I. WIND AND SHADOW

This section describes the proposed project's wind and shadow impacts.

WIND

This subsection describes the proposed project's impacts on ground-level wind currents at various locations on the project site and in the vicinity. The Setting discussion includes a general description of the wind environment in San Francisco and a discussion of regulations related to the review of wind impacts from proposed development projects. The Impacts discussion describes significance criteria for determining if wind impacts are significant under CEQA; existing wind conditions on the project site; the wind impacts of the proposed project and cumulative development projects; and improvement measures. The discussion of wind impacts in this subsection is supported by a wind tunnel report prepared by Rowan Williams Davies & Irwin, Inc. (RWDI), included in this EIR as Appendix H.[1]

SETTING

EXISTING CLIMATE AND WIND CONDITIONS

The difference in atmospheric pressure between two points on the earth causes air masses to move from the area of higher pressure to the area of lower pressure. This movement of air masses results in wind currents. Meteorological data from the United States Weather Bureau and the Bay Area Air Quality Management District show that winds from the northwest, west-northwest, west, and west-southwest, reflecting the persistence of sea breezes, are the most prevalent in San Francisco. Wind direction is most variable during the winter, when strong southerly winds, which are frequent during the approach of a winter storm, occur. Average wind speeds are highest during the summer and lowest during the winter. Typically, the highest wind speeds occur during the mid-afternoon, and the lowest wind speeds occur during the early morning.

Like many locations in downtown San Francisco, the vicinity of the project site can be characterized as windy. As discussed in more detail under "Impact Evaluation," on p. IV.I.6, existing pedestrian-level wind speeds in the vicinity of the project site average 12.6 mph and range from 5 to 26 mph under the wind comfort analysis. The windiest locations are the north

[1] Rowan Williams Davies & Irwin, Inc. (RWDI), 706 Mission Street Pedestrian Wind Study, January 25, 2012 (hereinafter referred to as "Pedestrian Wind Study"). A copy of this document is included in this EIR as Appendix H and is also is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

side of Mission Street in front of St. Patrick's Church and Jessie Square, the south side of Mission Street across from St. Patrick's Church and Jessie Square, the southwest and southeast corners of the intersection of Third and Market Streets, and Yerba Buena Lane at the southwest corner of the Four Seasons Hotel and Residences (the Four Seasons) (see Figure II.7: Project Location and Nearby Land Uses, in Chapter II, Project Description, p. II.17).

BUILDINGS AND WIND SPEED

The direction and speed of wind currents can be altered by natural features of the land or by buildings and structures. Groups of buildings clustered together tend to act as obstacles that reduce wind speeds; the heights, massing, and orientations or profiles of the buildings are some of the factors that can affect wind speeds.

When a building is much taller than those around it, rather than a similar height, it can intercept and redirect winds downward that might otherwise flow overhead. The winds can be directed down the vertical face of the building to ground level, and these redirected winds can be relatively strong and relatively turbulent.

The massing of a building can affect wind speeds. In general, slab-shaped buildings have the greatest potential to accelerate ground-level winds, while buildings that have unusual shapes or are more geometrically complex tend to have lesser effects.

The orientation or profile of a building is another factor that can affect wind speeds. When the wide face of a building, as opposed to its narrow face, is oriented toward the prevailing wind direction, the building has more surface area to intercept and redirect winds down to ground level, thus increasing the probability of strong and turbulent winds at ground level.

WIND SPEED AND PEDESTRIAN COMFORT

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to 4 miles per hour (mph) have no noticeable effect on pedestrian comfort. With winds from 4 to 8 mph, wind is felt on the face. Winds from 8 to 13 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. Winds from 13 to 19 mph will raise loose paper, dust, and dry soil, and will disarrange hair. With winds from 19 to 26 mph, the force of the wind will be felt on the body. With 26- to 34-mph winds, umbrellas are used with difficulty, hair is blown straight, walking steadily is difficult, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance, and gusts can be hazardous and can blow people over.

REGULATORY FRAMEWORK

Planning Code Section 148 establishes wind comfort and wind hazard criteria for certain zoning districts: the Downtown (C-3) Districts, the Downtown Residential (DTR) Districts, the Folsom and Main Residential/Commercial Special Use District, the Van Ness Special Use District, and certain zoning districts in the South of Market neighborhood.[2] Planning Code Section 148 establishes equivalent wind speeds[3] of 7 mph as the comfort criterion for seating areas and 11 mph as the comfort criterion for areas of substantial pedestrian use. New buildings and additions to existing buildings may not cause ground-level winds to exceed these wind speeds more than 10 percent of the time year round between 7:00 AM and 6:00 PM. If existing wind speeds exceed the comfort criteria, or when a project would result in exceedances of the comfort criteria, the Planning Commission may grant an exception pursuant to Planning Code Section 309 provided that the building or addition cannot be designed to meet the comfort criteria without creating an unattractive and ungainly building form and without unduly restricting the development potential of the site. In granting an exception pursuant to Section 309, the Planning Commission must determine that the exceedances of the comfort criteria would be insubstantial because of the limited amount by which the comfort criteria are exceeded, the limited location in which the comfort criteria are exceeded, or the limited time during which the comfort criteria are exceeded.

Section 148 also establishes a wind hazard criterion of an equivalent wind speed of 26 mph. New buildings or additions to existing buildings may not cause ground-level winds to reach or exceed this wind speed for more than a single hour during the year. Exceptions pursuant to Section 309 are not permitted.

The Planning Code seating comfort criterion of 7 mph and the pedestrian comfort criterion of 11 mph are based on wind speeds measured and averaged over a period of one minute. In contrast, the Planning Code wind hazard criterion of 26 mph is defined by a wind speed that is measured and averaged over a period of one hour. When stated on the same time basis as the comfort criteria wind speeds, the hazard criterion wind speed (26 mph averaged over one hour) is equivalent to a one-minute average of 36 mph. The test results presented in the wind tunnel report for the proposed project and in this section of the EIR use the one-minute average of 36 mph for the hazard criterion.

---

[2] Planning Code Section 148, which was adopted by the San Francisco Board of Supervisors in 1985, established the wind comfort and wind hazard criteria for the C-3 Districts. The wind comfort and wind hazard criteria for certain other zoning districts elsewhere in San Francisco are the same as those established for the C-3 Districts by Section 148 (see also Sections 243, 249.1 and 263.11).

[3] Pursuant to Section 148, equivalent wind speed is defined as the mean hourly wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians.

IMPACTS

SIGNIFICANCE CRITERIA

The thresholds for determining the significance of impacts in this analysis are consistent with the Planning Department's Initial Study checklist. For the purpose of this analysis, the following applicable threshold was used to determine whether implementing the project would result in a significant wind impact. Implementation of the proposed project would have a significant wind effect if the project would:

I.1 Alter wind in a manner that substantially affects public areas.

APPROACH TO ANALYSIS

Any proposed development project in a C-3 District in San Francisco that requires a wind tunnel analysis must follow the standard methodology established by the Planning Department. Under the standard methodology, the wind tunnel analysis relies on wind data collected from the United States Weather Bureau weather station atop the Federal Building at 50 United Nations Plaza. Wind data from 7:00 AM to 6:00 PM are used, because this time period represents peak pedestrian activity in a downtown setting. RWDI conducted a wind tunnel test of the proposed project using a 1:400 (1 inch = 33 feet) scale model of the proposed project and surrounding buildings within a 1,600-foot radius[4] of the project site. The scale model, which was equipped with permanently mounted wind speed sensors, was placed inside an atmospheric boundary layer wind tunnel. Using four wind directions (northwest, west-northwest, west, and west-southwest), wind tunnel tests were then conducted for the project site and vicinity using the following three different scenarios:

1. Existing Conditions Configuration: This configuration consists of the existing structures on the project site and the existing surrounding buildings.[5]
2. Existing Conditions Plus Proposed Project Configuration: This configuration consists of the proposed project and the existing surrounding buildings.[6]
3. Proposed Project Plus Cumulative Configuration: This configuration is the same as the Existing Conditions Plus Proposed Project Configuration, but it also includes anticipated proposed development projects at 2 New Montgomery Street (the Palace Hotel Project), 201 Second Street, 222 Second Street, 151 Third Street (the San Francisco Museum of Modern Art Expansion / Fire Station Relocation and Housing Project), a site on the north side of Howard Street between Third and New Montgomery Streets, a site on the south side of Howard Street between Third and Hawthorne Streets, and a site on the northeast

[4] The American Society of Civil Engineers has established a minimum standard of an 820-foot radius for wind tunnel testing.
[5] Pedestrian Wind Study, Figure 1a.
[6] Pedestrian Wind Study, Figure 1b.

corner of Third and Folsom Streets.[7] The anticipated proposed development projects included in the Proposed Project Plus Cumulative Configuration are within 1,600 feet of and close enough to the project site that they could interact with the proposed project and alter ground-level wind conditions around or near the project site.

Wind speed measurements were recorded at 95 ground-level locations for each of the three test scenarios described above.[8]

PROJECT FEATURES

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower that would be adjacent to and physically connected to the existing 10-story, 154-foot-tall Aronson Building. As part of the proposed project, the Aronson Building would be restored and rehabilitated. The existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a 15-foot-tall solarium would be constructed, resulting in an overall building height of 159 feet. The existing wind conditions in the project vicinity could be affected by the construction of a 550-foot-tall building on the project site.

As part of the proposed project, the roof of the Aronson Building would be converted to an outdoor terrace for project residents. In addition, an outdoor terrace may be provided for museum visitors on the fourth floor of the tower on the west side overlooking Jessie Square, and private roof terraces would be provided for the dwelling units on the forty-fourth, forty-sixth, and forty-seventh floors of the tower.

The proposed project would include several design features that would be beneficial to ground-level wind conditions. At the ground and second floors of the proposed tower, the southwest corner would be chamfered[9] to help reduce wind speeds at the base of the tower. The third floor of the proposed tower would cantilever over the ground and second floors and extend approximately 10 feet over Jessie Square. This projection would intercept and deflect overhead winds that are channeled down the face of the tower to ground level, which would also help reduce wind speeds at the base of the tower. As indicated above, the roof of this projection may be used as an outdoor terrace for museum visitors. The outdoor terrace would have windscreens that would break up and slow wind currents before they reach the sidewalk on the south side of

[7] Pedestrian Wind Study, Figure 1c.

[8] In addition, wind speed measurements were recorded at nine podium- and roof-level locations on the proposed tower and at five locations on the roof of the existing Aronson Building. These data are used to discuss the wind conditions on the proposed podium- and roof-level open spaces, which are not subject to Planning Code Section 148 and are not related to any significance criteria under CEQA.

[9] In the context of architecture, chamfer means to cut off or bevel a corner of a building, usually at a 45-degree angle.

Mission Street across from the project site. These windscreens would also make the potential outdoor terrace more comfortable for museum visitors.

IMPACT EVALUATION

Impact WS-1: The proposed project would not alter wind in a manner that substantially affects public areas. (*Less than Significant*) (Criterion I.1)

Wind Comfort Analysis for the Proposed Project[10]

Wind speeds were measured at 95 ground-level test locations for the Existing Conditions Configuration and the Existing Conditions Plus Proposed Project Configuration. The locations of the test points are shown in Figure IV.I.1: Locations of Ground-Level Test Points, and the test results are shown in Table IV.I.1: Wind Comfort Analysis for Ground-Level Test Points, on pp. IV.I.8-IV.I.13.

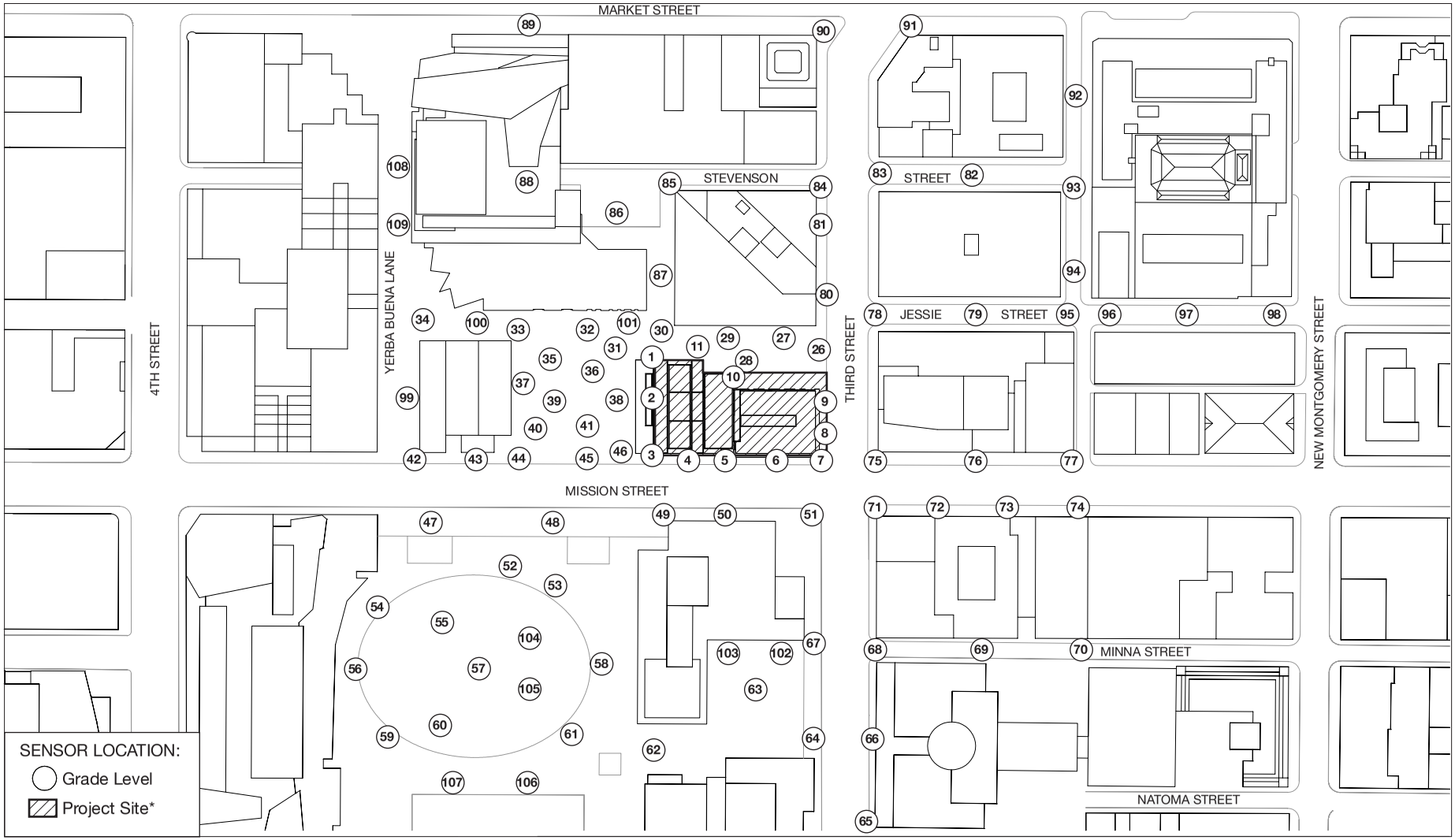
Under existing conditions, the average equivalent wind speed for the wind comfort analysis at the 95 test locations is approximately 12.6 mph, with wind speeds ranging from 5 to 26 mph. The highest wind speed occurs along Yerba Buena Lane at the southwest corner of the Four Seasons (Test Point 109). Under existing conditions, 28 of the 95 test locations meet the comfort criteria, and 67 do not.

With implementation of the proposed project, the average equivalent wind speed for the wind comfort analysis at the 95 test locations would increase from 12.6 mph to 12.7 mph. Wind speeds would range from 6 to 22 mph, and the highest wind speed would continue to occur along Yerba Buena Lane at the southwest corner of the Four Seasons (Test Point 109). Wind speeds would decrease at 28 locations, remain the same at 34 locations, and increase at 33 locations.

When compared to existing conditions, implementation of the proposed project would change wind patterns such that seven existing wind comfort exceedances (Test Points 1, 2, 4, 5, 7, 51, and 69 on Figure IV.I.1) would be eliminated and nine new exceedances (Test Points 27, 30, 33, 71, 78, 82, 87, 92, and 97) would be created, resulting in a net change of two new exceedances.

Of the seven existing wind comfort exceedances that would be eliminated by implementation of the proposed project, two are near the northwest corner of the proposed tower on Jessie Square (Test Points 1 and 2), one is in a location of low to moderate pedestrian use (Test Point 69), and four are in locations of moderate to heavy pedestrian use (Test Points 4, 5, 7, and 51). At these seven locations, wind speeds would decrease between 2 and 6 mph. The greatest decrease in

[10] The 7 mph seating comfort criterion was used for test points in seating areas, and the 11 mph pedestrian comfort criterion was used for test points in areas of substantial pedestrian use.



SOURCE: RWDI

* The underground portions of the project site (the Jessie Square Garage and the Stevenson Street ramp) are not shown on this figure.

FIGURE IV.I.1: LOCATIONS OF GROUND-LEVEL TEST POINTS

Table IV.I.1: Wind Comfort Analysis for Ground-Level Test Points

	Existing Conditions Configuration				Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Comfort Criterion (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
1	11	13	18%	e	11	10%	-2		11	10%	-2	
2	11	14	21%	e	11	10%	-3		11	10%	-3	
3	11	14	21%	e	15	23%	1	e	16	27%	2	e
4	11	15	25%	e	9	2%	-6		10	5%	-5	
5	11	14	22%	e	11	10%	-3		10	7%	-4	
6	11	10	5%		10	7%	0		10	6%	0	
7	11	12	15%	e	10	7%	-2		10	8%	-2	
8	11	13	20%	e	12	13%	-1	e	12	13%	-1	e
9	11	17	34%	e	17	33%	0	e	17	32%	0	e
10	11	14	22%	e	14	22%	0	e	14	24%	0	e
11	7	12	12%	e	12	15%	0	e	11	10%	-1	e

Note: Test Points 12 through 25 are above-grade locations that would not be accessible to the public.

26	11	14	23%	e	14	24%	0	e	13	20%	-1	e
27	11	10	7%		14	21%	4	e	13	17%	3	e
28	7	12	15%	e	15	26%	3	e	14	23%	2	e

Table IV.I.1 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Comfort Criterion (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
29	7	10	5%	e	14	22%	4	e	13	19%	3	e
30	11	11	10%		15	25%	4	e	14	23%	3	e
31	7	13	18%	e	15	27%	2	e	15	25%	2	e
32	7	14	21%	e	15	24%	1	e	14	21%	0	e
33	11	11	10%		13	17%	2	e	12	16%	1	e
34	11	12	12%	e	12	16%	0	e	12	14%	0	e
35	11	15	25%	e	15	24%	0	e	14	21%	-1	e
36	7	14	24%	e	15	27%	1	e	15	25%	1	e
37	11	11	10%		9	4%	-2		9	3%	-2	
38	7	14	21%	e	13	19%	-1	e	13	17%	-1	e
39	11	15	26%	e	14	23%	-1	e	14	20%	-1	e
40	7	16	30%	e	13	20%	-3	e	13	18%	-3	e
41	7	15	26%	e	15	25%	0	e	14	23%	-1	e
42	11	18	39%	e	17	37%	-1	e	17	36%	-1	e
43	11	19	39%	e	17	34%	-2	e	17	34%	-2	e
44	11	20	39%	e	16	28%	-4	e	16	28%	-4	e
45	11	17	34%	e	14	23%	-3	e	14	22%	-3	e
46	11	15	25%	e	15	26%	0	e	15	24%	0	e

Table IV.I.1 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Comfort Criterion (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
47	11	22	48%	e	21	47%	-1	e	21	46%	-1	e
48	11	16	29%	e	16	27%	0	e	15	25%	-1	e
49	11	15	25%	e	14	23%	-1	e	14	21%	-1	e
50	11	12	15%	e	18	34%	6	e	16	31%	4	e
51	11	15	27%	e	11	10%	-4		11	10%	-4	
52	7	11	10%	e	12	15%	1	e	12	13%	1	e
53	7	11	10%	e	12	16%	1	e	12	16%	1	e
54	7	7	0%		7	0%	0		7	0%	0	
55	7	11	10%	e	10	7%	-1	e	10	7%	-1	e
56	7	9	2%	e	8	1%	-1	e	8	1%	-1	e
57	11	12	17%	e	12	13%	0	e	11	10%	-1	
58	7	12	17%	e	12	15%	0	e	12	14%	0	e
59	7	13	17%	e	13	15%	0	e	12	14%	-1	e
60	11	12	15%	e	12	12%	0	e	11	10%	-1	
61	7	15	27%	e	14	19%	-1	e	13	17%	-2	e
62	11	14	22%	e	14	19%	0	e	13	16%	-1	e
63	7	9	3%	e	9	4%	0	e	9	3%	0	e
64	11	8	2%		8	1%	0		8	1%	0	

Table IV.I.1 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Comfort Criterion (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
65	11	8	1%		8	1%	0		10	7%	2	
66	11	6	0%		6	0%	0		8	1%	2	
67	11	8	2%		8	2%	0		9	3%	1	
68	11	10	7%		9	2%	-1		9	2%	-1	
69	11	12	14%	e	10	5%	-2		8	2%	-4	
70	11	11	10%		11	10%	0		10	8%	-1	
71	11	11	10%		15	28%	4	e	14	23%	3	e
72	11	14	21%	e	15	26%	1	e	16	28%	2	e
73	11	14	20%	e	15	28%	1	e	15	26%	1	e
74	11	11	10%		11	10%	0		11	10%	0	
75	11	16	32%	e	19	41%	3	e	18	39%	2	e
76	11	8	2%		9	4%	1		9	3%	1	
77	11	12	11%	e	14	16%	2	e	12	11%	0	e
78	11	11	10%		12	14%	1	e	11	10%	0	
79	11	10	5%		10	6%	0		9	2%	-1	
80	11	7	1%		6	0%	-1		7	1%	0	
81	11	7	0%		7	0%	0		6	0%	-1	
82	11	11	10%		12	13%	1	e	10	5%	-1	

Table IV.I.1 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Comfort Criterion (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
83	11	13	20%	e	13	19%	0	e	13	16%	0	e
84	11	13	17%	e	13	16%	0	e	12	13%	-1	e
85	11	16	30%	e	16	28%	0	e	16	31%	0	e
86	11	12	14%	e	12	13%	0	e	13	16%	1	e
87	11	11	10%		14	23%	3	e	14	22%	3	e
88	11	5	0%		6	0%	1		5	0%	0	
89	11	14	21%	e	14	23%	0	e	13	19%	-1	e
90	11	19	44%	e	20	46%	1	e	19	41%	0	e
91	11	18	37%	e	19	41%	1	e	17	33%	-1	e
92	11	11	10%		12	14%	1	e	11	10%	0	
93	11	8	5%		8	2%	0		13	16%	5	e
94	11	13	21%	e	13	17%	0	e	10	6%	-3	
95	11	12	15%	e	12	16%	0	e	15	27%	3	e
96	11	10	7%		11	10%	1		18	39%	8	e
97	11	11	10%		12	14%	1	e	15	27%	4	e
98	11	12	16%	e	13	19%	1	e	14	20%	2	e
99	11	12	16%	e	15	26%	3	e	15	25%	3	e
100	7	12	13%	e	14	23%	2	e	14	22%	2	e

Table IV.I.1 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Comfort Criterion (mph)	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
101	7	12	16%	e	15	25%	3	e	14	22%	2	e
102	7	7	0%		7	0%	0		8	0%	1	e
103	7	5	0%		6	0%	1		6	0%	1	
104	7	12	17%	e	11	10%	-1	e	11	10%	-1	e
105	7	13	19%	e	12	13%	-1	e	11	10%	-2	e
106	7	15	24%	e	14	21%	-1	e	13	18%	-2	e
107	7	14	20%	e	13	18%	-1	e	13	17%	-1	e
108	7	16	29%	e	19	43%	3	e	18	40%	2	e
109	7	26	59%	e	22	51%	-4	e	21	49%	-5	e
Average mph and %		12.6	17%		12.7	17%			12.5	17%		
Exceedances			67 of 95			69 of 95					66 of 95	

wind speed would be 6 mph on the north side of Mission Street in front of the proposed tower (Test Point 4). Implementation of the proposed project would not eliminate existing wind comfort exceedances at any of the test locations that are used for public seating.

Of the nine new wind comfort exceedances that would be created by implementation of the proposed project, four are in locations of low to moderate pedestrian use (Test Points 82, 87, 92 and 97), and five are in locations of moderate to heavy pedestrian use (Test Points 27, 30, 33, 71, and 78). At the five locations of moderate to heavy pedestrian use, wind speeds would increase between 1 and 4 mph. The greatest increase in wind speed would be 4 mph along the pedestrian path between the Westin Hotel and the Aronson Building (Test Point 27), near the southwest corner of the Westin Hotel (Test Point 30), and at the southeast corner of Third and Mission Streets (Test Point 71). Implementation of the proposed project would not create new wind comfort exceedances at any of the test locations that are used for public seating.

Summary of Wind Comfort Analysis for the Proposed Project

Implementation of the proposed project would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would increase from 12.6 to 12.7 mph, and the number of locations that would exceed the comfort criteria would increase from 67 to 69. Exceeding the seating comfort criterion or the pedestrian comfort criterion is not a significant wind impact under CEQA. Although there would be localized changes throughout the project vicinity, the overall wind conditions would remain substantially the same with implementation of the proposed project. While the proposed project would not have a significant impact on ground-level wind conditions, Improvement Measure I-WS-A, shown below, was identified to lessen the proposed project's less-than-significant effect on ground-level wind conditions. City decision-makers may choose to include this improvement measure as a condition of approval for the proposed project.

Improvement Measure I-WS-A

As an improvement measure to reduce ground-level wind speeds in areas used for public seating, the project sponsor shall meet with Planning Department staff to determine which locations would benefit the most from wind reduction measures and what types of wind reduction measures could be implemented at these locations. The project sponsor shall strive to install, or cause to be installed, wind reduction measures that could include hedges, planter boxes, trees, and trellises. In the event that some locations are not on property owned or otherwise controlled by the project sponsor, the project sponsor shall discuss the implementation of these wind reduction measures with the appropriate parties, which could include the Successor Agency, other City departments, or other property owners.

Wind Hazard Analysis for the Proposed Project

Wind speeds were measured at 95 ground-level test locations for the Existing Conditions Configuration and the Existing Conditions Plus Proposed Project Configuration. The locations of the test points are shown in Figure IV.I.1 on p. IV.I.7, and the test results are shown in Table IV.I.2: Wind Hazard Analysis for Ground-Level Test Points. As discussed on p. IV.I.3, the test results presented in Table IV.I.2 use the one-minute average of 36 mph for the wind hazard criterion.

Under existing conditions, 91 of the 95 test locations meet the wind hazard criterion, and four do not. At the four locations that do not meet the wind hazard criterion, the existing wind speeds exceed the wind hazard criterion for a total of 127 hours per year. The locations that do not meet the wind hazard criterion are the south side of Mission Street at one of the entrances to Yerba Buena Gardens (Test Point 47), the southwest and southeast corners of the intersection of Third and Market Streets (Test Points 90 and 91, respectively), and along Yerba Buena Lane at the southwest corner of the Four Seasons (Test Point 109).

With implementation of the proposed project, both the wind speed and duration of hazardous winds would increase at Test Points 90 and 91 when compared to existing conditions. At Test Point 90, the wind speed would increase by 1 mph, and the duration of hazardous winds would increase by 4 hours per year. At Test Point 91, the wind speed would increase by 1 mph, and the duration of hazardous winds would increase by 3 hours per year. The existing hazard exceedances at Test Points 90 and 91 would not be eliminated with implementation of the proposed project, and hazard wind conditions would worsen at both of these locations.

With implementation of the proposed project, both the wind speed and duration of hazardous winds would decrease at Test Points 47 and 109 when compared to existing conditions. At Test Point 47, the wind speed would decrease by 1 mph, and the duration of hazardous winds would decrease by 5 hours per year. With the reduction in wind speed and duration, the wind conditions would comply with the wind hazard criterion. As a result, the proposed project would eliminate the existing hazard exceedance at Test Point 47. At Test Point 109, the wind speed would decrease by 8 mph, and the duration of hazardous winds would decrease by 92 hours per year. The existing hazard exceedance at Test Point 109 would not be eliminated with implementation of the proposed project, but the wind conditions would improve at this location.

Table IV.I.2: Wind Hazard Analysis for Ground-Level Test Points

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Hazard Criterion (mph)	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds
1	36	26	< 1		21	< 1	0		20	< 1	0	
2	36	27	< 1		19	< 1	0		20	< 1	0	
3	36	26	< 1		27	< 1	0		28	< 1	0	
4	36	29	< 1		16	< 1	0		17	< 1	0	
5	36	29	< 1		20	< 1	0		18	< 1	0	
6	36	18	< 1		20	< 1	0		19	< 1	0	
7	36	21	< 1		20	< 1	0		21	< 1	0	
8	36	23	< 1		23	< 1	0		24	< 1	0	
9	36	30	< 1		33	< 1	0		32	< 1	0	
10	36	27	< 1		27	< 1	0		25	< 1	0	
11	36	24	< 1		21	< 1	0		20	< 1	0	

Note: Test Points 12 through 25 are above-grade locations that would not be accessible to the public.

26	36	25	< 1		25	< 1	0		23	< 1	0	
27	36	21	< 1		25	< 1	0		22	< 1	0	
28	36	24	< 1		27	0	0		25	< 1	0	

Table IV.I.2 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Hazard Criterion (mph)	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds
29	36	18	< 1		28	< 1	0		27	< 1	0	
30	36	24	< 1		30	< 1	0		29	< 1	0	
31	36	25	< 1		27	< 1	0		26	< 1	0	
32	36	23	< 1		25	< 1	0		24	< 1	0	
33	36	20	< 1		23	< 1	0		23	< 1	0	
34	36	22	< 1		27	< 1	0		26	< 1	0	
35	36	25	< 1		26	< 1	0		24	< 1	0	
36	36	26	< 1		26	< 1	0		25	< 1	0	
37	36	21	< 1		17	< 1	0		16	< 1	0	
38	36	25	< 1		23	< 1	0		22	< 1	0	
39	36	26	< 1		25	< 1	0		24	< 1	0	
40	36	27	< 1		23	< 1	0		22	< 1	0	
41	36	27	< 1		27	< 1	0		27	< 1	0	
42	36	32	< 1		31	< 1	0		31	< 1	0	
43	36	32	< 1		30	< 1	0		30	< 1	0	
44	36	35	< 1		28	< 1	0		27	< 1	0	
45	36	29	< 1		27	< 1	0		26	< 1	0	
46	36	28	< 1		28	< 1	0		28	< 1	0	
47	36	37	6	e	36	< 1	-6		36	< 1	-6	

Table IV.I.2 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Hazard Criterion (mph)	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds
48	36	27	< 1		27	< 1	0		27	< 1	0	
49	36	28	< 1		27	< 1	0		27	< 1	0	
50	36	27	< 1		33	< 1	0		31	< 1	0	
51	36	33	< 1		22	< 1	0		20	0	0	
52	36	21	< 1		23	< 1	0		23	0	0	
53	36	22	< 1		25	< 1	0		25	0	0	
54	36	13	< 1		12	< 1	0		13	0	0	
55	36	19	< 1		18	< 1	0		19	0	0	
56	36	15	< 1		15	< 1	0		15	0	0	
57	36	22	< 1		21	< 1	0		20	0	0	
58	36	22	< 1		27	< 1	0		26	0	0	
59	36	22	< 1		21	< 1	0		21	0	0	
60	36	22	< 1		20	< 1	0		19	0	0	
61	36	27	< 1		25	< 1	0		24	0	0	
62	36	26	< 1		24	< 1	0		23	0	0	
63	36	18	< 1		18	< 1	0		18	0	0	
64	36	17	< 1		15	< 1	0		15	0	0	
65	36	16	< 1		16	< 1	0		19	0	0	
66	36	12	< 1		12	< 1	0		14	0	0	

Table IV.I.2 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Hazard Criterion (mph)	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds
67	36	17	< 1		18	< 1	0		19	0	0	
68	36	19	< 1		17	< 1	0		17	0	0	
69	36	21	< 1		19	< 1	0		18	0	0	
70	36	25	< 1		26	< 1	0		22	0	0	
71	36	21	< 1		26	< 1	0		24	0	0	
72	36	23	< 1		25	< 1	0		27	0	0	
73	36	29	< 1		33	< 1	0		31	0	0	
74	36	23	< 1		26	< 1	0		21	0	0	
75	36	30	< 1		32	< 1	0		32	0	0	
76	36	16	< 1		18	< 1	0		18	< 1	0	
77	36	25	< 1		32	< 1	0		26	< 1	0	
78	36	22	< 1		20	< 1	0		20	< 1	0	
79	36	17	< 1		17	< 1	0		15	< 1	0	
80	36	15	< 1		13	< 1	0		14	< 1	0	
81	36	13	< 1		13	< 1	0		12	< 1	0	
82	36	20	< 1		21	< 1	0		17	< 1	0	
83	36	27	< 1		25	< 1	0		25	< 1	0	
84	36	23	< 1		23	< 1	0		23	< 1	0	
85	36	32	< 1		32	< 1	0		33	< 1	0	

Table IV.I.2 (Continued)

Existing Conditions Configuration					Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Hazard Criterion (mph)	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds
86	36	26	< 1		25	< 1	0		27	< 1	0	
87	36	23	< 1		30	< 1	0		29	< 1	0	
88	36	0	< 1		0	< 1	0		10	< 1	0	
89	36	31	< 1		31	< 1	0		27	< 1	0	
90	36	39	5	e	40	9	4	e	38	3	-2	e
91	36	38	3	e	39	6	3	e	37	2	-1	e
92	36	20	< 1		22	< 1	0		21	< 1	0	
93	36	20	< 1		16	< 1	0		22	< 1	0	
94	36	30	< 1		30	< 1	0		17	< 1	0	
95	36	22	< 1		23	< 1	0		26	< 1	0	
96	36	20	< 1		21	< 1	0		31	< 1	0	
97	36	23	< 1		23	< 1	0		26	< 1	0	
98	36	25	< 1		25	< 1	0		25	< 1	0	
99	36	24	< 1		28	< 1	0		28	< 1	0	
100	36	22	< 1		27	< 1	0		27	< 1	0	
101	36	23	< 1		25	< 1	0		24	< 1	0	
102	36	14	< 1		14	< 1	0		15	< 1	0	
103	36	11	< 1		11	< 1	0		12	< 1	0	
104	36	22	< 1		21	< 1	0		21	< 1	0	

Table IV.I.2 (Continued)

		Existing Conditions Configuration			Proposed Project Configuration				Proposed Project Plus Cumulative Configuration			
Location Number	Hazard Criterion (mph)	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 Hour per Year (mph)	Hours per Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceeds
105	36	22	< 1		20	< 1	0		20	< 1	0	
106	36	25	< 1		25	< 1	0		24	< 1	0	
107	36	23	< 1		23	< 1	0		22	< 1	0	
108	36	32	< 1		36	< 1	1		35	< 1	0	
109	36	50	113	e	42	21	-92	e	42	21	-92	e
Average mph and total hours		23.8	127		23.8	37	-90		23.4	26	-101	
Exceedances				4 of 95				3 of 95				3 of 95

The intersection of Third and Market Streets (Test Points 90 and 91) does not include any seating areas, and pedestrians typically pass through the intersection quickly. In contrast, pedestrians are more likely to stop and linger for a longer period of time on the south side of Mission Street at one of the entrances to Yerba Buena Gardens (Test Point 47). Pedestrians can sit down on the steps or on the grass at the northern edge of Yerba Buena Gardens. Yerba Buena Lane is primarily a pedestrian path, but there are benches and seating areas where pedestrians can stop and sit down for extended periods of time. As discussed above, the increases in wind speed and duration of hazardous winds at the intersection of Third and Market Streets would be minimal, and the decreases in wind speed and duration of hazardous winds at one of the entrances to Yerba Buena Gardens and along Yerba Buena Lane would be more substantial.

Summary of Wind Hazard Analysis for the Proposed Project

Implementation of the proposed project would eliminate one existing wind hazard exceedance, improve wind conditions substantially at one location with an existing wind hazard exceedance, and make wind conditions slightly worse at two locations with existing wind hazard exceedances. Overall, there would be a net improvement in wind hazard conditions; the duration of hazardous wind at the four locations would decrease by about 90 hours per year (from 127 hours to 37 hours). For these reasons, the proposed project would not have a significant wind impact, and no mitigation measures are necessary.

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

Wind Comfort Analysis for the Cumulative Scenario[11]

Wind speeds were measured at 95 ground-level test locations for the Existing Conditions and Proposed Project Plus Cumulative configurations. The locations of the test points are shown in Figure IV.I.1 on p. IV.I.7, and the test results are shown in Table IV.I.1 on pp. IV.I.8-IV.I.13. The Proposed Project Plus Cumulative Configuration is described on pp. IV.I.4-IV.I.5.

Under existing conditions, the average equivalent wind speed for the wind comfort analysis at the 95 test locations is approximately 12.6 mph, with wind speeds ranging from 5 to 26 mph. The highest wind speed occurs along Yerba Buena Lane at the southwest corner of the Four Seasons (Test Point 109). Under existing conditions, 28 of the 95 test locations meet the comfort criteria, and 67 do not.

[11] The 7 mph seating comfort criterion was used for test points in seating areas, and the 11 mph pedestrian comfort criterion was used for test points in areas of substantial pedestrian use.

With implementation of the proposed project and past, present, and reasonably foreseeable future projects, the average equivalent wind speed for the wind comfort analysis at the 95 test locations would decrease from 12.6 mph to 12.5 mph. Wind speeds would range from 5 to 21 mph, and the highest wind speed of 21 mph would occur on the south side of Mission Street across from St. Patrick's Church (Test Point 47) and along Yerba Buena Lane at the southwest corner of the Four Seasons (Test Point 109). Wind speeds would decrease at 44 locations, remain the same at 19 locations, and increase at 32 locations.

When compared to existing conditions, implementation of the proposed project, in combination with past, present, and reasonably foreseeable future projects, would change wind patterns such that 10 existing wind comfort exceedances (Test Points 1, 2, 4, 5, 7, 51, 57, 60, 69, and 94 on Figure IV.I.1) would be eliminated and nine new exceedances (Test Points 27, 30, 33, 71, 87, 92, 96, 97, and 102) would be created, resulting in a net change of one fewer exceedance.

Of the 10 existing wind comfort exceedances that would be eliminated with implementation of the proposed project and past, present, and reasonably foreseeable future projects, two are near the northwest corner of the proposed tower on Jessie Square (Test Points 1 and 2), two are in locations of low to moderate pedestrian use (Test Points 69 and 94), and six are in locations of moderate to heavy pedestrian use (Test Points 4, 5, 7, 51, 57, and 60). At these 10 locations, wind speeds would decrease between 1 and 5 mph. The greatest decrease in wind speed would be 5 mph on the north side of Mission Street in front of the proposed tower (Test Point 4). Implementation of the proposed project and past, present, and reasonably foreseeable future projects would not eliminate existing wind comfort exceedances at any of the test locations that are used for public seating. Two locations on the grass portion of the Yerba Buena Gardens Esplanade (Test Points 57 and 60) do not have structured seating, but they can be used as seating areas. As noted above, existing wind comfort exceedances at these two locations would be eliminated.

Of the nine new wind comfort exceedances that would be created by implementation of the proposed project and past, present, and reasonably foreseeable future projects, four are in locations of low to moderate pedestrian use (Test Points 87, 93, 96, and 97), four are in locations of moderate to heavy pedestrian use (Test Points 27, 30, 33, and 71), and one is in a location used for public seating (Test Point 102). At the four locations of moderate to heavy pedestrian use, wind speeds would increase between 1 and 3 mph. The greatest increase in wind speed would be 3 mph along the pedestrian path between the Westin Hotel and the Aronson Building (Test Point 27), near the southwest corner of the Westin Hotel (Test Point 30), and at the southeast corner of Third and Mission Streets (Test Point 71). As discussed above, implementation of the proposed project and past, present, and reasonably foreseeable future projects would create one new wind comfort exceedance at a seating area in the eastern portion of Yerba Buena Gardens

(Test Point 102). At this location, the wind speed would increase from 7 mph under existing conditions to 8 mph.

Summary of Wind Comfort Analysis for the Cumulative Scenario

Implementation of the proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would decrease from 12.6 to 12.5 mph, and the number of locations that would exceed the comfort criteria would decrease from 67 to 66. Exceeding the seating comfort criterion or the pedestrian comfort criterion is not a significant wind impact under CEQA. Although there would be localized changes throughout the project vicinity, the overall wind conditions would remain substantially the same with implementation of the proposed project and past, present, and reasonably foreseeable future projects.

As discussed on p. IV.I.14, Improvement Measure I-WS-A could be implemented upwind of and/or around locations with comfort exceedances in order to make wind conditions at those locations more comfortable for pedestrians or seated individuals.

Wind Hazard Analysis for the Cumulative Scenario

Wind speeds were measured at 95 ground-level test locations for the Existing Conditions and Proposed Project Plus Cumulative configurations. The locations of the test points are shown in Figure IV.I.1on p. IV.I.7, and the test results are shown in Table IV.I.2 on pp. IV.I.16-IV.I.21. As discussed on p. IV.I.3, the test results presented in Table IV.I.2 use the one-minute average of 36 mph for the wind hazard criterion.

Under existing conditions, 91 of the 95 test locations meet the wind hazard criterion, and four do not. At the four locations that do not meet the wind hazard criterion, the existing wind speeds exceed the wind hazard criterion for a total of 127 hours per year. The locations that do not meet the wind hazard criterion are the south side of Mission Street at one of the entrances to Yerba Buena Gardens (Test Point 47), the southwest and southeast corners of the intersection of Third and Market Streets (Test Points 90 and 91, respectively), and along Yerba Buena Lane at the southwest corner of the Four Seasons (Test Point 109).

With implementation of the proposed project and past, present, and reasonably foreseeable future projects, both the speed and duration of hazardous winds would decrease at Test Points 47, 90, 91, and 109 when compared to existing conditions. At Test Point 47, the wind speed would decrease by 1 mph, and the duration of hazardous winds would decrease by 6 hours per year. With the reduction in wind speed and duration, the wind conditions would comply with the wind hazard criterion. As a result, implementation of the proposed project and past, present, and reasonably foreseeable future projects would eliminate an existing hazard exceedance at Test

Point 47. At Test Point 90, the wind speed would decrease by 1 mph, and the duration of hazardous winds would decrease by 2 hours per year. At Test Point 91, the wind speed would decrease by 1 mph, and the duration of hazardous winds would decrease by 1 hour per year. At Test Point 109, the wind speed would decrease by 8 mph, and the duration of hazardous winds would decrease by 92 hours per year. The existing wind hazard exceedances at Test Points 90, 91, and 109 would not be eliminated with implementation of the proposed project and past, present, and reasonably foreseeable future projects, but the wind conditions would improve at all three locations.

Summary of Wind Hazard Analysis for the Cumulative Scenario

Implementation of the proposed project, in combination with past, present, and reasonably foreseeable future projects, would eliminate one existing wind hazard exceedance and improve wind conditions at three other locations with existing wind hazard exceedances. Overall, there would be a net improvement in wind conditions; the duration of hazardous winds would decrease by about 101 hours per year (from 127 hours to 26 hours). The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not have a significant cumulative wind impact. The proposed project would not make a cumulatively considerable contribution to a significant cumulative wind impact, and no mitigation measures are necessary.

Discussion of Proposed Podium- and Roof-Level Private Open Space on the Project Site

The following discussion of on-site, above-grade open spaces proposed for the use of residents and museum visitors is provided for informational purposes only. Wind impacts at these above-grade areas are not evaluated for the purposes of environmental review pursuant to CEQA or Planning Code Section 148, because they are not accessible to the general public. As part of the proposed project, the roof of the Aronson Building, at approximately 144 feet above grade, would be converted to a private outdoor terrace for project residents, and a 15-foot-tall solarium would be constructed on the roof of the Aronson Building. In addition, an outdoor terrace may be provided for museum visitors on the fourth floor on the west side of the tower. Private roof terraces would be provided for the dwelling units on the forty-fourth, forty-sixth, and forty-seventh floors of the tower. These terraces would be used for passive recreation and would likely include seating.

The provisions of Planning Code Section 148 apply only to ground-level wind currents in areas of substantial pedestrian use and in public seating areas. However, in order to provide information regarding wind conditions at the proposed podium- and roof-level open spaces, wind speeds were measured at 14 podium- and roof-level locations. The wind speeds for the podium- and roof-level locations were measured in the wind tunnel at the same time as the wind speeds for the ground-level locations for all three building configurations described on pp. IV.I.4-IV.I.5 using

the same 1:400 scale model. There was no difference in the methodology used to obtain the test results for the podium- and roof-level locations. The test results for the podium- and roof-level locations are presented in a separate report and are provided for informational purposes only (included in this EIR as Appendix H).[12]

Wind Comfort Discussion for the Roof-Level Open Spaces

The locations of the podium- and roof-level open spaces are shown in Figure IV.I.2: Locations of Proposed Podium- and Roof-Level Open Spaces. The pedestrian comfort criterion of 11 mph set forth in Section 148 is not applicable to the podium- and roof-level locations. The wind speeds identified throughout the wind tunnel test are reported for informational purposes only.

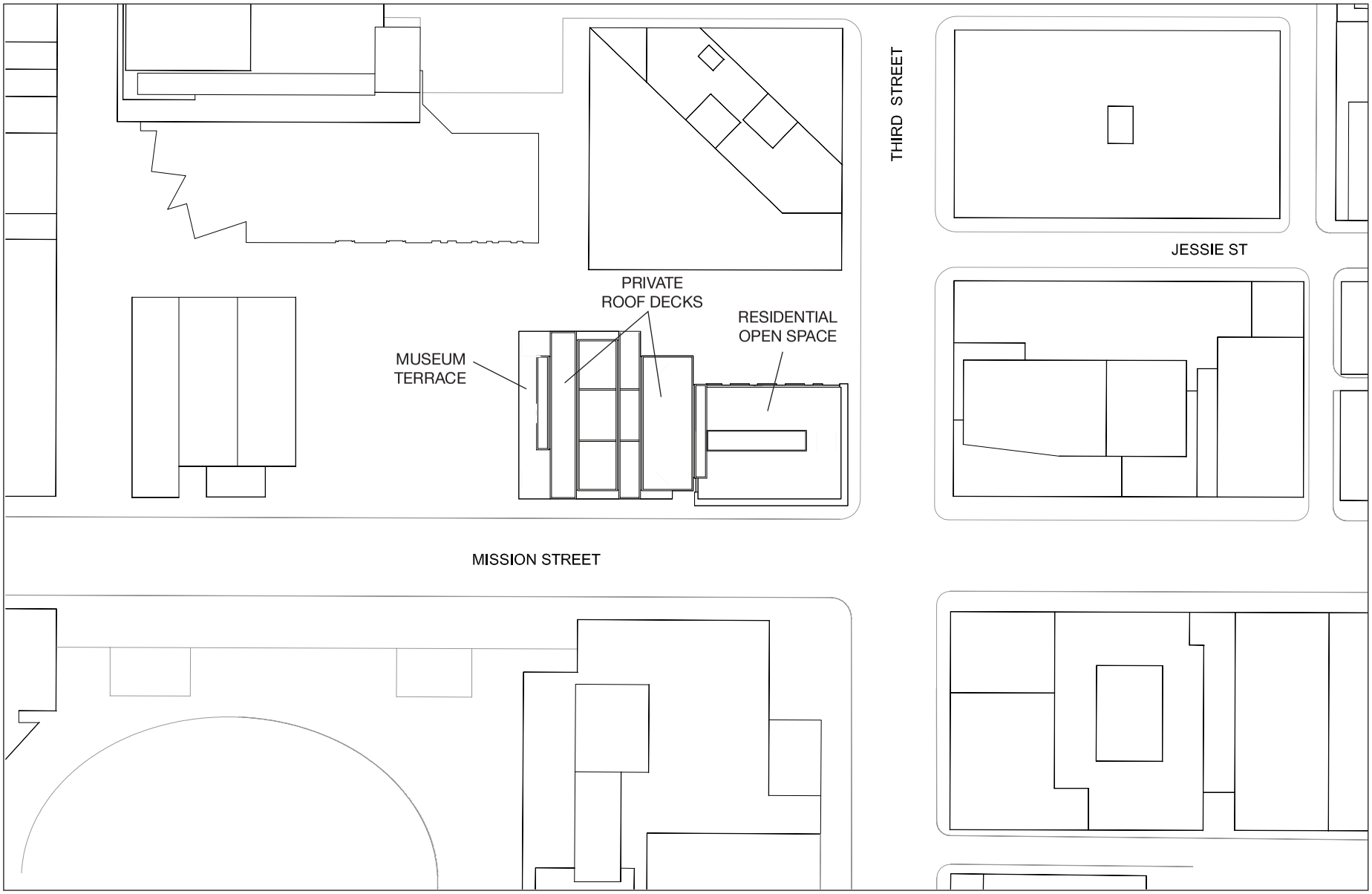
Aronson Building

Under existing conditions, wind speeds on the roof of the Aronson Building, which is currently not used as open space, range from 13 to 20 mph. Under the Existing Conditions Plus Proposed Project Configuration, the average equivalent wind speed on the proposed Aronson Building roof terrace would be 16.4 mph, with wind speeds ranging from 10 to 21 mph. Under the Proposed Project Plus Cumulative Configuration, the average equivalent wind speed on the proposed Aronson Building roof terrace would be 16.2 mph, with wind speeds ranging from 10 to 21 mph.

Proposed Tower

Under the Existing Conditions Plus Proposed Project Configuration, the average equivalent wind speed on the potential fourth-floor outdoor terrace for the museum on the west side of the tower would be 9 mph, with wind speeds ranging from 8 to 10 mph. Wind speeds on the potential fourth-floor outdoor terrace would not be greater than 11 mph. The average equivalent wind speed on the proposed roof terraces at the top of the tower would be 21.5 mph, with wind speeds ranging from 15 to 29 mph. Under the Proposed Project Plus Cumulative Configuration, the average equivalent wind speed on the potential fourth-floor outdoor terrace for the museum on the west side of the tower would be 9.3 mph, with wind speeds ranging from 8 to 10 mph. Wind speeds on the potential fourth-floor outdoor terrace would not be greater than 11 mph. The average equivalent wind speed on the proposed roof terraces at the top of the tower would be 20.8 mph, with wind speeds ranging from 14 to 28 mph.

[12] RWDI, 706 Mission Street Above-Grade Report, January 31, 2012. A copy of this document is included in this EIR as Appendix H and is also available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.



706 MISSION STREET

FIGURE IV.I.2: LOCATIONS OF PROPOSED PODIUM- AND ROOF-LEVEL OPEN SPACES

Wind Hazard Discussion for the Roof-Level Open Spaces

The locations of the podium- and roof-level open spaces are shown in Figure IV.I.2, on p. IV.I.27. The wind hazard criterion of 26 mph set forth in Section 148 is not applicable to the podium- and roof-level locations. The wind speeds identified throughout the wind tunnel test are reported for informational purposes only. As discussed on p. IV.I.3, the test results presented in the wind tunnel report for the proposed project and in this section of the EIR use the one-minute average of 36 mph for the wind hazard discussion.

Aronson Building

Under existing conditions, wind speeds on the roof of the Aronson Building, which is currently not used as open space, range from 24 to 37 mph. Under the Existing Conditions Plus Proposed Project Configuration, winds on the northern portion of the proposed Aronson Building roof terrace would range from 43 to 45 mph. The total duration of these winds would be about 58 hours per year. Winds on the central and southern portions of the proposed Aronson Building roof terrace would not reach speeds greater than a one-minute average of 36 mph. Under the Proposed Project Plus Cumulative Configuration, winds on the northern portion of the proposed Aronson Building roof terrace would range from 41 to 43 mph. The total duration of these winds would be about 40 hours per year. Winds on the central portion and southern portions of the roof would not reach speeds greater than a one-minute average of 36 mph.

Proposed Tower

Under the Existing Conditions Plus Proposed Project Configuration, winds on the potential fourth-floor outdoor terrace and on the proposed roof terraces on the east side of the tower would not reach speeds greater than a one-minute average of 36 mph. Winds on the proposed roof terraces on the west side of the tower would range from 47 to 57 mph. The total duration of these winds would be about 544 hours per year.

Under the Proposed Project Plus Cumulative Configuration, winds on the potential fourth-floor outdoor terrace and on the proposed roof terraces on the east side of the tower would not reach speeds greater than a one-minute average of 36 mph. Winds on the proposed roof terraces on the west side of the tower would range from 45 to 56 mph. The total duration of these winds would be about 452 hours per year.

Design Considerations

The project design would take wind speeds and user comfort into account by incorporating improvements into the design to address wind conditions on these private outdoor open spaces. As discussed in the wind tunnel report for the podium- and roof-level locations, wind speeds on

these private outdoor open spaces could be reduced by incorporating design features such as trellises, screens, and/or landscaping.[13]

Improvement Measure I-WS-B

As an improvement measure, the project sponsor would address the wind conditions and usability of the proposed private roof terraces on the west side of the tower and the common open space on the north side of the Aronson Building roof through the implementation of building design considerations as well as wind control measures in order to improve wind conditions in these locations. Wind control measures to be implemented may include trellises, landscaping, tall parapets and/or wind screens.

The bottom of this page is intentionally blank.

[13] RWDI, 706 Mission Street Above-Grade Report, January 31, 2012.

SHADOW

This subsection describes the proposed project's shadow impacts on open spaces and recreation facilities in the vicinity of the project site. The Setting discussion identifies existing public and private open spaces and recreation facilities, describes applicable government regulations related to shadow impacts, and describes existing shadows on existing public and private open spaces and recreation facilities. The Impacts discussion describes significance criteria for determining if shadow impacts are significant under CEQA and analyzes the shadows impacts of the proposed project. Cumulative effects of the proposed project, combined with past, present, and reasonably foreseeable future projects, are discussed, Background materials supporting the discussion of shadow impacts consist of shadow calculations and shadow diagrams that were prepared by CADP Associates (CADP).[14]

SETTING

PUBLIC OPEN SPACES

There are a total of nine public open spaces[15] that are potentially within reach of the proposed project's shadow (see Figure IV.I.3: Existing Public and Publicly Accessible Open Spaces Within Reach of the Proposed Project's Shadow). Three of them are under the jurisdiction of the Recreation and Park Commission and are subject to the provisions of Planning Code Section 295. The other six are under the jurisdiction of other government agencies and are subject to the provisions of Planning Code Sections 146 and 147. These Planning Code regulations are discussed under Regulatory Framework on pp. IV.I.36-IV.I.39.

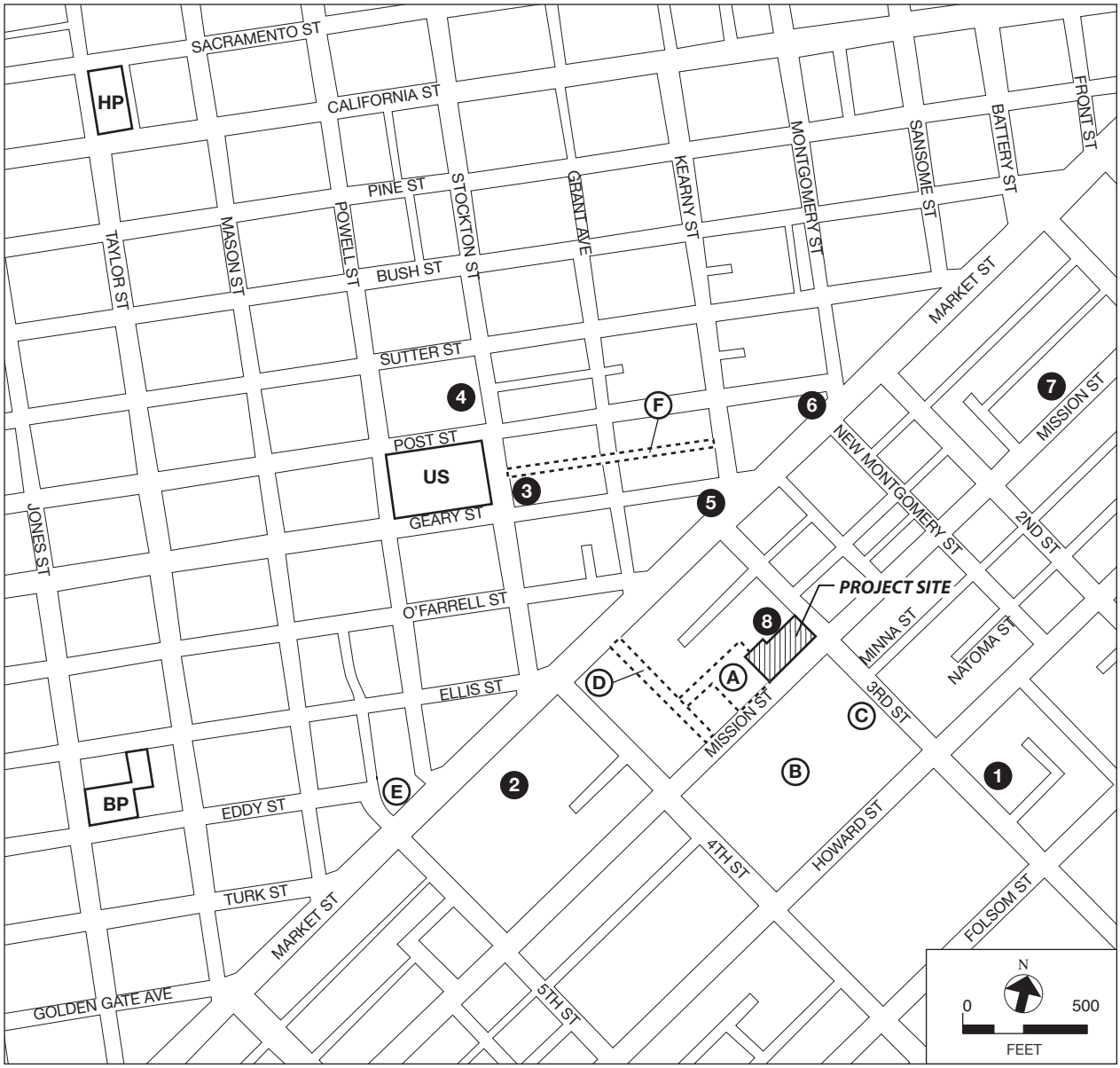
Recreation and Park Commission Properties

Union Square

Union Square, which is 0.25 mile northwest of the project site, is a public open space that is under the jurisdiction of the Recreation and Park Commission. Union Square is an approximately 2.58-acre park that occupies the entire block bounded by Post Street on the north, Stockton Street on the east, Geary Street on the south, and Powell Street on the west. The majority of the park is paved, but there are some grassy areas along its southern perimeter. There are pedestrian

[14] CADP. Shadow Calculations and Diagrams, February 2011. The shadow calculations and diagrams are available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[15] Public open spaces are those that are owned by and/or under the jurisdiction of public agencies. Privately owned, publicly accessible open spaces (POPOs), which are discussed later in this section, are those that are under private ownership.



SOURCE: Turnstone Consulting

Recreation and Park Commission Properties

- **US** Union Square
- **BP** Boeddeker Park
- **HP** Huntington Park

Other Public Open Spaces

- **A** Jessie Square
- **B** Yerba Buena Gardens – Esplanade
- **C** Yerba Buena Gardens – East Garden
- **D** Yerba Buena Lane
- **E** Hallidie Plaza
- **F** Maiden Lane

Privately Owned Publicly Accessible Open Spaces (POPOs)

- **1** Moscone Plaza
- **2** 835 Market Street
- **3** 212 Stockton Street
- **4** 345 Stockton Street
- **5** 1 Kearny Street
- **6** 1 Post Street
- **7** 560 Mission Street
- **8** Westin Plaza

The underground portions of the project site (the Jessie Square Garage and the Stevenson Street ramp) are not shown on this figure.

FIGURE IV.I.3: EXISTING PUBLIC AND PUBLICLY ACCESSIBLE OPEN SPACES WITHIN REACH OF THE PROPOSED PROJECT'S SHADOW

walkways and seating areas throughout the park, as well as several retail kiosks. There are two cafés on the east side of the park, but only one of the cafés is currently in operation. The park includes portable tables and chairs that can be moved to different locations. A 97-foot-tall monument commemorating the Battle of Manila Bay from the Spanish American War occupies the center of the park. Residents, shoppers, tourists, and workers use the park as an outdoor lunch destination and a mid-block pedestrian crossing, and Union Square is often the site of civic and cultural events. Throughout the year, the park is sunny during the middle of the day; it is shadowed by existing buildings to the east, south, and west during the early morning, late afternoon, and early evening.

During the spring and autumn, Union Square is sunny from approximately 9:00 AM until 3:00 PM; it is shadowed by existing buildings during the early morning, late afternoon, and early evening (see Figure IV.I.6: Project Shadow at 10:00 AM and Noon PDT on March 21 (September 21 Similar), on p. IV.I.48, and Figure IV.I.7: Project Shadow at 3:00 PM PDT on March 21 (September 21 Similar), on p. IV.I.49). During the summer, Union Square is sunny from approximately 10:00 AM until 4:00 PM; it is shadowed by existing buildings during the early morning, late afternoon, and early evening (see Figure IV.I.8: Project Shadow at 10:00 AM and Noon PDT on June 21, on p. IV.I.50, and Figure IV.I.9: Project Shadow at 3:00 PM PDT on June 21, on p. IV.I.51). During the winter, Union Square is mostly sunny from approximately noon until 2:00 PM; it is shadowed by existing buildings during the rest of the day (see Figure IV.I.10: Project Shadow at 10:00 AM and Noon PST on December 21, on p. IV.I.52, and Figure IV.I.11: Project Shadow at 3:00 PM PST on December 21, on p. IV.I.53).

Boeddeker Park

Boeddeker Park, which is about 0.5 mile west of the project site, is an approximately 0.95-acre park at the northeast corner of Eddy and Jones Streets. The park, which is used for both active and passive recreation, has one basketball court, a clubhouse, some children's play structures, and benches. Portions of the park are landscaped with grass and low shrubs. The park is enclosed by a fence, and the gates are locked at night.

During the spring and autumn, Boeddeker Park is sunny from approximately 10:00 AM until 4:00 PM; it is shadowed by existing buildings during the early morning, late afternoon, and early evening. During the summer, Boeddeker Park is sunny from approximately 10:00 AM until 6:00 PM; it is shadowed by existing buildings during the early morning and early evening. During the winter, Boeddeker Park is mostly sunny from approximately 11:00 AM until 3:00 PM; it is shadowed by existing buildings during the rest of the day.

Huntington Park

Huntington Park, which is approximately 0.65 mile northwest of the project site, is an approximately 0.96-acre park on the block bounded by Sacramento Street on the north, Cushman Street on the east, California Street on the south, and Taylor Street on the west. The park has a children's play area at the north end, a fountain in the center, and benches and public art. Portions of the park are landscaped with grass, hedges, and trees.

During the spring and autumn, Huntington Park is sunny from approximately 10:00 AM until 4:00 PM; it is shadowed by existing buildings during the early morning, late afternoon, and early evening. During the summer, Huntington Park is sunny from approximately 8:00 AM until 5:00 PM; it is shadowed by existing buildings during the early morning and early evening. During the winter, Huntington Park is mostly sunny from approximately 1:00 PM until 3:00 PM; it is shadowed by existing buildings during the rest of the day.

Other Public Open Spaces

Of the nine public open spaces that are potentially within reach of the proposed project's shadow, six are not under the jurisdiction of the Recreation and Park Commission: Jessie Square (adjacent to and west of the project site), two spaces in the Yerba Buena Gardens/Moscone Convention Center complex (across Mission Street from the project site), Yerba Buena Lane (about 0.1 mile west of the project site), Hallidie Plaza (about 0.25 miles west of the project site), and Maiden Lane (about 0.25 mile northwest of the project site). Jessie Square, Yerba Buena Gardens, and Yerba Buena Lane are owned by the Successor Agency. Hallidie Plaza is owned by the Department of Public Works, and Maiden Lane is a public right-of-way that is under the jurisdiction of the Department of Public Works.

Jessie Square

Jessie Square, which is adjacent to and west of the project site, is an approximately 0.78-acre plaza that was constructed in 2008. The plaza is bordered by St. Patrick's Church on the west, the Contemporary Jewish Museum on the north, the project site on the east, and Mission Street on the south. The plaza is used for passive recreation. There is a water feature near the central portion of the plaza. In the northeast corner of the plaza in front of the Contemporary Jewish Museum, there are seating areas with sun shades. There are uncovered seating areas around the water feature and near the southern perimeter of the plaza. Most of the plaza is paved, but there is landscaping in the southern portion of the plaza and around the water feature. Jessie Square is sunny from approximately 9:00 AM until approximately 2:00 PM during the spring and autumn, sunny from approximately 9:00 AM until approximately 3:00 PM during the summer, and sunny from approximately 8:00 AM until approximately 12:30 PM during the winter. At other times of

the day throughout the year, Jessie Square is shadowed by existing buildings. In general, the eastern portion of Jessie Square is shadowed in the morning, and the western portion of Jessie Square is shadowed in the afternoon.

Yerba Buena Gardens/Moscone Convention Center Complex

The northern half of the Yerba Buena Gardens /Moscone Convention Center complex occupies the city block immediately south of the project site across Mission Street. The west end of the block is occupied by the Metreon, a four-story, 115-foot-tall building containing approximately 350,000 square feet of entertainment and retail space, including a 16-screen movie theater and a food court. With the exception of the movie theater and some ground-floor restaurants, the Metreon is currently undergoing renovation. To the east of the Metreon is the Yerba Buena Gardens Esplanade (Esplanade), a 5.5-acre public open space that includes benches, berms/terraces, the Martin Luther King, Jr. Memorial Fountain and Waterfall, pedestrian walkways, and public art. The primary landscaping consists of a large grassy area (meadow) surrounded by a network of smaller gardens. The Esplanade is used for passive recreation and for hosting civic and cultural events. The east end of the block is occupied by a pair of two-story buildings that house gallery and theater space for the Yerba Buena Center for the Arts. In addition, there is a small paved plaza called the East Garden along Third Street adjacent to and north of the pedestrian walkway in the Yerba Buena Gardens/Moscone Convention Center complex. The East Garden includes seating areas and a water feature, and it is used for passive recreation. The northern block of the Yerba Buena Gardens/Moscone Convention Center complex are sunny during the day throughout the year, with shadows occurring mainly in the early morning and in the late afternoon.

The southern block of the Yerba Buena Gardens/Moscone Convention Center complex includes a rooftop open space (the approximately 130,000-gsf Children's Garden). This open space is not within reach of the proposed project's shadow, and this open space is not discussed further in this EIR.

Yerba Buena Lane

Yerba Buena Lane, which is 0.1 mile west of the project site, is a one-block-long public pedestrian passage that connects Market Street with Mission Street. The San Francisco Marriott Hotel is on the west side of the passage, and the Four Seasons, the Contemporary Jewish Museum, Jessie Square, and St. Patrick's Church are on the east side of the passage. The passage includes benches and seating areas. Retailers, restaurants, and the Museum of Craft and Folk Art occupy the storefronts along the passage. Yerba Buena Lane is sunny from late morning until early afternoon during the spring, summer, and autumn. At other times of the day throughout the year, Yerba Buena Lane is shadowed by existing buildings in the area.

Hallidie Plaza

Hallidie Plaza, which is about 0.25 mile west of the project site, is a two-level plaza at the intersection of Market and Powell Streets. The portion of the plaza at street level includes the passenger waiting area for the Powell Street cable car line. The portion of the plaza that is below street level is open to the sky but enclosed on all sides by approximately 20-foot-tall walls. The plaza is adjacent to the entrance to the underground Powell Street Bay Area Rapid Transit (BART) and Muni Metro station. Commuters exiting the station can reach street level via an elevator, an escalator, or stairs. The plaza includes food service kiosks, seating areas, and an information center for tourists and visitors. Since Hallidie Plaza is approximately 20 feet below street level, it is shadowed by surrounding buildings in the early morning and the late afternoon, when the sun is lower in the sky, throughout the year.

Maiden Lane

Maiden Lane, which is about 0.25 mile northwest of the project site, is a two-block-long street that runs east-west from Kearny Street to Stockton Street between Geary and Post Streets. Union Square is west of Maiden Lane across Stockton Street. From 11:00 AM until 6:00 PM, Maiden Lane is closed to vehicles.[16] During these hours, the cafes and restaurants along Maiden Lane set up tables and chairs in the middle of the street for outdoor dining. Maiden Lane is sunny from mid-morning until mid-afternoon during the summer. At other times of the day throughout the year, Maiden Lane is shadowed by existing buildings in the area.

Privately Owned, Publicly Accessible Open Spaces

There are a number of privately owned, publicly accessible open spaces (POPOs) within reach of the proposed project's shadow. These POPOs are at 835 Market Street (Westfield San Francisco Centre); 212 Stockton Street; 345 Stockton Street (San Francisco Hyatt Union Square Hotel); 1 Kearny Street, 1 Post Street (McKesson Plaza); 560 Mission Street; the Tehama Street right-of-way between 201 and 247 Third Street (Moscone Plaza); and Westin Plaza,[17] a public pedestrian path adjacent to and north of the project site that connects Third Street with Jessie Square. Some of these POPOs are at street level, and some are elevated spaces on building podiums or roofs. These POPOs are located between densely developed high-rise buildings, and many of these POPOs are already shadowed by existing buildings for much of the day throughout the year.

[16] Union Square website, http://www.visitunionsquaresf.com/about_union_square/maiden_lane/, accessed May 18, 2011.

[17] This open space does not have an official name, but it is on the property on which the Westin San Francisco Market Street Hotel is located.

REGULATORY FRAMEWORK

San Francisco General Plan

Chapter III, Plans and Policies, discusses the shadow-related regulatory framework relevant to the proposed project, including objectives and policies in the *Downtown Area Plan* of the *San Francisco General Plan* and the Priority Policies of Planning Code Section 101.1 Although the project site was not included in the *Downtown Area Plan* due to its inclusion in the *Yerba Buena Center Redevelopment Plan* area, the project site is located in downtown San Francisco, and it is surrounded by properties covered by the *Downtown Area Plan*. Objectives and policies contained in the *Downtown Area Plan* offer land use guidance for the project site. Additional Planning Code provisions related to shadow are discussed in more detail below.

San Francisco Planning Code

Section 295

In 1984, San Francisco voters approved an initiative known as "Proposition K, The Sunlight Ordinance," which was codified in 1985 as Planning Code Section 295. Planning Code Section 295 prohibits the approval of "any structure that would cast any shade or shadow upon any property under the jurisdiction of, or designated for acquisition by, the Recreation and Park Commission" unless the Planning Commission, with review and comment by the Recreation and Park Commission, has found that the shadows cast by a proposed project would not have an adverse impact on the use of the property. Section 295 does not apply to structures that do not exceed 40 feet in height. The period analyzed is from the first hour after sunrise until the last hour before sunset.

On February 7, 1989, Pursuant to Proposition K, the Planning Commission and the Recreation and Park Commission adopted a joint resolution adopting criteria for determination of significant shadows in 14 downtown parks, as described in a February 3, 1989 memorandum to the Planning Commission and the Recreation and Park Commission regarding "Proposition K – The Sunlight Ordinance." These criteria establish an "absolute cumulative limit" for new shadow allowed on these parks, as well as qualitative criteria for allocating the absolute cumulative limit among individual buildings. The amount of shadow above existing shadow but below the absolute cumulative limit is commonly referred to as the "shadow budget" for these parks. The shadow budget is then allocated to individual projects within the absolute cumulative limit based on qualitative criteria established for each park, which vary by park but may include factors such as the time of day, the time of year, shadow characteristics (size, duration, location), and the public good served by the building casting the shadow.

Union Square

Union Square receives about 392,663,521 square-foot-hours (sfh)[18] of theoretical annual sunlight.[19] Currently, there are about 150,265,376 sfh of existing annual shadow on the park. Union Square is one of 14 downtown parks for which the Planning Commission and the Recreation and Park Commission, on February 3, 1989, established quantitative standards to control the amount of additional shadow on these parks from future development projects. The quantitative standard that was established for Union Square is additional shadow in an amount equal to 0.1 percent of the theoretical annual available sunlight on Union Square, which is approximately 392,663.5 sfh.[20] Union Square currently has a remaining shadow allocation, or shadow budget, of approximately 323,123.5 sfh.[21]

Since the quantitative standard for Union Square was established in 1989, two completed development projects have affected the shadow conditions on Union Square. In 1996, a project to expand Macy's department store altered the massing of the structure and resulted in a net reduction of 194,293 sfh of existing shadow (with a corresponding increase in the amount of sunlight on the park), and in 2003, a project at 690 Market Street added 69,540 sfh of net new shadow on Union Square.[22]

Although the Macy's expansion project reduced the amount of existing shadow and increased the amount of available sunlight on Union Square, this amount has not been added back to the shadow budget for Union Square by the Planning Commission and the Recreation and Park Commission to account for these conditions. The current shadow budget for Union Square, which accounts for the 69,540 sfh of net new shadow that were added by the project at 690 Market Street, is 323,123.5 sfh.

[18] Sunlight and shadow are measured in units known as square-foot-hours (sfh), which are calculated by multiplying the area that is in sunlight or shadow (in square feet) by the amount of time that the sunlight or shadow is present (in hours).

[19] The amount of theoretical annual sunlight on a park is calculated by multiplying the area of the park (in square feet) by the total hours of sunlight available on an annual basis, ignoring shadows from structures or other natural phenomena, such as clouds, fog, or solar eclipses, that may obscure sunlight. For San Francisco, there are approximately 3,721.4 hours of sunlight available on an annual basis.

[20] February 3, 1989 Planning Department memorandum to the Planning Commission and the Recreation and Park Commission; Planning Commission Resolution No. 11595, adopted February 7, 1989.

[21] The remaining shadow budget for Union Square was provided by the Planning Department. The remaining shadow budget is based on approved projects that sought and received shadow allocations as part of their entitlements.

[22] Environmental review files for Macy's Expansion Project (Planning Department Case No. 1996.228E) and 690 Market Street (Planning Department Cases No. 2003.0584E and 2003.1206E).

In addition to a quantitative standard, the Planning Commission and the Recreation and Park Commission established a qualitative standard for Union Square calling for the preservation of mid-day sunlight.[23]

Boeddeker Park

The Planning Commission and the Recreation and Park Commission established a quantitative standard of zero net new shadow for Boeddeker Park.[24]

Huntington Park

The Planning Commission and the Recreation and Park Commission established a quantitative standard of zero net new shadow for Huntington Park.[25]

Section 146

Planning Code Section 146 regulates shadow impacts on public sidewalks in certain downtown areas during critical periods of use. Pursuant to Section 146(a), new structures and additions to existing structures in C-3 Districts shall be required to avoid penetration of a sun access plane defined by an angle sloping away from the street above a stipulated height at the property line abutting the street. The streets designated in Table 146 are subject to the provisions of Section 146(a). Since Mission Street and Third Street, which abut the project site, are not designated in Table 146, the provisions of Section 146(a) are not applicable to the proposed project.

Pursuant to Section 146(c), new buildings and additions to existing buildings in C-3 Districts shall be shaped, if it can be done without creating an unattractive design and without unduly restricting the development potential of the project site, to reduce substantial shadow impacts on public sidewalks other than those protected by Section 146(a). Section 146(c) is applicable to the proposed project.

Section 147

Planning Code Section 147 regulates shadow impacts on public or publicly accessible open spaces in C-3 Districts that are not already regulated under Section 295. New buildings in C-3 Districts that are over 50 feet tall must be shaped, consistent with the dictates of good design and

[23] February 3, 1989 Planning Department memorandum to the Planning Commission and the Recreation and Park Commission; Planning Commission Resolution No. 11595, adopted February 7, 1989.
[24] February 3, 1989 Planning Department memorandum to the Planning Commission and the Recreation and Park Commission; Planning Commission Resolution No. 11595, adopted February 7, 1989.
[25] February 3, 1989 Planning Department memorandum to the Planning Commission and the Recreation and Park Commission; Planning Commission Resolution No. 11595, adopted February 7, 1989.

without unduly restricting the development potential of the project site, to reduce substantial shadow impacts on these public or publicly accessible open spaces. In determining shadow impacts under Section 147, the following factors must be taken into account: the amount of area shadowed, the duration of the shadow, and the importance of sunlight to the type of open space being shadowed.

Approach to Analysis

Shadow Fan

In order to determine whether any properties under the jurisdiction of the Recreation and Park Commission could be potentially affected by project shadow, the Planning Department prepared a "shadow fan" diagram. The shadow fan plots the maximum potential reach of project shadow over the course of a year (from one hour after sunrise until one hour before sunset on each day of the year) and plots the locations of nearby open spaces, recreation facilities, and parks. The shadow fan does not account for topographical changes or existing shadows cast by existing buildings. The shadow fan is used by the Planning Department as the basis for initially identifying which open spaces, recreation facilities, and parks merit further study. Those that are outside the maximum potential reach of project shadow do not require further study.[26]

In addition, CADP prepared a shadow fan similar to the shadow fan prepared by the Planning Department. The shadow fan prepared by CADP accounts for topographical changes.[27]

Shadow Calculations and Shadow Diagrams

Using a computer program that accounts for the heights of existing and proposed buildings as well as topographical data, CADP prepared shadow calculations for three of the open spaces (Boeddeker Park, Jessie Square, and Union Square) that could potentially be shadowed by the proposed project. Fog, rain, and shadows from trees, existing or proposed, are not taken into account.

Shadow diagrams are "snapshots" taken at a particular representative time of day and day of the year. They illustrate the extent and location of shadows cast by existing buildings, net new shadow from a proposed development project, and the remaining sunlight on the subject open space. A series of shadow diagrams from the same day demonstrates how the shadow moves

[26] The Planning Department shadow fan for the proposed project, dated October 27, 2008, is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[27] The CADP shadow fan for the proposed project, dated February 28, 2011, is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

across the space over a specific period of time. Shadow diagrams are presented in this section and serve as the basis for the qualitative discussion of shadow impacts.

Project Features

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower that would be adjacent to and physically connected to the existing 10-story, 154-foot-tall Aronson Building. As part of the proposed project, the historic Aronson Building would be restored and rehabilitated. The existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a new 15-foot-tall solarium would be constructed, resulting in an overall building height of 159 feet. The existing shadow conditions on parks and open spaces in the project vicinity could be affected by the construction of a new 550-foot-tall building on the project site.

As part of the proposed project, the roof of the Aronson Building would be converted to a solarium and an outdoor terrace for project residents. The third floor of the proposed tower would cantilever over the ground and second floors and extend approximately 10 feet over Jessie Square. The roof of this projection may be used as an outdoor terrace for museum visitors. In addition, private roof terraces would be provided for the dwelling units on the forty-fourth, forty-sixth, and forty-seventh floors of the tower.

IMPACTS

SIGNIFICANCE CRITERIA

The thresholds for determining the significance of impacts in this analysis are consistent with the Planning Department's Initial Study checklist. For the purpose of this analysis, the following applicable threshold was used to determine whether implementing the project would result in a significant shadow impact. Implementation of the proposed project would have a significant shadow effect if the project would:

I.2 Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas.

The thresholds for determining the significance of shadow impacts in San Francisco pursuant to CEQA and Planning Code Section 295 are different. Under Planning Code Section 295 and the joint Planning Commission and Recreation and Park Commission criteria, any shadow beyond the absolute cumulative limit is considered "significant" in the way that term is used in Planning Code Section 295. In contrast, the significance threshold for environmental review addresses a broader array of shadow-related considerations that may include not only quantitative criteria, but also open space usage, time of day and/or time of year, physical layout and facilities affected, the

intensity, size, shape, and location of the shadow, and the proportion of open space affected. If the Planning Department determines, based on these factors, that the use and enjoyment of the park or public space would be substantially and adversely affected, then the impact is "significant" in the way that term is used in CEQA. As a result, there are situations under which new shadow that is considered significant under Planning Code Section 295 would not have a significant environmental impact under CEQA. There are also situations under which new shadow that is a significant environmental impact under CEQA would not be considered significant under Planning Code Section 295.

IMPACT EVALUATION

The shadow fan prepared by the Planning Department indicates that shadow from the proposed project could reach Union Square, which is under the jurisdiction of the Recreation and Park Commission.[28] In addition, the shadow fan indicates that shadow from the proposed project might reach Boeddeker Park and Huntington Park. Like Union Square, Boeddeker Park and Huntington Park are under the jurisdiction of the Recreation and Park Commission.

The shadow fan prepared by the Planning Department indicates that shadow from the proposed project could reach Hallidie Plaza, Jessie Square, and the East Garden of the Yerba Buena Gardens/Moscone Convention Center. These public open spaces are not under the jurisdiction of the Recreation and Park Commission or subject to the provisions of Section 295 of the Planning Code. However, for the purposes of this CEQA analysis, potential shadow impacts on these public open spaces are discussed.

Subsequent shadow diagrams prepared by CADP indicate that shadow from the proposed project could reach the POPOs at 1 Kearny Street, 1 Post Street (McKesson Plaza), 560 Mission Street, and Westin Plaza between the hours of 10:00 AM and 3:00 PM, when these spaces are most heavily used. These POPOs, which include seating areas, are used primarily for passive recreation activities. The other POPOs identified in the Setting discussion are outside of the range of the proposed project's shadow between the hours of 10:00 AM and 3:00 PM. Since the POPOs in downtown San Francisco tend to be used most heavily between the hours of 10:00 AM and 3:00 PM, the EIR focuses on this time period. The proposed project's shadow impacts on POPOs before 10:00 AM and after 3:00 PM are not analyzed.

[28] The Planning Department shadow fan for the proposed project, dated October 27, 2008, is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Impact WS-2: The proposed project would not create new shadow in a manner that substantially affects outdoor recreation facilities and other public areas. (*Less than Significant*) (Criterion I.2)

Recreation and Park Commission Properties

Union Square

The shadow calculations prepared for the proposed project indicate that it would cast net new shadow on Union Square during the morning hours from early October through early November and from early February through early March. The proposed project would not cast net new shadow on Union Square after 9:30 AM on any day during the year.

During the autumn, October 11 would be the first day on which the proposed project would cast net new shadow on the park (between 8:30 AM PDT and 9:30 AM PDT), and November 8 would be the last day on which the project would cast net new shadow on the park (between 7:43 AM PST and 8:15 AM PST). In terms of area, the maximum shadow during the autumn would occur on October 18. At 8:45 AM PDT on October 18, the shadow would cover an area of approximately 17,715 square feet of the 112,615 total square feet of the park. Figure IV.I.4: Project Shadow on Union Square, 8:30 AM and 8:45 AM PDT on October 18, on p. IV.I.44, and Figure IV.I.5: Project Shadow on Union Square, 9:00 AM and 9:15 AM PDT on October 18, on p. IV.I.45, show the progression of the shadow across Union Square on the morning of October 18.

During the late winter, the proposed project would begin to cast net new shadow on the park on February 2 (between 7:43 AM and 8:15 AM PST) and would stop casting net new shadow on the park on March 2 (between 8:30 AM and 9:30 AM PST). In terms of the area of the park being shadowed, the maximum project-related shadow during the late winter would occur on February 23. At 8:45 AM PDT on February 23, the shadow would cover approximately 17,715 square feet of the total 112,615 square feet of the park. The shadow pattern and movement of shadow across the park on February 23 would be similar to that described for October 18.

During the early morning (from sunrise until 9:00 AM), Union Square is not heavily used. At that time of day, most retail stores are not yet open. There is substantially more pedestrian activity on the sidewalks surrounding Union Square than in the park itself as people walk to work and other destinations. The park, which is more suitable for passive recreation than active recreation, is most heavily used from late morning through early evening. The net new shadow from the proposed project would fall on some of the pedestrian walkways and seating areas in Union Square. In general, the net new project-related shadow would begin near the western edge of the park and move east across the park. There is a café near the northeast corner of the park, and the

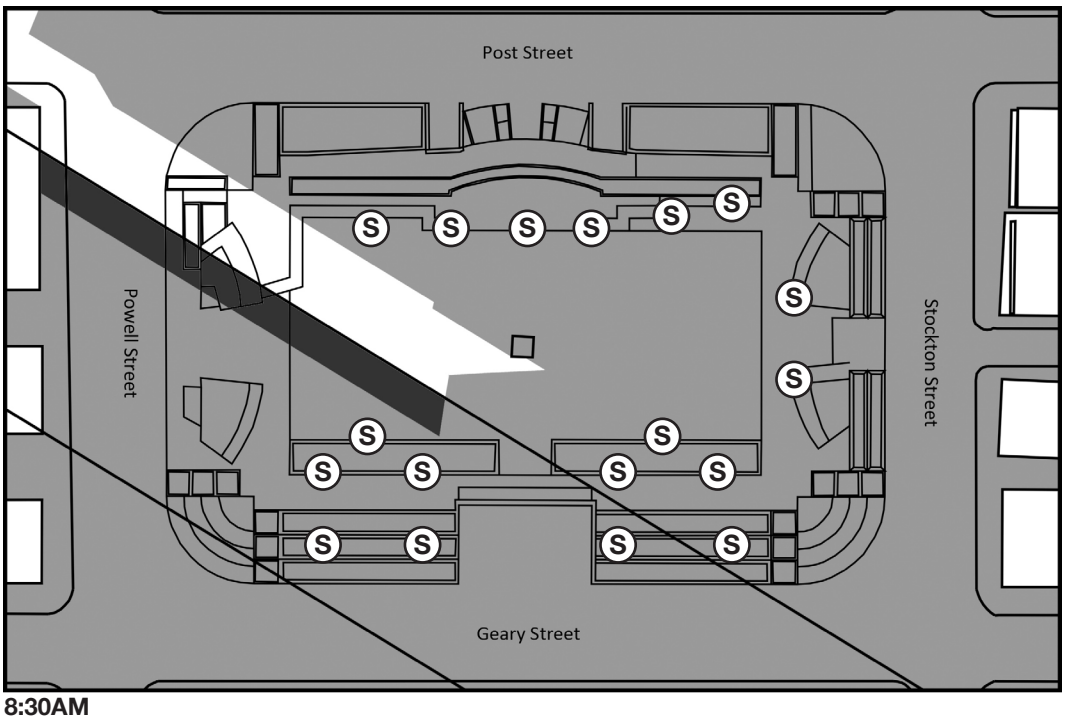
café has an outdoor seating area. Portions of the outdoor seating area are already shadowed for much of the morning (from sunrise until approximately 10:00 AM) by existing buildings in the area. Some net new shadow from the proposed project would fall on part of the outdoor seating area for about 15 to 20 minutes before moving off the park. This net new project-related shadow on the outdoor seating area would occur from about 9:10 AM until just before 9:30 AM in mid-October and again from late February until early March. Since the proposed project would not cast net new shadow on Union Square after 9:30 AM, the proposed project would be consistent with the Planning Commission's and the Recreation and Park Commission's qualitative standard for Union Square calling for the preservation of mid-day sun.

On an annual basis, the proposed project would cast 337,744 sfh of net new shadow on Union Square, which would be an increase of about 0.22 percent relative to the existing annual shadow on the park. This amount of net new shadow would exceed the remaining shadow budget of 323,123 sfh of shadow that could be cast on Union Square by proposed future development projects. Due to the limited duration of the shadow and the limited use of the park during the time when the shadow would occur, the net new shadow from the proposed project would not likely result in a substantial change in the use of Union Square. While the shadow would be noticeable to park users and others walking in and around the park, the new shadow would not impair the passive recreational enjoyment of Union Square, especially because the net new shadow would not occur when the park is most used.

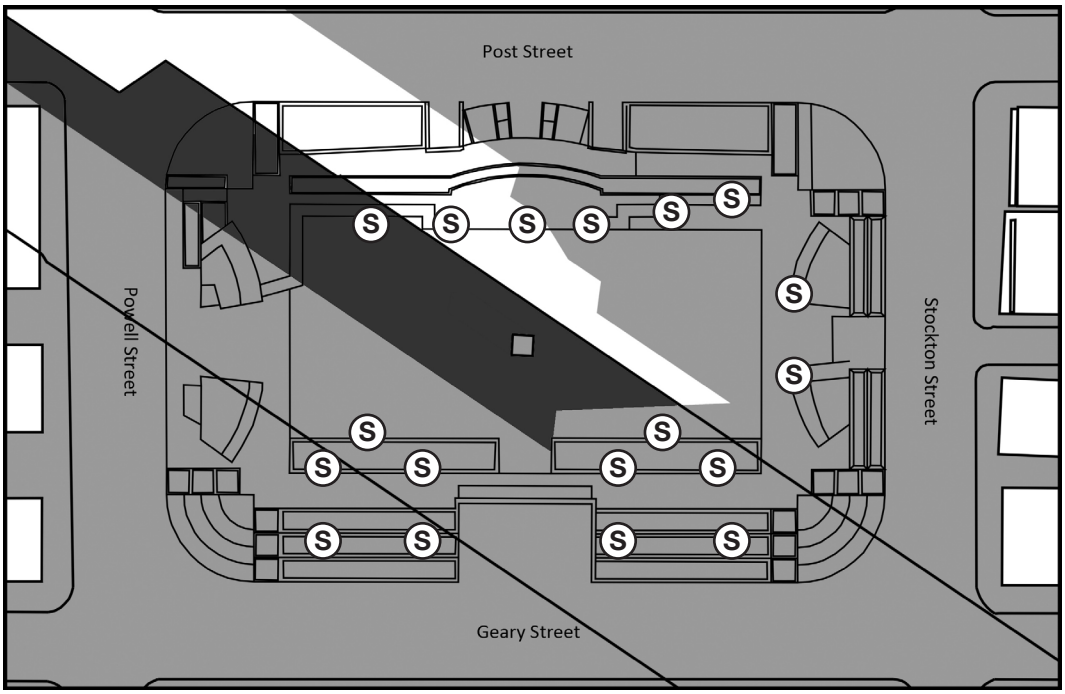
In order for the proposed project to be implemented, the Planning Commission and the Recreation and Park Commission would have to increase the absolute cumulative limit for Union Square to an amount that would accommodate the amount of net new shadow cast by the proposed project. It is anticipated that the project sponsor would request that the Planning Commission and the Recreation and Park Commission consider making this change. If this increase in the absolute limit were made, the project would be within the absolute cumulative limit for Union Square, and the Commissions would then need to determine whether to allocate available shadow budget to the project based upon the qualitative standard set for Union Square of avoiding additional shadows during mid-day.

Boeddeker Park

Shadow from the proposed project could reach Boeddeker Park; however, the shadow calculations prepared by CADP indicate that the proposed project would not cast net new shadow



8:30AM



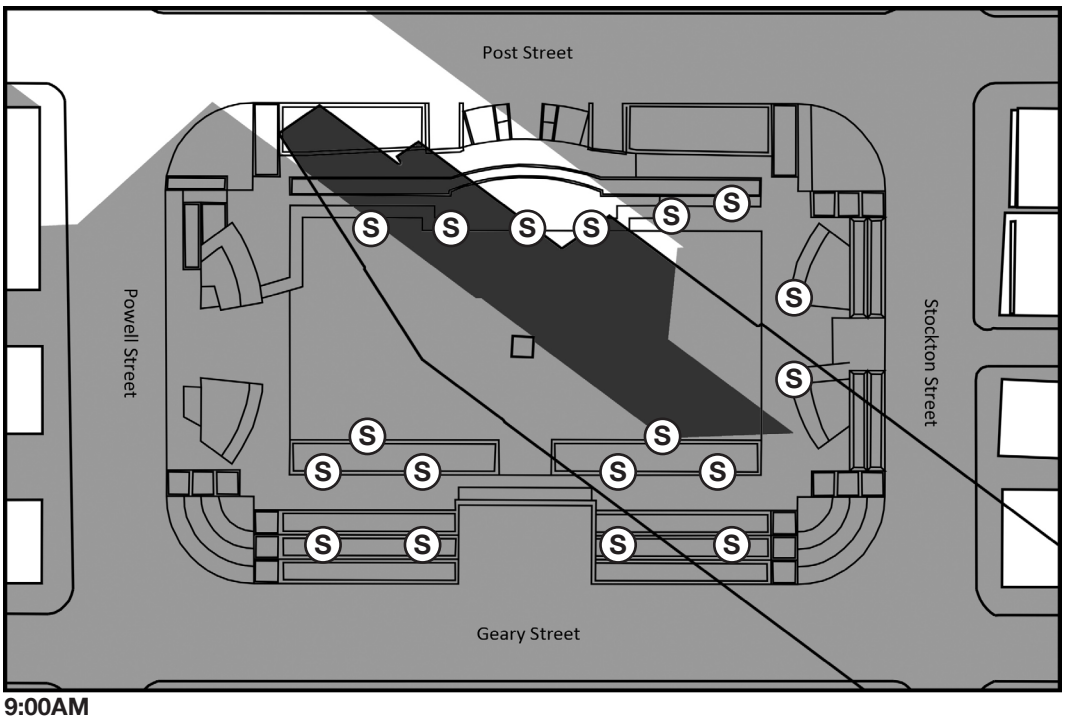
8:45AM

EXISTING SHADOWS
NET NEW PROJECT SHADOW
S SEATING

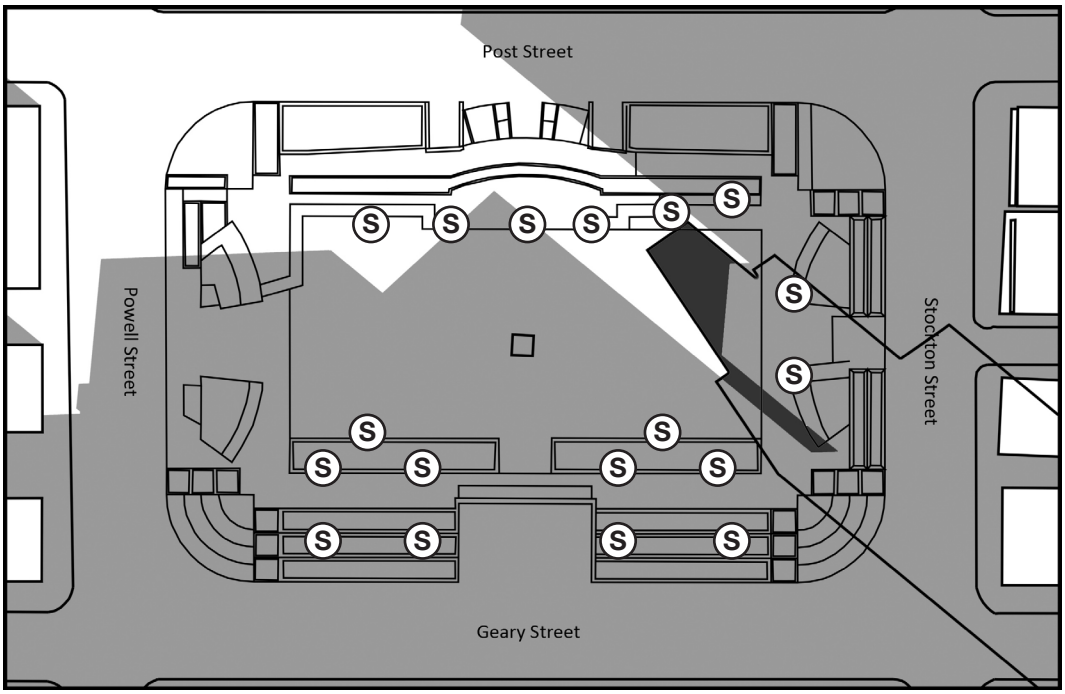
SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.4: PROJECT SHADOW ON UNION SQUARE, 8:30AM AND 8:45AM PDT ON OCTOBER 18



9:00AM



9:15AM

EXISTING SHADOWS
NET NEW PROJECT SHADOW
SEATING

SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.5: PROJECT SHADOW ON UNION SQUARE, 9:00AM AND 9:15AM PDT ON OCTOBER 18

on the park at any time during the year.[29] Shadow from the proposed project would be blocked by intervening buildings or masked by existing shadows cast by other buildings. Thus, the proposed project would not cast any net new shadow on Boeddeker Park.

Huntington Park

Huntington Park is on the summit of Nob Hill, which is at an elevation that is approximately 260 feet higher than that of the project site. Due to the difference in elevation, shadow from the proposed project would fall primarily on the southeast slope of Nob Hill. Some shadow from the proposed project would fall near the summit of Nob Hill, but no shadow from the proposed project would reach Huntington Park at any time during the year. The shadow fan prepared by CADP, which accounts for topographical changes, shows that the longest early-morning summer shadow (worst-case condition) from the proposed project could not reach Huntington Park.[30] The proposed project would not cast any shadow on Huntington Park.

Summary of Recreation and Park Commission Properties

As described above, shadow from the proposed project has the potential to reach three open spaces under the jurisdiction of the Recreation and Park Commission. The shadow calculations and shadow diagrams prepared by CADP confirm that the proposed project would not cast net new shadow on Boeddeker Park or Huntington Park at any time during the year. The proposed project would cast net new shadow on Union Square in the early morning from early October through early November and from early February through early March. The proposed project would cast net new shadow on Union Square in an amount that would exceed the remaining shadow budget for Union Square. However, due to the time of day and the limited times of year that would be affected, the project-related shadows would not impair the use or enjoyment of Union Square.

Other Public Open Spaces

Jessie Square

The proposed project would cast net new shadow on Jessie Square from the early morning until the early afternoon throughout the year. Some of this shadow would be cast by the proposed third floor of the tower, which would overhang the eastern boundary of Jessie Square by approximately

[29] CADP, Shadow calculation spreadsheet for Boeddeker Park. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[30] CADP, Shadow fan for 706 Mission Street. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

10 feet. During the spring and autumn, the net new project-related shadow would begin at sunrise and cover approximately one-quarter to one-third of the square, primarily the northeast corner, before receding as the day progresses. By approximately 11:00 AM, the proposed project would no longer shadow the Contemporary Jewish Museum's outdoor seating area and would not cast any net new shadow on the square. During the summer, the shadow would begin at sunrise and cover most of the square before receding as the day progresses. By noon, the proposed project would no longer shadow the Contemporary Jewish Museum's outdoor seating area, and by approximately 12:30 PM, the proposed project would not cast any net new shadow on the square. During the winter, the shadow would begin at sunrise and cover only the area along the eastern edge of the square before receding as the day progresses. By approximately 9:30 AM, the proposed project would not cast any net new shadow on the square (see Figures IV.I.6 through IV.I.11, on pp. IV.I.48-IV.I.53).[31, 32]

Jessie Square is used primarily for passive recreation such as sitting and strolling. On a typical day, the square is lightly used before 11:00 AM. From 11:00 AM until approximately 2:30 PM, the square is heavily used by residents, shoppers, tourists, and workers as an outdoor lunch destination and a mid-block pedestrian crossing. From 2:30 PM until approximately 6:15 PM (the end of the day), activity in the square remains moderate.[33]

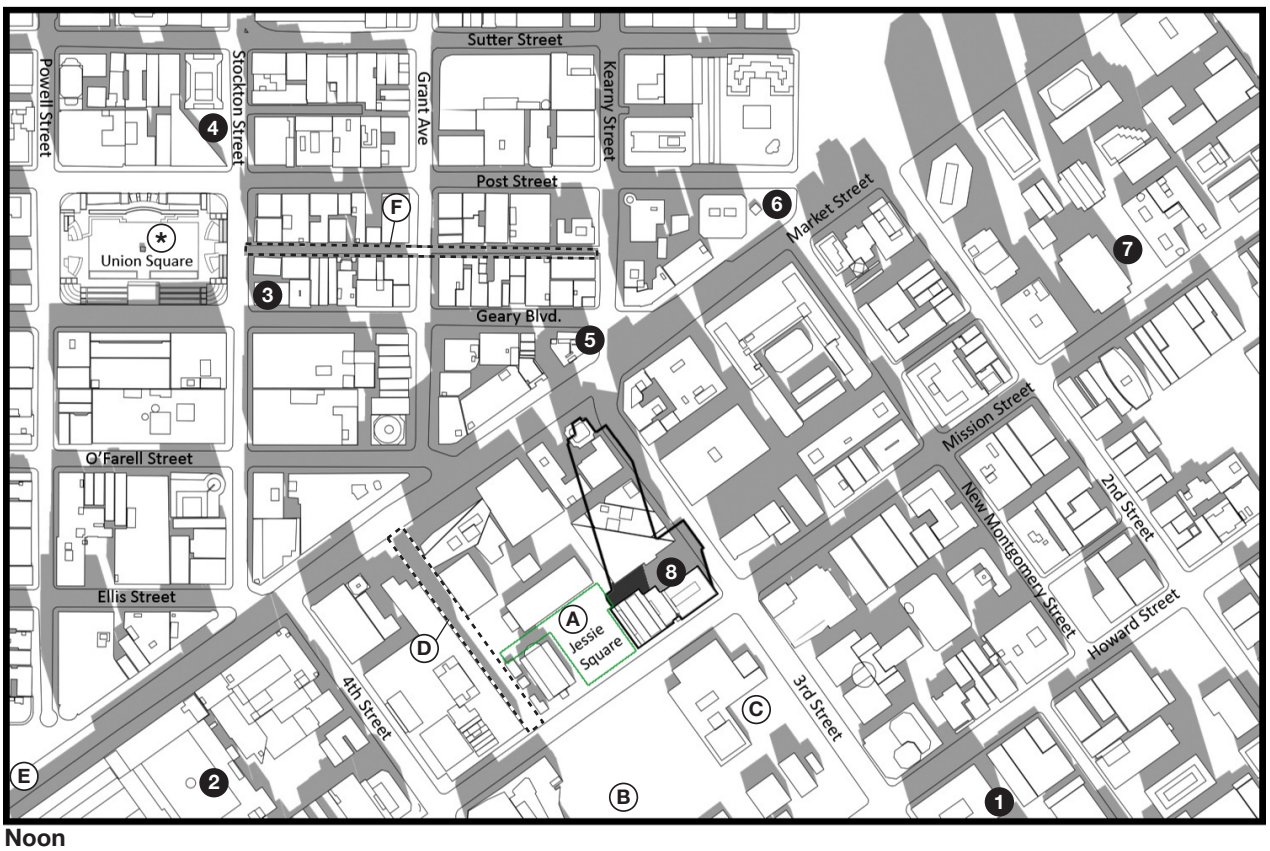
Some of the seating areas on the eastern side of Jessie Square would be shadowed by the proposed project during the morning throughout the year, but these net new project-related shadows would occur at a time when the park is lightly used and would move off the seating areas by late morning. Additional shadow on the square during the morning would not substantially affect the use of the square. With implementation of the proposed project, Jessie Square would receive about six to eight hours of sunlight a day during the spring, summer, and autumn, and about four to six hours of sunlight a day during the winter.

---

[31] The sun's position in the sky is symmetrical throughout the entire solar year. One half of the solar year begins on June 21 and ends on December 20, and the other half of the solar year begins on December 21 and ends on June 20. Each day in the first half of the solar year has an equivalent solar date in the second half of the solar year, with the spring and autumn equinoxes (March 20 or 21 and September 22 or 23, respectively) being equivalent solar dates. For this reason, the shadow patterns on March 21 would be almost identical to the shadow patterns on September 21, and separate figures for September 21 are not included.

[32] Daylight saving time begins on the second weekend in March and ends on the first weekend in November, so daylight saving time is observed on March 21 and September 21.

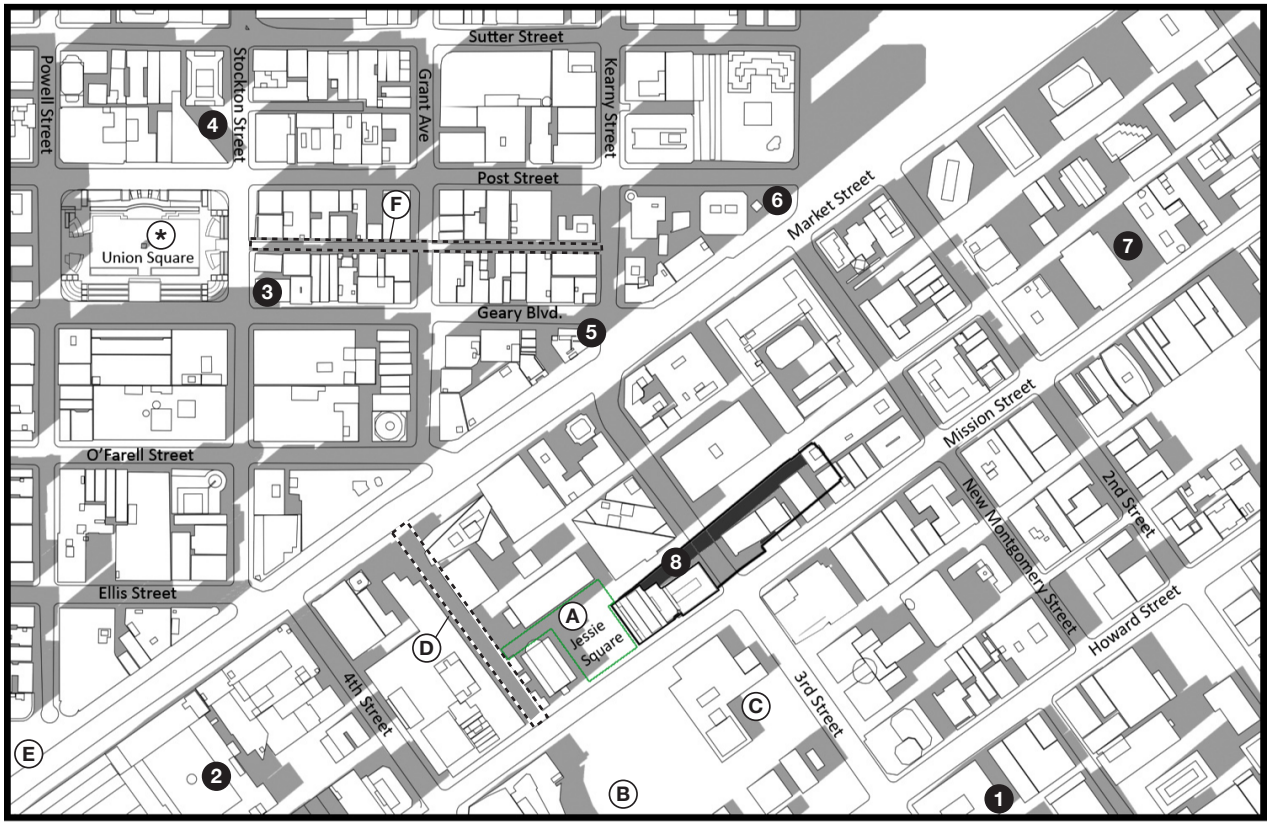
[33] A field observation was conducted on Wednesday, August 10, 2010. At 15-minute intervals from 8:30 AM until 6:15 PM (one hour after sunrise until one hour before sunset), the people in the park were counted and categorized by activity. From 8:30 AM until 11:00 AM, about 65 people were observed in the square (about 25 walking and about 40 sitting down). From 11:15 AM until 2:30 PM, about 375 people were observed in the square (about 80 walking and about 295 sitting down). From 2:45 PM until 6:15 PM, about 235 people were observed in the square (about 80 walking and about 155 sitting down).



SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.6: PROJECT SHADOW AT 10:00AM AND NOON PDT ON MARCH 21 (SEPTEMBER 21 SIMILAR)



3:00PM

EXISTING SHADOWS
NET NEW PROJECT SHADOW

Recreation and Park Commission Properties
* Union Square

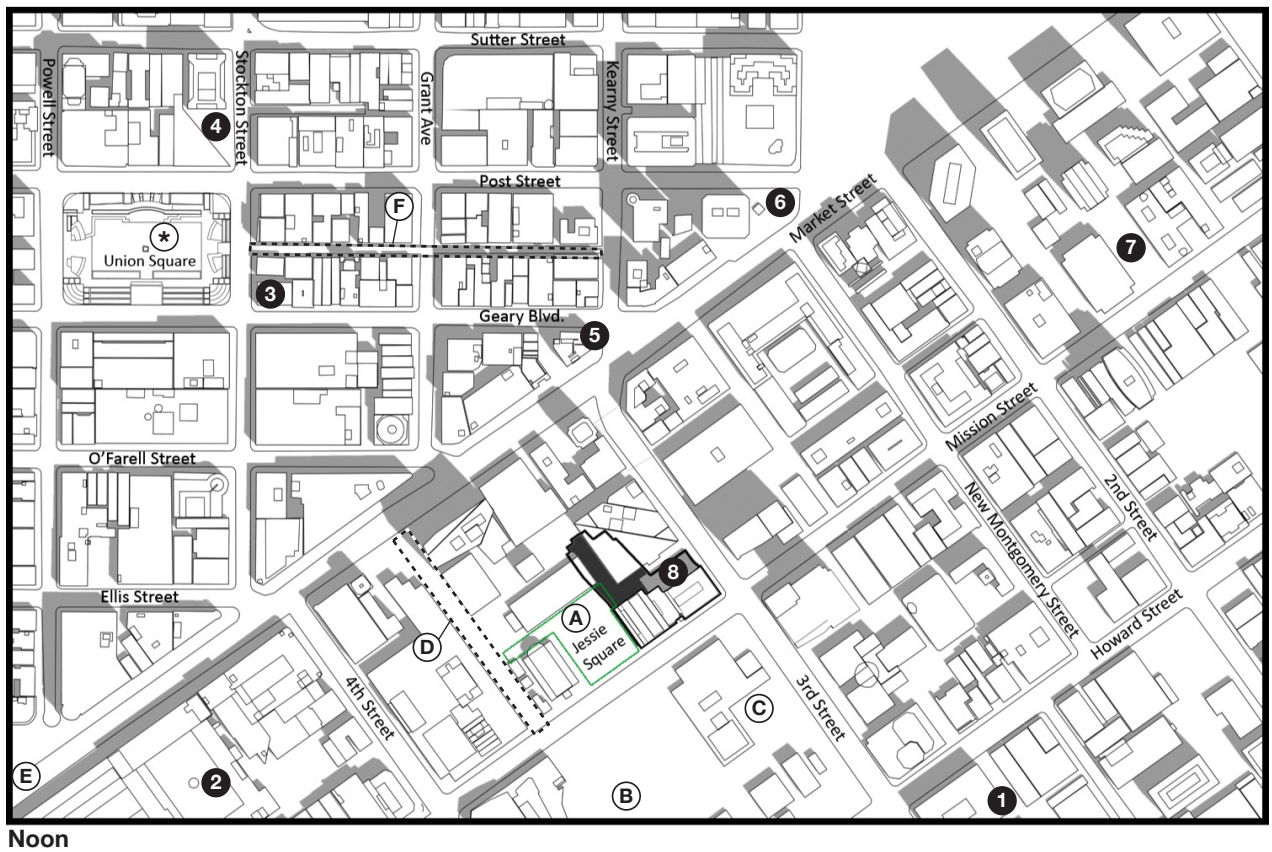
Other Public Open Spaces
A Jessie Square
B Yerba Buena Gardens – Esplanade
C Yerba Buena Gardens – East Garden
D Yerba Buena Lane
E Hallidie Plaza
F Maiden Lane

Privately Owned Publicly Accessible Open Spaces (POPOs)
1 Moscone Plaza
2 835 Market Street
3 212 Stockton Street
4 345 Stockton Street
5 1 Kearny Street
6 1 Post Street
7 560 Mission Street
8 Westin Plaza

SOURCE: CADP Associates

FIGURE IV.I.7: PROJECT SHADOW AT 3:00PM AND PDT ON MARCH 21 (SEPTEMBER 21 SIMILAR)

10:00AM

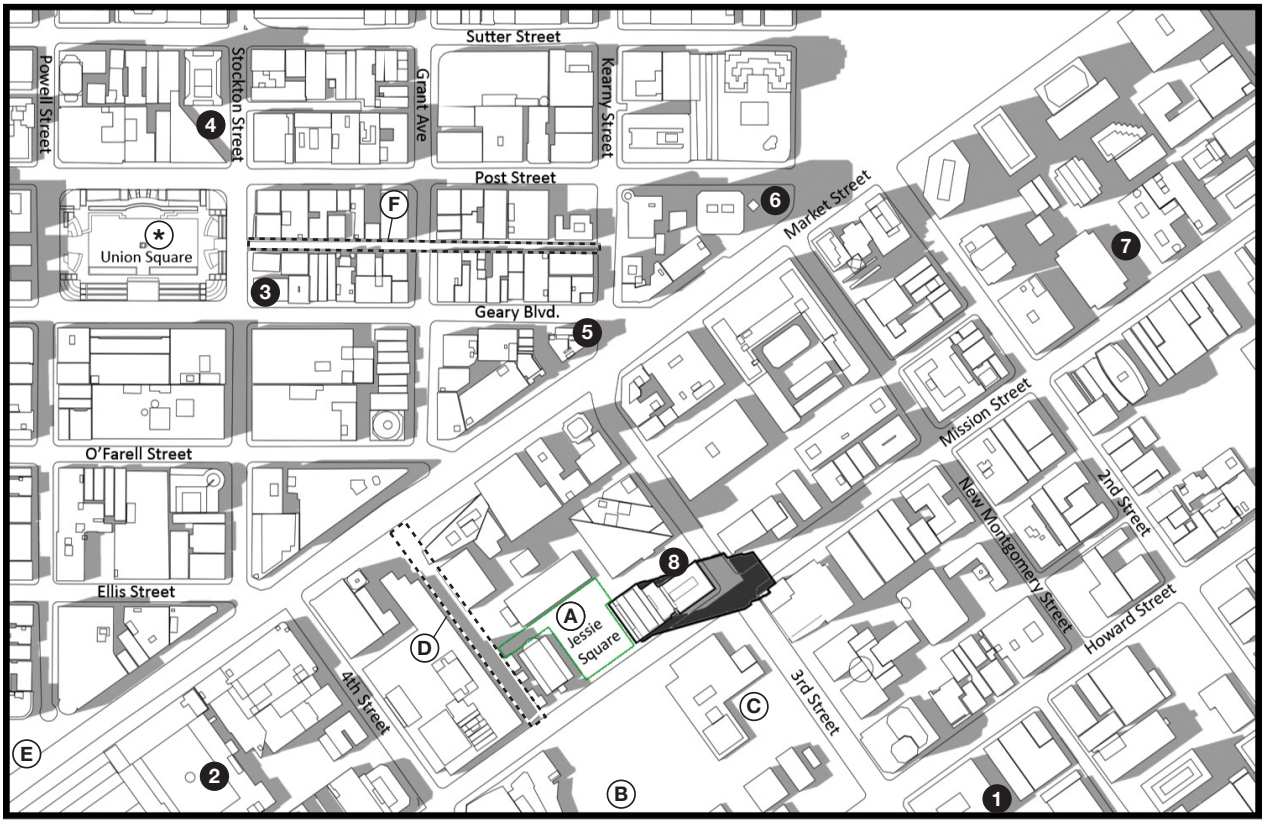


Noon

SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.8: PROJECT SHADOW AT 10:00AM AND NOON PDT ON JUNE 21



SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.9: PROJECT SHADOW AT 3:00PM PDT ON JUNE 21

SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.10: PROJECT SHADOW AT 10:00AM AND NOON PST ON DECEMBER 21

Recreation and Park Commission Properties

***** Union Square

Other Public Open Spaces

A Jessie Square
B Yerba Buena Gardens – Esplanade
C Yerba Buena Gardens – East Garden
D Yerba Buena Lane
E Hallidie Plaza
F Maiden Lane

Privately Owned Publicly Accessible Open Spaces (POPOs)

1 Moscone Plaza
2 835 Market Street
3 212 Stockton Street
4 345 Stockton Street
5 1 Kearny Street
6 1 Post Street
7 560 Mission Street
8 Westin Plaza

SOURCE: CADP Associates

706 MISSION STREET

FIGURE IV.I.11: PROJECT SHADOW AT 3:00PM PST ON DECEMBER 21

Yerba Buena Gardens/Moscone Convention Center Complex

There are two open spaces on the northern block of the Yerba Buena Gardens/Moscone Convention Center complex that are potentially within reach of the proposed project's shadow. The proposed project would not cast any shadow on the Esplanade at any time during the year. From 6:00 PM until the end of the day during the summer, shadow from the proposed project would reach the East Garden, the small plaza on the west side of Third Street across from SFMOMA; however, the shadow from the proposed project would be masked by existing shadows cast by other buildings in the area, including shadow from the two-story Yerba BuenaCenter for the Arts gallery building that is adjacent to and north of the East Garden. The proposed project would not cast any net new shadow on the Yerba Buena Gardens/Moscone Convention Center complex.

Yerba Buena Lane

The proposed project would cast net new shadow on Yerba Buena Lane from sunrise until approximately 9:30 AM during the summer. Yerba Buena Lane is primarily used as a public pedestrian passage, although there are seating areas along the lane. Additional shadow on Yerba Buena Lane at the beginning of the day during the summer, when the days are longest, would not substantially affect the use of Yerba Buena Lane as a public pedestrian passage. At other times throughout the year, the shadow from the proposed project would not reach Yerba Buena Lane, or it would be masked by existing shadows cast by other buildings in the area.

Hallidie Plaza

From sunrise until about 7:30 AM during the summer, shadow from the proposed project would reach Hallidie Plaza; however, the shadow from the proposed project would be masked by existing shadows cast by other buildings in the area. The proposed project would not cast any net new shadow on Hallidie Plaza.

Maiden Lane

The shadow from the proposed project would not reach Maiden Lane during the spring, summer, or autumn. The shadow from the proposed project would reach Maiden Lane in the morning during the winter, but the shadow would be masked by existing shadows cast by other buildings in the area. For these reasons, the proposed project would not cast any net new shadow on Maiden Lane.

Summary of Other Public Open Spaces

The proposed project would not cast net new shadow on the Yerba Buena Gardens/Moscone Convention Center, Hallidie Plaza, and Maiden Lane.

The proposed project would cast net new shadow on Jessie Square and Yerba Buena Lane. Throughout the year, net new project-related morning shadow on Jessie Square would recede as the day progresses, and the proposed project would not shadow the square by late morning or early afternoon, depending on the time of year. The additional shadows from the proposed project would not substantially affect the use of the seating areas in Jessie Square, because the seating areas can continue to function even if they are shadowed during the day, although the seating areas may be less pleasant without sunlight. Many outdoor seating areas in downtown San Francisco are shadowed during the day but are still used, because some people may prefer to sit in the shade instead of under direct sunlight. The proposed project would cast net new shadow on Yerba Buena Lane for a short period in the morning during the summer. At other times throughout the year, the shadow from the proposed project would not reach Yerba Buena Lane, or it would be masked by existing shadows cast by other buildings in the area.

Privately Owned, Publicly Accessible Open Spaces and Public Sidewalks

The following discussion describes the proposed project's shadow impacts on the POPOs within the project vicinity (see Figure IV.I.3 on p. IV.I.31). A brief discussion of shadows on public sidewalks near the POPOs is also included. The discussion focuses on the period during the day when these spaces are most heavily used, between the hours of 10:00 AM and 3:00 PM, on March 21, June 21, September 21, and December 21 (see Figures IV.I.6 through IV.I.11, on pp. IV.I.48-IV.I.53).

March 21

At 10:00 AM on March 21, the proposed project would cast net new shadow on the west end of Westin Plaza. The central and eastern portions of Westin Plaza are currently shadowed by the existing Aronson Building. The shadow from the proposed project would not reach any other POPOs at this time of day. The shadow from the proposed project would reach the intersection of Market Street, O'Farrell Street, and Grant Avenue, about one block northwest of the project site. The sidewalks at this intersection are already shadowed by existing buildings in the area, and the proposed project would add some net new shadow to the sidewalks.

At noon on March 21, the proposed project would cast net new shadow on the western half of Westin Plaza. The eastern half of Westin Plaza is already shadowed by the existing Aronson Building. The shadow from the proposed project would not reach any other POPOs at this time of day. The proposed project would not add net new shadow to the sidewalk along the west side of Third Street, because the shadow from the proposed project would be masked by existing shadows cast by other buildings in the area.

At 3:00 PM on March 21, the proposed project would cast net new shadow on the southern half of Westin Plaza. The northern half of Westin Plaza, where outdoor seating is located, would be sunny. The shadow from the proposed project would not reach any other POPOs at this time of day. The shadow from the proposed project would cross Third Street to about halfway into the city block to the east of the project site. The proposed project would add some net new shadow to the sidewalks on either side of Third Street between Jessie and Mission Streets.

June 21

At 10:00 AM, the shadow from the proposed project would not reach any POPOs. All of Westin Plaza is already shadowed by the existing Aronson Building at this time of day. The proposed project would not cast any net new shadow on any sidewalks due to the presence of shadow from existing buildings in the area.

At noon, the proposed project would cast net new shadow on the western half of Westin Plaza. The eastern half of Westin Plaza is already shadowed by the existing Aronson Building. The shadow from the proposed project would not reach any other POPOs at this time of day. The proposed project would not cast any net new shadow on any sidewalks due to the presence of shadow from existing buildings in the area.

At 3:00 PM on June 21, the proposed project would cast net new shadow along the southern edge of Westin Plaza. The rest of Westin Plaza would be sunny. The shadow from the proposed project would not reach any other POPOs at this time of day. The shadow from the proposed project would cross the intersection of Third and Mission Streets and add net new shadow to the sidewalks on the northeast, southeast, and southwest corners of the intersection. The northwest corner of the intersection is already shadowed by the existing Aronson Building.

September 21

The shadow patterns on public open spaces, POPOs, and public sidewalks in the vicinity of the project site that would occur on September 21 would be almost identical to the shadow patterns on March 21 (see discussion above).

December 21

At 10:00 AM on December 21, the proposed project would cast net new shadow on the western half of Westin Plaza. The eastern half of Westin Plaza is already shadowed by the existing Aronson Building. The shadow from the proposed project would not reach any other POPOs at this time of day. The shadow from the proposed project would reach the intersection of Grant Avenue and Post Street, about three blocks northwest of the project site. All of the sidewalks within the proposed project's shadow at this time of day are already shadowed by other buildings in the area.

At noon on December 21, the proposed project would cast net new shadow on the western half of Westin Plaza. The eastern half of Westin Plaza is already shadowed by the existing Aronson Building. The proposed project would cast net new shadow on a POPO at 1 Kearny Street, but shadow from the proposed project would not reach any other POPOs at this time of day. The shadow from the proposed project would cross Market Street to about two blocks northeast of the project site. All of the sidewalks within the proposed project's shadow at this time of day are already shadowed by other buildings in the area.

At 3:00 PM on December 21, the proposed project would cast net new shadow on the eastern portion of Westin Plaza. The rest of Westin Plaza is already shadowed by existing buildings in the area. The proposed project would cast net new shadow on a POPO at 560 Mission Street, but shadow from the proposed project would not reach any other POPOs at this time of day. The shadow from the proposed project would reach about three blocks east of the project site and briefly shadow portions of the sidewalks along Jessie Street between First and Third Streets.

Summary of Privately Owned, Publicly Accessible Open Spaces and Public Sidewalks

The proposed project would cast shadow on Westin Plaza, a POPO adjacent to and north of the project site, throughout the day for much of the year. Much of Westin Plaza, including portions of the existing outdoor seating area, is already shadowed by the Aronson Building and other existing buildings in the area. Westin Plaza provides public pedestrian access from Third Street to Jessie Square. There is an outdoor seating area on the north side that is used by the restaurant in the Westin San Francisco Market Street Hotel. This outdoor seating area can continue to function even if it is shadowed during the day, but the space may be less pleasant without sunlight. Many outdoor seating areas in downtown San Francisco are shadowed during the day but are still used, because some people may prefer to sit in the shade instead of under direct sunlight. Additional net new shadows from the proposed project would not substantially affect pedestrian use of this POPO.

The proposed project would cast shadow on a POPO at 1 Kearny Street, about one block north of the project site, for approximately one hour each day (from 10:30 AM until 11:30 AM) during the winter. This POPO is a roof terrace that includes seating areas. As with Westin Plaza, the POPO at 1 Kearny Street can continue to function even it is shadowed for some time during the day, but the space may be less pleasant without sunlight.

The proposed project would also briefly shadow a POPO at 560 Mission Street, about three blocks east of the project site, for several minutes in the mid-afternoon during the winter. The brief duration of the net new project-related shadow would not substantially affect the use of this POPO.

The proposed project would cast shadow on nearby sidewalks, including, but not limited to, those along Third Street, Mission Street, and Jessie Street, at certain times of day throughout the year. Many of the public sidewalks in downtown San Francisco are already shadowed for much of the day by densely developed high-rise buildings, and additional net new project-related shadows would be transitory in nature and would not substantially affect the use of the sidewalks.

Summary of Shadow Impacts on Parks, Outdoor Recreation Facilities, and Other Public Areas

As described above, the proposed project would not cast net new shadow on Boeddeker Park, Huntington Park, the Yerba Buena Gardens/Moscone Convention Center complex, Hallidie Plaza, or Maiden Lane. The proposed project would cast net new shadow on Union Square (in excess of the current shadow budget), Jessie Square, Yerba Buena Lane, the POPOs at Westin Plaza, 1 Kearny Street, and 560 Mission Street, and sidewalks near the project site. However, due to the times of day and the times of the year that would be affected, the duration of shadows, the relatively small proportion of the open space affected by net new shadow, and the use of the areas that would be affected, the project-related shadows would not substantially impair the use or enjoyment of these public open spaces. For these reasons, shadow from the proposed project would not substantially affect outdoor recreation facilities or other public areas, and the proposed project would have a less-than-significant shadow impact. No mitigation measures are necessary.

Impact C-WS-2: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the project vicinity, would create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas, resulting in a significant cumulative shadow impact. The proposed project would make a cumulatively considerable contribution to this significant cumulative shadow impact. (*Significant and Unavoidable*)

There are several proposed projects in the project vicinity that have the potential to shadow outdoor recreation facilities or other public areas, including some of the same open spaces that the proposed project would shadow. These reasonably foreseeable future projects are 151 Third

Street (the San Francisco Museum of Modern Art [SFMOMA] Expansion Project), 2 New Montgomery Street (the Palace Hotel Project), and the Transit Tower on the south side of Mission Street between First and Fremont Streets. In addition, the draft *Transit Center District Plan* (TCDP) proposes a comprehensive plan for and rezoning of the southern portion of the downtown Financial District east of the project site. Implementation of the TCDP would increase height limits that would allow the construction of buildings exceeding 700 feet in height, and this potential development could shadow parks, outdoor recreation facilities, or other public areas, including some of the same open spaces that the proposed project would shadow.

As discussed under Impact WS-2, the proposed project would cast net new shadow on Union Square that would be in excess of the current shadow budget set under Planning Code Section 295, Jessie Square, Yerba Buena Lane, the POPOs at Westin Plaza, 1 Kearny Street, and 560 Mission Street, and sidewalks near the project site. The SFMOMA Expansion Project would not cast net new shadow on Union Square or Jessie Square, but it would cast net new shadow on the SFMOMA sculpture garden and sidewalks near the SFMOMA site.[34] The Palace Hotel Project, the Transit Tower, and other buildings that could be constructed under the TCDP would cast net new shadow on parks, outdoor recreation facilities, or other public areas, including Union Square, Justin Herman Plaza, Portsmouth Square, St. Mary's Square, Maritime Plaza, Boeddeker Park, Willie "Woo Woo" Wong Playground, Chinese Recreation Center, Woh Hei Yuen Recreation Center and Park, Rincon Park, Ferry Plaza, Herb Caen Way, Mechanics Plaza, Yerba Buena Gardens, POPOs at 555-575 Market Street, 525 Market Street, 560 Mission Street, Fremont Center Plaza, 45 Fremont Street, Bechtel Plaza, Crown Zellerbach Plaza, McKesson Plaza, the planned City Park atop the new Transit Center, and Mission Square, and nearby sidewalks.[35] Because of the dispersed locations of these reasonably foreseeable future projects, new shadows from each of the projects would reach different open spaces at different times of the day and year. For some of these open spaces, the new shadow would not be likely to result in major changes to the usage of the affected parks, but in other cases, including Portsmouth Square, St. Mary's Square, and Justin Herman Plaza, the shadows would fall at times when heavy use, including active recreational use, is occurring and could be affected. The TCDP would require the absolute cumulative limit to be increased on eight downtown parks.

[34] San Francisco Planning Department. *San Francisco Museum of Modern Art Expansion / Fire Station Relocation and Housing Project Final Environmental Impact Report*, November 10, 2011. This document is available online at http://tinyurl.com/sfceqadocs under case numbers 2009.0291E and2010.0275E. The document is also available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California.

[35] San Francisco Planning Department. *Transit Center District Plan and Transit Tower Draft Environmental Impact Report*, September 28, 2011. This document is available online at http://tinyurl.com/sfceqadocs under case numbers 2007.0558E and 2008.0789E. The document is also available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California.

As stated above, none of the development anticipated under the TCDP would shadow Jessie Square. There would not be new cumulative shadow related to Jessie Square. With respect to Union Square specifically, the net new shadow from these reasonably foreseeable future projects, including potential future development under the draft TCDP, would not occur during the same time of the year as the net new shadow from the proposed project. Implementation of the proposed project and the reasonably foreseeable future projects identified above, including potential future development under the draft TCDP, would increase the amount of net new shadow on Union Square and would exceed the remaining shadow budget of 323,123 sfh for Union Square.

The *Transit Center District Plan and Transit Tower EIR* (TCDP EIR) concludes that development anticipated under the TCDP, including the Transit Tower, would have a significant and unavoidable shadow impact, and would contribute to a significant and unavoidable cumulative shadow impact when considered in combination with the proposed project. For the most part, shadows from the TCDP and the proposed project, would not overlap – they would affect different open spaces and, with respect to Union Square, different times of the day and different times of the year. Due to the number of proposed projects adding new shadow and the layering of additional times of day and additional times of the year when the public open spaces would be shadowed, combined with the impact of the TCDP on the use of some of these open spaces, cumulative shadow impacts would be significant and unavoidable. By contributing shadow to different open spaces, or in the case of Union Square, at different times of the day and a different time of the year, the proposed project would contribute considerably to the significant and unavoidable cumulative shadow impact identified in the *TCDP EIR*.

There is no feasible mitigation for the proposed project's contribution to cumulative shadow impacts, because any theoretical mitigation would fundamentally alter the project's basic design and programming parameters. Any significant development on the project site would shadow downtown open spaces and sidewalks that may also be affected by other downtown development. With respect to Union Square, the project has been redesigned to sculpt the top of the tower in order to reduce shadow on Union Square. The original project proposed by the project sponsor included an elliptical tower design that was approximately 630 feet tall and 170 feet wide at the highest level. That proposal was modified to reflect a shorter and more slender rectangular tower design that was shifted to the west on the project site to reduce shadow on Union Square. The rectangular design ultimately chosen for the project would break up the tower massing and top into smaller volumes at different or staggered heights, particularly along the eastern edge of the site and tower, to further reduce shadow. In addition, the tower massing and the tower core were moved 15 feet to the west on the project site, and the tower cantilever over the Aronson Building was reduced from 106 feet to 8 feet to further reduce shadow on Union Square.

The mid- to lower portion of the tower, not the top portion, casts net new shadow on Union Square. Thus, other than a reduction in the height of the tower to approximately 351 feet or less, no further modification of the tower could eliminate the tower's net new shadow on Union Square.[36] A reduction of the building height would substantially reduce the development program of the proposed project. (See the Existing Zoning Alternative, which addresses the impacts of reducing the tower height to approximately 196 feet and the Reduced Shadow Alternative, which addresses the impacts of reducing the tower height to approximately 351 feet.) Even then, the project would still shadow other downtown open spaces and sidewalks. Thus, there is no feasible mitigation to reduce this impact to a less-than-significant level.

For these reasons, the proposed project, in combination with past, present, and reasonably foreseeable future projects in the project vicinity would create new cumulative shadow in a manner that would substantially affect parks, outdoor recreation facilities, or other public areas. This cumulative shadow impact would be significant and unavoidable, and the proposed project would make a cumulatively considerable contribution to this significant cumulative shadow impact.

[36] CADP, *706 Mission Street Project Shadow Envelope Analysis*, April 2009. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E. A shadow envelope analysis determines the maximum building height that would not cast net new shadow on a particular park or open space.

This page is intentionally blank.

J. RECREATION

This section analyzes the effects of the proposed project related to recreation. The Setting discussion describes the existing recreation resources in the vicinity of the project site. The Impacts analysis identifies significance criteria for impacts related to recreation and discusses the changes in demand for recreational facilities that would occur with implementation of the proposed project. Finally, cumulative effects of the proposed project combined with past, present, and reasonably foreseeable future projects are discussed. Data used in this section include information obtained from the San Francisco Recreation and Park Department (RPD), the San Francisco Department of Public Health, and the Recreation and Open Space Element of the *San Francisco General Plan (General Plan).*

SETTING

RECREATION AND PARK RESOURCES

Citywide and Regional Resources

RPD maintains more than 230 properties (parks, playgrounds, and open spaces) throughout the City. The RPD's responsibilities include the management of 15 large, full-complex recreation centers, 9 swimming pools, 6 golf courses, and hundreds of tennis courts, baseball diamonds, athletic fields, and basketball courts. RPD also manages many of the City's signature facilities, such as the Palace of Fine Arts, Golden Gate Park, Coit Tower, the Marina Yacht Harbor, and Candlestick Park football stadium.

RPD owns and operates approximately 3,395 acres of permanently dedicated, publicly accessible recreation and open space uses in San Francisco.[1] Together with the approximately 3,346 acres of open space properties owned and operated by other City agencies and by State and Federal agencies, San Francisco has about 6,741 acres of parkland and open space in a variety of forms (parks, walkways, landscaped areas, recreational facilities, playing fields, and unmaintained open areas).[2] According to the 2010 U.S. Census, the population of San Francisco as of April 2010 was 805,235,[3] yielding a ratio of approximately 8.4 acres of open space per 1,000 San Francisco residents. The City has not established a citywide target ratio of parkland to residents, and the Recreation and Open Space Element of the *General Plan* (ROSE) recognizes that San Francisco is likely to provide less open space acreage than many communities, given land constraints, high

[1] Total acreage as of 2010. San Francisco Department of Public Health, *Healthy Development Measurement Tool* (hereinafter referred to as "Healthy Development Measurement Tool"). Available online at http://www.thehdmt.org/indicators/view/8. Accessed April 25, 2012.

[2] Healthy Development Measurement Tool.

[3] U. S. Census Bureau, State & County QuickFacts. Available online at http://quickfacts.census.gov/qfd/states/06/06075.html. Accessed April 25, 2012.

population density, and existing urban development.[4] However, under Policy 2.1 of the ROSE, the City identified a need to increase the per capita supply of public open space, from the ratio of 5.5 acres per 1,000 San Francisco residents identified in the *General Plan* to about 10 acres per 1,000 residents as suggested by the National Park and Recreation Association.[5] As part of this effort, San Francisco residents voted in favor of the 2008 Clean and Safe Neighborhood Parks Bond, which is expected to augment the number of City parks (primarily in the eastern part of the City) and fund renovations and repairs to parks, playgrounds, and athletic fields throughout the City.[6] As presented above, the City has increased its number of acres per 1,000 residents from the time when the current ROSE was adopted (5.5 acres/1,000 residents) to 2010 (7.9 acres/1,000 residents) despite land constraints, population density, and existing urban development.

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.[7] District-serving open spaces are generally larger than 10 acres and have a service area consisting of a three-eighths-mile radius around the park (about a 7.5-minute walk), while neighborhood-serving open spaces are generally 1 to 10 acres and have a service area of one-quarter mile (about a 10-minute walk). Subneighborhood-serving open spaces, often referred to as mini parks, are less than an acre and are too small to accommodate athletic facilities. Mini-parks usually include seating areas, small landscaped spaces, tot lots, and playgrounds with amenities for elementary-school-age children. The service area for subneighborhood open spaces is a one-eighth-mile radius around the open space.

San Franciscans also benefit from the Bay Area's regional open space system. The National Park Service operates the Golden Gate National Recreation Area in Marin, San Francisco, and San Mateo Counties, which includes attractions such as Muir Woods National Monument, the Marin Headlands, Fort Point National Historic Site, Alcatraz Island, the San Francisco Maritime National Historical Park, Ocean Beach, and Fort Funston. The Presidio Trust and the National Park Service each operate a portion of the Presidio. Other Federal lands in the region include the Point Reyes National Seashore in Marin County. State park and recreation areas that benefit San Francisco residents include attractions such as Mount Tamalpais State Park, Angel Island

[4] San Francisco Planning Department has prepared an update to the *General Plan's* Recreation and Open Space Element (ROSE). The 2011 Revised Draft ROSE is undergoing environmental review and is not yet official City policy. Available online at http://openspace.sfplanning.org/docs/Recreation_and_Open_Space_Element_APRIL_2011.pdf. Accessed April 24, 2012.

[5] Although the National Park and Recreation Association formerly called for 10 acres of open space per 1,000 city residents, the association no longer recommends a single absolute "average" of park acreage per population, in recognition of the fact that it is more relevant that each locality plan and program facilities based upon community need. More important than raw acreage is accessibility (location, walking distance) and whether the facility provides needed services to the population in question.

[6] San Francisco Recreation and Park Department, *2008 Clean and Safe Neighborhood Parks Bond - Planning Report*, October 2007, pp. 11-12.

[7] San Francisco Planning Department, ROSE, Policy 2.1 and Map 2, Public Open Space Service Areas.

State Park, and the Candlestick Point State Recreation Area. Regional resources also include public open spaces in Alameda and Contra Costa Counties owned and operated by the East Bay Regional Park District,[8] open spaces in San Mateo and Santa Clara Counties owned and operated by the Midpeninsula Regional Open Space District,[9] and county park and recreation areas throughout the larger Bay Area.

Nearby Recreational Facilities[10]

The project site is located near City-owned park and recreational facilities that attract tourists and regional and citywide visitors, but also serve residents in the burgeoning downtown and South of Market neighborhoods (see Figure IV.I.3: Existing Public and Publicly Accessible Open Spaces Near the Project Site, in Section IV.I, Wind and Shadow, p. IV.I.31). Due to the dense downtown urban location of the project site, most of these City-owned open space and recreational facilities are open air plazas and parks that provide green space and areas for relaxation and gathering, rather than the sports fields, playgrounds, and recreation centers typically found in less-dense residential neighborhoods.

The following City-owned open space and recreational facilities are within a 0.25-mile radius of the project site (all of them are north of Market Street):

- Union Square is an approximately 2.58-acre open space that occupies the entire block bounded by Post, Stockton, Geary, and Powell Streets. It is owned by RPD and has outdoor seating, a performance stage, seasonal ice skating, a restaurant, and an outdoor café.
- Maiden Lane is an approximately 0.6-acre, two-block-long street that runs east-west from Kearny Street to Stockton Street between Geary and Post Streets. It is owned by the Department of Public Works (DPW) and is closed to vehicles from 11:00 AM until 6:00 PM.[11] During these hours, cafés and restaurants along Maiden Lane set up tables and chairs in the middle of the street for outdoor leisure and dining.
- Hallidie Plaza, at the intersection of Market and Powell Streets, is an approximately 0.3-acre open air, two-level, partly below-grade landscaped plaza that serves as a transit hub for BART, Muni Metro, and above-grade cable car lines on Powell Street. It is owned by DPW. The plaza is a gathering place with food service kiosks, a seating area, and an information center for tourists and visitors.

[8] The East Bay Regional Park District is the largest regional park district in the nation and includes 65 parks and over 1,100 miles of trails on more than 98,000 acres.
[9] The Midpeninsula Regional Open Space District has 26 open space preserves (24 of which are open to the public) and has permanently preserved over 57,000 acres of open space.
[10] Distance measurements are taken from the corners of the project site using the Google Earth measurement tool.
[11] Union Square Business Improvement District. Available online at http://www.visitunionsquaresf.com/about_union_square/maiden_lane/. Accessed April 25, 2012.

The following City-owned open space and recreational facilities are within a 0.5-mile radius of the project site:

- St. Mary's Square, at California and Grant Streets, is an approximately 1.1-acre open space. It is owned by RPD and includes a plaza, seating area, and small play structures for children.
- Boeddeker Park, at the northeast corner of Eddy and Jones Streets, is an approximately 0.95-acre park. It is owned by RPD and has a basketball court, a clubhouse, some children's play structures, and benches. The park is enclosed by a fence, and the gates are locked at night.
- Hooker Alley Community Garden on Mason Street between Pine and Bush Street is a 0.55-acre community garden. It is owned by DPW.

There are also a number of indoor and outdoor privately owned, publicly accessible open spaces within a 0.25-mile radius of the project site. Indoor privately owned, publicly accessible open spaces are at 55 Second Street and 101 Second Street. Outdoor privately owned, publicly accessible open spaces are at Moscone Plaza (the Tehama Street right-of-way between 201 and 247 Third Street); 835 Market Street (Westfield San Francisco Centre); 212 Stockton Street; 345 Stockton Street (San Francisco Hyatt Union Square Hotel); 50 Post Street (Crocker Galleria); 1 Kearny Street; 560 Mission; 1 Montgomery Street (Wells Fargo Bank); 1 Post Street (McKesson Plaza); 595 Market Street; and the Westin San Francisco Market Street Hotel's (Westin) pedestrian pathway[12] adjacent to and north of the project site that connects Third Street with Jessie Square. Some of these open spaces are at street level, and others are elevated spaces on building podiums or roofs.

Along The Embarcadero, located about 1 mile east of the project site, there are a number of open space plazas and parks that take advantage of the waterfront views and are owned, managed and/or leased by RPD, the Port of San Francisco, or the Successor Agency to the San Francisco Redevelopment Agency (Successor Agency). These parks include:

- The approximately 3-mile-long, 25-foot wide, 9-acre The Embarcadero Promenade (Herb Caen Way);[13]
- The approximately 2-acre Rincon Park,[14] which contains tidal steps, a hallmark sculpture (Cupid's Span), and bayfront promenade;
- The Ferry Building Plaza; and

[12] This privately owned, publicly accessible open space does not have an official name, but it is on the property on which the Westin San Francisco Market Street Hotel is located.

[13] Port of San Francisco, *Embarcadero Promenade Design Criteria*, Draft for Public Review, January 13, 2011, p. 4. The Port of San Francisco owns and maintains the property.

[14] Rincon Park was created by the San Francisco Redevelopment Agency on land leased to the Redevelopment Agency by the Port of San Francisco. The Port of San Francisco maintains the park under a separate maintenance agreement with the Successor Agency.

- The approximately 4.3-acre Justin Herman/Embarcadero Plaza, which is owned by RPD and is located at the foot of Market Street opposite the Ferry Building. The plaza contains sculptures, water features, and seating areas.

Adjacent Recreational Facilities

Jessie Square, adjacent to and southwest of the project site, is an approximately 0.75-acre public plaza owned by the Successor Agency. The plaza is bordered by St. Patrick's Church on the west, the Contemporary Jewish Museum on the north, the project site on the east, and Mission Street on the south. Jessie Square sits atop the Jessie Square Garage, and contains an approximately 34,000-square-foot plaza constructed in 2008. The plaza is designed for seating and gathering, and features custom wood benches, stone platforms, a water feature, paved area, and landscaping (grass and shrubs). The plaza is used for passive recreation and may be entered from Yerba Buena Lane and Mission Street, as well as from Third Street via the pedestrian pathway south of the the Westin, described below. West of Jessie Square, there is a mid-block retail plaza on Yerba Buena Lane, which provides mid-block access from Yerba Buena Gardens, between Mission and Market Streets.

Immediately north of the project site, the Westin owns and maintains a private landscaped pedestrian pathway that is accessible to the public during daytime hours. The pathway provides a direct pedestrian thoroughfare to Jessie Square (see Figure II.2: Existing Site Plan, in Chapter II, Project Description, p. II.8). The western half of this pedestrian pathway is flanked by a seating area that contains art and is used by the hotel's restaurant for outdoor patio seating.

The project site is also located across Mission Street from the Yerba Buena Gardens, owned by the Successor Agency, which spans the two blocks bound by Mission, Folsom, and Third and Fourth Streets occupied in part by the Moscone Convention Center (Moscone North and Moscone South). (Refer to Figure II.1: Project Location, on p. II.2, for the location of Yerba Buena Gardens.) On the Moscone North block, located opposite the project site between Mission and Howard Streets, Yerba Buena Gardens provides 6 acres of gardens and two cultural buildings. This block contains the Terrace at the south end (a crescent-shaped open space with seating, the Sister City Gardens, and a Reflection Pool), the East Garden (a perimeter fountain/waterfall, public art, and open space in the form of stone paving and lawn with deciduous trees) at the Third Street entrance, and the centrally-located Esplanade that features a 5.5-acre grass meadow, with a stone stage in a grove of sycamore trees. The Esplanade's perimeter walkway is lined with deciduous trees and evergreens and planted flowers; the open air Martin Luther King, Jr. Memorial with its fountain, waterfall, and walkway; an Ohlone Indian Memorial (Oche Wat Te Ou/Reflections) in grove of redwood trees; and a butterfly garden. The Rooftop at Yerba Buena Gardens, located on the Moscone South block between Howard and Folsom Streets, houses the Children's Creativity Museum. Recreational facilities on the Moscone South block include an ice

rink, a 12-lane bowling center, the historic Playland-at-the-Beach carousel, and a 3-acre Children's Garden and Play Circle.

General Plan Recreation and Open Space Element

The ROSE notes that "While the number of neighborhood parks and facilities is impressive, they are not well distributed throughout the City…The [unequal distribution] merits correction where neighborhoods lacking parks and recreational facilities also have relatively high needs for such facilities." The ROSE defines "high need areas" as areas with high population density or high percentages of children, seniors, or low-income households relative to the City as a whole, and "deficient" areas as areas that are not served by public open space, areas with population that exceeds the capacity of the open spaces that serve it, or areas with facilities that do not correspond well to neighborhood needs. High-need areas and deficient areas are identified in the ROSE, based on information from the 1980 U.S. Census.[15] The project site and its immediate vicinity are not located within a park-deficient area.[16]

The Planning Department has prepared an update to the ROSE. The 2011 Revised Draft Recreation and Open Space Element is undergoing environmental review and is not yet official City policy. Similar to the current ROSE, the 2011 Revised Draft ROSE indicates that the project site is not within a high-need area for recreational facilities.[17]

Recreation and Park Department Recreation Assessment

In 1998, the City initiated the "Great Parks for a Great City Assessment Project" to determine the condition of the park system as well as to determine future needs. In August 2004, RPD published a *Recreation Assessment Report* that evaluated the recreation needs of San Francisco residents.[18] Nine service area maps were developed for this report. The service area maps were intended to assist RPD staff and City decision-makers in assessing where services are offered, how equitable the service delivery is across the City, and how effective the service is in light of the service area's demographics. The maps define service areas by the capacity of the facility as designed and, in some cases, as actually being used, not by distance. Maps are provided for ball fields, pools, outdoor basketball courts, multi-use / soccer fields, recreation centers and tennis courts. Certain maps show that the project site and vicinity are not within the defined service

[15] San Francisco Planning Department, ROSE, Figure 3 through Figure 8 and Map 9.
[16] San Francisco Planning Department, 2011 Revised Draft ROSE, June 2011, Figure 2, High Needs Areas, pp. 19-20.
[17] San Francisco Planning Department, 2011 Revised Draft ROSE, June 2011, Figure 2, High Needs Areas, pp. 19-20.
[18] San Francisco Recreation and Park Department, *Recreation Assessment Report*, August 2004 (hereinafter "*Recreation Assessment Report*").

areas of existing RPD recreation centers, baseball/softball fields, multi-use/soccer fields, outdoor tennis courts, and outdoor basketball courts.[19]

REGULATORY FRAMEWORK

Local

San Francisco General Plan

The ROSE contains objectives and policies pertaining to the development of parks and recreational facilities. The following policies are relevant to the proposed project:

- Policy 4.5: Require private usable outdoor open space in new residential development.
- Policy 4.6: Assure the provision of adequate public open space to serve new residential development.

Although the project site is within the area encompassed by the *Downtown Area Plan*, which is an element of the *General Plan*, it was not covered due to its inclusion in the *Yerba Buena Center Redevelopment Plan*. The *Downtown Area Plan* extends the *General Plan* policy directions to the Downtown Area where the project site is located. With the expiration of the *Yerba Buena Center Redevelopment Plan*, the *Downtown Area Plan* objectives and policies provide guidance for development on the project site. These objectives and policies are discussed below.

- Objective 9: Provide quality open space in sufficient quantity and variety to meet the needs of downtown workers, residents, and visitors.
- Policy 9.1: Require usable indoor and outdoor open space, accessible to the public, as part of new downtown development.
- Policy 9.2: Provide different kinds of open space downtown.
- Policy 9.4: Provide a variety of seating arrangements in open spaces throughout downtown.
- Objective 10: Assure that open spaces are accessible and usable.
- Policy 10.1: Develop an open space system that gives every person living and working downtown access to a sizable sunlit open space within convenient walking distance.
- Policy 10.2: Encourage the creation of new open spaces that become a part of an interconnected pedestrian network.
- Policy 10.3: Keep open space facilities available to the public.
- Policy 10.4: Provide open space that is clearly visible and easily reached from the street or pedestrian way.

[19] *Recreation Assessment Report*, Appendix B.

Policy 10.5: Address the need for human comfort in the design of open spaces by minimizing wind and maximizing sunshine.

Objective 11: Provide contrast and form by consciously treating open space as a counterpoint to the built environment.

Policy 11.1: Place and arrange open space to complement and structure the urban form by creating distinct openings in the otherwise dominant streetwall form of downtown.

Policy 11.2: Introduce elements of the natural environment in open space to contrast with the built-up environment.

Planning Code Section 135

Pursuant to Planning Code Section 135, the residential open space requirement for the proposed project would be 36 square feet of private open space per residential unit. Common open space may be substituted at a ratio of 1.33 square feet for each square foot of private open space per residential unit. Under the residential flex option, the proposed project would include up to 215 residential units and would be required to provide 7,740 square feet of private residential open space (215 units multiplied by 36 square feet per unit) or 10,294 square feet of common open space (7,740 square feet multiplied by 1.33). Under the office flex option, the proposed project would include up to 191 residential units and would be required to provide 6,876 square feet of private residential open space (191 units multiplied by 36 square feet per unit) or 9,145 square feet of common open space (6,876 square feet multiplied by 1.33). Under both the residential flex and office flex options, the proposed project would provide an approximately 8,625-gsf open space with a solarium on the rooftop of the Aronson Building and approximately 5,060 gsf of private open space in the form of roof terraces for the proposed new tower. Thus, the combination of the common and private open space provided under either flex option would meet the proposed project's residential open space requirements.

Pursuant to Section 138(b) of the Planning Code, institutional uses, such as The Mexican Museum, are not required to provide open space. Existing office and retail uses in the Aronson Building do not provide any open space. If these existing uses are retained but reduced in size, they would not be required to provide open space.

IMPACTS

SIGNIFICANCE CRITERIA

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State CEQA Guidelines, which has been adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would

result in a significant impact on recreation. Implementation of the proposed project would have a significant effect on recreation if the project would:

J.1 Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated;

J.2 Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment; or

J.3 Physically degrade existing recreational resources.

PROJECT FEATURES

The proposed project would contain up to 215 residential units with development of the residential flex option, and up to 191 new residential units with the office flex option. The proposed project would generate a residential on-site population of up to 490 net new residents within 215 units (under the residential flex option) and 435 net new residents within 191 units (under the office flex option). The proposed new residential uses would displace a portion of the existing on-site employment. Under the proposed project, between 100 (under the residential flex option) to 318 on-site employees (under the office flex option) are anticipated, resulting in a net decrease of between approximately 353 employees (under the residential flex option) to 135 (under the office flex option). The institutional use (The Mexican Museum) would generate approximately 400 daily visitors who would be considered part of the daily on-site population. As described above, the combination of common and private open space provided under the proposed project under either flex option would be the same and would satisfy the requirements of Planning Code Section 135.

APPROACH TO ANALYSIS

For purposes of this analysis, the most intensive development potential is analyzed for both the residential and office flex options to provide a conservative assessment of the potential project impacts. Public parks are generally defined as areas of land set aside for various recreational opportunities for the public, including open air plazas. Public recreational facilities are those structures and/or improvements that are built at parks (e.g., benches, picnic tables, tennis courts, dog runs, gardens, etc.). In determining whether the proposed project would have a significant adverse impact on recreational facilities, this analysis considers adjacent and nearby recreational facilities within a 0.5-mile radius of the project site, the existing capacity of those facilities, and the recreation improvements that would be included as part of the proposed project. The distance of recreation and open space facilities from potential users is generally defined as the service area of the facility or open space and is dictated by the type of park; i.e. subneighborhood-serving, neighborhood-serving, or district-serving. The distance is also indicative of how far a particular type of user would walk, i.e., a family with children will not walk as far as an adult. This analysis

assumes that if there are a variety of recreation options within a convenient distance of the potential users with sufficient capacity, there would not be a significant adverse effect. This analysis does not assume that a lack of capacity for each type of recreational activity in and of itself would be a significant adverse impact nor does it assume that the incremental population increase resulting from the proposed project is the single factor that leads to deterioration or physical degradation of recreation resources. Other factors that are evaluated in the assessment of the deterioration or physical degradation of recreation resources include the park design, age of infrastructure, how the park is used, and level of maintenance. Cumulative effects of the proposed project's demand for park and open space on the City's overall parks and open space network are also considered.

IMPACT EVALUATION

Impact RE-1: The proposed project would not increase the use of existing park and recreational facilities such that substantial physical deterioration of facilities would occur or be accelerated. ***(Less than Significant)*** **(Criterion J.1)**

The office flex option would result in fewer residents (approximately 435 instead of approximately 490) and more employees (approximately 318 instead of approximately 100) on site than the residential flex option would, although it would still reduce the number of employees on site compared to current conditions. Office workers often use local plazas and parks for lunch breaks or other light impact uses; these activities are not considered to be substantial contributors to the deterioration of recreational facilities and open space. Thus, this impact analysis focuses on the development of the proposed project under the residential flex option because this option would have the greatest potential to increase the use of existing recreational facilities and open space.

Implementation of the proposed project under the residential flex option would increase demand for recreational facilities. Proposed project uses would increase residential population up to a maximum of approximately 490 residents, and would reduce on-site employment by up to approximately 353 persons, resulting in a maximum of up to approximately 100 employees on site.[20] In addition, there would be an expected daytime daily visitor population increase of up to approximately 400 persons associated with The Mexican Museum.[21] The increase in residential and visitor populations at the project site combined with the decrease in on-site employment would slightly increase the demand on and use of existing adjacent parks and recreational

[20] See Section IV.C, Population and Housing, for assumptions about the number of new residents and employees in San Francisco and the total number of residents and employees that would result with the proposed project.

[21] *706 Mission Street Transportation Study*, January 24, 2012, Appendix H, Travel Demand Calculations. A copy of this report is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

facilities, nearby City recreational facilities, and regional, State, and Federal recreational facilities.

The project site is located in an area that has a high concentration of public parks and recreational facilities that attract regional and citywide users; these facilities provide a wide range of active and passive recreational opportunities that also serve local residents.

City-owned subneighborhood-, neighborhood-, and district-serving recreational facilities managed by RPD or DPW within a 0.5-mile radius of the project site (Union Square, Maiden Lane, St. Mary's Square, Hooker Alley Community Garden, Boeddeker Park, and Hallidie Plaza) provide approximately 6.1 acres of park space.

Public parks and recreational facilities adjacent to the project site provide another 9.8 acres of parks and recreational facilities: Jessie Square (0.8 acre) and Yerba Buena Gardens (9 acres). The 9-acre total for Yerba Buena Gardens includes 6 acres on the Moscone North block and the 3-acre Children's Garden and Play Circle in the complex on the Moscone South block; it does not include the ice rink, the 12-lane bowling center, and the historic Playland-at-the-Beach carousel, which provide additional recreation options, but are private, fee-based activities not typically included in the assessment of park and open space use.

Nearby public parks and plazas along the waterfront 1 mile east of the project site (i.e., The Embarcadero Promenade, Rincon Park, the Ferry Building Plaza, and Justin Herman Plaza) also provide over 15 acres of nearby park and recreation opportunities in addition to the City-owned and Yerba Buena Garden park facilities described above.

Combined, Port-, Successor Agency-, DPW-, and RPD-owned parks within 1 mile of the project site provide almost 35 acres of public open space. In addition, the proposed project would provide an approximately 3,500-gsf ground-level public open space at the base of the proposed tower (see Table IV.J.1: Proposed Project Open Space).

Given the wide variety and quantity of nearby public parks, plazas, and recreation opportunities, including children-oriented park and recreational facilities, the anticipated on-site population would not increase the use of adjacent and nearby recreational facilities such that substantial physical deterioration of existing facilities would occur or be accelerated. Project-related impacts on existing public open space and recreational facilities would be less than significant, and no mitigation measures are necessary.

Table IV.J.1: Proposed Project Open Space

Description	Floor	Aronson Building approx. (gsf)	Proposed Tower approx. (gsf)	Type of Open Space[a]
Public Plaza Areas	Ground Floor		3,500[a]	Public[a]
The Mexican Museum Terrace	4th (Tower Podium)		2,500	Private Museum
Roof Terrace	Rooftop	7,380[b]		Common Residential
Solarium	Rooftop	1,245[b]		Common Residential
Roof Terrace	45th		550	Private Residential
Roof Terraces (2)	46th		1,640	Private Residential
Roof Terrace	47th		2,870	Private Residential
Total : ±19,685 gsf		**±8,625**	**±11,060**	
Total Publicly Accessible Open Space : approx. ±3,500 gsf **Total Common Residential Open Space : approx. ±8,625 gsf** **Total Private Residential Open Space: ±5,060gsf**				

Notes:
gsf - gross square feet
[a] Common residential and private residential open space as defined in Planning Code Section 135(a).
Sources: 706 Mission Street Co., LLC, and Turnstone Consulting

Impact RE-2: The proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. *(Less than Significant)* (Criterion J.2)

The office flex option would result in fewer residents (approximately 435 instead of approximately 490) and more employees (approximately 318 instead of approximately 100) on site than the residential flex option would, although it would still reduce the number of employees on site compared to current conditions. Office workers often use local plazas and parks for lunch breaks or other light impact uses; these activities are not considered to be substantial contributors to the deterioration of recreation and open space. Thus, this impact analysis focuses on the development of the proposed project under the residential flex option because this option would have the greatest potential to increase the use of existing park and recreational facilities.

Table IV.J.1 shows public and private open space that would be included in the proposed project. Under the proposed project, a 3,500-gsf ground-floor plaza would be developed adjacent to existing open space at Jessie Square and the pedestrian pathway between the Westin and the Aronson Building. This plaza would be accessible to the public. The proposed project would provide an approximately 8,625-gsf outdoor terrace, including an approximately 1,245-gsf solarium on the rooftop of the Aronson Building for use by residents, and approximately 5,060 gsf of private residential roof terraces on the upper levels of the proposed tower. Potential interior uses at the fifth or tenth floors of the Aronson Building could include residential

amenities for project residents such as a children's play area, a fitness center, a club/lounge, meeting spaces, or a combination of these uses. If the residential amenities were to be provided at the fifth floor of the Aronson Building, these amenities would occupy approximately 12,170 gsf. If the residential amenities were to be provided at the tenth floor of the Aronson Building, these amenities would occupy approximately 8,760 gsf. In addition, The Mexican Museum may include an approximately 2,500-gsf outdoor terrace on the roof of the tower podium (the fourth floor) for use by museum visitors.

As discussed above under "Regulatory Framework," the proposed project would be subject to the residential open space requirements specified in Planning Code Section 135. The combination of approximately 8,625 gsf of common open space and approximately 5,060 gsf of private open space that would be provided by the proposed project under both flex options would satisfy these requirements.

The potential construction-related environmental impacts of the development of approximately 19,685 gsf of public and private open space are discussed in relevant sections of the EIR (i.e., IV.E, Transportation and Circulation, IV.F, Air Quality, and IV.G, Noise) as part of the assessment of overall project construction impacts. The incremental increase to the on-site daily population would not be substantial (up to approximately 490 full-time residents and up to approximately 400 daily visitors to The Mexican Museum). Thus, the potential demand attributable to the projected increase to the on-site daily population, primarily from the residential component of the proposed project, would not generate a substantial demand for public open space that would result in the need to construct or expand new and/or existing recreational facilities in the vicinity of the project site. Therefore, the proposed project would not result in adverse impacts on the environment due to construction or expansion of recreational facilities, and no mitigation measures are necessary.

Impact RE-3: The proposed project would not physically degrade existing recreational resources. *(Less than Significant)* (Criterion J.3)

Recreational facilities adjacent to and near the proposed project site attract citywide and regional visitors, as well as tourists, due to the presence of nearby cultural amenities such as the San Francisco Museum of Modern Art, the Contemporary Jewish Museum, the Yerba Buena Center for the Arts, and others. As described above under Impact RE-1, office workers often use local plazas and parks for lunch breaks or other passive recreational uses, and these activities are not considered to be substantial contributors to the degradation of recreation and open space resources. Thus, the analysis focuses on the development of the proposed project under the residential flex option because it represents the most intensive development scenario from an open space and recreation impact standpoint and would provide a worst-case assessment of the potential project impacts.

Implementation of the proposed project would add up to approximately 490 new residents under the residential flex option, and approximately 400 new visitors per day at The Mexican Museum. There would be up to approximately 100 on-site employees; however, this would represent a net decrease of up to approximately 335 on-site employees at the project site. Based on the incremental increase to the on-site daily population, the proposed project would not physically degrade existing recreation resources. Nearby and adjacent recreational facilities have been designed and constructed to sustain high-volume, physical use due to their location in the urbanized downtown area. The proposed project would increase the use of Jessie Square; however, the benches and hardscape amenities, such as seating and paths through the water features located there would not be degraded by the increased residential and visitor populations at the project site.

Yerba Buena Gardens attracts over 2.3 million visitors a year[22] and would not be physically degraded by the increased use from project residents and visitors. Similarly, public plazas maintained by RPD such as Union Square, and public plazas and open space areas along The Embarcadero maintained by the Port of San Francisco attract a high volume of daily users, including downtown residents, regional visitors, and tourists. The added use by project residents and museum visitors would not physically degrade these recreational facilities.

For the reasons discussed above, the proposed project would have a less-than-significant effect on the degradation of existing recreational facilities. No mitigation measures are necessary.

Impact C-RE-1: Construction of the proposed project, in combination with past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to significant adverse cumulative impacts on recreational facilities. ***(Less than Significant)***

Under both the residential and office flex options, the proposed project would provide a combination of approximately 8,625 gsf of common open space and approximately 5,060 gsf of private open space, as described under "Regulatory Framework" on p. IV.J.8. This would accommodate a portion of the incremental increase to the demand for and use of public recreational facilities resulting from the proposed project. The proposed project's contribution to cumulative impacts on recreational facilities is evaluated in the context of existing, proposed, and reasonably foreseeable future projects expected in the City. The Association of Bay Area Governments estimates an increase of 54,020 households, 124,800 residents, and 179,370 jobs

[22] MJM Management Group which maintains and operates Yerba Buena Gardens estimates reports that Yerba Buena Gardens has attracted over 2.3 million persons per year since it opened in 1993. Available online at http://mjmmanagementgroup.com/YBG.html. Accessed April 25, 2012.

from 2010 to 2030.[23] Development of the proposed project is estimated to increase the City's residential population by up to 490 residents.

Cumulative recreation demand would be met by existing adjacent parks and recreational facilities provided in Yerba Buena Gardens and Jessie Square, as well as nearby City-owned park space located north of Market Street (e.g., Union Square and St. Mary's Square), and recreational facilities owned and maintained by the City, Port of San Francisco, or Successor Agency along The Embarcadero (e.g., Justin Herman Plaza, The Embarcadero Promenade, and Rincon Park).

In addition, park and open space acreage in the South of Market areas and along the northeastern and eastern waterfronts is proposed to be augmented as development projects such as Mission Bay, the proposed *Transit Center District Plan* (which includes the Transbay Transit Center), the *Eastern Neighborhoods Community Plan*, and the proposed Candlestick Park-Hunters Point Shipyard Project move toward approval or completion. The Transbay Transit Center development project site is located within 0.5 mile of the project site and would provide a 5-acre park on top of the proposed Transit Center and new public open space at the corner of Howard and Second Streets. Similar to the proposed project, these future projects also would result in an increase in the City's population through the development of housing. These past, present, and reasonably foreseeable future projects would, unlike the proposed project, increase employment. The increase in housing and employment in the Downtown Neighborhoods and Transit Rich Infill Areas are accounted for in ABAG's *Projections 2009*.

Anticipated growth in the citywide network of parks and open space has occurred as a result of the passage of the $185 million 2008 Clean and Safe Neighborhood Parks General Obligation Bond, which focused on the development of new parks in the eastern portions of the City. To continue improvements to the City's parks and open space system, the City's 2012-2021 Capital Plan proposes a $185 million Neighborhood Parks and Open Space General Obligation Bond for issuance in November 2012.[24] Overall, the City's Capital Plan proposes $323 million in investment primarily for neighborhood parks. Development of new and upgraded parks and open space acreage as a result of these bond measures would improve the delivery of recreation programs, facilities, and services to a growing population in the City. For these reasons, the proposed project's contribution to cumulative demand on recreational facilities citywide would not be cumulatively considerable. Therefore, the proposed project's cumulative contribution to significant cumulative impacts on recreational facilities would be less than significant. No mitigation measures are necessary.

[23] Association of Bay Area Governments, *Projections 2009*, p. 92.
[24] City and County of San Francisco, *Capital Plan Fiscal Years 2012-2021, Executive Summary*, pp. 6-7, March 29, 2011. Available online at http://onesanfrancisco.org/wp-content/uploads/Toc-Exec-2012-2021.pdf. Accessed April 25, 2012.

This page is intentionally blank.

K. UTILITIES AND SERVICE SYSTEMS

The Setting discussion describes the existing water, wastewater, and solid waste systems available at the project site, and the Impacts discussion describes the impacts of the proposed project on these systems. This section also considers whether the proposed project in combination with other reasonably foreseeable development projects would contribute to cumulative environmental impacts related to these utilities and service systems.

This section analyzes the proposed project in relation to the capacity of the combined wastewater-stormwater system. Section IV.O, Hydrology and Water Quality, analyzes the proposed project in relation to water quality, drainage, and stormwater management.

The project site is in an area well served by electricity, natural gas, and telecommunications (i.e., telephone and data) systems and would continue to be served under the proposed project. Therefore, these topics are not discussed further in this section. The proposed project's impacts on energy resources are discussed Section IV.Q, Mineral and Energy Resources.

SETTING

WATER SUPPLY

The San Francisco Public Utilities Commission (SFPUC) provides water to approximately 2.5 million people in San Francisco, Santa Clara, Alameda, San Mateo, and Tuolumne Counties.[1] The SFPUC's Regional Water System draws approximately 85 percent of its water from the Upper Tuolumne River Watershed, collected in the Hetch Hetchy Reservoir in Yosemite National Park. The rest of the Regional Water System's water supply is drawn from local surface waters in the Alameda and Peninsula watersheds.[2]

Approximately 97 percent of the water provided to San Francisco is supplied by the SFPUC's Regional Water System.[3] In San Francisco, total consumption and the per capita water use have been on a general decline since the mid-1970s.[4] Factors contributing to these trends include changes to the mix of industrial and commercial businesses in the City, and apparently, changes in plumbing codes and conservation programs in part due to the severe droughts of 1976-77 and

---

1 SFPUC, *2010 Urban Water Management Plan for the City and County of San Francisco*, June 2011, (hereinafter referred to as "2010 UWMP"), p. 7. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

2 2010 UWMP, p. 7.

3 2010 UWMP, p. 31. Groundwater and recycled water make up the remainder of the SFPUC supplies to the City (less than 3 percent).

4 2010 UWMP, p. 33.

1987-92.[5] In-City customers consumed about 71 million gallons per day (mgd) in 2010, but this was lower than expected due to a wet spring and cool summer.[6] About 70 percent of retail demand is for residential users, and 30 percent for businesses.[7] SFPUC forecasts that in-City retail water demand will only slightly increase over the period 2010 through 2035, even though the household population in San Francisco is expected to increase by nearly 12 percent for the same period.[8] The SFPUC anticipates reducing gross per capita consumption due to conservation programs.

The *2010 Urban Water Management Plan for the City and County of San Francisco* (hereinafter referred to as the "2010 UWMP") projects that, during normal precipitation years, the SFPUC will have adequate supplies to meet projected demand.[9] During multiple dry years, however, additional water sources will be required. To address this issue, the SFPUC initiated the multi-year Water System Improvement Program (WSIP) to rebuild and upgrade the water system. After certification of the Final Program EIR in 2008, the SFPUC adopted the Phased Water System Improvement Program option. The SFPUC is currently implementing the WSIP to provide improvements to its water infrastructure. During a multiple dry-year scenario, the SFPUC would rely upon additional conservation efforts, recycled water, and groundwater to meet demand.[10]

WASTEWATER

The project site is served by San Francisco's combined sewer system, which collects sanitary sewage and stormwater in the same sewers and treats the combined wastewater in the same treatment plants. Wastewater from the project site flows to, and is treated at, the Southeast Water Pollution Control Plant (Southeast Plant). During wet weather, the capacity at the Southeast Plant is supplemented by the North Point Wet-Weather Facility and a series of storage/transport boxes[11] located around the perimeter of the City. If wet-weather flows exceed the capacity of the overall system, the excess (primarily stormwater) is discharged from one of 36 combined sewer overflow structures located along the waterfront. In 2010, the SFPUC finalized work on the Sewer System Master Plan (SSMP)[12] to develop a long-term strategy to address the City's sanitary sewage and

[5] 2010 UWMP, p. 33.
[6] 2010 UWMP, p. 34.
[7] 2010 UWMP, p. 34.
[8] 2010 UWMP, p. 35.
[9] 2010 UWMP, p. 67.
[10] 2010 UWMP, pp. 68-69, Table 31, Projected Multiple Dry Year Retail System Supply and Demand Comparison.
[11] The storage/transport boxes provide treatment consisting of settling and screening of floatable materials inside the boxes. This treatment is equivalent to primary treatment at the wastewater treatment plants.
[12] SFPUC, "About the Sewer System Improvement Program." Available online at http://www.sfwater.org/index.aspx?page=117. Accessed April 26, 2012.

stormwater needs. Projects identified in the SSMP will undergo separate CEQA review.[13] Concurrent with this master planning effort, the SFPUC allocated $150 million to an Interim Capital Improvement Program to fund approximately 40 critical projects addressing aging collection, conveyance and treatment infrastructure, odor emission controls, and potential flooding in various parts of the City.

San Francisco's combined sanitary sewage-stormwater system operates under wastewater National Pollutant Discharge Elimination System (NPDES) permits.[14] The 2008 Bayside Permit (NPDES Permit No. CA0037664), issued and enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB) for the Southeast Plant, the North Point Wet-Weather Facility, and the Bayside Wet-Weather Transport/Storage and Diversion Structures, states that the treatment process at these facilities meets the minimum treatment specified by the U.S. Environmental Protection Agency (USEPA) Combined Sewer Overflow Policy I50 Federal Register 18688, as of April 11, 1994. Wastewater flows from the main and peripheral project sites are also governed by the 2008 San Francisco Bay Publicly Owned Treatment Works and Industrial Mercury Watershed Permit (NPDES Permit No. 0038849) that implements the San Francisco Bay Mercury Total Maximum Daily Load Requirements.

SOLID WASTE

Recology (formerly Norcal Waste Systems, Inc.) provides solid waste collection, recycling, and disposal services for residential and commercial garbage and recycling in San Francisco through its subsidiaries San Francisco Recycling and Disposal, Golden Gate Disposal and Recycling, and Sunset Scavenger.

San Francisco uses a three-cart collection program: residents and businesses sort solid waste into recyclables, compostable items such as food scraps and yard trimmings, and garbage. All materials are taken to the San Francisco Solid Waste Transfer and Recycling Center, located at 501 Tunnel Avenue in southeast San Francisco. There, the three waste streams are sorted and bundled for transport to the composting and recycling facilities and the landfill. San Francisco has created a large-scale urban program for collection of compostable materials. Food scraps and other compostable material collected from residences, restaurants, and other businesses are sent to Recology's Jepson-Prairie composting facility, located in Solano County. Food scraps, plant trimmings, soiled paper, and other compostables are turned into a nutrient-rich soil amendment, or compost. Recyclable materials are sent to Recycle Central, located at Pier 96 on San Francisco's southern waterfront, where they are separated into commodities and sold to

[13] San Francisco Public Utilities Commission website, available online at http://www.sfwater.org/index.aspx?page=117, accessed January 22, 2012.

[14] The 2009 Oceanside Permit (NPDES Permit No. CA0037681) is issued and enforced by both the RWQCB and the USEPA since the Oceanside Water Pollution Control Plant discharges through the Southwest Ocean Outfall into federally regulated waters of the Pacific Ocean.

manufacturers that turn the materials into new products. Waste that is not composted or recycled is taken to the Altamont Landfill, which is located east of Livermore in Alameda County.

The Altamont Landfill is a regional landfill that handles residential, commercial, and construction waste. It has a permitted maximum disposal of about 11,500 tons per day and received about 1.29 million tons of waste in 2007 (the most recent year reported by the State).[15] In 2007, the waste contributed by San Francisco (approximately 628,914 tons) represented approximately 49 percent of the total volume of waste received at this facility. The remaining permitted capacity of the landfill is about 45.7 million cubic yards.[16] With this capacity, the landfill can operate until 2025.[17]

In 1988, San Francisco contracted for the disposal of 15 million tons of solid waste at the Altamont Landfill. Through August 1, 2009, the City has used approximately 12.5 million tons of this contract capacity. The City projects that the remaining contract capacity will be reached no sooner than August 2014. On September 10, 2009, the City and County of San Francisco announced that it could award its landfill disposal contract to SF Recycling & Disposal Inc., a subsidiary of Recology. Under this contract, SF Recycling & Disposal would ship solid waste from San Francisco by truck and rail to its Recology Ostrom Road Landfill in Yuba County. The landfill is open to commercial waste haulers and can accept up to 3,000 tons of municipal solid waste per day. The site has an expected closure date of 2066 with a total design capacity of over 41 million cubic yards.[18] The Board of Supervisors could ratify a new agreement, prior to entitlement of the proposed project, that could provide approximately 5 million tons of capacity, which would represent 20 or more years of use beginning in 2014. The City's contract with the Altamont Landfill expires in 2014. After that date, the City could begin using the Ostrom Road Landfill.

Hazardous waste, including hospital, commercial, and household hazardous waste, is handled separately from other solid waste. Recology operates a facility at the San Francisco Dump (Transfer Station) for people to safely dispose of the hazardous waste generated from their homes or businesses.[19]

---

[15] California Department of Resources Recycling and Recovery (CalRecycle), "Facility/Site Summary Details: Altamont Landfill & Resource Recovery (01-AA-0009)" (hereinafter referred to as "Facility/Site Summary Details"). Available online at http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/. Accessed April 25, 2012.

[16] Facility/Site Summary Details.

[17] California Department of Resources Recycling and Recovery (CalRecycle), "Facility/Site Summary Details: Altamont Landfill & Resource Recv`ry (01-AA-0009)." Available online at http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/, accessed April 25, 2012.

[18] Recology web site at http://www.recologyostromroad.com/, accessed April 25, 2012.

[19] Recology, web page, "The San Francisco Dump (Transfer Station)," available at http://sunsetscavenger.com/sfDump.htm, accessed January 8, 2012.

EXISTING UTILITIES ON THE PROJECT SITE

Connections for water and wastewater extend from the project site underground to pipes under Mission Street and Third Street. Connections for electricity, natural gas, and telecommunications extend from the project site underground to the nearest conduits.

REGULATORY FRAMEWORK

Regulatory Framework Regarding Water Supply

The following State and local laws, programs, and policies affect the supply and use of water in San Francisco. No Federal laws apply.

State

Urban Water Management Plan

In 1983, the California Legislature enacted the Urban Water Management Planning Act (California Water Code §§10610 - 10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of reliability in its water service, sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act describes the contents of the Urban Water Management Plan (UWMP) and how urban water suppliers should adopt and implement the plans. The plan must be updated at least every five years on or before December 31 in years ending in five and zero. San Francisco prepared a 2010 UWMP as required by the California Water Code, which was adopted on June 14, 2011.

Local

Water Conservation

San Francisco's Residential Water Conservation Ordinance generally requires a homeowner to install water conservation equipment (such as low-flow showerheads, faucets, and toilets) prior to selling a home or making a major improvement to the home.[20]

In 2008, the City adopted the San Francisco Green Building Ordinance. This requires green building practices and Leadership in Energy and Environmental Design (LEED) certification for new residential and commercial buildings in the City. The Ordinance requires residential

[20] San Francisco Department of Building Inspection, "What You Should Know about San Francisco's Residential Energy and Water Conservation Requirements." Available online at http://www.sfdbi.org/Modules/ShowDocument.aspx?documentid=124. Accessed April 25, 2012.

buildings over 75 feet to be LEED Certified and earn specific credits addressing water efficiency, stormwater management, and construction waste management (designated WEc1.1, WEc3.1, MRc2.1, SSc6.1 and SSc6.2). The water conservation requirements (WEc1.1) seek to reduce the quantity of water used.

Water Recycling for Irrigation and Other Uses

In 1991, the SFPUC sponsored and the San Francisco Board of Supervisors passed Reclaimed Water Use Ordinances[21] generally requiring development projects over 40,000 square feet to build and operate a reclaimed water system within the buildings and a reclaimed water irrigation system for the landscaping.[22]

Non-potable water must be used for soil compaction and dust control activities during project construction as required by Ordinance 175-91.

Regulatory Framework Regarding Wastewater

Federal and State laws and local policies govern water quality protection. Water quality requirements determine the type of wastewater collection and treatment facilities needed to manage pollution. Highlights of the applicable requirements are summarized below.

Federal

The Federal Clean Water Act amendments of 1972 prohibit the discharge of pollutants to navigable waters of the United States from a point source, unless the discharger has an NPDES permit. The USEPA has delegated certain authority to the State of California.

State

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board (SWRCB), which, in turn, delegated certain authority to the several Regional Water Quality Control Boards (Regional Boards) to issue and enforce NPDES permits, as discussed above.

In addition, the SWRCB develops water quality standards and performs other functions to protect California's waters. The Regional Boards carry out the SWRCB regulations and standards, and

[21] San Francisco Public Works Code, Article 22. Available online at http://sfwater.org/modules/showdocument.aspx?documentid=1294. Accessed April 25, 2012.

[22] San Francisco Public Works Code, Article 22, section 1204. The project site is located within the designated recycled water use area as defined in the Reclaimed Water Ordinances 390-91, 391-91, and 393-94. Therefore, installation of recycled water systems for all California-approved recycled water uses is required.

the Regional Boards issue and enforce permits. The RWQCB also implements the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan).

The SWRCB has a Sanitary Sewer Overflow Reduction Program. "A sanitary sewer overflow ('SSO') is any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system."[23] Untreated overflows frequently contain high levels of suspended solids, pathogenic organisms, nutrients, toxic chemicals, oil, grease, and other pollutants. The SWRCB adopted Water Quality Order No. 2006-0003 (Sanitary Sewer Order), which requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans to reduce SSOs. In addition, they must report all SSOs to the SWRCB's online SSO database.

Local

San Francisco Public Utilities Commission Water Pollution Prevention Program

The City has a Water Pollution Prevention Program to avoid and minimize pollutants entering the City's sewer system and storm drains, thereby reducing pollutant loading to San Francisco Bay and the Pacific Ocean.[24] The program includes education components for businesses, residents, and City employees. The program also includes several initiatives that are meant to reduce water pollution, including initiatives to reduce toxic chemicals used for landscaping, reduce dental mercury, reduce fats/oils/greases, minimize construction-related water pollution, minimize stormwater pollution, minimize pet-waste-related water pollution, dispose of medications properly, and support green design and operation measures for businesses and households. Articles 4, 4.1, and 4.2 of the San Francisco Public Works Code contain many components of the program.[25]

The City has been working for many years to reduce fats, oil, and grease in the wastewater stream from commercial and residential kitchens, especially from restaurants. These materials clog pipes and treatment processes. The City has recently adopted a new fats, oil, and grease ordinance, which would strengthen Article 4.1.[26]

Another component of the program is the Stormwater Management Program, which is discussed further in "Regulatory Framework," pp. IV.O.7-IV.O.11 in Section IV.O, Hydrology and Water Quality.

[23] SWRCB web site, http://www.waterboards.ca.gov/water_issues/programs/sso/index.shtml, accessed April 25, 2012.
[24] SFPUC, "Water Pollution Prevention." Available online at http://sfwater.org/index.aspx?page=96. Accessed January 22, 2012.
[25] The San Francisco Public Works Code is available at the San Francisco Public Library and online at http://www.sfdpw.org/index.aspx?page=739, accessed April 25, 2012.
[26] San Francisco Public Works Code.

San Francisco General Plan

The Environmental Protection Element of the *San Francisco General Plan* contains the following policies relating to wastewater facilities:

Objective 3:	Maintain and improve the quality of the Bay, ocean and shoreline areas.
Policy 3.1:	Cooperate with and otherwise support regulatory programs of existing regional, State, and Federal agencies dealing with the Bay, Ocean, and Shorelines.
Policy 3.3:	Implement plans to improve sewage treatment and halt pollution of the Bay and Ocean.

Regulatory Framework Regarding Solid Waste

California Integrated Waste Management Act – Assembly Bill 939

The 1989 California Integrated Waste Management Act (CIWMA) mandated that source reduction be the highest priority waste management strategy, followed by recycling and composting and environmentally safe transformation and land disposal. The law required that each county prepare an Integrated Waste Management Plan. The Act also required that each city prepare a source reduction and recycling element, with a plan for reducing solid waste by 25 percent by 1995 and 50 percent by 2000 using a 1989 baseline. Later revisions required that local jurisdictions and State agencies also achieve 50 percent reduction in solid waste by 2000.

Solid Waste Disposal Measurement Act – Senate Bill 1016

Senate Bill 1016 maintains the 50 percent diversion requirement set forth under the CIWMA, but changes the measurement system to a disposal based system – expressed as the 50 percent Equivalent Per Capita Disposal Target. This per capita disposal target is the amount of disposal a jurisdiction would have had during the base period if it had been exactly at a 50 percent diversion rate. The 50 percent Equivalent Per Capita Disposal Target is calculated by dividing the average of 2003-2006 per capita generation in half. Each jurisdiction has a specific 50 percent Equivalent Per Capita Disposal Target that cannot be compared to other jurisdictions. This disposal target is an indicator or baseline that is compared against the annual per capita disposal rate. This change shifts the focus away from numeric estimates, which are just one indicator to consider, and toward diversion program implementation efforts that are better and more meaningful long-term indicators. The shift in focus from estimated diversion to measured disposal allows jurisdictions to track their programmatic progress more effectively because of the turnaround time for State review of disposal rate summaries – within 6 to 9 months rather than the 18 to 24 months under the former system. In addition, for jurisdictions that already meet the 50 percent diversion rate,

such as San Francisco, annual waste generation studies are no longer required, allowing more resources to be focused on the development or maintenance of waste reduction strategies.

City and County of San Francisco

The City and County of San Francisco has enacted several programs to divert solid waste from the landfill. The Construction and Demolition Debris Recovery Ordinance, adopted in 2006, requires preparation of a waste diversion plan and diversion of 65 percent or more of the construction and demolition debris from disposal in a landfill. The City's Green Building Ordinance, which became effective January 1, 2009, requires that at least 75 percent of a project's construction debris be diverted from the landfill.[27] In June 2009, the Board of Supervisors passed the Mandatory Recycling & Composting Ordinance, which requires all of San Francisco to separate recyclables, compostables, and landfilled trash. The City's Plastic Bag Reduction Ordinance requires the use of compostable plastic, recyclable paper and/or reusable checkout bags by supermarkets and drugstores. The Food Service Waste Reduction Ordinance requires restaurants and food vendors to use food ware that is made of compostable or recyclable material rather than styrofoam. In 2002, the Board of Supervisors set goals of achieving 75 percent diversion by 2010 and zero solid waste by 2020.[28]

IMPACTS

SIGNIFICANCE CRITERIA

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

K.1 Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

K.2 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;

[27] The proposed project would adopt Green Building Specifications that meet or exceed these requirements.

[28] San Francisco Department of the Environment. Available online at http://www.sfenvironment.org/our_programs/program_info.html?ssi=3. Accessed May 16, 2011.

K.3 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;

K.4 Have insufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements;

K.5 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;

K.6 Not be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;

K.7 Not comply with federal, state, and local statutes and regulations related to solid waste.

Using these criteria, this section provides an analysis of the proposed project's impacts on water supply and distribution facilities, wastewater collection and treatment facilities, and solid waste capacity. Regarding stormwater, this section analyzes the proposed project in relation to the capacity of the combined sanitary sewage-stormwater system. Section IV.O, Hydrology and Water Quality, analyzes the proposed project in relation to water quality, drainage, and stormwater management.

PROJECT FEATURES

The project site is currently served by underground water and wastewater from mains located under Mission and Third Streets. The proposed project would use connections to the existing mains under Mission Street and/or Third Streets.

Pursuant to the Stormwater Management Ordinance (SMO), the project sponsor would have to reduce the existing volume and rate of stormwater runoff discharged from the main project site from the two-year, 24-hour design storm by 25 percent. To achieve this, the project sponsor would develop a Stormwater Control Plan that locates and sizes source control and treatment Best Management Practices (BMPs). There would also be maintenance and operation agreements to retain runoff on-site and limit site discharges entering the City's combined stormwater-sewer collection system.[29]

[29] Per the Stormwater Management Ordinance, SFPUC, Urban Watershed Management Program, "Announcement of Stormwater Management Ordinance (SMO)," Ordinance No. 83-10, undated. This ordinance is also discussed in Section IV.O, Hydrology and Water Quality.

IMPACT EVALUATION

Wastewater Treatment

Impact UT-1: The proposed project would not exceed the wastewater treatment requirements of the Regional Water Quality Control Board. *(Less than Significant)* (Criterion K.1)

As explained in the Setting, the project site is served by San Francisco's combined sewer system, which collects sanitary sewage (wastewater) and stormwater in the same sewers and treats the combined wastewater in the same treatment plants. San Francisco's combined stormwater-sewer system operates under wastewater NPDES permits. Project-related wastewater flows would be treated in accordance with the RWQCB-issued NPDES permits prior to discharge into the Bay. All Combined Sewer Overflow discharges are regulated with permits issued by the RWQCB and with the USEPA's National Combined Sewer Overflow Control Policy.

As discussed in the Setting, pp. IV.K.2-IV.K.3, in 2010, the SFPUC finalized work on the SSMP[30] to develop a long-term strategy to address the City's sanitary sewage and stormwater needs. According to the SFPUC's summary report, implementation of the SSMP's recommendations, along with changes in City policies, will effectively address the major existing vulnerabilities of the SFPUC collection system and will address collection system challenges during the SSMP planning period.[31]

The Sewer System Improvement Program Report sets forth the numerous Federal, State, and local treatment requirements that the City's wastewater treatment system must meet.[32] The SSMP is geared toward future compliance with those requirements.

The proposed project is expected to result in an increase in wastewater flows to the City's system. The estimated, future, monthly wastewater generation of the proposed project with the residential flex option would total approximately 2,136,000 gallons per month (rounded).[33] The estimated, future monthly wastewater generation of the proposed project with the office flex option would total approximately 2,282,000 gallons per month (rounded).

---

[30] SFPUC, "About the Sewer System Improvement Program." Available online at http://www.sfwater.org/index.aspx?page=117. Accessed April 26, 2012.

[31] SFPUC, San Francisco Sewer System Master Plan Summary Report Final Draft, p. 3-9 (hereinafter referred to as "2010 SSMP Summary Report"). Available online at http://www.sfwater.org/index.aspx?page=312 and related pages. Accessed April 26, 2012.

[32] SFPUC, Sewer System Improvement Program Report: Draft Report for SFPUC Commission Review, prepared by Wastewater Enterprise Staff, July 27, 2010, revised August 10, 2010, pp. 12-17.

[33] These wastewater generation figures are based on a factor of 95 percent of water usage. The water usage estimates are provided below under Impact UT-4, p. IV.K.15.

The SFPUC work on the SSMP and improvements that would be made under it are based on projections of growth in population and employment. As discussed in Section IV.C, Population and Housing, p. IV.C.11, based on the 2010 U.S. Census, the new residential units proposed by the project represent less than one-half percent (0.004) of the total citywide population growth expected by 2030.[34] The projections in the SSMP take into account projected future development, including projects such as this one.[35]

For the reasons described above, the proposed project would not result in the exceedance of any wastewater treatment requirements, and impacts would be less than significant. No mitigation measures are necessary.

Impact UT-2: The proposed project would not require or result in the construction of new or the expansion of existing water or wastewater treatment facilities, or stormwater drainage facilities, the construction of which could have significant environmental effects. (*Less than Significant*) (Criteria K.2, K.3)

At the project site, the renovation and rehabilitation of the Aronson Building would result in the replacement of existing, old water and wastewater fixtures with new, efficient water and wastewater fixtures. The new construction for the museum and tower would use new, efficient water and wastewater fixtures. Monthly water consumption at the existing Aronson Building is approximately 115,000 gallons (rounded). The maximum estimated future monthly water consumption of the proposed project with the residential flex option would total approximately 2,248,000 gallons per month (rounded).[36] The maximum estimated future monthly water consumption of the proposed project with the office flex option would total approximately 2,403,000 gallons per month (rounded).[37]

Projects seeking certification under LEED, such as the proposed project, must reduce water use by at least 20 percent as a prerequisite for certification. For commercial lavatory faucets, the baseline against which water savings are measured for the LEED 2009 baseline is 0.5 gallon per

[34] ABAG projects that between 2010 and 2030, San Francisco population will increase from 810,000 in 2010 to 934,800 in 2030, a total increase of about 124,800 persons; ABAG Projections 2009, p. 92.

[35] Carollo Engineers, Task 100, Technical Memorandum No. 102, Wastewater Flow and Load Projections, Final Draft, August 2009, p. 102-2.

[36] Broadway Mechanical Contractors, memo on estimated water and gas demand to Steven Hood, Millennium Partners, January 18, 2012. A copy of this communication is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E. For the residential flex option, there would be a net increase above the existing water use at the Aronson Building of approximately 2,134,000 gallons per month.

[37] Broadway Mechanical Contractors, memo on estimated water and gas demand to Steven Hood, Millennium Partners, January 18, 2012. For the office flex option, there would be a net increase of approximately 2,288,000 gallons per month above the existing water use on the project site at the Aronson Building.

minute. This prerequisite applies to interior water use only, but can be coupled with other water credits regarding outdoor water use reductions.[38]

The estimates for project water consumption take into account the various water-saving technologies that are to be incorporated in LEED construction (e.g., installation of low-flow faucets and other water-saving fixtures). The project sponsor would construct the new space to at least LEED Silver standard or the applicable LEED level required by the City, per the San Francisco Building Code.

Generation of wastewater (sanitary sewage) is typically assumed to be about 95 percent of water consumption.[39] Therefore, existing wastewater flows are estimated as approximately 109,000 gallons per month. Future flows are estimated as approximately 2,136,000 gallons per month for the residential flex option and 2,282,000 gallons per month for the office flex option.

The existing Aronson Building is already served by water, wastewater, and storm drainage pipes and connections. As part of the proposed project, these connections may be replaced; however, no major new sewer, stormwater, or water treatment facilities or the expansion of existing treatment facilities would be needed to serve the proposed project. It is anticipated that the water, wastewater, and storm drain connections would be made to the existing facilities under Mission Street and/or Third Street. The existing collection and conveyance facilities under Mission Street and/or Third Street would not need to be altered to accommodate the project-related wastewater and stormwater flows.

The City's combined stormwater-sewer system accommodates stormwater runoff volumes in addition to wastewater volumes, which contribute greatly to the total volume in the system. Since the project site is nearly covered with impervious surfaces, it is expected that future stormwater runoff volumes would be similar to existing conditions. The SMO was created to help minimize stormwater runoff to the combined sewer and separate storm sewer system collection systems. Compliance with the SMO in general would require the project to reduce the existing volume and rate of stormwater runoff discharged from the project site from the two-year, 24-hour design storm by 25 percent.

To achieve this, the project sponsor would develop a stormwater control plan that locates and sizes source control and treatment BMPs, along with maintenance and operation agreements that retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system.

---

[38] LEED user web site, "NC 2009 WEp1: Water Use Reduction -- 20% Reduction." Available online at http://www.leeduser.com/credit/NC-2009/WEp1. Accessed January 8, 2012.

[39] See e.g., *Candlestick Point- Hunters Point Shipyard Phase II Draft Environmental Impact Report*, p. III.Q-27.

This, in turn, would limit the incremental demand on both the collection system and wastewater facilities resulting from stormwater discharges, and minimize the potential need for additional treatment capacity. The precise type, size, and routing of stormwater BMPs have not yet been finalized. Example BMPs for use in urban San Francisco include flow-through planters, swales and rain gardens.[40] Such BMPs capture, filter, and slow stormwater runoff, thus improving stormwater quality and reducing the quantity of runoff. A more detailed hydrologic analysis would be completed during the preparation of the stormwater control plan and submitted for approval to the SFPUC with the final construction drawings.

Therefore, the proposed project would have less-than-significant impacts related to water, wastewater treatment, and stormwater drainage service and facilities, and no mitigation measures are necessary.

Impact UT-3: The proposed project would not result in a determination that there is insufficient capacity in the wastewater treatment system to serve the proposed project's estimated demand in addition to its existing demand. (*Less than Significant*) (Criterion K.5)

As explained under Impact UT-1, the proposed project's incremental wastewater generation can be accommodated by the City's wastewater collection and treatment system. In 2010, the SFPUC finalized work on the SSMP to develop a long-term strategy to address the City's sanitary sewage and stormwater needs. According to the SFPUC's summary report, implementation of the SSMP's recommendations, along with changes in City policies, will effectively address the major existing vulnerabilities of the SFPUC collection system and will address collection system challenges during the SSMP planning period. Therefore, the proposed project would not result in a determination that there is insufficient capacity in the wastewater treatment system to serve it. Impacts would be less than significant, and no mitigation measures are necessary.

Impact C-UT-1: Construction of the proposed project, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact regarding the treatment of stormwater runoff or capacity of wastewater treatment facilities or stormwater drainage facilities. (*Less than Significant*)

The proposed project, along with the reasonably foreseeable cumulative development projects in in the City, would increase the demand on the City's combined wastewater and stormwater treatment facilities, but not exceed capacity projected by agencies responsible for management of those services and utilities. The proposed project's contribution to increased impervious service

[40] SFPUC, San Francisco Stormwater Design Guidelines (2009), p. 26.

area is minimal and would not substantially affect stormwater or wastewater facilities. As with the proposed project, reasonably forseeable cumulative projects would also need to meet the wastewater pre-treatment requirements of the SFPUC and RWQCB. Therefore, the cumulatively considerable contribution to cumulative impacts on the treatment of and capacity of stormwater and wastewater treatment facilities would be less than significant. No mitigation measures are necessary.

Water Supply

Impact UT-4: The proposed project would be adequately served by existing water entitlements and water supply resources, and would not require new or expanded water supply resources or entitlements. (*Less than Significant*) (Criterion K.4)

As discussed under Impact UT-2, pp. IV.K.12-IV.K.14, the monthly water consumption of the existing Aronson Building is approximately 115,000 gallons per month. Estimated future water consumption of the residential flex option would result in a net increase of approximately 2,134,000 gallons per month.[41] Estimated future water consumption of the office flex option would result in a net increase of approximately 2,288,000 gallons per month. The projected consumption takes into account the various water-saving technologies that are to be incorporated in LEED construction (e.g., installation of low-flow faucets and other water-saving fixtures). For the residential flex option, the equivalent in mgd is approximately 0.07 mgd (rounded). For the office flex option, the equivalent in mgd is approximately 0.08 mgd (rounded). To put that number in context, in-City retail water demand was 71.4 mgd in 2010, and is forecasted to be 73.7 mgd, with conservation.[42]

The 2010 UWMP projects that during normal precipitation years, the SFPUC will have adequate supplies to meet projected demand, which would include demand generated by the proposed project.[43] The SFPUC forecasts that in-City retail water demand will only slightly increase over the period 2010 through 2035, even though the household population in San Francisco is expected to increase by nearly 12 percent for the same period.[44] The SFPUC anticipates reducing gross per capita consumption due to conservation programs. During multiple dry years, however, additional water sources will be required. To address this issue, the SFPUC initiated the multi-year WSIP to rebuild and upgrade the water system. Through the WSIP, the SFPUC will rely

[41] Net means total future consumption minus existing consumption at the Aronson Building. Net number is rounded.
[42] 2010 UWMP, p. 36, Table 12, San Francisco Retail Water Demands.
[43] Email communications between D. Dwyer, San Francisco Planning Department and M. Petrick, SFPUC, May 22, 2012, January 14, 2010, and January 10, 2010. A copy of this correspondence is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.
[44] 2010 UWMP, p. 35.

upon additional conservation efforts, recycled water, and groundwater to meet demand during a multiple dry-year scenario to meet demand. The SFPUC is currently implementing the WSIP to provide improvements to its water infrastructure. Therefore, through the WSIP, with its associated water infrastructure improvements, the proposed project is expected to be adequately serviced by existing water supply resources, including the SFPUC's planned reliance on recycled water, groundwater, and additional conservation measures. This impact with respect to water supply would be less than significant, and no mitigation measures are necessary.

Impact C-UT-2: Construction of the proposed project, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact on water supply. (*Less than Significant*)

Cumulative development in the project area and elsewhere in the City would incrementally increase demand for water. As explained above, through the WSIP and its conservation efforts and associated water infrastructure improvements, the proposed project and other reasonably foreseeable development in the City are expected to be adequately served by existing water supply resources anticipated in the 2010 UWMP. New or expanded water facilities would not be required as a result of construction of the proposed project. Therefore, the proposed project's contribution to significant cumulative impacts would not adversely affect the City's water supply and would not be cumulatively considerable. This impact would be less than significant, and no mitigation measures are necessary.

Solid Waste

Impact UT-5: The proposed project would increase the amount of solid waste generated on the project site, but would be adequately served by the City's landfill and would comply with Federal, State, and local statutes and regulations related to solid waste. (*Less than Significant*) (Criteria K.6, K.7)

Under the CIWMA, San Francisco was 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 Integrated Waste Management Board. The City was required to reduce the amount of waste sent to landfill by 50 percent by 2000. The City met the 50 percent reduction goal in 2000 by recycling, composting, reuse, and other efforts, and achieved 70 percent reduction in 2006. The San Francisco Department of the Environment's Strategic Plan 2010-2012 identified the diversion rate for 2007 at 72 percent.[45] San Francisco surpassed its goal to divert 75 percent of its waste by 2010, by achieving a 77 percent diversion. San Francisco seeks to divert all waste by 2020.

[45] San Francisco Department of the Environment, *Strategic Plan 2010 -2012*, p. 15.

Under Senate Bill 1016 Equivalent Per Capita Disposal Target, in 2008 the target disposal rate for San Francisco residents and employees was 6.6 pounds/resident/day and 10.6 pounds/employee/day. Both of these targeted disposal rates were met in 2009 (the most recent year reported), with San Francisco residents generating about 3.1 pounds/resident/day and employed persons in San Francisco generating about 4.8 pounds/employee/day.[46]

The Altamont Landfill has a permitted maximum disposal of about 11,150 tons per day. This landfill is projected to have sufficient capacity to operate until at least 2025, depending on waste flows and incorporation of citywide waste reduction measures. Therefore, any increase in solid waste from implementation of the proposed project could be accommodated by the Altamont Landfill's existing permitted capacities, and this would constitute a less-than-significant impact.

The City's Green Building Ordinance, which became effective January 1, 2009, would require that at least 75 percent of the project's construction debris be diverted from the landfill. To comply with these requirements and assist in achieving the sustainability goals for the proposed project, a Waste Diversion Plan to divert 75 percent of the construction debris from landfills would be developed as part of the proposed project's construction management program. Demolition debris recovery would allow for the reuse and recycling of the wood, concrete, metals, and other materials. Similar efforts would be made for diversion of construction demolition and debris associated with the interior renovation of the Aronson Building.

The proposed project would be required to separate recyclable and compostable materials from the garbage, and this requirement would reduce the amount of materials sent from the proposed project to landfills. Given the above, the effects of solid waste associated with the construction and operation of the proposed project would not substantially affect the projected life of the Altamont Landfill or the Ostrom Road Landfill. The proposed project would be adequately served by landfills with sufficient capacity to accommodate the proposed project's solid waste disposal needs. The proposed project would result in a less-than-significant impact on the disposal capacity of the identified landfills. No mitigation measures are necessary.

Impact C-UT-3: Construction of the proposed project, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact on solid waste disposal facilities. (*Less than Significant*)

Cumulatively, demolition for, and construction and operation of the proposed project in combination with anticipated future development within the City would contribute to impacts on solid waste disposal facilities. Implementation of State requirements for waste diversion, as well as the City's Green Building Ordinance and other goals for waste diversion, would minimize the

[46] CalRecycle, "Jurisdiction Diversion/Disposal Rate Summary." Available online at http://www.calrecycle.ca.gov/LGCentral/Tools/MARS/DrmcMain.asp?VW=Disposal. Accessed May 16, 2011.

project's contribution to cumulative impacts on solid waste disposal facilities, and impacts would not be cumulatively considerable. The requirements would apply to other cumulative development projects, as well. Therefore, the project's contribution to significant cumulative impacts on solid waste disposal facilities would not be cumulatively considerable. This impact would be less than significant. No mitigation measures are necessary.

L. PUBLIC SERVICES

This section of the EIR discusses the topics of police protection, fire protection and emergency medical services, public school facilities, and public libraries. The topic of recreation and park facilities serving the project site is discussed in Section IV.J, Recreation.

The Setting discussion describes the existing baseline conditions for police protection, fire protection, public school facilities, and public libraries serving the project site. The Impacts discussion addresses the changes in demand for these services and facilities that would occur if the proposed project is implemented and whether new or expanded services would be needed as a result. The Impacts discussion also considers whether the proposed project in combination with other reasonably foreseeable development projects would contribute to cumulative environmental impacts related to these public services.

SETTING

POLICE

The San Francisco Police Department (SFPD), headquartered in the Hall of Justice at 850 Bryant Street, provides public safety services in the City and County of San Francisco. The SFPD consists of four bureaus and ten districts (two areas divided into five districts each) located throughout the City. The project site, located in the southern part of the Financial District neighborhood, is within the SFPD's Southern District, which covers about 6.5 percent of the City's land area.

The Southern District is headquartered at the Hall of Justice[1] and includes the South of Market area, Rincon Hill, South Beach, North Mission Bay, and a portion of the Financial District neighborhoods in San Francisco, all which are located south of Market Street and north of the Mission District and China Basin Channel. Southern District personnel include district command staff, administrative officers, and patrol officers. In total, there were 155 sworn officers at the beginning of 2011.[2] The Southern District receives an average of 2,688 calls for service per week, which are dispatched from the City of San Francisco Emergency Communication Division.

[1] Public Safety Strategies Group, *San Francisco Police Department District Station Boundaries Analysis–Final Report*, May 13, 2008 (hereinafter referred to as "*District Boundaries Analysis*"), p. 28. Available online at http://sf-police.org/Modules/ShowDocument.aspx?documentid=14684. Accessed April 25, 2012.

[2] *District Boundaries Analysis*, p. 28.

The SFPD does not have an adopted standard for the ratio of officers to population or developed acreage, and bases its staffing levels on the number of service calls and crime incidents.[3] The SFPD has 2,283 sworn police officers as of 2011.[4]

According to the SFPD Crime Maps, there were about 326 crimes reported in the 0.2-mile radius around the project site for the first three months of 2011. Of these, the most frequent crimes were theft and assault.

FIRE AND EMERGENCY MEDICAL SERVICES

The San Francisco Fire Department (SFFD) is responsible for protecting life and property throughout San Francisco from fires, natural disasters, and hazardous materials incidents.[5] The SFFD also provides emergency medical services in the City, including basic life support and advanced life support services. In addition, several privately operated ambulance companies are authorized to provide basic and advanced life support services. Water supply for fire suppression in San Francisco is provided mainly from the potable supply but is augmented on the east side of San Francisco in the project vicinity by an auxiliary water supply system.

As of 2011, the SFFD has a staff of 1,533 uniformed members and 127 civilians. The daily operational strength is a minimum of approximately 295 staff members citywide.[6] The SFFD operates 48 stations throughout the City. The department's resources include 42 engine companies, 19 truck companies, 2 heavy rescue squads, 2 fireboats, and multiple special purpose units. The SFFD has two main divisions: Division 2 (four battalions), and Division 3 (five battalions).

The project site is located within the Division 3 service area (Battalion 3). Division 3 is comprised of the South of Market area and runs through the southwestern boundaries of the City, up to the southern border of the City. The Division 3 service area encompasses all types of residential and commercial buildings, including high-rise buildings, underground construction, wood-frame residential structures in densely populated neighborhoods, and the City's only heavy concentration of industrial uses. In addition, the responsibilities of Division 3 include the main

[3] The San Francisco City Charter, Section 4.127, states that the City is to maintain a staffing level of a minimum of 1,971 sworn officers.

[4] Andray Chak, Sergeant, Public Information Officer, personal communication with Turnstone Consulting, May 11, 2011. A copy of this record is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[5] The mission of the Fire Department is stated on the City and County of San Francisco Fire Department website, available online at http://www.sf-fire.org/, accessed April 25, 2012. The mission statement also includes fire prevention education and goals for the work environment.

[6] Rhab Boughn, Compliance and Public Records Officer, San Francisco Fire Department, personal communication with Turnstone Consulting, May 12, 2011 (hereinafter referred to as "Boughn, personal communication"). A copy of this record is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

transportation facilities in the City (BART, San Francisco International Airport, Muni) and an extended area of port facilities.[7]

The project site is within the First Alarm area for Station No. 1, located at 676 Howard Street, 0.2 mile southeast of the project site. Station No. 1 is staffed by 13 firefighters and houses 3 vehicles: 1 truck, 1 engine, and 1 rescue squad.[8] The San Francisco Museum of Modern Art (SFMOMA) Expansion Project was certified on November 10, 2011,[9] and the Planning Commission approved the entitlements for this project on February 2, 2012.[10] The Fire Department plans to replace this station with a new Station No. 1 at 935 Folsom Street; the existing station would not be demolished until the new one is built. The proposed new fire station would have the same staffing levels and equipment as the current Station No. 1. Construction of the proposed new Station No. 1 is expected to begin in 2013 and would take a total of about 12 months to complete.[11]

Fire stations are strategically located to allow personnel to reach emergencies in the surrounding area quickly. In San Francisco, response times are calculated from the time the dispatch is received and acknowledged at the station to the time the responding unit informs dispatch that it is at the scene. The State of California target response time goal for Code 3 (life-threatening fire and medical emergencies) calls is 5 minutes. Code 3 calls are the highest response priority.[12]

San Francisco's objective is to respond to the scene of high-priority medical emergencies (Code 3 calls) within 6.5 minutes of receiving a 911 call, 90 percent of the time. The 6.5-minute goal includes 2 minutes for dispatch and 4.5 minutes for the fire engine or ambulance to arrive. This standard was adopted in 2004 by the San Francisco Emergency Medical Services Agency under the Department of Public Health. A 2009 report by the San Francisco Fire Commission noted

---

[7] The roles and responsibilities of Division 3 include command and control, fire suppression, emergency medical services, disaster operations, mitigation of hazardous materials, weapons of mass destruction, and mass casualty incidents. Fire prevention responsibilities consist of planning and inspections of buildings, fire protection devices, and water supplies.

[8] Boughn, personal communication.

[9] San Francisco Planning Department, *San Francisco Museum of Modern Art Expansion / Fire Station Relocation and Housing Project Final Environmental Impact Report*, November 10, 2011.

[10] San Francisco Planning Commission Motion No. 18536, approved on February 2, 2012.

[11] "Supervisors Reject Roadblock to SFMOMA Expansion," San Francisco Chronicle, January 10, 2012, available online at http://blog.sfgate.com/cityinsider/2012/01/10/supervisors-reject-roadblock-to-sfmoma-expansion/, accessed April 25, 2012; "Planners OK SFMOMA's Expansion Impact Report," Stephanie Lee, San Francisco Chronicle, November 11, 2011, available online at http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2011/11/10/BAIO1LT8J0.DTL, accessed April 25, 2012; SFMOMA website, About the Project, available online at http://www.sfmoma.org/our_expansion/expansion_project, accessed April 25, 2012.

[12] Office of the Controller, City and County of San Francisco, A Review of the San Francisco Fire-EMS System, April 2004, Appendix B. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

that the response time for Emergency Medical Care (called Advanced Life Support by the San Francisco Fire Department) is 4 minutes 40 seconds,[13] which indicates that SFFD is meeting both the City and State standards.

SCHOOLS

Existing School Facilities

The San Francisco Unified School District (SFUSD) oversees the public school system in San Francisco (kindergarten through grade 12) and has 37 preschools, 64 elementary schools, 15 middle schools, and 19 high schools. Based on data for the 2008–2009 school year, there are approximately 56,000 students currently attending public schools in San Francisco, about 1,500 of whom are enrolled in preschool. Approximately 20,000 students, 26 percent of the total student population in San Francisco, attend local private schools. From 1999 to 2008, student enrollment in the SFUSD declined by approximately 0.1 percent annually. From the 2007-2008 academic year to present, enrollment has stabilized at around 55,150 students.[14]

Preschools near the project site include the Bessie Carmichael Pre-kindergarten at 45 Cleveland Street, 0.9 mile southwest of the project site; the Gordon J. Lau Pre-kindergarten at 950 Clay Street, 0.9 mile away to the northwest; the Commodore Stockton Early Education School at 1 Trenton Street, 0.9 mile to the north; and the Tenderloin Early Education School at 627 Turk Street, 1.1 miles to the west.

The proposed project is in the attendance area for the Bessie Carmichael Elementary School at 55 Sherman Street, 0.7 mile from the project site.[15] The Chinese Education Center Elementary School, at 657 Merchant Street, is 0.7 mile to the north. The Gordon Lau Elementary School, at 950 Clay Street, is 0.9 mile to the northwest, and the Tenderloin Community Elementary School, at 627 Turk Street, is 1.1 miles to the west. The middle school closest to the project site is Francisco Middle School at 2190 Powell Street, 1.5 miles to the north. The International Studies Academy High School at 693 Vermont Street, 2.2 miles to the south, and Mission High School at 3750 18th Street, 2.4 miles to the southwest, are the closest high schools.

---

[13] This is the 90th percentile response time, the amount of time 9 out of 10 emergency medical teams arrive, which is the industry standard measurement. Fire Commission Response to Grand Jury Report, September 18, 2009. Available online at http://www.sf-fire.org/index.aspx?page=827. Accessed January 16, 2012.

[14] California Department of Education, DataQuest. Available online at http://data1.cde.ca.gov/dataquest/. Accessed January 29, 2012.

[15] Parents are permitted to designate which three pre-kindergarten programs they would prefer, and students are assigned based on eligibility and when openings are available. For elementary schools, a lottery is used to assign students. The lottery gives some weight to the attendance area in which the student resides. Available online at http://www.sfusd.edu/en/enroll-in-sfusd-schools/enroll-for-next-year/overview/frequently-asked-questions.html. Accessed April 25, 2012. Middle school and high school attendance is determined by the elementary school attended.

SFUSD has capacity for approximately 64,000 students in existing facilities. Although neighborhoods with many school-age children generate a proportionally higher level of demand for nearby schools, SFUSD assigns students based on a lottery system.[16]

Since student enrollment overall has been declining, SFUSD has been closing schools. SFUSD has focused on replacing older schools and modernizing facilities. The SFUSD Capital Plan identifies a range of physical improvements necessary to modernize existing facilities, such as providing Americans with Disabilities Act-compliant access, upgrading science and computer labs, and expanding arts facilities.

LIBRARIES

The San Francisco Public Library operates the Main Library at Civic Center, at 100 Larkin Street, and 28 neighborhood branches throughout San Francisco. Community-based branch libraries, as well as the Main Library, provide reading rooms, book lending, information services, access to technology, and library-sponsored public programs. Public libraries near the proposed project are the Chinatown Branch at 1135 Powell Street, 1 mile away; the Main Library, 1.1 miles away; and the Mission Bay Branch at 960 4th Street, 1.3 miles away.

In 1994, San Francisco voters passed Proposition E, a Charter amendment that created the Library Preservation Fund, which provided library services and materials, and aids in the operation of library facilities. Proposition E requires the City to maintain funding for the San Francisco Public Library at a level no lower than the amount it spent during the 1992–1993 fiscal year. Voters renewed the Library Preservation Fund in November 2007 (Proposition D).

Branch Library Improvement Program

The Branch Library Improvement Program resulted from a bond measure passed in November 2000 to provide $106 million in funding to upgrade San Francisco's branch library system, and Proposition D, which passed in November 2007, authorizing additional funding to improve the branches. These funds were used to establish the Mission Bay Branch, which opened in February 2009.

[16] The lottery system distributes students to facilities that have sufficient capacity. In March 2010, the prior lottery system, which emphasized diversity, was altered to create a hybrid system that placed more weight on the test scores in a student's census tract and the student's proximity to a school, granting children in low-scoring tracts and children near a given school preferential status in the lottery system over other students. Jill Tucker, *San Francisco Chronicle*, "S.F. Adopts New School Assignment System," March 10, 2010. Available online at http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/03/10/MNKM1CD8MJ.DTL&type=education. Accessed April 25, 2012.

REGULATORY FRAMEWORK

Police

The Community Facilities Element of the *San Francisco General Plan* establishes objectives, policies, and criteria for meeting San Francisco's long-range police facility requirements, including distribution, location, design, and use of police facilities. The following objectives and policies are relevant to the proposed project:

Objective 1:	Distribute, locate, and design police facilities in a manner that will enhance the effective, efficient and responsive performance of police functions.
Policy 1.1:	Locate police functions that are best conducted on a centralized basis in a police headquarters building.
Policy 1.2:	Provide the number of district stations that balance service effectiveness with community desires for neighborhood police facilities.

Fire and Emergency Medical Services

State

California Fire Code

State fire regulations are set forth in Sections 13000 *et seq*. of the California Health and Safety Code, which include regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices (such as extinguishers and smoke alarms, high-rise building and child care facility standards), and fire suppression training.

Local

San Francisco Fire Code

The San Francisco Fire Code incorporates by reference the 2010 California Fire Code (Title 24, Cal. Code Regs, Part 9), with certain local amendments. The San Francisco Fire Code was revised in 2010 to regulate and govern the safeguarding of life and property from fire and explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises; to provide for the issuance of permits, inspections, and other SFFD services; and to assess and collect fees for those permits, inspections, and services. The SFFD reviews building

plans to ensure that fire and life safety are provided and maintained in the buildings that fall under its jurisdiction.[17]

In coordination with the San Francisco Department of Building Inspection, the SFFD conducts plan checks to ensure that all structures, occupancies, and systems listed above are designed in accordance with the San Francisco Building Code.

Section 511 (Local Fire Safety Feature Requirements) of the San Francisco Fire Code requires that buildings 200 feet or more in height must provide at least one elevator approved by the Fire Department for firefighter use under fire conditions. The section also requires that buildings with floors used for human occupancy located 75 feet above the lowest level of Fire Department vehicle access (usually 75 feet above the street) have an air replenishment system so that firefighters can refill air bottles for their self-contained breathing apparatus. The system must be tested and maintained pursuant to the Fire Department Administration Bulletin 5.07.

Schools

State

The major source of school funding for construction and modernization was the State School Construction Program until the passage of the Leroy F. Greene School Facilities Act, or Senate Bill (SB) 50, and Proposition 1A, both of which passed on November 3, 1998. SB 50 and Proposition 1A provided a comprehensive school facilities financing and reform program, which authorized a $9.2 billion school facilities bond issue. The provisions of SB 50 prohibit local agencies from denying land use approvals on the basis that school facilities are inadequate, and establish a school facility fee cap for legislative actions (e.g., general plan amendments, specific plan adoption, zoning plan amendments). According to Government Code Section 65996, the development fees authorized by SB 50 are deemed to be full and complete school facilities mitigation. The legislation also recognized the need for the fee to be adjusted periodically to keep pace with inflation. Local jurisdictions are further precluded from imposing school-enrollment-related mitigation beyond the development impact fees. These provisions are in effect and will remain in place as long as subsequent State bonds are approved and available. As a result of this legislation, school districts would continue to levy a school fee under existing statutes (Government Code Sections 65995, 65995.5, and 65995.7).

[17] SFFD plan review applies to all of the following occupancy types: assembly occupancies (including restaurants and other gathering places for 50 or more occupants); educational occupancies (including commercial day care facilities); hazardous occupancies (including repair garages, body shops, fuel storage, and emergency generator installation); storage occupancies where potential exists for high-piled storage as defined by the Fire Code; institutional occupancies; high-rise buildings of all occupancies; residential occupancies, such as hotels, motels, lodging houses, residential care facilities, apartment houses, small- and large-family day care homes, and R-1 artisan buildings (excluding minor residential repairs such as kitchen and bath remodeling and dry rot repair).

Local

The SFUSD began collecting State-authorized school impact fees in 1987. These fees are collected to mitigate impacts associated with enrollment growth (e.g., enrollment growth from new residential development). The SFUSD collects fees for all construction and building permits issued within the City. Developer fee revenues are used, in conjunction with other SFUSD funds, to support efforts to complete capital improvement projects. Development impact fees are collected when building permits are issued and are based on the type of land use and its size, rather than the anticipated number of new students that may be generated. The current fees applicable to the proposed project are $2.24 per square foot of space for residential development, $0.27 per square foot of covered and enclosed space for commercial/industrial development applicable to the "office" category, and $0.18 per square foot of covered and enclosed space for commercial/industrial development applicable to the "retail and services" land use category.[18]

Libraries

San Francisco General Plan

The Community Facilities Element of the *San Francisco General Plan* establishes objectives, policies, and criteria for meeting San Francisco's long-range facility requirements, including the distribution, location, design, and use of library facilities. The Element's stated goal is to develop a public library system in San Francisco which will make adequate and efficient library service freely available to everyone within the City, and which will be in harmony with related public service facilities and with all other features and facilities of land development and transportation provided for in other sections of the *General Plan*.

San Francisco Public Library Strategic Plan (2003–2006)

The *San Francisco Public Library Strategic Plan* was adopted in 2003 and is the library's guiding policy and planning document. The *Strategic Plan* does not set a standard for library service, but provides every library with a unifying organizational vision and systemwide goals. These goals are broad and flexible so that services can be tailored to the unique needs of each neighborhood.

[18] San Francisco Unified School District, *SB 1693 Annual and Five Year Reports*, November 26, 2007. Telephone conversation with Turnstone Consulting and SFUSD employee, Cristina Mariscal, April 18, 2012. A copy of this record is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

IMPACTS

SIGNIFICANCE CRITERIA

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

L.1 Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services.

PROJECT FEATURES

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower that would be adjacent to and physically connected to the existing 10-story, 154-foot-tall Aronson Building, which would be rehabilitated. In addition, the existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a new 15-foot-tall solarium would be constructed on the roof of the Aronson Building, resulting in an overall building height of 159 feet. The overall project would contain up to 215 residential units, seven floors of flex space (residential or office use) in the Aronson Building, space for The Mexican Museum, a ground-floor retail/restaurant use, and associated building services.

As described under "Project Features" in Section IV.C, Population and Housing, p. IV.C.9, the proposed project would introduce approximately 435 to 490 residents to the project site, depending on whether the office flex option or the residential flex option is constructed. The proposed new residential uses would displace a portion of the existing on-site employment. Under the proposed project, between approximately 100 (under the residential flex option) to 318 on-site employees (under the office flex option) are anticipated, resulting in a net decrease of between approximately 135 (under the office flex option) to approximately 353 (under the residential flex option) employees. Since the residential flex option, which would add up to 490 residents to the project site, would have the greater environmental impact on public services, the impact evaluation below analyzes that option as the more conservative approach.

IMPACT EVALUATION

Impact PS-1: The proposed project would not increase demand for public services to the extent that new facilities would have to be constructed or existing facilities altered in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as police protection, fire protection and emergency services, schools, or libraries. (*Less than Significant*) (Criterion L.1)

Police

Impacts on police protection services are considered significant if an increase in population would result in inadequate staffing levels (as measured by the ability of the SFPD to respond to call loads) or if increased demand for services would require the construction or expansion of new or altered facilities that might have an adverse physical effect on the environment. The proposed project would be constructed in a fully developed area of San Francisco. The residential population of the Southern District was 24,157 in 2008.[19] The proposed project would add up to 490 residents to the project site, which would increase the number of people residing in the Southern District by about 2 percent; the number of employees at the project site would be reduced.

According to the SFPD, current staffing levels are adequate to meet the needs of the proposed project. The proposed project would result in increased activities at the site and could cause a slight increase in the demand for police services. The proposed project would not require construction of new police facilities nor would it affect the SFPD's ability to meet its response time goals.[20] Therefore, this impact would be less than significant, and no mitigation measures are necessary.

Fire and Emergency Medical Services

The proposed project would include the construction of a high-rise building that would be subject to current State and local regulations governing fire and life safety in high-rise construction. In addition, as part of the project, the Aronson Building would be seismically upgraded[21] and completely sprinklered. The SFFD would review building plans to ensure that adequate fire and

[19] *District Boundaries Analysis*, p. 28.

[20] Ivan Sequeria, Press Information Officer, San Francisco Police Department, personal communication with Turnstone Consulting, May 12, 2011. A copy of this record is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[21] In addition, the existing fire escape stairs and landings would be removed to return the building to its original composition, with impacted materials and cornice line openings repaired to their original appearance. Signage and lighting would be designed to be compatible with the historic façades and in accordance with applicable guidelines.

life safety measures are provided, including review of emergency access and egress; sprinkler systems; fire-rated design, construction, and materials; restrictions on occupant loads; emergency lighting; smoke alarms; and mechanical smoke control and emergency notification systems.

The SFFD does not anticipate that the incremental change in demand for services from the proposed project would degrade service levels below adopted performance objectives, nor would it require new fire protection service facilities or emergency medical response services beyond those now provided and planned for, because the proposed project would not add considerably to the existing SFFD duties in this area.[22]

The existing Fire Station No. 1 at 676 Howard Street, is proposed to be closed as part of the SFMOMA Expansion Project, and a new Fire Station No. 1would be constructed at 935 Folsom Street to replace it.[23] Like the existing station, the new station would be equipped with 1 engine, 1 fire truck, and 1 rescue squad, and staffed with 13 firefighters.

Thus, the proposed project's impacts on fire protection and emergency medical services would be less than significant, and no mitigation measures are necessary.

Schools

The proposed project would add up to 215 residential units and up to approximately 490 residents to the project site. The SFUSD employs a student generation rate of 0.203 students per new housing unit for planning purposes.[24] Thus, the proposed project would be expected to increase the number of school-age children by up to 44, one of whom is assumed to be a preschool student. While 26 percent of the total school-age children in San Francisco attend private schools, this analysis conservatively assumes that 100 percent of the school-age children associated with the proposed project would attend SFUSD schools.

Enrollment in the SFUSD has declined for many years, stabilizing in 2008, and is predicted to grow in coming years. The number of elementary school students is expected to rise 11 percent from 2008 to 2013, from 25,000 to 27,600.[25] Middle school enrollment is not expected to grow

[22] Boughn, personal communication.

[23] The Final EIR for the SFMOMA Expansion / Fire Station Location and Housing Project, available at the Planning Department, Case Nos. 2009.0291E and 2010.0275E, and available online at http://tinyurl.com/meacases. Accessed on April 25, 2012.

[24] San Francisco, *Eastern Neighborhoods Community Rezoning and Area Plans Final Environmental Impact Report*, August 2008, Initial Study, p. 42. This is lower than the rate used by the California Department of Education, as San Francisco is more urbanized and has fewer children than most communities statewide. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2004.0160E.

[25] SFUSD, Capital Plan for Fiscal Years 2010-2019, p. 19. Available online at http://www.sfusd.edu/en/assets/sfusd-staff/about-SFUSD/files/capital-plan-final-2010-2019.pdf. Accessed April 25, 2012.

during that five-year timeframe, and high school enrollment is expected to continue declining, from 19,696 in 2008 to 18,396 in 2013. SFUSD had about 55,700 students in 2009, with a physical capacity for about 64,000.[26] Thus, even with increasing enrollment, SFUSD would not need to alter existing facilities or construct new facilities as a result of the expected additional 44 students generated by the proposed project. Therefore, the proposed project would have a less-than-significant impact on schools, and no mitigation measures are necessary.

Libraries

The existing library branches near the project site, the Chinatown Branch, the Main Library, and the Mission Bay Branch, would be able to meet the demand for library services generated by the up to 490 additional residents in the proposed project, and the proposed project would not require construction of new or expanded library facilities beyond those already proposed or under construction under the Branch Library Improvement Program.

Thus, the new, existing, and rebuilt San Francisco Public Library branches could accommodate increased demand from the proposed project, and no additional library facilities would be required. Impacts on library services would be less than significant, and no mitigation measures are necessary.

Impact C-PS-1: The proposed project, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to significant adverse cumulative impacts that would result in a need for construction of new or physically altered facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any public services, including police protection, fire protection and emergency services, schools, and libraries. (*Less than Significant*)

The proposed project's contribution to cumulative public services impacts was analyzed in combination with reasonably foreseeable projects, such as development anticipated under the draft *Transit Center District Plan* and the *Treasure Island/Yerba Buena Island Redevelopment Plan*, and in relation to anticipated citywide growth estimates that are consistent with local growth projections.

Police

The proposed project would add to the demand for police services in the Southern District, but the cumulative effect with the reasonably foreseeable development projects in the project's

[26] Including charter schools. SFUSD, School Site List & Summary- Student Enrollment [Most Current], version 2.1, October 7, 2009. Available online at http://orb.sfusd.edu/schmisc/ssls/SFUSD_SSLS.pdf, accessed April 25, 2012.

service area would not be significant. The SFPD has not identified a citywide service gap. The increase in anticipated residents as a result of the proposed project and reasonably foreseeable projects would not be beyond levels anticipated and planned for by the SFPD. Thus, the cumulatively considerable contribution to cumulative impacts of the proposed project on police services would not be significant. Thus, cumulative impacts to police services would be less than significant, and no mitigation measures are necessary.

Fire and Emergency Medical Services

The proposed project would add to the demand for fire response and emergency medical services in the project's service area, but the cumulative contribution of the proposed project's impact with the reasonably foreseeable development projects would not be considerable. The SFFD has not identified a citywide service gap, and the incremental increase in the demand for fire services as a result of the proposed project and reasonably foreseeable projects would not be beyond levels anticipated and planned for by the SFFD. Thus, the cumulatively considerable contribution to cumulative impacts of the proposed project on fire and emergency medical response services would be less than significant, and no mitigation measures are necessary.

Schools

The proposed project would add to the cumulative effect of these other reasonably foreseeable development projects, but the proposed project's contribution to this effect would not be considerable because the anticipated increase in the number of school-age children would likely not exceed the physical capacity of SFUSD schools, which could accommodate approximately 8,000 more students. Furthermore, the SFUSD would continue to collect development fees based on building permits issued in the City. These fees would be used to support capital improvements, including renovation of existing schools and construction of new schools if there was a demand for new facilities. As these development fees are deemed to be complete mitigation for impacts on school facilities, any cumulative impacts would be mitigated to less-than-significant levels. Thus, the cumulatively considerable contribution to cumulative impacts of the proposed project on schools would not be significant. Thus, cumulative impacts to schools would be less than significant, and no mitigation measures are necessary.

Libraries

The proposed project would add to the cumulative effects of these other reasonably foreseeable development projects on library services and facilities, but the proposed project's contribution to these effects would not be considerable. The Association of Bay Area Governments' *Projections 2009* estimates that the City will gain about 124,800 residents by 2030, which equals about a

15.5 percent increase in citywide population.[27] The proposed project's contribution to this anticipated citywide population growth represents less than one-half percent (0.0039). The San Francisco library system has experienced an annual increase in use without a decline in service ratios or other performance objectives.[28] Therefore, an additional increase in citywide population would likely not have a considerable impact on the library system.

Thus, the cumulatively considerable contribution to cumulative impacts of the proposed project on library services and facilities would be less than significant, and no mitigation measures are necessary.

[27] The Association of Bay Area Governments projects that in the next 20 years, San Francisco population will increase from 810,000 in 2010 to 934,800 in 2030, a total increase of about 124,800 persons. ABAG *Projections 2009*, p. 92.

[28] San Francisco Public Library, Friends of the San Francisco Public Library, *Annual Report 2007-08, 2008-09*, p. 2.

M. BIOLOGICAL RESOURCES

This section describes the potential effects of the proposed project on plants and animals on the project site and in the vicinity. The Setting discussion describes the vegetation and wildlife known or expected to be found on the site. The Impacts discussion identifies significance criteria for biological resources impacts and discusses potential changes to these biological resources that could occur if the proposed project is implemented. The Impacts discussion also considers whether the proposed project in combination with other reasonably foreseeable development projects in the vicinity of the project site would contribute to cumulative environmental impacts related to biological resources.

SETTING

The project site is within the northeast portion of San Francisco, approximately 0.7 mile from the shoreline of San Francisco Bay. It covers 1.45 acres and is located within an existing commercially zoned, urbanized area. The site and surrounding area are highly developed with streets, buildings, and landscaping. The topography of the site is relatively flat. There are no existing drainage features on the site; runoff is diverted into storm drains and directed off-site into the City's combined stormwater and sewer system.

The project site includes the existing 10-story Aronson Building and a vacant, paved area. Immediately adjacent to the site on the north is the Westin San Francisco Market Street Hotel (Westin Hotel), which has a landscaped plaza. Adjacent to the east, across Third Street, are mid-rise and high-rise residential and commercial buildings. Adjacent to the south, across Mission Street, is the 5.5-acre Yerba Buena Gardens Esplanade. Adjacent to the west is Jessie Square, a pedestrian plaza, and the Contemporary Jewish Museum.

VEGETATION

Vegetation on the project site and in the site vicinity consists of ornamental trees and shrubs. The project site contains one significant tree[1] (avocado) adjacent to the northwest corner of the Aronson Building. There is one street tree (magnolia) on Mission Street, adjacent to the project site, and a row of 23 ornamental trees (poplar) north of the project site along the adjacent Westin Hotel plaza. There are also trees in containers positioned adjacent to the Contemporary Jewish Museum in Jessie Square. The Yerba Buena Gardens Esplanade contains a large grassy area

[1] The San Francisco Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code) identifies significant trees as trees that are within 10 feet of the property edge of the sidewalk and are more than 20 feet in height, have a canopy greater than 15 feet in diameter, or have a trunk diameter greater than 12 inches in diameter at breast height.

(a meadow) surrounded by a network of smaller gardens that include a woodland grove, a butterfly garden, flowering trees, evergreens, deciduous trees, sculpture, seating areas, and fountains and other water features.

WILDLIFE

As noted on p. IV.M.1, the project site is fully developed, and there is no ground cover or vegetation on the site other than the single, significant avocado tree adjacent to the northwest corner of the Aronson Building. Yerba Buena Gardens Esplanade, to the south, has landscaped public open space that provides some habitat wildlife could use. Trees at the Gardens provide potential nest sites for several species of birds. Wildlife species on and in the vicinity of the project site are those that have adapted to the urban environment and are able to co-exist with people and the built environment. Seagulls, brewer's blackbirds, and pigeons, for example, are common visitors to San Francisco's urban parks.

The vicinity of the project site can also be expected to support common, urban-adapted species such as eastern fox squirrel, deer mouse, house mouse, and northern raccoon. The status and distribution of bats in San Francisco is not well known; however, several species of year-round and migratory bats are common in the Bay Area. The big brown bat, Brazilian free-tailed bat, and Yuma myotis are year-round residents of the Bay Area. The hoary bat, which migrates along the Pacific coast, roosts in trees and may use trees in and near the Yerba Buena Gardens Esplanade.

Yerba Buena Gardens Esplanade could also be visited by migratory birds traveling along the Pacific Flyway, a major north-south route of travel for migratory birds along the western portion of the Americas, extending from Alaska to Patagonia. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources as they head to breeding grounds or travel to overwintering sites. Migratory species could include warblers, orioles, junco, robin, goldfinch, swallows, and even waterfowl such as Canada goose and mallard.

REGULATORY FRAMEWORK

Biological resources are protected by Federal, State, and local laws and regulations. Described below are the Federal, State, and local regulations, permits, and policies pertaining to biological resources that apply to the project site.

Federal Endangered Species Act[2]

The United States Fish and Wildlife Service (USFWS) has jurisdiction over Federally listed threatened and endangered plant and animal species. A threatened species is one that is likely to

[2] 16 U.S.C. 1531-1544.

become endangered in the foreseeable future, and an endangered species is one that is considered to be in danger of becoming extinct throughout all or a significant portion of its range. The Federal Endangered Species Act (FESA) protects listed species from harm or "take," broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Any such activity can be defined as a "take" even if it is unintentional or accidental.

Federal agencies involved in funding or permitting activities that may result in take of Federally listed species (e.g., U.S. Army Corps of Engineers) are required under Section 7 of FESA to consult with the USFWS prior to issuing take permits or authorizing finds. A FESA Section 10 take permit from the USFWS is required for any activity that could result in the take of a Federally listed animal species and is not authorized as part of a Section 7 consultation. Section 7 does not apply to listed species on private land with no Federal funding or regulatory jurisdiction.

In addition to a list of endangered and threatened species that are legally protected under FESA, the USFWS has a list of proposed and candidate species. Proposed species are those for which a proposed rule to list them as endangered or threatened has been published in the Federal Register. A candidate species is one for which the USFWS currently has enough information to support a proposal to list it as a threatened or endangered species. Proposed species could be listed at any time, and many Federal agencies protect them as if they already are listed. Candidate species are not afforded legal protection under FESA.

Migratory Bird Treaty Act[3]

The Federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, and purchasing of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act.

California Endangered Species Act[4]

The California Department of Fish and Game (CDFG) has jurisdiction over threatened or endangered species that are formally listed by the State under the California Endangered Species Act (CESA). CESA is similar to FESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and Federal

[3] 16 U.S.C. 703-712.
[4] California Fish & Game Code Section 2050 et seq.

laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFG for addition to the State list. Candidate species are protected by the provisions of CESA.

California Species of Special Concern

The CDFG maintains an administrative list of Species of Special Concern (SSC),[5] defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated[6] from the State, or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as Federally, but not State-, threatened or endangered;
- Meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; and/or
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status."

The CDFG's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, and reptiles and amphibians. The Fisheries Branch is responsible for updates to the Fish SSC document and list. Section 15380 of the CEQA Guidelines indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein. In contrast to species listed in the FESA or CESA, however, SSC have no formal legal status.

California Environmental Quality Act[7]

Under Section 15380 of the CEQA Guidelines,[8] a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. This provides an agency with the ability to protect species from a

[5] California Fish and Game, California Code of Regulations, Title 14, Division 1. Fully Protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42 (CCR; Title 14, Div. 1).

[6] "Extirpated" means that the species has been locally eliminated but may exist elsewhere and is not extinct.

[7] California Public Resources Code Section 21000 et seq.

[8] California Code of Regulations, Title 14, Section 15000 et seq.

project's potential impacts until the responsible government agencies have an opportunity to designate the species as protected if warranted.

San Francisco Urban Forestry Ordinance

The San Francisco Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code) was enacted to ensure the protection of trees within and adjacent to public areas. The City and County of San Francisco currently considers "Protected Trees" as landmark trees, significant trees, and street trees, defined as follows:

- Landmark trees have the highest level of protection in the City. They meet criteria for age, size, shape, species, location, historical association, visual quality, or other contribution to the City's character, and have been found worthy of landmark status after public hearings at both the Urban Forestry Council and the Board of Supervisors. Temporary landmark status is also afforded to nominated trees currently undergoing the public hearing process.
- Significant trees are within 10 feet of the property edge of the sidewalk and are more than 20 feet in height, have a canopy greater than 15 feet in diameter, or have a trunk diameter greater than 12 inches in diameter at breast height.
- Street trees are trees within the public right-of-way. Street trees may be maintained by either the adjacent property owner or the City.

The Department of Public Works, Bureau of Urban Forestry, must issue a permit before any trees with protected status under the Urban Forestry Ordinance can be removed. If any construction activity is to occur within the dripline of any protected tree, an International Society of Arboriculture-certified arborist must prepare a tree protection plan, and the plan must be submitted to the Planning Department for review and approval before a building permit is issued.

San Francisco Planning Code, Green Landscaping Ordinance

The San Francisco Planning Code[9] also includes requirements for street trees in all zoning districts in the event of construction of a new building. The proposed project is subject to the following requirements:

- Street trees must be installed at a minimum of one 24-inch box or larger tree for each 20 feet of property frontage.
- Street trees shall be 1) compatible with the water use requirements of Administrative Code Chapter 63, and 2) 'climate appropriate' as defined by Section 802.1of the Public Works Code. For trees installed in the public right-of-way, species and locations are subject to approval by the Department of Public Works.

[9] San Francisco Planning Department, Guide to the San Francisco Green Landscaping Ordinance, April 2010. Available online at http://www.sf-planning.org/ftp/files/publications_reports /Guide_to_SF_Green_Landscaping_Ordinance.pdf. Accessed April 24, 2012.

- The property owner must maintain the tree in good health per Article 16 of the Public Works Code and replace the tree within 6 months if it should die (Section 805 of the Public Works Code).
- Trees planted in the Downtown Commercial (C-3) District are subject to additional requirements to ensure tree health and adequate pedestrian passage in these densely populated areas.

Planning Code Section 139, Standards for Bird-Safe Buildings

Standards for Bird-Safe Buildings was adopted by the Planning Commission on July 14, 2011.[10] The Board of Supervisors passed and the Mayor signed an ordinance implementing these standards on October 7, 2011 (Ordinance 199-11). Required treatments under this ordinance are codified in Planning Code Section 139, Standards for Bird-Safe Buildings. The purpose of the standards is to establish requirements for new building construction and replacement façades to reduce bird mortality from circumstances that are known to pose a high risk to birds. The two circumstances regulated by this Planning Code Section 139 are "location-related hazards," where the siting of a structure creates increased risk to birds; and "feature-related hazards," which may create increased risk to birds regardless of where the structure is located.

The project site is within 300 feet of the 5.5-acre Yerba Buena Gardens Esplanade open space, an Urban Bird Refuge as defined under Planning Code Section 139(c)(1). The proposed project tower is therefore subject to location-related standards of Planning Code Section 139(c)(1). Bird-Safe Glazing Treatment is required from grade up to 60 feet of the proposed project tower façades facing the Urban Bird Refuge. Bird-Safe Glazing Treatment may consist of fritting, netting, stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing, or UV patterns visible to birds (Planning Code Section 139(b)(1)). Location-related standards also require that minimal lighting be used, that lighting be shielded, and prohibit uplighting and event searchlights (Planning Code Section 139(c)(1)(B)).

Feature-related hazards can occur throughout the City. As set forth in Planning Code Section 139(c)(2), they include free-standing glass walls, wind barriers, skywalks, balconies, and greenhouses on rooftops that have unbroken glazed segments 24 square feet and larger in size. Any structure that contains these elements must employ Bird Safe Glazing Treatment (described in the previous paragraph) on 100 percent of the glazing on feature-related-hazards.

[10] San Francisco Planning Department, *Standards for Bird-Safe Buildings*, Adopted by the Planning Commission on July 14, 2011. Available online at http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards%20for%20Bird%20Safe%20Buildings%20-%2011-30-11.pdf. Accessed April 24, 2012.

The Zoning Administrator may either waive the requirements contained within Section 139(c)(1) and Section 139(c)(2) or modify such requirements to allow equivalent Bird-Safe Glazing Treatments upon the recommendation of a qualified biologist (Planning Code Section 139(c)(3)(C)).

IMPACTS

SIGNIFICANCE CRITERIA

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

M.1 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 California Department of Fish and Game or U.S. Fish and Wildlife Service;

M.2 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 California Department of Fish and Game or U.S. Fish and Wildlife Service;

M.3 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;

M.4 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;

M.5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

M.6 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

There is no riparian habitat or other sensitive natural community, or wetland, on or near the project site. The project site is not subject to any habitat or natural community conservation plan. Therefore, Criteria M.2, M.3, and M.6 are inapplicable to the proposed project and are not discussed further in this EIR.

PROJECT FEATURES

The proposed project would include common residential open space in the form of an approximately 8,625-gross-square-foot (gsf) outdoor landscaped terrace, including a solarium on the roof of the Aronson Building, as well as public open space in the form of an approximately 3,500-gsf ground-floor landscaped plaza that would run along the southern, western, and northern façades of the proposed tower. The proposed museum may include an approximately 2,500-gsf outdoor landscaped terrace on the roof of the tower podium, which would be on the fourth floor.

As discussed in Chapter II, Project Description, p. II.68, two trees would be removed to accommodate construction of the proposed project: the first tree (avocado) is a significant tree, because it exceeds a height of 20 feet, and is located on the project site adjacent to the northwest corner of the Aronson Building; and the second is a street tree (magnolia) on the Mission Street sidewalk south of the southern project site boundary. Both trees would be replaced in compliance with Article 16 of the San Francisco Public Works Code. In addition, the proposed project would be required to comply with the provisions of the San Francisco Planning Code's Green Landscaping Ordinance, which requires projects involving the construction of a new building within a C-3 District to install street trees. In accordance with the San Francisco Planning Code, Green Landscaping Ordinance, the proposed project would be required to plant about 15 new street trees.

As required by Planning Code Section 139(c)(1)(A), the proposed 47-story project tower must include Bird-Safe Glazing Treatment, on up to 60 feet of the tower façades facing Yerba Buena Gardens, an Urban Bird Refuge. Bird-Safe Glazing Treatment may consist of fritting, netting, stencils, frosted glass, exterior screens, physical grids placed on the exterior of glazing or UV patterns visible to birds (Planning Code Section 139(b)(1)). Glass wind barriers at the podium base and the proposed solarium on the Aronson Building roof are features of the proposed project identified as feature-related hazards in Planning Code Section 139(c)(2), and Bird-Safe Glazing Treatment would therefore be required on 100 percent of the glazing on these features. The proposed project must also minimize lighting, as required by Planning Code Section 139(c)(1)(B).

IMPACT EVALUATION

Impact BI-1: The proposed project would not 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 USFWS. ***(Less than Significant)*** **(Criterion M.1)**

There are no known occurrences of any special status species on the project site or in the project vicinity. Further, because the site is located in a highly developed urban area, and because the amount of habitat suitable for wildlife on the 1.45-acre project site is relatively small and isolated from other natural habitats, it is unlikely that a special status species would visit the site. The proposed project would be unlikely to directly or indirectly have an adverse effect on any special status species. Therefore, the impact of the project on special status species would be less than significant, and no mitigation is necessary.

Impact BI-2: The proposed project would not have a substantial adverse effect on the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, nor would it impede the use of native wildlife nursery sites. ***(Less than Significant*** **(Criterion M.4)**

Bird Nesting

The project site is within a fully developed, urbanized area and does not support or provide habitat for any rare or endangered wildlife species. No rare, threatened, or endangered species are known to exist on site or in the project vicinity. There are trees on and immediately adjacent to the project site, including one significant tree adjacent to the northwest corner of the Aronson Building, one street tree along the Mission Street sidewalk south of the southern project site boundary, a row of 23 trees north of the project site along the adjacent Westin Hotel plaza, and container trees adjacent to the Contemporary Jewish Museum in Jessie Square. These trees provide a very small amount of nesting habitat for resident urban-adapted and migratory songbirds, and none of them are considered to be rare, threatened, or endangered species. The trees located on the project site and along the Mission Street sidewalk, which would be removed in order to accommodate construction of the proposed project, could support active nests during the bird nesting season (March through August). Furthermore, construction activities may take place during the bird nesting season, potentially disturbing nesting birds in the row of trees north of the project site.

As discussed in Chapter II, Project Description, p. II.68, the proposed project includes planting replacement trees and adding landscaping, and native plant species or other climate-appropriate species could be used. Replacement trees would be planted in compliance with Article 16 of the

San Francisco Public Works Code. The proposed project would be required to comply with the provisions of San Francisco Planning Code's Green Landscaping Ordinance, which requires projects involving the construction of a new building or relocation of an existing building within a C-3 District to install street trees.

While the proposed project includes replacement trees and new landscaping, there would still be a short-term loss of nesting habitat as a result of tree removal and construction disturbances. Birds and nests are protected by the MBTA and the California Fish and Game Code. Compliance with the requirements of the MBTA and the California Fish and Game Code, if applicable would ensure that there would be no significant impact as a result of these removal and construction disturbances. These requirements may include the following actions:

- Vegetation removal activities for the proposed project shall be conducted during the non-breeding season (i.e., September through February) to avoid impact to nesting birds or preconstruction surveys shall be conducted for work scheduled during the breeding season (March through August).
- Preconstruction surveys shall be conducted by a qualified ornithologist, authorized by CDFG to conduct such activities, to determine if any birds are nesting in or in the vicinity of the vegetation to be removed. The preconstruction survey shall be conducted within 15 days prior to the start of work from March through May (since there is higher potential for birds to initiate nesting during this period), and within 30 days prior to the start of work from June through August.
- If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist, in consultation with the CDFG, shall determine the extent of a construction-free buffer zone to be established around the nest until the young have fledged.

Compliance with Federal and State regulations would result in a less-than-significant impact to migratory birds, and no mitigation is necessary.

Bird Strikes

The proposed 47-story tower (550 feet tall) could affect bird migration and local movement if birds are injured or killed by colliding with the proposed tower. The proposed project would be required to comply with Planning Code Section 139, Standards for Bird-Safe Buildings, which would minimize the potential for bird strikes. Therefore, impacts of the proposed project related to bird strikes would be considered less than significant, and no mitigation measures are necessary.

Impact BI-3: The proposed project would not conflict with local policies or ordinances protecting biological resources. *(Less than Significant)* (Criterion M.5)

As discussed above on p. IV.M.1, the project site contains one significant tree (avocado), as defined by the San Francisco Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code) adjacent to the northwest corner of the Aronson Building. There is one street tree (magnolia) adjacent to the project site along the Mission Street sidewalk south of the southern project site boundary. There are no designated landmark trees on or adjacent to the project site. Both trees would be removed to accommodate construction of the proposed project. Both trees would be removed and replaced in compliance with Article 16 of the San Francisco Public Works Code. The proposed project would be required to comply with the provisions of the San Francisco Planning Code's Green Landscaping Ordinance, which requires projects involving the construction of a new building or relocation of an existing building within a C-3 District to install street trees. As noted above, the proposed project would be required to comply with Planning Code Section 139, Standards for Bird-Safe Buildings. Therefore, the project would have less-than-significant impacts on local policies or ordinances protecting biological resources. No mitigation measures are necessary.

Impact C-BI-1: The proposed project, in combination with past, present and reasonably foreseeable future projects in the project vicinity, would not make a cumulatively considerable contribution to a significant adverse cumulative impact on biological resources. *(Less than Significant)*

Several other development projects in the immediate vicinity of the project site have been formally proposed or approved, are under consideration by developers, or are reasonably foreseeable. The proposed project combined with these other foreseeable development projects would result in increased population and development in the project vicinity. As discussed on pp. IV.M.1-IV.M.2, the project site is currently fully developed and vegetation within the project site and vicinity consists of ornamental trees and shrubs. Similarly, wildlife species on and in the vicinity of the project site are those that have adapted to the urban environment and are able to co-exist with people and the built environment. The vegetation and wildlife that could occur on and around the project site represent an urban environment rather than a wildland condition. Moreover, as development projects must comply with Federal, State, and local regulations that protect biological resources, there would be no significant project-level impacts on biological resources. For these reasons, the proposed project's contribution to cumulative effects on biological resources would not be considerable. Therefore, there would be no cumulatively considerable contribution to significant cumulative impacts on biological resources, and no mitigation measures are necessary.

This page is intentionally blank.

N. GEOLOGY AND SOILS

This section describes geologic and seismic conditions of the project site and its vicinity and evaluates the potential for the proposed project to result in significant impacts related to exposing people or structures to substantially adverse geologic hazards, soils, and/or seismic conditions. Analysis relies on the *Updated Preliminary Geotechnical Study* prepared for 706 Mission Street by Treadwell & Rollo[1] and the *Geotechnical Investigation – Proposed Mexican Museum Report* prepared by Trans Pacific Geotechnical Consultants, Inc.[2] Potential impacts are discussed and evaluated, and appropriate mitigation measures are identified where necessary. The impacts discussion also considers whether the proposed project in combination with other reasonably foreseeable development projects would contribute to cumulative environmental impacts related to geology and soils.

SETTING

TOPOGRAPHY

The project site is relatively flat with little topographic relief. The surface elevation is approximately 16 to 17 feet (all elevations are based on San Francisco City datum).[3]

REGIONAL GEOLOGY

The project site lies within the geologically complex region of California referred to as the Coast Ranges geomorphic province.[4] 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 Range 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

---

1 Treadwell & Rollo, *Updated Preliminary Geotechnical Study, 706 Mission Street, San Francisco, California*, November 18, 2009 (hereinafter referred to as "*Updated Preliminary Geotechnical Study").* A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

2 Trans Pacific Geotechnical Consultants, Inc., *Geotechnical Investigation, Proposed Mexican Museum, 718 Mission Street, San Francisco, California*, September 28, 2000. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

3 This elevation is approximately 40 feet above mean sea level. AllWest Environmental, Inc., *Environmental Site Assessment, Commercial and Office Building, 706 Mission Street, San Francisco, California*, December 15, 2005, p. 9 (citing a United States Geological Survey map of 1997). A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

4 A geomorphic province is an area that possesses similar bedrock, structure, history, and age. California has 11 geomorphic provinces.

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 the 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.

The Northern Coast Ranges are composed 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. Typically, this collection of interbedded graywacke sandstone, siltstone, and shale has been heavily altered by tectonic forces.[5] Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma, and Clear Lake volcanic fields.[6]

SITE GEOLOGY

The geologic conditions of the project site include:

- Fill: The fill consists of loose to medium dense sand and gravel with varying amounts of clay. It contains varying amounts of rubble, concrete, wood and brick fragments, some or all of which was likely placed after the 1906 earthquake and fire. The thickness of the fill varies between approximately 10 and 15 feet.
- Dune Sand: This layer consists of native fine-grained, wind-deposited sand. It extends to depths of approximately 23 to 30 feet.
- Marsh deposits: This layer consists of medium stiff to stiff sandy clay and silt and medium dense clayey sand. Consolidation tests performed at adjacent sites indicated that the marsh deposits are overconsolidated.[7] The layer is approximately 3.5 to 5 feet thick.
- Colma Formation: This layer consists of stiff to very stiff sandy clay and dense to very dense sand. It extends to a depth of approximately 100 feet.
- Old Bay Clay: This is a very stiff to hard clay layer.
- Franciscan Complex: This is the bedrock beneath the site. It consists of sandstone and shale and is likely present at depths of 200 feet or greater.

Groundwater is present beneath the site at depths of 18 to 30 feet. Historic data for the area indicate the groundwater level may rise as high as the ground surface. Section IV.O, Hydrology and Water Quality, discusses the consequences of a potentially higher groundwater level on the site.

[5] Tectonics refers to the broad architecture of the outer part of the Earth's crust and the regional assembling of its structural and deformational features such as faulting and folding.
[6] California Geological Survey, *California Geomorphic Provinces*, CGS Note 36, 2002.
[7] An overconsolidated soil is one that has experienced a load greater than the load it is currently under.

SEISMICITY

The project site lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity (see Figure IV.N.1: Regional Fault Map).[8] The 2007 Working Group on California Earthquake Probabilities, which was formed by the U.S. Geological Survey (USGS) along with the California Geological Survey (CGS) and the Southern California Earthquake Center, has evaluated the probability of one or more earthquakes of magnitude 6.7 or higher occurring in California over the next 30 years. The result of the evaluation indicated a 63 percent likelihood that such an earthquake event would occur in the Bay Area.

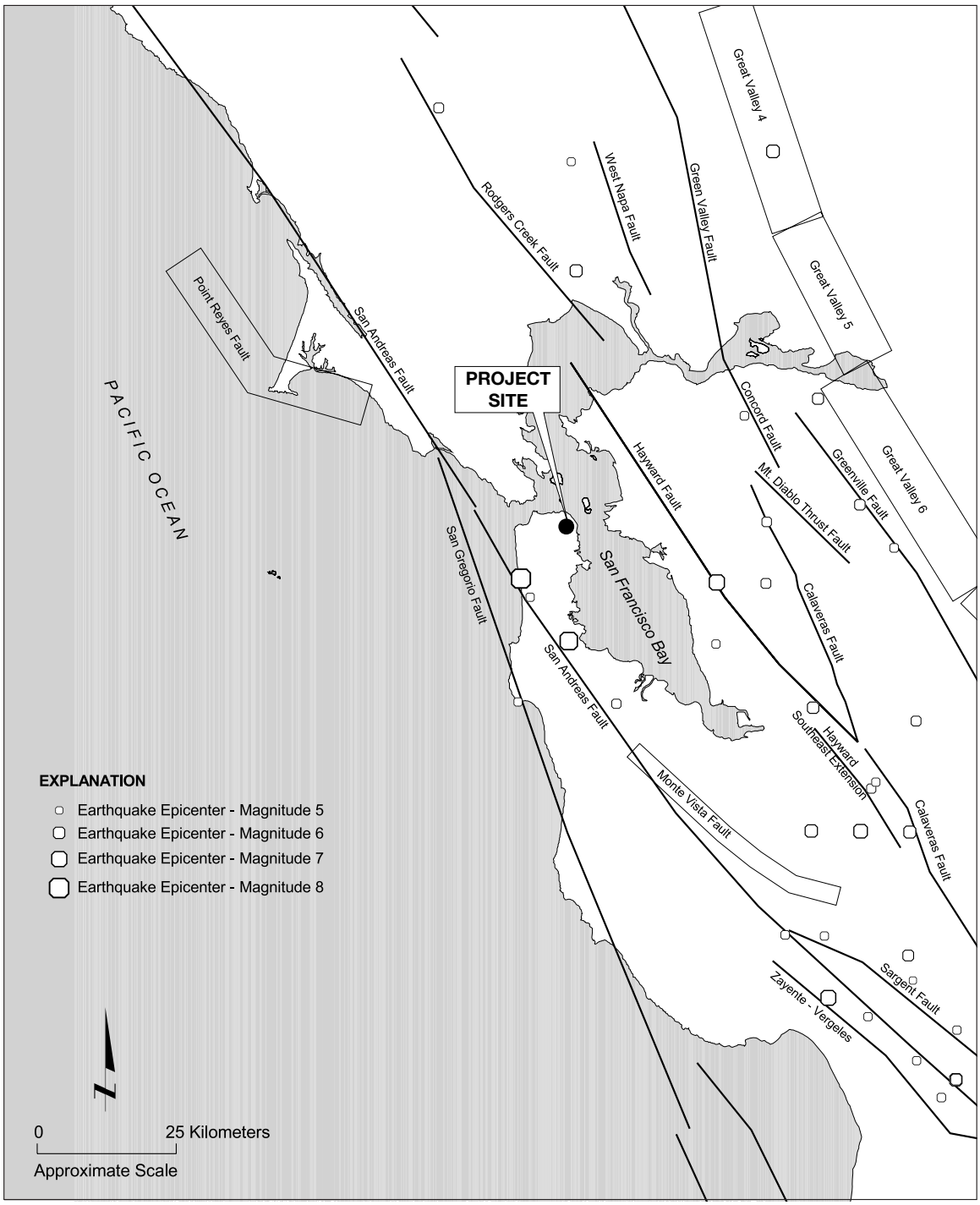
Richter magnitude (M) is a measure of the size of an earthquake as recorded by a seismograph, a standard instrument that records ground shaking at the location of the instrument. The reported Richter magnitude for an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically, with each whole number increase representing a ten-fold increase in the amplitude of the recorded seismic waves. Earthquake magnitudes are also measured by their Moment Magnitude (Mw), which is related to the physical characteristics of a fault, including the rigidity of the rock, the size of fault rupture, and movement or displacement across a fault.[9] A maximum moment magnitude earthquake represents a calculated estimate of what moment magnitude earthquake could occur in the future.

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. For this reason, earthquake intensities are also measured in terms of their observed effects at a given locality. The Modified Mercalli (MM) intensity scale (see Table IV.N.1: Modified Mercalli Intensity Scale, on p. IV.N.5) is commonly used to measure earthquake damage due to ground shaking.

---

[8] An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches. (Source: Hart, E. W., Fault-Rupture Hazard Zones in California: Alquist-Priolo Special Studies Zones Act of 1972 with Index to Special Studies Zones Maps, California Division of Mines and Geology, Special Publication 42, 1990, revised and updated 1997.)

[9] California Geological Survey, *How Earthquakes Are Measured*, CGS Note 32, 2002; and *Background Information on the ShakeMaps*, also available online at http://earthquake.usgs.gov/eqcenter/shakemap/background.php. Accessed January 5, 2012.



SOURCE: Treadwell and Rollo

706 MISSION STREET

FIGURE IV.N.1: REGIONAL FAULT MAP

Table IV.N.1: Modified Mercalli Intensity Scale

Intensity Value	Intensity Description
I	Not felt except by a very few persons under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly; vibration similar to a passing truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.

Source: Association of Bay Area Governments, *Modified Mercalli Intensity Scale, 2003*, also available online at http://www.abag.ca.gov/bayarea/eqmaps/doc/mmi.html; California Geological Survey, 2009. Background on Shakemaps, also available online at http://earthquake.usgs.gov/earthquakes/shakemap/background.php, accessed October 6, 2009.

The MM values for intensity range from I (earthquake not felt) to XII (damage is nearly total); intensities ranging from IV to X could cause moderate to significant structural damage.[10] The intensities of an earthquake will vary over the region of a fault and generally decrease with distance from the epicenter of the earthquake.

Regional Faults

The San Andreas, Hayward, and Calaveras Faults pose the greatest threat of significant damage in the Bay Area according to the USGS Working Group.[11] These three active faults exhibit strike-slip orientation and have experienced movement within the last 150 years.[12] Other principal faults capable of producing significant ground shaking in the Bay Area are listed in Table IV.N.2: Active Faults in the San Francisco Bay Region, and include the Concord-Green Valley, Marsh Creek-Greenville, San Gregorio, and Rodgers Creek Faults. These active faults are in addition to the various inactive faults located throughout the Bay Area. A considerable seismic event can occur along an inactive fault, and occasionally faults classified as inactive can exhibit secondary movement during a major event on another active fault.

San Andreas Fault

The San Andreas Fault Zone is a major structural feature that forms at the boundary of the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace extends out into the Pacific Ocean. The main trace of the San Andreas Fault through the Bay Area trends northwest through the Santa Cruz Mountains, and along the eastern side of the San Francisco Peninsula. As the principal strike-slip boundary between the Pacific plate to the west and the North American plate to the east, the San Andreas is often a highly visible topographic feature, such as between Pacifica and San Mateo, where Crystal Springs Reservoir and San Andreas Lake clearly mark the rupture zone. Near San Francisco, the San Andreas Fault trace is located immediately off-shore near Daly City and continues northwest through the Pacific Ocean approximately 6 miles due west of the Golden Gate Bridge.

[10] The damage level represents the estimated overall level of damage that would occur for various MM intensity levels. The damage, however, will not be uniform. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance.

[11] United States Geological Survey, *USGS Fact Sheet 039-03*, Working Group 02, 2003 (hereinafter referred to as *"USGS Fact Sheet 039-03")*.

[12] A strike-slip fault is a fault on which movement is parallel to the fault's strike, which is the lateral expression at the surface.

Table IV.N.2: Active Faults in the San Francisco Bay Region

Fault	Approximate Distance and Direction from Project Site	Known Dates of Movement	Fault Classification[a]	Historical Seismicity[b]	Maximum Moment Magnitude Earthquake (Mw)[c]
San Andreas	8 miles southwest	Historic (1906; 1989 ruptures)	Active	M 7.1, 1989 M 7.9, 1906 M 7.0, 1838 Many <M 6	7.9
Hayward	10 miles northeast	Historic (1868 rupture)	Active	M 6.8, 1868 Many <M 4.5	7.1
Rodgers Creek	21 miles north	Historic	Active	M 6.7, 1898 M 5.6, 5.7, 1969	7.0
San Gregorio (including Seal Cove segment)	18 miles southwest	Prehistoric (Sometime prior to 1775 but after 1270 A.D.)	Active	N/A	7.3
Calaveras	22 miles southeast	Historic (1861 1911, 1984)	Active	M 5.6–M 6.4, 1861 M 6.2 1911, 1984	6.8
Marsh Creek–Greenville	32 miles east	Historic (1980 rupture)	Active	M 5.6 1980	6.9
Concord–Green Valley	24 miles northeast	Historic (1955)	Active	Historic active creep	6.7

Notes:

[a] As defined by the Alquist Priolo Earthquake Zoning Act.

[b] Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.

[c] Moment Magnitude (Mw) is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event. (Source: California Geological Survey (CGS), *How Earthquakes Are Measured*, CGS Note 32, 2002b. CGS, *Background Information on the ShakeMaps*, also available online at http://earthquake.usgs.gov/eqcenter/shakemap/background.php , accessed January 5, 2012; United States Geological Survey, *USGS Fact Sheet 039-03*, Working Group 02, 2003.) The Maximum Moment Magnitude Earthquake as shown in this column is a calculated estimate derived from the joint CGS/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. (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 U.S. Geological Survey, CDMG 96-08 and USGS 96-706, 1996.)

Sources: Hart, E. W., Fault-Rupture Hazard Zones in California: Alquist-Priolo Special Studies Zones Act of 1972 with Index to Special Studies Zones Maps, California Division of Mines and Geology, Special Publication 42, 1990, revised and updated 1997; Jennings, C. W., Fault Activity Map of California and Adjacent Areas, California Division of Mines and Geology Data Map No. 6, 1:750,000, 1994; United States Geological Survey, *USGS Fact Sheet 039-03*, Working Group 02, 2003

In the San Francisco Bay Area, the San Andreas Fault Zone was the source of the two major seismic events in recent history that affected the region. The 1906 San Francisco earthquake was estimated at M 7.9 (though estimates have ranged in publication from M 7.7 to as high as M 8.25) 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. The more recent 1989 Loma Prieta earthquake, with a magnitude of M 7.1 (Mw 6.9), resulted in widespread damage throughout the Bay Area.

Hayward Fault

The Hayward Fault Zone is the southern extension of a fracture zone that includes the Rodgers Creek Fault (north of San Pablo Bay), the Healdsburg Fault (Sonoma County), and the Mayacama Fault (Mendocino County). The Hayward Fault trends to the northwest across the East Bay, extending from San Pablo Bay in Richmond, 60 miles south to San Jose. The Hayward Fault in San Jose converges with the Calaveras Fault, a similar fault type that extends north to Suisun Bay. Historically, the Hayward Fault generated one sizable earthquake in the 1800s.[13] In 1868, an M 7 earthquake on the southern segment of the Hayward Fault ruptured the ground for a distance of about 30 miles. Recent analysis of geodetic data indicates surface deformation may have extended as far north as Berkeley. Lateral ground surface displacement during these events was at least 3 feet.

A characteristic feature of the Hayward fault is its well-expressed and relatively consistent fault creep. Although no large earthquakes on the Hayward fault have occurred 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.[14] However, a large earthquake could occur on the Hayward Fault with an estimated Mw 7.1 (Table IV.N.2, p. IV.N.7). The USGS Working Group on California Earthquake Probabilities includes the Hayward–Rodgers Creek Fault Systems in the list of those faults that have the highest probability of generating earthquakes of M 6.7 or greater in the Bay Area.[15]

[13] Prior to the early 1990s, it was thought that an M 7 earthquake occurred on the northern section of the Hayward Fault in 1836. However, a study of historical documents by the CGS concluded that the 1836 earthquake was not on the Hayward Fault. (Source: 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*.)

[14] 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.

[15] *USGS Fact Sheet 039-03*.

Calaveras Fault

The Calaveras Fault 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 portion of the Bay Area and generally trends along the eastern side of the East Bay Hills, west of San Ramon Valley, and extends into the western Diablo Range, and eventually joins the San Andreas Fault Zone south of Hollister. The northern extent of the fault zone is not completely understood and could be linked with the Concord Fault.

The fault separates rocks of different ages, with older rocks west of the fault and younger sedimentary rocks to the east. The location of the main, active fault trace is defined by youthful geomorphic features (linear scarps and troughs, right-laterally deflected drainage, sag ponds) and local groundwater barriers. There is a distinct change in slip rate and fault behavior north and south of the vicinity of Calaveras Reservoir, located primarily in Santa Clara and Alameda Counties. North of Calaveras Reservoir, the fault is characterized by a relatively low slip rate of 5 to 6 millimeters per year 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 numerous moderate magnitude earthquakes and the probability of a large earthquake (greater than M 6.7) is much lower than on the San Andreas or Hayward Faults.[16] However, this fault is considered capable of generating earthquakes with magnitudes ranging as high as Mw 6.6 to 6.8.

Rodgers Creek Fault

The Rodgers Creek Fault Zone (RCFZ) is the southern segment of a fracture zone that includes the Rodgers Creek Fault (north of San Pablo Bay) and the Healdsburg Fault (northern Sonoma County). The most recent significant earthquakes on the RCFZ occurred on October 1, 1969, when two earthquakes of Richter magnitude 5.6 and 5.7 occurred within an 83-minute period. Buildings in Santa Rosa sustained serious damage during these quakes. Prior to these events, the last major earthquake (estimated Richter magnitude 6.7) was generated in 1898 with an epicenter near Mare Island at the north margin of San Pablo Bay. The USGS estimates the probability of a large earthquake (Mw 6.7 or greater) on the Hayward-Rodgers Creek Fault during the period 2003 to 2032 to be 27 percent, the highest probability for all San Francisco Bay fault zones.[17] CGS and the Association of Bay Area Governments estimate the RCFZ is capable of generating a maximum Mw 7.0 earthquake.

[16] *USGS Fact Sheet 039-03*.
[17] *USGS Fact Sheet 039-03*.

Concord-Green Valley Fault

The Concord-Green Valley Fault 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.[18] However, a moderate earthquake of M 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.

Marsh Creek-Greenville Fault

The Greenville Fault, also known as the Marsh Creek-Greenville Fault, extends along the base of the Altamont Hills, which form the eastern margin of the Livermore Valley. The fault is recognized as a major structural feature and has demonstrated activity in the last 11,000 years. An M 5.6 earthquake on the Greenville Fault in 1980 produced a small amount of surface rupture (approximately 3 centimeters) on the fault near Vasco Road.

San Gregorio Fault

The San Gregorio Fault is an active earthquake fault located off the coast of Northern California extending from southern Monterey Bay to near Bolinas Bay, where the San Gregorio intersects the San Andreas Fault. Most of the San Gregorio fault trace is located offshore beneath the waters of Monterey Bay, Half Moon Bay, and the Pacific Ocean, though it cuts across land near Point Año Nuevo and Pillar Point. The San Gregorio Fault is part of a system of coastal faults that run roughly parallel to the San Andreas Fault.

SEISMIC HAZARDS

Surface Fault Rupture

The site is not within an Alquist-Priolo Fault Rupture Hazard Zone as designated through the Alquist-Priolo Earthquake Fault Zoning Act, and no mapped active faults are known to pass through the immediate vicinity of the project site. Therefore, the risk of ground rupture at the site is very low.

Ground Shaking

Strong ground shaking from a major earthquake could affect the project site during the next 30 years. Earthquakes on the active faults (listed in Table IV.N.2, p. IV.N.7) are expected to produce a range of ground shaking intensities within the project site. Ground shaking may affect areas hundreds of miles distant from the earthquake's epicenter. Historic earthquakes have

[18] *USGS Fact Sheet 039-03*.

caused strong ground shaking and damage in the Bay Area, the most recent being the M 6.9 Loma Prieta earthquake in October 1989. The epicenter was approximately 50 miles southeast of the project site, but this earthquake nevertheless caused strong ground shaking for about 20 seconds and resulted in varying degrees of structural damage throughout the Bay Area.

The 1906 San Francisco earthquake, with an estimated Mw 7.9, produced violent (IX) shaking intensities in the project area.[19] The 1989 Loma Prieta earthquake, with an Mw 6.9, produced very strong (VIII) shaking intensities in the project area.[20]

Liquefaction

Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the build-up of excess pore water pressure, especially during earthquake-induced cyclic loading.[21] Soil susceptible to liquefaction includes loose- to medium-dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Four kinds of ground failure commonly result from liquefaction: lateral spreading, flow failure, ground oscillation, and loss of bearing strength. *Lateral spreading* is the horizontal displacement of surficial blocks of sediments resulting from liquefaction in a subsurface layer that occurs on gentle slopes and commonly displaces the surface by several meters to tens of meters. *Flow failures* generally occur on slopes greater than 3 degrees and are primarily liquefied soil or blocks of intact material riding on a liquefied subsurface zone. *Ground oscillation* occurs on gentle slopes when liquefaction occurs at depth and no lateral displacement takes place. Soil units that are not liquefied may pull apart from each other and oscillate on the liquefied zone. The *loss of bearing strength* can occur beneath a structure when the underlying soil loses strength and liquefies. When this occurs, the structure can settle, tip, or even become buoyant and "float" upwards. Liquefaction and associated failures can damage foundations, roads, underground cables and pipelines, and disrupt utility service. Liquefaction potential is generally very high in fill that has not been compacted to current standards. The CGS has identified areas of liquefaction potential as part of the Seismic Hazards Zonation Program (discussed below).[22] The presence of medium dense Dune sand below the high groundwater level on the project site creates a potential risk of liquefaction at the project site.

---

[19] Association of Bay Area Governments, *Earthquake Hazards Maps for San Francisco, Modeled Shaking Intensity for 1906 San Andreas Fault Earthquake* (hereinafter referred to as *"Earthquake Hazards Maps").* Available online at http://quake.abag.ca.gov/shaking/. Accessed April 25, 2012.

[20] *Earthquake Hazards Maps.*

[21] In saturated soils, water exists in the void spaces between soil particle grains. An increase in soil water pressure indicates an increase in the pressures exerted against the soil particles, thereby reducing the frictional forces between the grains.

[22] California Geological Survey, *State of California Seismic Hazard Zones, City and County of San Francisco Quadrangle.*

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 imported loose to medium dense sandy fill on the project site would likely be susceptible to this type of settlement. Given the geologic setting, portions of the project site could be subjected to earthquake-induced settlement unless this soil is removed during excavation for basements or properly compacted or improved, and foundations are suitably designed and constructed.

GEOLOGIC HAZARDS

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 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. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors, and basement walls. 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. Based on the results of the geotechnical investigation, it is not anticipated that expansive soil would be present at the site.[23]

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. Because the project site is relatively flat, there are no areas within the project site that are susceptible to erosion, except during excavation when proper erosion-control measures would be implemented and monitored, as discussed in Section IV.O, Hydrology and Water Quality, Impact HY-4, p. IV.O.16.

[23] *Updated Preliminary Geotechnical Study*; Memo re: telephone conversation with Cary Ronan of Treadwell & Rollo, January 27, 2012. Copies of these documents are available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Settlement

Settlement can occur from immediate settlement, consolidation, 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. Consolidation settlement occurs in saturated clay from the volume change caused by squeezing out water from the pore spaces.

Soils tend to settle at different rates and by varying amounts depending on the load weight or changes in properties over an area; when it occurs, it is referred to as differential settlement of the soils. The project site is underlain by poorly engineered imported fill, medium dense Dune sand, and a marsh deposit. However, the depth of excavation required for the basement of the new building would be expected to remove all of these deposits such that settlement or differential settlement would not be an issue for the new building. Consolidation of the marsh deposit beneath the existing building has previously occurred; the updated geotechnical report concluded that settlement is not an issue for this portion of the project site, although underpinning would be required where the bottom of the foundation of the existing building is adjacent to and above the deeper (below-ground basement levels) tower excavation.

Landslides and 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. The project site is relatively flat. Therefore, slope failure is not a hazard at the project site.

REGULATORY FRAMEWORK

State

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit may be granted for a site within a Seismic Hazard Zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into a proposed project's design. The project site is located within a Seismic Hazard Zone for liquefaction, as designated by the CGS. Therefore, evaluation and mitigation of potential liquefaction hazards must be conducted in accordance with

the CGS, Special Publication 117, adopted March 13, 1997 by the State Mining and Geology Board pursuant to the Seismic Hazards Mapping Act. The San Francisco Department of Building Inspection is the local agency empowered by the City to enforce the regulatory requirements of the Act.

California Building Code

The 2010 California Building Code (CBC), effective January 1, 2011, is based on the 2009 International Building Code. It is found in Title 24 of the California Code of Regulations. The CBC sets minimum requirements that ensure life safety but does not preclude earthquake damage and loss of function of structures that are not "essential facilities" (i.e., those that must function after an earthquake, such as hospitals). The San Francisco Building Code is the locally adopted code based on the 2010 CBC. Local building codes may not include standards less stringent than those in the CBC.

The project site is located in an area classified in the CBC as Seismic Zone 4, the highest risk category of the four seismic zones designated in the United States. The San Francisco Bay Area is within Seismic Zone 4. The project site, along with all development sites in the Bay Area, therefore has the most stringent requirements for seismic design.

California Historical Building Code

The California Historical Building Code was created by legislation in 1975 giving authority to the State Historical Building Safety Board to write regulations and have consultation, review, and appellate functions for code and regulation issues relating to qualified historic buildings, structures, and properties.

The California Historical Building Code is not a "stand-alone" code and relies on a "regular adopted code" such as the latest adopted CBC to be the standard from which alternatives are derived. The 2007 California Historical Building Code is the most recent published update of this code.

Local

The City adopted the 2010 CBC, with modifications; it became effective January 2011. The San Francisco Building Code is implemented by the Department of Building Inspection and is mandatory for all development in the City. Sections of the San Francisco Building Code address geology and soils issues, including seismic safety, foundations, and soil investigations; safety of excavations and slopes on construction sites; and erosion control.

San Francisco General Plan

One of the goals of the *San Francisco General Plan*, to the extent feasible, is to avoid the loss of life and property as a result of natural and technological disasters, to reduce the social, cultural and economic dislocations of disasters, and to assist and encourage the rapid recovery from disasters. The following policies are from the Community Safety Element of the *San Francisco General Plan*:

Policy 2.1: Assure that new construction meets current structural and life safety standards.

Policy 2.3: Consider site soils conditions when reviewing projects in areas subject to liquefaction or slope instability.

Policy 2.5: Assess the risks presented by other types of potentially hazardous structures and reduce the risks to the extent possible.

Policy 2.9: Consider information about geologic hazards whenever City decisions that will influence land use, building density, building configurations or infrastructure are made.

The Community Safety Element includes maps of potential hazard areas, including liquefaction and potential liquefaction areas.

The San Francisco Planning Code, Section 101, lists the Priority Policies for the City's *General Plan*. The following Priority Policy is from the City's *General Plan*.

(6) That the City achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake[24]

IMPACTS

SIGNIFICANCE CRITERIA

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

N.1 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

[24] San Francisco Planning Code 101.1(b)(6).

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.

N.2 Result in substantial soil erosion or the loss of topsoil;

N.3 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;

N.4 Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property;

N.5 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

N.6 Change substantially the topography or any unique geologic or physical features of the site.

There are no earthquake faults on or less than 1 mile from the project site, and the project site is not within an Alquist-Priolo Earthquake Fault Zone. Therefore, no fault rupture would be expected to occur. No landslide areas or areas of subsidence are identified on the project site, and there are no unique geologic or topographic features on the project site. Septic tanks would not be used, as the site is entirely served by the municipal sewer system. The proposed project would not change the topography of the project site. Therefore, no significant impacts related to these issues (Criteria N.1 (ground rupture), N.5, and N.6) would result, and these topics are not discussed further.

PROJECT FEATURES

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower adjacent to and physically connected to the existing 10-story, 154-foot-tall historic Aronson Building, which would be restored and rehabilitated. In addition, the existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a new 15-foot-tall solarium would be constructed, resulting in an overall building height of 159 feet for the Aronson Building. The overall project would contain up to 215 residential units, seven floors of flex space (residential or office use) in the Aronson Building, space for The Mexican Museum, a ground-floor retail/restaurant use, and associated building services. Under the proposed tower would be two levels of basement (B1 to the lowest, B2) that would be constructed and connected to the existing Jessie Square Garage. The basement level of the Aronson Building would be connected to the new tower's first basement level.

The proposed project would require disturbance of soil underneath the site of the Aronson Building's 10-story west-side annex, which would be demolished, and underneath the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex.[25] Excavation to a depth of approximately 41 feet below the surface would occur underneath the site of the annex following its demolition and underneath the pedestrian walkway. Approximately 9,610 cubic yards of soil would be excavated and removed. There would be no excavation underneath the Mexican Museum parcel because an existing foundation has already been constructed at that location. Figure II.31: Conceptual Building Section, in Chapter II, Project Description, p. II.58, shows the proposed basement depth and configuration.

The proposed project would result in minimal soils disturbance on the north side of the Aronson Building for removal of the three-story 1978 annex and installation of the driveway leading to the two car elevators. The proposed project would not require excavation along the north side of the Aronson Building. As analyzed in Chapter VI, Project Variants, Variant 2, which begins on p. VI.10, and Variant 4, which begins on p. VI.25, would call for additional excavation north of the Aronson Building to construct a vehicular access ramp from Third Street to the Jessie Square Garage.

A portion of the proposed tower would be built on the Mexican Museum parcel. The structural load of the proposed tower would be accommodated through the thickening of the existing mat slab foundation, the installation of drilled piles, or a combination of the two. If drilled piles are used, the piles would reach a depth of approximately 80 feet.

Prior to construction, the existing foundation of the Aronson Building would be evaluated and upgraded as necessary, including, potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[26]

IMPACT EVALUATIONS

Impact GE-1: The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture, ground-shaking, liquefaction, or landslides. (*Less than Significant*) (Criterion N.1)

The project site will likely experience at least one major earthquake (M 6.7 or higher) within the next 30 years. The intensity of such an event in the project site would depend on the causative fault and the distance to the epicenter, the depth of the rupture below ground surface, the moment magnitude, and the duration of shaking. A seismic event in the Bay Area could potentially produce considerable ground accelerations within the project site. The 1989 Loma Prieta

[25] The existing geologic conditions are discussed in "Site Geology," on p. IV.N.2.
[26] *Updated Preliminary Geotechnical Study*, pp. 6-7.

earthquake caused damage within the area with an epicenter located approximately 50 miles away. A larger earthquake with a closer epicenter could cause even greater groundshaking within the project site. A characteristic earthquake on the Hayward fault with an estimated M 7.1 could produce violent (IX) shaking in the project area.[27]

The building foundation for the proposed project tower would require a mat and/or pile foundations that are anchored in more structurally solid materials. The structural load of the proposed tower would likely be accommodated through the thickening of the existing mat slab foundation, the installation of drilled piles, or a combination of the two.[28] Buildings that have implemented these measures during construction have had superior results during earthquakes, and these measures would ensure that the proposed project would have a less-than-significant impact with respect to the risk of loss, injury, or death involving rupture, ground-shaking, liquefaction, or landslides.

The foundation of the existing historic Aronson Building would be evaluated prior to construction and upgraded as necessary, including, potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[29] These retrofit measures would ensure that the proposed project would have a less-than-significant impact with respect to the risk of loss, injury, or death involving rupture, ground-shaking, liquefaction, or landslides.

Occupants of residential, office, and commercial buildings are also susceptible to injury and damage from nonstructural disruption during an earthquake. Examples of dangerous nonstructural damages that have occurred in past earthquakes include broken glass, the overturning of tall and heavy shelves, falling overhead light fixtures, ruptured piping containing hazardous substances, and falling pieces of brickwork or precast concrete panels. The most effective countermeasures for protection from nonstructural earthquake damage include securing shelves to walls and other heavy items as well as following regulatory requirements for storage of hazardous materials. Damage and injury from these causes cannot be entirely avoided; however, adherence to current commercial and regulatory practices, including building code requirements, can reduce the potential for injury and damage to a less-than-significant level.

Therefore, with adherence to Building Code requirements, the potential impacts from groundshaking would be reduced to less-than-significant levels. No mitigation measures are necessary.

---

[27] ABAG, *Earthquake Hazards Maps for San Francisco, Modeled Shaking Intensity for Hayward Fault Earthquake*. Available online at http://quake.abag.ca.gov/shaking/. Accessed April 25, 2012.
[28] *Updated Preliminary Geotechnical Study*, pp. 6-7.
[29] *Updated Preliminary Geotechnical Study*, pp. 6-7.

CGS has designated the project site as a Seismic Hazard Zone (discussed above in "Regulatory Framework," pp. IV.N.13-IV.N.15) for liquefaction potential. Liquefaction of medium dense saturated Dune sand at the site could result in about 1 inch of ground deformation or settlement, loss of bearing pressure, lateral spreading, and other potentially damaging effects. Therefore, after suitable excavation for the foundation of the proposed project which is expected to remove the Dune sand, and with adherence to the regulatory requirements in the San Francisco Building Code regarding foundation design and construction, the potential impacts from liquefaction and any resulting earthquake-induced settlement would be reduced to less than significant. No mitigation measures are necessary.

Impact GE-2: The proposed project would not result in substantial soil erosion or loss of topsoil. (*Less than Significant*) (Criterion N.2)

The project site is flat and fully developed. Soils are not currently exposed. Soil would be exposed for a short time during demolition of existing structures and construction of the proposed tower. However, as discussed in Impact HY-4 in Section IV.O, Hydrology and Water Quality, p. IV.O.16, compliance with the City's requirements for protection of exposed soils from erosion and runoff would ensure that this impact would be less than significant. No mitigation measures are necessary.

Impact GE-3: The proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse. (*Less than Significant*) (Criterion N.3)

As discussed above, the project site is underlain by up to 30 feet of Dune sand. Excavation to a depth of approximately 41 feet below the surface would occur beneath the 1978 annex on the west side of the Aronson Building. Excavation would occur beneath the area currently occupied by the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. To prevent slope instability and settlement, the sides of the excavation would be properly sloped or shored up using engineering practices such as soil-cement walls and underpinning, and significant impacts would not be expected. Various methods of underpinning are available, but because of the groundwater depth and the presence of marsh deposits and Dune sand, the recommended method is the installation of slant piles using slurry to maintain the shaft.[30] Further, adherence to the City Building Code requires that the foundation of the building be designed and installed to protect against lateral spreading, subsidence, liquefaction or collapse. Therefore, this impact would be less than significant. No mitigation measures are necessary.

[30] *Updated Preliminary Geotechnical Study*, p. 7.

Impact GE-4: The proposed project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property. (*Less than Significant*) (Criterion N.4)

As discussed above on p. IV.N.2, the project site is underlain by several clay layers. This material could be subject to expansion. The Uniform Building Code classifies expansive soils in five categories, from very low potential expansion to very high. The geotechnical investigation revealed that the underlying soils of sandy and clay layers at the project site would not be highly expansive, and would rate below 50 on the expansive soil scale, which would qualify as either low or very low expansiveness.[31] Further, the proposed project would comply with the City Building Code and its requirements that the foundation of the building be designed and installed to protect against expansive soil. Therefore, this impact would be less than significant. No mitigation measures are necessary.

Impact C-GE-1: The proposed project, in combination with other past, present and other reasonably foreseeable future projects in the vicinity, would not result in a cumulatively considerable contribution to significant adverse cumulative impacts with respect to geology, soils, or seismicity. (*Less than Significant*) (Criterion N.1)

Development of the project would have less-than-significant impacts related to exposing persons or structures to geologic, soils, or seismic hazards. The proposed project, combined with other reasonably foreseeable development in the immediate project vicinity, would result in increased population and development in an area subject to seismic risks and hazards. However, the proposed project and all other foreseeable projects in the immediate vicinity would be required to implement appropriate geotechnical design requirements similar to those discussed in this section and to adhere to all State and local programs, requirements, and policies pertaining to building safety and construction permitting. Therefore, the proposed project, combined with other foreseeable development in the immediate vicinity, would not result in a cumulatively considerable contribution to significant cumulative impacts to geologic conditions or soils. Thus, the cumulative impacts related to the risks of exposing people or structures to geologic hazards, soils, and/or seismic conditions would be less than significant. No mitigation measures are necessary.

[31] Memo re: telephone conversation with Cary Ronan of Treadwell & Rollo, January 27, 2012, cited above.

O. HYDROLOGY AND WATER QUALITY

The Setting section describes the existing hydrology of the project site, including water quality, drainage, and groundwater. The Impacts discussion lists significance criteria and describes the potential changes in drainage, stormwater management, and groundwater conditions that would result from construction and operation of the proposed project. Flooding risks are also discussed. The Impacts discussion also considers whether the proposed project in combination with other reasonably foreseeable development projects in the vicinity of the project site would contribute to cumulative environmental impacts related to hydrology and water quality.

SETTING

CLIMATE

San Francisco has a Mediterranean climate with cool wet winters and relatively warmer dry summers. Temperatures in San Francisco average 58˚ Fahrenheit (F) annually, ranging from the mid-40s in winter to the mid-70s in late summer. Strong onshore winds in summer keep the air temperature cool and generate fog through September. Temperatures are warmest in September and October. The average annual rainfall in San Francisco is approximately 20 inches and is generally confined to the wet season, from October through April. Long-term rainfall records indicate that wet and dry cycles lasting several years are common in the San Francisco Bay Area. Severe rainstorms occur approximately once every three years. Except for occasional tropical storms or drizzle from thick marine clouds, summers are nearly completely dry. Coastal fog reduces summer irrigation requirements in some areas.

DRAINAGE

The project site is an approximately 1.45-acre site in the Yerba Buena Center area of the Financial District, south of Market Street. The area surrounding the project site is highly developed with streets, buildings, and landscaping. The project site consists of a building, a driveway, a paved vacant lot, and walkways. The existing topography is essentially flat and slopes gently to the southeast.[1] The site of the Aronson Building and its surroundings have been occupied by buildings since at least 1853, and perhaps as early as 1849.[2]

---

[1] AllWest Environmental, Inc., *Environmental Site Assessment, Commercial and Office Building, 706 Mission Street, San Francisco, California,* December 15, 2005, p. 6 (herein referred to as "AllWest Phase I Report"). A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[2] Knapp & VerPlanck Preservation Architects, *Historic Resources Evaluation, The Aronson Building, 706 Mission Street, San Francisco,* California, June 23, 2011, p. 36.

Prior to development of the project site in the mid- to late-1800s, the topography of the site was slightly rolling, sloping toward San Francisco Bay to the east. Several minor drainage channels directed runoff into the Bay. The original sand-dune topography was graded flat when the area was developed. The original drainage ways were filled and eventually San Francisco installed an underground storm drain system that discharges all runoff to the combined sewer system. The combined sewer system is operated by the San Francisco Public Utilities Commission (SFPUC).

Today, there are no drainage features; runoff is diverted into storm drains and directed into the City's combined stormwater and sanitary sewer system. The site has minimal landscaping located at-grade adjacent to and west of the Aronson Building, so that virtually all precipitation is runoff and is directed to the storm drains.

STORMWATER

Throughout San Francisco, stormwater enters the combined sewer system through roof drains on buildings and catch basins along the streets. Because San Francisco is highly urbanized, most of the rainwater flows to the sewer system. During light rainfall, runoff enters the combined sewer system and flows to SFPUC's Southeast Plant, located on Phelps Street near Third and Evans Streets, where it is treated and discharged to San Francisco Bay and the Pacific Ocean. When treatment capacity is reached, additional flows are stored temporarily in the underground transport/storage facilities and released gradually for treatment and discharge.

During dry weather, all sanitary sewage and stormwater runoff from the east side of San Francisco (approximately 67 million gallons per day [mgd]) is currently pumped to the Southeast Plant, and treated to secondary effluent quality[3] before flowing by gravity to the Bay via a 900-foot-long pipe. During light rainfall, all flows to the Southeast Plant (up to 250 mgd) continue to receive this level of treatment.

When the combined volume of storm and sanitary inflows to the Southeast Plant exceeds the capacity of the plant, a sewer overflow occurs. During a sewer overflow event, the wastewater is held in large, underground storage boxes before being pumped for disposal through the southeast outfall. When overflow events occur, the contents are mainly rainwater. (Studies have shown that overflows are approximately 94 percent stormwater.) The outfall structures are equipped with weirs and baffles that trap wastewater solids that have not settled. Overflows thus undergo essentially the equivalent of primary treatment prior to discharge. All discharge facilities are operated in compliance with permits issued by the San Francisco Bay Regional Water Quality

[3] Secondary effluent has undergone treatment to remove floatable materials (such as oil and grease), settleable materials (such as sand and gravel), and a substantial portion of the organic compounds in the waste. In San Francisco, it is treated with chlorine to kill bacteria and the chlorine is removed before being discharged.

Control Board (RWQCB). The Southeast Plant's treatment system is designed and permitted pursuant to the City's National Pollutant Discharge Elimination System (NPDES) permit.

The City's combined sewers are designed to convey the five-year design storm adequately.[4] Over time, however, paved and other impermeable surfaces (e.g., buildings) in the City have increased due to development, increasing the amount of water that enters the combined sewers. The design capacity of the combined sewers is not always sufficient to handle this increased flow, resulting in sewer overflows in some neighborhoods. Sewer overflows have not occurred near the project site.

GROUNDWATER

San Francisco overlies all or part of seven groundwater basins: the Lobos, Marina, Downtown, and South Basins, located wholly within the city limits, and the Westside, Islais Valley, and Visitation Valley Basins, which extend south into San Mateo County. The project site overlies the Downtown Groundwater Basin, located in the northeastern portion of San Francisco. Except for the Westside and Lobos Basins, groundwater in San Francisco's groundwater basins is insufficient for municipal supply due to low yield.

Early in its history, San Francisco made use of local groundwater, springs, and spring-fed surface water. However, after surface water supplies were developed in the Peninsula and Alameda watersheds and the Hetch Hetchy system was completed in the 1930s, the use of groundwater for the water supply system has been minimal.

The soils underlying the project site are primarily sandy fill and native dune sand to depths of 23 to 30 feet, and therefore have relatively high percolation rates, resulting in a moderate to high capacity for infiltration potential. However, most of the site is covered with pavement or structures, thus reducing the amount of stormwater infiltration. Before development of the east side of the City, rainfall percolated into the ground. During the past 100 years, however, development on the east side of the City, including the project site, has reduced recharge of the Downtown Basin as open ground was replaced with pavement and structures, reducing the infiltration area. This change in drainage has resulted in much less infiltration into the Downtown Basin.[5]

[4] The five-year design storm is a storm event that has an annual exceedance probability of 20 percent, or a chance of occurring once every five years.

[5] SFPUC, San Francisco Groundwater Supply Project Fact Sheet, Fall 2009. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

WATER QUALITY

The quality of surface water and groundwater in San Francisco is affected by past and present land uses, as well as by the composition of local geological materials. Water quality in surface and groundwater bodies is regulated by the RWQCB, which is responsible for implementation of State and Federal water quality protection regulations. The RWQCB implements the *Water Quality Control Plan*, a master policy document that identifies beneficial uses of the water resources of the Bay Area and establishes water quality management policies for the region.

There are no natural surface water features on the project site. San Francisco Bay is the surface water body nearest the project site.

FLOODING AND RELATED RISKS

Flooding and Flood Maps

Flooding can be defined as inundation of normally dry land by the overflow of inland or tidal waters, the unusual and rapid accumulation or runoff of surface waters from any source, or mudflows caused by flooding. Evaluations of flooding risk incorporate stormwater, tides, waves, seiche, tsunami, and sea level rise.

The 100-year flood is the flood with a 1 percent probability of occurring in a given year. The Federal Emergency Management Agency (FEMA, a part of the U.S. Department of Homeland Security) issues 100-year floodplain maps. The 100-year maps are an integral part of an insurance and regulatory structure. FEMA manages the National Flood Insurance Program (NFIP). Under the NFIP, the Federal government provides financial backing for affordable flood insurance, in exchange for the local government adopting and enforcing floodplain management regulations.[6] In addition to insurance purposes, the FEMA 100-year flood maps are widely used to assess flood risk. FEMA prepared Preliminary Flood Insurance Rate Maps (FIRM) for the City in 2007.[7] FEMA is in the process of updating its maps for the City.

---

[6] City and County of San Francisco, Office of the City Administrator, "San Francisco Floodplain Management Program Fact Sheet" (one page), revised January 25, 2011 (hereinafter "1/25/2011 Floodplain Management Program Fact Sheet Summary"), available online at http://sfgsa.org/Modules/ShowDocument.aspx?documentid=7519, accessed on April 27, 2012.

[7] For more detail, see City and County of San Francisco, Office of the City Administrator, "San Francisco Floodplain Management Program Fact Sheet" (four pages), revised January 25, available online at http://sfgsa.org/index.aspx?page=828, under "Floodplain Management Program Fact Sheet Extended - 4 pgs (PDF)," accessed on April 27, 2012.

The City and County of San Francisco participates in the NFIP. The Mayor and Board of Supervisors approved a Floodplain Management Ordinance and prepared accompanying flood zone maps in 2008 that regulate new construction and substantial improvements to structures in flood-prone areas.[8] The Board of Supervisors has amended the Floodplain Management Ordinance in response to FEMA's comments.[9]

The lowest surface elevation of the project site is approximately 40 feet above mean sea level.[10] The project site is approximately 0.7 mile west of the Bay shoreline.

According to the City's floodplain map,[11] the project site is not within a potential flood hazard area. The following subsections discuss additional hydrological risks: sea level rise, seiche, tsunamis, and reservoir failure.

Sea Level Rise

The Intergovernmental Panel on Climate Change (IPCC) is a non-governmental body associated with the United Nations that assesses global warming and climate change. It reviews worldwide scientific work on the physical aspects and potential environmental impacts of climate change, and proposes policy recommendations. The IPCC asserts that the rate of sea level rise accelerated between the mid-19th and the mid-20th centuries. There are regional differences, with sea level rising in some regions and falling in others.

The IPCC's *Fourth Assessment Report* estimates sea level rise based on "a hierarchy of models that encompasses a simple climate model, several Earth Models of intermediate complexity, and a large number of Atmosphere-Ocean General Circulation Models, as well as observational constraints."[12] The report estimates a sea level rise of 7 to 23 inches by the year 2100, with the caveat that there is insufficient published scientific information to estimate a maximum.

Certain agencies in California have adopted larger estimates of potential sea level rise for planning purposes. The San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over development within 100 feet of the shoreline. BCDC plays a key role in planning for protection of San Francisco Bay. BCDC, with funding provided by the California

[8] 1/25/2011 Floodplain Management Program Fact Sheet Summary.
[9] Ordinance 56-10 (2010), available online at http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0056-10.pdf, accessed April 24, 2012.
[10] AllWest Phase I Report, p. 9 (citing a United States Geological Survey map of 1997).
[11] The San Francisco's Interim Floodplain Maps of July 2008 are available online at http://www.sfgsa.org/index.aspx?page=828, accessed April 27, 2012. The map for northeastern San Francisco can be viewed from this page via the link.
[12] IPCC, 2007. *Climate Change 2007: Synthesis Report* in *Fourth Assessment of the Intergovernmental Panel on Climate Change* (Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA) (hereinafter "*2007 IPCC Synthesis Report*"), p. 45, Table 3.1, note (a).

Energy Commission's Public Interest Energy Research Program and the United States Geologic Survey, developed potential sea level rise maps. BCDC maps show areas vulnerable to sea level rise, assuming a forecast of 16 inches of sea level rise by 2050 and 55 inches by 2100 (which is greater than the estimate presented in the IPCC's *Fourth Assessment Report*).

In a similar vein, the California State Lands Commission has directed its staff to evaluate proposed development projects in relation to sea level rise scenarios of 16 inches and 55 inches, and perform a variety of other analytical and planning activities to address potential sea level rise.[13]

Because the project site is approximately 40 feet above mean sea level, even assuming the largest of the sea level rise scenarios discussed above were to occur, the project site would not be affected by the additive effect of sea level rise along with other Bayside flood risks, such as storm wave action or tsunami.

Seiche and Tsunami

A seiche is an oscillation of an enclosed or semi-enclosed body of water, such as a lake, bay, or harbor. A seiche may be caused by earthquakes, tsunamis, tides, strong winds, and changes in atmospheric pressure. Triggering forces at specific frequencies relative to the size of the basin are key to generating a seiche.

A tsunami is an ocean wave originating from an underwater disturbance, such as earth movement due to an earthquake, volcanic eruption, landslide, or explosion. Based on a recent coastal engineering study for a ferry terminal at Treasure Island, there have been three tsunamis associated with a wave height or run-up within San Francisco Bay of 1 foot or more since 1851:[14,15]

- March 31, 1898. Earthquake on the Rogers Creek fault in Northern California. Maximum run-up of 2 feet observed in the Bay (location not specified).

---

[13] California State Lands Commission, *A Report on Sea Level Rise Preparedness*, December 2009, available online at http://www.slc.ca.gov/Reports/SEA_LEVEL_Report.pdf, accessed April 24, 2012.

[14] Skidmore, Owings & Merrill, LLP and Moffat & Nichol, *Treasure Island Ferry Terminal Project: Coastal Engineering Assessment*, prepared for the Water Emergency Transportation Authority, August 2009, p. 17. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2007.0903E.

[15] The run-up from the March 11, 2011 tsunami in Japan was about 0.7 foot on the shore of San Francisco. See National Oceanic and Atmospheric Administration, NOAA Center for Tsunami Research, web page, "Japan (East Coast of Honshu) Tsunami, March 11, 2011," available online at http://nctr.pmel.noaa.gov/honshu20110311/. (Click on link for West Coast for gauge information). http://nctr.pmel.noaa.gov/honshu20110311/images/comp_plots/2011honshu_westcoast.pdf, accessed January 8, 2012.

- May 22, 1960. Earthquake in south central Chile. Maximum observed run-up was 2.9 feet in San Francisco and 1.9 feet at Alameda.
- March 28, 1964. Earthquake in the Gulf of Alaska, Alaska Peninsula. Maximum observed run-up was 3.6 feet at San Francisco and 2.6 feet at Alameda. The 1964 Alaska event represents an event with a return period (the estimated interval of time between events) of more than 300 years.

The project site is not located within an area that is subject to inundation by seiche, tsunami, or mudflow, as shown on the Association of Bay Area Governments' Tsunami Inundation Map.[16]

Reservoir Failure

A Dam Failure Inundation Hazard Map prepared by the Association of Bay Area Governments shows that the project site is not located within an area that would be flooded as the result of failure of a levee or dam.[17]

REGULATORY FRAMEWORK

Federal Laws and Regulations

Clean Water Act

The Federal Clean Water Act (CWA), enacted by Congress in 1972 and amended several times since inception, is the primary Federal law regulating water quality in the U.S. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA prescribes the basic Federal laws for regulating discharges of pollutants into waters of the U.S., including setting water quality standards for contaminants in surface waters, establishing wastewater and effluent discharge limits from various industry categories, and imposing requirements for controlling non-point source pollution.

The CWA addresses pollution from non-point sources and includes managing such pollution through NPDES permits. The U.S. Environmental Protection Agency (USEPA) has authority to issue NPDES permits for several categories of stormwater discharges, including discharges associated with industrial activity; discharges from municipal dischargers with populations equal to or exceeding 100,000; and discharges judged by the permitting authority to be significant sources of pollutants or which contribute to a violation of a water quality standard. Under this

[16] Association of Bay Area Governments, Tsunami Inundation Map for Emergency Planning, available online at http://www.abag.ca.gov/bayarea/eqmaps/tsunami/tsunami.html, accessed April 25, 2012; also San Francisco Planning Department, 20-Foot Tsunami Run-Up Map, available online at http://www.sf-planning.org/ftp/General_Plan/images/I8.community_safety/Map6.gif, accessed April 25, 2012.

[17] Association of Bay Area Governments, Dam Failure Inundation Hazard Map for San Francisco, available online at http://www.abag.ca.gov/cgi-bin/pickdamx.pl, accessed April 25, 2012.

authority, the USEPA requires municipal stormwater dischargers to obtain a municipal discharge permit for stormwater runoff.[18] The USEPA has issued a general NPDES permit for construction sites that would disturb 1 or more acres of land. The USEPA has also issued a general NPDES permit (called the multi-sector general permit) for industrial facilities other than construction sites.

Under the General Permit for Storm Water Discharges Associated with Construction Activity (for projects that disturb more than 1 acre of land), the project sponsor must file a public Notice of Intent to discharge stormwater and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must include a site map and a description of proposed construction activities. In addition, it must describe the Best Management Practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and report the results to the State Water Resources Control Board to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

State Laws and Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) was adopted by the State legislature in 1969 and is the primary State statute covering the waters of California. The act specifies water quality provisions and discharge requirements for regulating the discharge requirements that could affect the quality of State waters. Under the act, the State Water Resources Control Board has the ultimate authority over State water rights and water quality policy. The RWQCB is responsible for the oversight of local water quality on a day-to-day basis.

Under Porter-Cologne, the RWQCB regulates the discharge of waste to the waters of the State. The terms “discharge of waste” and “waters of the State” are broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other discharge that may directly or indirectly affect waters of the State. Waters of the State may include any surface water or groundwater, including saline waters, within the boundaries of the State. This jurisdiction includes waters that the U.S. Army Corps of Engineers deems to be wetlands. Any party proposing to discharge waste that could affect waters of the State must file a report of waste discharge with the RWQCB, which will then respond to the report by issuing Waste Discharge Requirements (WDRs) in a public hearing, or by waiving WDRs (with or

[18] See, e.g., 40 Code of Federal Regulations part 122.26.

without conditions) for the proposed discharge. A WDR may also be issued in addition to a water quality certification under Section 401 of the CWA.

As described above, the RWQCB is required to develop, adopt, and implement a Water Quality Control Plan, also known as a Basin Plan, for its region. The Basin Plan is the master policy document that describes the legal, technical, and programmatic basis of water quality regulation for the Basin. The Basin Plan identifies beneficial uses of surface water and groundwater in the Basin, specifies water quality objectives and standards for surface water and groundwater, and develops the actions necessary to control nonpoint and point sources of pollutants in the State's waters.

Local Regulations

City of San Francisco Construction Site Water Pollution Prevention Program

The City of San Francisco Construction Site Water Pollution Prevention Program requires stormwater quality BMPs at all construction sites, regardless of the size of the site and whether the site drains to the combined sewer or a separate storm sewer system.

For sites that disturb one or more acres and drain to the separate sewer system, compliance with the Construction General Permit and preparation and implementation of a SWPPP that meets Construction General Permit conditions is required. For sites that discharge to the combined sewer system, a SWPPP that includes an Erosion and Sediment Control Plan and meets SFPUC requirements must be submitted to the SFPUC prior to initiation of construction.

Stormwater Management Ordinance

The Stormwater Management Ordinance (SMO) was created to implement green infrastructure systems within San Francisco to help minimize stormwater runoff to the combined sewer and storm sewer system collection systems, and help protect receiving bay and ocean waters.[19] Under the SMO, every development project with 5,000 square feet or more of ground disturbance must comply with the *Stormwater Design Guidelines*.[20] The SMO provides for inspections, sampling, notification regarding spills, and enforcement.[21]

[19] SFPUC, Urban Watershed Management Program, "Announcement of Stormwater Management Ordinance (SMO)," Ordinance No. 83-10, undated.
[20] Stormwater Management Ordinance, Section 147.2.
[21] Stormwater Management Ordinance, Section 147.4.

Stormwater Design Guidelines

The SFPUC and the Port of San Francisco developed the *San Francisco Stormwater Design Guidelines*.[22] The guidelines set forth a planning process for stormwater management and guidance for developing integrated, Low Impact Design (LID) solutions using site- and neighborhood-scale BMPs.[23] The *Stormwater Design Guidelines* include seven principles:

1) Preserve and protect existing waterways, wetlands, and vegetation.
2) Preserve natural drainage patterns and topography and use them to inform design.
3) Think of stormwater as a resource, not a waste product.
4) Minimize and disconnect impervious surfaces.
5) Treat stormwater at its source.
6) Use treatment trains to maximize pollutant removal.
7) Design the flow path of stormwater on a site all the way from first contact to discharge point.

Per requirements of the *Stormwater Design Guidelines*, this project must achieve Leadership in Energy and Environmental Design (LEED) Sustainable Sites (SS) c6.1, "Stormwater Design: Quantity Control." Therefore, the proposed project must implement a stormwater management approach that reduces existing stormwater runoff flow rate and volume by 25 percent for a two-year 24-hour design storm.

Green Building Ordinance

In 2008, the City adopted the San Francisco Green Building Ordinance and incorporated it as Chapter 13 of the Building Code. This requires green building practices and LEED certification for new residential and commercial buildings in the City. The Ordinance requires residential buildings over 75 feet to be LEED Certified and earn specific credits addressing water efficiency, stormwater management, and construction waste management (designated WEc1.1, WEc3.1, MRc2.1, SSc6.1 and SSc6.2). The stormwater management requirements (SSc6.1 and SSc6.2) seek to reduce the quantity of stormwater and improve its quality.

[22] San Francisco Public Utilities Commission and Port of San Francisco, *San Francisco Stormwater Design Guidelines*, effective May 22, 2010, available online at http://sfwater.org/index.aspx?page=446, accessed April 25, 2012. The SFPUC adopted the guidelines on January 12, 2010.

[23] Low Impact Design approaches use stormwater management solutions that promote the use of ecological and landscape-based systems that mimic pre-development drainage patterns and hydrologic processes by increasing retention, detention, infiltration, and treatment of stormwater at its source.

General Plan

The Environmental Protection Element of the *San Francisco General Plan* contains the following objectives and policies relating to wastewater facilities:

Objective 3:	Maintain and improve the quality of the Bay, ocean and shoreline areas.
Policy 3.1:	Cooperate with and otherwise support regulatory programs of existing regional, State, and Federal agencies dealing with the Bay, Ocean, and Shorelines.
Policy 3.3:	Implement plans to improve sewage treatment and halt pollution of the Bay and Ocean.

IMPACTS

SIGNIFICANCE CRITERIA

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

O.1 Violate any water quality standards or waste discharge requirements;

O.2 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);

O.3 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 of siltation on- or off-site;

O.4 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;

O.5 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;

O.6 Otherwise substantially degrade water quality;

O.7 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;

O.8 Place within a 100-year flood hazard area structures that would impede or redirect flood flows;

O.9 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

O.10 Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

The project site is not located nor would it place housing within a 100-year flood hazard area, nor in an area that would be flooded as the result of failure of a levee or dam. Additionally, the proposed project would not subject people or structures to inundation by a seiche, tsunami, or mudflow. Therefore, Criteria O.7, O.8, O.9, and O.10 are not applicable and are not discussed further in this EIR.

PROJECT FEATURES

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower (a 520-foot-tall building with a 30-foot-tall elevator/mechanical penthouse). The new tower would be adjacent to and physically connected to the existing 10-story, 154-foot-tall Aronson Building, which would be restored and rehabilitated as part of the proposed project. The existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a new 15-foot-tall solarium would be constructed, resulting in an overall building height of 159 feet for the Aronson Building.

Construction of the proposed project would disturb more than 5,000 square feet of soil. Therefore the proposed project would be subject to the City's SMO. The project sponsor would be required to develop a Stormwater Control Plan[24] consistent with San Francisco's Stormwater Design Guidelines that locates and sizes source control and treatment BMPs prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management would meet the applicable LEED guidelines.[25]

In addition, as discussed and analyzed in Chapter VI, Project Variants. Variant 2, which begins on p. VI.10, and Variant 4, which begins on p. VI.25, would call for additional excavation north of

[24] San Francisco Public Works Code, § 147.2(a) (requiring a Stormwater Control Plan for a Development Project).

[25] San Francisco Green Building Ordinance, § 1304C.0.3, "Stormwater," available online at http://sfenvironment.org/article/new-construction-and-major-renovations/green-building-ordinance-san-francisco-building-code, accessed April 25, 2012.

the Aronson Building to construct a vehicular access ramp from Third Street to the Jessie Square Garage. Impacts of the ramp's construction on hydrology and water quality are discussed in Chapter VI, Project Variants.

To achieve LEED standards in combined sewer areas, the project must demonstrate compliance with the Stormwater Control Plan, which requires that the proposed project decrease the volume of pre-development stormwater runoff by 25 percent, based on a two-year storm.[26] The *Stormwater Design Guidelines* provide the following suggested measures for high-rise residential projects, which may be included in the future Stormwater Control Plan in order to decrease the volume of pre-development stormwater runoff: 1) downspout discharges to vegetated roof to reduce runoff, 2) vegetated roof to reduce runoff, 3) green wall to slow runoff, 4) downspout connected to dry well, 5) permeable paving in pedestrian areas, 6) rain garden for bio-infiltration, 7) bio-retention planter with curb cuts, and 8) downspout connected to large-scale cistern for rainwater harvesting.[27]

Impact HY-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. *(Less than Significant)* (Criteria O.1 and O.6)

Domestic wastewater from the project site flows to the City's combined sewer system, where it is treated to standards contained in the City's NPDES Permit for the Southeast Plant prior to discharge. During dry weather (typically May 1 to October 15), all sanitary sewage generated at the project site is treated at the Southeast Plant, which currently operates at about 80 percent of its design capacity. The additional dry weather flow associated with the proposed project could be accommodated within the system's existing capacity. During wet weather (typically October 16 to April 30), the combined sewer system collects large volumes of stormwater runoff, and other facilities in the City provide additional treatment as needed before discharging treated effluent to the Bay. When combined flows exceed the total capacity of all of the facilities, excess flows receive primary treatment and are discharged through combined sewer overflow (CSO) structures located along the Bayside waterfront. These intermittent CSO discharges occur in compliance with the current NPDES permit.

Discharge of typical domestic wastewater to the City's existing wastewater treatment system would not violate any water quality standards or waste discharge requirements and would be within the capacity of the Southeast Plant. During wet weather, any net increase in combined sewage could contribute to a cumulative increase in the average volume of CSO discharges to the

[26] Energy Design Resources, Credit 6.1 Stormwater Design, Quantity Control, available online at http://www.energydesignresources.com/design/applying-leed/sustainable-sites/credit-61-stormwater-design,-quantity-control.aspx, accessed April 25, 2012.
[27] Stormwater Design Guidelines, p. 41, Figure 9.

Bay. Such an increase could be a concern because the RWQCB has designated this portion of the Bay as an impaired water body under Section 303(d) of the Clean Water Act, which indicates water quality standards are not expected to be met after implementation of technology-based effluent limitations, and because CSO discharges contain pollutants for which the Bay is impaired. However, as discussed in Section IV.K, Utilities and Service Systems, pp. IV.K.2-IV.K.3, the City is undertaking a number of measures to reduce the quantity and frequency of overflows and improve the water quality of overflows. In light of these efforts, the proposed project would result in less-than-significant impacts with respect to water quality standards or waste discharge requirements. No mitigation measures are necessary.

Impact HY-2: The proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge. ***(Less than Significant)*** **(Criterion O.2)**

Groundwater beneath the project site is not used as a water source and the proposed project would not interfere with groundwater supplies. The existing project site is developed and almost completely covered with impervious surfaces (e.g., buildings and walkways). There is a small at-grade landscaped area on the 706 Mission Street lot adjacent to the Aronson Building. The proposed project would slightly increase the amount of impervious surface on the site by covering this area with building structure. Because the project site is contributing very little to groundwater recharge, the proposed project would interfere to only a small degree with groundwater recharge.

With respect to groundwater and the need for construction dewatering, construction of the proposed project would involve ground disturbance. Excavation to a depth of approximately 41 feet below the surface would occur beneath the area currently occupied by the 1978 west annex and adjacent site corridor on the west side of the Aronson Building. Excavation would occur beneath the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. The proposed project would not require excavation along the north side of the Aronson Building.

For the Mexican Museum parcel, the additional structural load of the proposed tower would be accommodated through the thickening of the existing mat slab foundation, the installation of drilled piles, or a combination of the two. If drilled piles are installed, the piles would reach a depth of approximately 80 feet.

Groundwater is present beneath the site at depths of approximately 18 to 30 feet. Historic data for the area indicate the groundwater level may rise as high as the ground surface.[28] Therefore, the proposed excavation would likely require dewatering at the site during construction of the new building.

Groundwater produced during construction dewatering would be discharged to the combined sewer system in accordance with Article 4.1 of the San Francisco Public Works Code, as supplemented by Order No. 158170, which regulates the quantity and quality of discharges to the combined sewer system. This permit would contain appropriate discharge standards and may require installation of meters to measure the volume of the discharge. As part of its Water Pollution Prevention Program, the SFPUC's Environmental Regulation and Management Department must be notified of projects necessitating dewatering, and may require water analysis before discharge.

Although the *Updated Preliminary Geotechnical Study* is available for the proposed project, a final soils report is needed for making final engineering decisions regarding the foundation and other structural details and for deciding on final excavation and construction methods. This final soils report for the proposed project would address the potential settlement and subsidence impacts of dewatering. The report would contain a determination as to whether a lateral movement and settlement survey should be done prior to dewatering to monitor for any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey were recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the San Francisco Building Code) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable movement were to occur during dewatering, groundwater recharge would be used to halt this settlement. Costs for the survey and any necessary repairs to service lines under the streets would be borne by the project sponsor. Although the groundwater could contain contaminants related to past site activities, as discussed in Section IV.P, Hazards and Hazardous Materials, as well as sediment and suspended solids, the groundwater would be treated, as necessary, to meet permit requirements prior to discharge. Long-term dewatering would not be required because the underground structure would be waterproofed and constructed to withstand the hydrostatic pressure of the groundwater.

[28] Treadwell & Rollo, *Updated Preliminary Geotechnical Study, 706 Mission Street, San Francisco, California*, November 18, 2009, p. 3. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

In view of the above, the proposed project would have a less-than-significant impact regarding groundwater supplies and levels. No mitigation measures are necessary.

Impact HY-3: The proposed project would not 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 or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. (*Less than Significant*) (Criteria O.3 and O.4)

Stormwater from the project site is currently conveyed to storm drains that enter the City's combined sewer system. With the proposed project, runoff from the site would continue to flow to the combined sewer system, and the proposed project would not substantially alter the existing drainage pattern. There are no surface drainage features, i.e., a stream or river; therefore, the project would not alter the course of a stream or river and would not result in substantial erosion or siltation on or off site.

Because the project site is already developed and almost entirely covered with impervious surfaces, the proposed project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. In addition, the proposed project would comply with the Stormwater Design Guidelines, as it would retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection systems.

For the above reasons, impacts related to the alteration of an existing drainage pattern of the site or area would be less than significant. No mitigation measures are necessary.

Impact HY-4: Construction of the proposed 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)* (Criterion O.5)

Although the proposed project would occur within an area that is already developed, construction activities such as earthwork could lead to erosion where soil is exposed. In accordance with LEED guidelines for development of sustainable sites and Article 4.2 of the San Francisco Public Works Code, the project sponsor would prepare an erosion control plan specifying erosion control measures to prevent loss of soil during construction by stormwater runoff and/or wind erosion and to prevent sedimentation from entering the combined sewer system. The plan would be reviewed and approved by the City prior to construction, and the City would conduct periodic inspections to ensure compliance with the plan. With preparation and implementation of the erosion control plan, water quality impacts related to on- and off-site erosion and siltation during construction of the proposed project would be less than significant. No mitigation measures are necessary.

Impact HY-5: Operation of the proposed 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)* (Criterion O.5)

The project site is in a combined sewer area. Compliance with the SMO in general will require the project to maintain or reduce the existing volume and rate of stormwater runoff discharged from the site. To achieve this, the project would implement and install appropriate stormwater management systems that retain runoff on site, promote stormwater reuse, and limit site discharges before entering the combined sewer collection system. Because more than 5,000 square feet of soils disturbance would occur, the project sponsor would have to comply with the City's Stormwater Design Guidelines and develop a Stormwater Control Plan. The Stormwater Control Plan would be reviewed by the SFPUC prior to issuance of the building permit.

Per the *Stormwater Design Guidelines* requirements, this project must achieve LEED SSc6.1, "Stormwater Design: Quantity Control." Therefore, the project must implement a stormwater management approach that reduces existing stormwater runoff flow rate and volume by 25 percent for a two-year 24-hour design storm. In accordance with the SMO, the proposed project would be designed with Low Impact Design approaches and stormwater management systems to comply with the Stormwater Design Guidelines.

Regarding potential, additional sources of polluted runoff, the proposed project would include common residential open space in the form of an approximately 8,625-gsf outdoor terrace on the roof of the Aronson Building, as well as public open space in the form of an approximately 3,500-gsf ground-floor plaza that would run along the southern, western, and northern façades of the proposed tower. The museum may include an approximately 2,500-gsf outdoor terrace on the roof of the tower podium, which would be located on the fourth floor. In addition, there would be several private roof terraces at the upper levels of the tower, as described earlier. Some portion of the runoff may be designed and incorporated into the proposed project's planned stormwater reduction strategies. The remainder of the runoff from all of these open space areas would drain to the storm drains and the City's combined sewer system. To the extent that these open space areas have vegetation, they would increase retention and detention of rainwater, which is a Low Impact Design concept. Therefore, these open space areas would have a less-than-significant impact on runoff, and no mitigation measures are necessary.

Impact C-HY-1: The proposed project, in combination with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact on hydrology and water quality. (*Less than Significant*)

The proposed project would not impact local drainage patterns; alterations of a stream or river; placement of housing or structures in a 100-year floodplain; or inundation due to dam or levee failure, or tsunami, seiche, or mudflow; therefore, it would also not contribute to cumulative impacts with respect to these issues. The proposed project would incorporate measures to temporarily detain a portion of stormwater on site, pursuant to the SMO and the required Stormwater Control Plan. The proposed project would result in no increased impacts to groundwater levels or existing drainage patterns compared to the existing conditions. Therefore, it would not considerably contribute to any future impacts from the cumulative development projects. These development projects would also be required to follow erosion and dust control measures and dewatering water quality regulations, similar to the proposed project. The proposed project would not make a cumulatively considerable contribution to significant cumulative impacts regarding violation of any water quality standards or waste discharge requirements; creation or contribution of runoff water which would exceed the capacity of existing or planned stormwater drainage systems; or generation of substantial additional sources of polluted runoff that would cumulatively contribute to the substantial degradation of water quality. For these reasons, the proposed project would not result in a cumulatively considerable contribution to significant cumulative impacts to hydrology and water quality, and cumulative hydrology and water quality impacts related to the project would be less than significant. No mitigation measures are necessary.

P. HAZARDS AND HAZARDOUS MATERIALS

This section discusses impacts related to hazardous materials and physical hazards that could result from the construction and occupancy of the proposed project. It discusses routine hazardous materials that would likely be used in construction and operation of the proposed project. This section also considers whether the proposed project in combination with other reasonably foreseeable development projects in the vicinity of the project site would make a considerable contribution to cumulative environmental impacts related to hazards and hazardous materials.

SETTING

Hazardous materials are materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a substantial present or potential hazard to human health and safety or to the environment if released to the workplace or environment.[1] Hazardous wastes are wastes that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.[2]

SITE BACKGROUND

The project site has been developed with buildings used for stores, restaurants, and lodging since at least 1887. The Aronson Building was constructed in 1903. The San Francisco Earthquake and Fire destroyed the vast majority of buildings in this area of San Francisco in 1906. The interior of the Aronson Building was damaged by the 1906 Earthquake and Fire, but the exterior and structural system survived mostly intact, and it was rehabilitated after the earthquake. Since then, the ground-floor commercial space has been occupied by retail and restaurant uses and the upper floors by office uses. The upper floors may have been used for some clothing manufacturing activities from about 1955 to the mid-1970s. The interior was reconfigured, and two annexes were added to the building in 1978 as described in Chapter II, Project Description.

---

[1] Cal. Health and Safety Code Section 25501(p). Available online at http://codes.lp.findlaw.com/cacode/HSC/1/d20/6.95/1/s25501. Accessed April 27, 2012.

[2] Cal. Health and Safety Code Section 25117 (referring to Cal. Health and Safety Code § 25141). Available online at http://law.onecle.com/california/health/25117.html, accessed April 27, 2012; Cal. Health and Safety Code § 25141, available online at http://law.onecle.com/california/health/25141.html, accessed April 27, 2012.

The project site is located on Assessor's Block 3706, Lot 093, Lot 275, and a portion of Lot 277. (See Figure II.1: Project Location, in Chapter II, Project Description, p. II.2) Lot 093 is occupied by the Aronson Building, a 10-story mixed-use building currently occupied by a retail store on the ground floor and offices on the upper floors. Some of the office space is currently vacant. Lot 275 is the existing vehicular ramp from Stevenson Street into the Jessie Square Garage, an underground parking facility. The portions of Lot 277 that are part of the project site include the subsurface Jessie Square Garage and a vacant surface lot between Lot 093 and Jessie Square (the Mexican Museum parcel). There is a two-level, double-height, vacant structure beneath this parcel that was constructed when the Jessie Square Garage was built. In addition, the existing Jessie Square Garage, including an unused portion beneath the Contemporary Jewish Museum, would be conveyed to the project sponsor by the San Francisco Municipal Transportation Agency Board of Directors as part of the proposed project.

There are no schools closer than one-quarter mile of the project site. There is one day care center, the Yerba Buena Gardens Child Development Center, 0.28 mile from the project site at 790 Folsom Street.

The project site is not located within an airport land use plan area. The nearest public airport, San Francisco International Airport, is located more than 20 miles to the south. The project site is not located within the vicinity of a private airstrip. There are no hazards at the project site related to the operation of aircraft.

HAZARDOUS MATERIALS ON THE PROJECT SITE

Environmental Site Assessments (ESAs) are professional investigations that characterize existing conditions related to hazardous materials and hazardous waste contamination at a site. In 2005, a Phase I ESA was prepared for 706 Mission Street (the Aronson Building) (hereinafter referred to as the "706 Mission ESA").[3] In 2001, a Phase I and II ESA was prepared for the excavation and construction of the Jessie Square Garage (hereinafter referred to as the "Jessie Square ESA").[4] The ESAs describe current and prior uses of the property based on review of environmental agency databases and records and site reconnaissance observations. They discuss potential soil and groundwater contamination issues. The findings of the ESAs are discussed below.

[3] AllWest Environmental, Inc., *Environmental Site Assessment, Commercial and Office Building, 706 Mission Street, San Francisco, California,* December 15, 2005 (hereinafter referred to as the "706 Mission ESA"). A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[4] Treadwell & Rollo, *Phase I and II Environmental Site Assessment, Jessie Square Garage Project, 718 Mission Street, Block 3706, Lots 63-67, San Francisco, California*, prepared for Millennium Partners, July 17, 2001 (hereinafter referred to as the "Jessie Square ESA"). A copy of this document is available for review at the Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

The historical use of the 706 Mission Street site (Aronson Building site) included the presence of four underground storage tanks (USTs) for diesel fuel.[5] Three of the tanks were reported to have been removed in 1980 when a wall was constructed on the west side of the Aronson Building. The fourth tank was located on the north side of the Aronson Building. Its contents were removed in 1994,[6] though the tank is still in place.

A diesel-powered generator is located on the roof of the Aronson Building. No storage tank was observed.[7] A boiler, currently used by the retail space, is housed in a small building at the rear, adjacent to the pedestrian walkway to Third Street from Jessie Square.

Review of historical documents and aerial photographs of the site revealed no landfill activity or large-scale hazardous materials storage or uses at the project site.[8]

The 706 Mission ESA explored *potential* sources of hazardous materials, which include:

- Hazardous materials used in routine maintenance, such as paints, solvents, cleaners, and diesel fuel, stored and used in the store and offices in the building;
- Soil contamination in earthquake fill;
- USTs;
- Asbestos-containing building materials;
- Lead-based paint on building exteriors and interiors;
- Equipment containing polychlorinated biphenyls (PCBs); and
- Contamination from other sites in the project vicinity.

Each of these potential sources of hazardous materials is discussed below, after an overview of the Jessie Square ESA.

The Jessie Square ESA was prepared in 2001 in preparation for excavation and construction of the current structure, when Jessie Square was a surface parking lot. This ESA included the Mexican Museum parcel. The ESA did not study the pedestrian walkways adjacent to the Aronson Building on the north and west. The ESA included in its study area the Westin Hotel walkway, but no subsurface sampling was done there.

Historical uses of what is now Jessie Square included furniture manufacture, metal roofing works, electrical fixture and curtain factory, and unspecified uses.[9] Subsequently, the current

[5] 706 Mission ESA, pp. 2, 13.
[6] 706 Mission ESA, p. 3.
[7] 706 Mission ESA, p. 13.
[8] 706 Mission ESA, p. 2.
[9] Jessie Square ESA, p. 4.

underground parking garage was built, excavating to about 40 feet below ground,[10] with the improved Jessie Square at ground surface. A portion of the former Jessie Street is now the Westin Hotel walkway extending to Third Street. The adjacent Contemporary Jewish Museum was an electrical substation for decades.

The Jessie Square ESA concluded that nearby underground contamination, such as contamination from leaking USTs on surrounding city blocks, had not likely affected the Jessie Square site.[11] However, the Jessie Square site had artificial fill of unknown origin, and such fill in San Francisco may have metals, polynuclear aromatic hydrocarbons, and petroleum hydrocarbons. Some of this fill was removed during the construction of the Jessie Square Garage. Through 11 ground borings and 2 groundwater wells, the investigators took samples. The samples revealed elevated lead levels in the soil, which in some cases exceeded California criteria for total lead and soluble lead.[12] The samples did not conclusively reveal any groundwater contamination. The investigators roughly estimated that of the total of approximately 100,000 cubic yards of material to be excavated for building the Jessie Square Garage, approximately 4,200 cubic yards would qualify as hazardous waste due to lead contamination.[13] The amount of lead-contaminated soil actually removed during construction of the Jessie Square Garage is not available. Note that the Westin San Francisco Market Street Hotel (Westin Hotel) walkway north of the Aronson Building and extending to Third Street was not one of the areas sampled.[14]

The Jessie Square ESA found Total Recoverable Petroleum Hydrocarbons (TRPH) in 42 samples, with a maximum concentration of 5,200 milligrams/kilogram (mg/kg). These concentrations would not qualify these excavated soils as a hazardous waste.[15]

Finally, the Jessie Square ESA concluded that the groundwater would not likely require chemical treatment prior to batch disposal into the combined sewer system. However, testing would be required on the groundwater extracted during construction.

The report concluded with a recommendation that a Site Mitigation Plan be prepared and followed during construction of the Jessie Square Garage.[16] The plan would outline worker health and safety requirements and proper soil and groundwater handling and disposal methods in the event contamination is discovered.

---

[10] Jessie Square ESA, p. 1.
[11] Jessie Square ESA, pp. 6-8.
[12] Jessie Square ESA, p. 13.
[13] Jessie Square ESA, p. 15.
[14] Jessie Square ESA, Figures 2 and 3. Note that the location marked "Argent Hotel" in these figures is the Westin Hotel of today.
[15] Jessie Square ESA, p. 14. TRPH is defined on p. 10.
[16] Jessie Square ESA, p. 15.

Routine Use, Transport, and Disposal of Hazardous Materials and Accidental Release

Use and storage of hazardous materials on the site is typical of a commercial urban district. Typical hazardous materials used in building maintenance include water treatment chemicals, solvents, paints, lubricants, diesel fuel, disinfectants, adhesives, and sealants. In addition, older fluorescent light fixtures usually contain PCBs, and fluorescent light bulbs may contain mercury.

The 706 Mission ESA found no indication of leaks, spills, or improper handling of petroleum or hazardous substances that might affect the environmental condition of the project site.[17]

Routine use of the hazardous materials results in small amounts of air emissions and dermal contact; such releases should generally not cause adverse health effects if product instructions are followed. Similarly, routine use of hazardous materials may result in hazardous wastes, which should be disposed of properly.

Soil Contamination from Earthquake Fill

Historic fill from the 1906 earthquake may contain elevated levels of heavy metals and petroleum hydrocarbons. Most of the site has been previously excavated during construction of the Aronson Building and Jessie Square Garage. Earthquake fill in San Francisco is typically near the ground surface, i.e., immediately below sidewalks and other pavement, and is generally not thicker than 10 to 15 feet. Because of the prior excavation of the site, most of the earthquake fill has probably been removed. Therefore, the risk of encountering soil contamination from earthquake fill is low.

Underground Storage Tanks

Four USTs for diesel fuel have been reported at the site, all associated with the Aronson Building. As discussed on p. IV.P.3, three of the tanks were reported to have been removed when a wall was constructed in 1980 on the west side of the building. There is no information regarding any detection of soil contamination when the tanks were removed. The ESA states that any associated contamination would likely have been removed during the construction of the wall.

The fourth UST is still present on the north side of the building.[18] In 1994, a limited subsurface investigation was conducted. Soil samples were collected from beneath each end of the 750-gallon tank and analyzed for total petroleum hydrocarbons as diesel (TPHd) at a depth of 8 and 9 feet below ground surface (bgs). The sample collected from the north end of the tank

[17] 706 Mission ESA, p. 13.

[18] "According to a 1993 tank abandonment permit application the UST was to be abandoned in-place by removing product and cleaning the tank with a detergent solution and filling the UST with a cement/sand slurry. However according to the property owner the tank abandonment was not completed and the tank is empty." 706 Mission ESA, p. 4.

detected 220 parts per million (ppm) TPHd.[19] The samples were analyzed for TPHd; benzene, toluene, ethylbenzene, and total xylene (BTEX); and volatile organic compounds (VOCs). For a fuel tank site, the BTEX compounds and VOCs are more a concern in terms of health risk than TPHd, since the heavier petroleum compounds in diesel are generally less toxic and less mobile. No BTEX or VOCs were found, meaning that evaporative emissions are not expected. Depth to groundwater at the project site was not known for the 706 Mission ESA, but depth to groundwater at the nearby Hearst Garage, at 45 Third Street, was 10 to 11 feet bgs.[20] Therefore, it was not determined if groundwater was contaminated with TPHd.

Comparison to the Regional Water Quality Control Board's (RWQCB's) environmental screening levels (ESLs) can be useful; however, the ESLs are not regulatory cleanup standards.[21] According to the RWQCB, "The presence of a chemical at concentrations in excess of an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; this simply indicates that a potential for adverse risk may exist and that additional evaluation is warranted."[22] "Under most circumstances, and within the limitations described, the presence of a chemical in soil, soil gas or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment."[23] The RWQCB's ESLs for contamination in soil are intended to address direct exposure, groundwater protection, and ecologic (urban areas) and nuisance concerns.[24]

For residential land use, where groundwater is not a current or potential source of drinking water, the RWQCB set the following ESLs:

- For soil less than or equal to 3 meters bgs, the ESL for total petroleum hydrocarbons (TPH) (middle distillates) is 100 mg/kg.[25,26]
- For soil more than 3 meters bgs, the ESL for TPH (middle distillates) is 180 mg/kg.[27]

Thus, the TPHd (as diesel) of 220 ppm (which is equivalent to 220 mg/kg) found in one location at the project site at a depth of 8 or 9 feet bgs exceeds the 100 mg/kg ESL for less than or equal to 3 meters bgs (about 10 feet). As discussed above, exceeding the ESL does not necessarily mean this petroleum contamination would constitute a health or environmental risk.

---

[19] 706 Mission ESA, p. 7.
[20] 706 Mission ESA, p. 10.
[21] California Regional Water Quality Control Board -- San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final - November 2007 (Revised May 2008) (hereinafter referred to as the "Interim Final"), p. ES-1.
[22] Interim Final, p. ES-2.
[23] Interim Final, p. ES-1.
[24] Interim Final, Table D, p. 3, note 3. See pp. 8-4 to 8-7 of the main text for discussion of development of the ESLs.
[25] Interim Final, Table B, p. 3.
[26] Middle distillates include on-road diesel, off road diesel, and Number 2 heating oil.
[27] Interim Final, Table D, p. 3.

As this sample was collected near the fill port and dispenser of the tank, the TPHd detected may indicate spillage during filling and use of the tank. Because TPHd was detected in only one sample from the tank vicinity, any contamination that is present is likely to be limited in extent. Furthermore, petroleum hydrocarbons generally degrade over time; therefore, if sampled today, 18 years following the 1994 testing, the concentrations would likely be significantly lower.

In 2010, the San Francisco Department of Public Health (DPH), Occupational and Environmental Health Section, Hazardous Waste Unit, reviewed the Phase I Report on 706 Mission Street. DPH recommended that a subsurface site characterization be conducted to determine the presence and level of hazardous waste in the soil and groundwater and the presence of any USTs.[28] Further, DPH directed that the 750-gallon UST should be abandoned properly or removed via an application with the Hazardous Materials Unified Program Agency.[29] The case remains open.[30]

Asbestos-Containing Materials (ACMs)

Asbestos was widely used for many years in many types of building materials until approximately 1989. Loose insulation, ceiling panels, and brittle plaster are potential sources of friable (easily crumbled or pulverized) asbestos. Friable asbestos fibers are a health threat when they become airborne. Nonfriable asbestos is generally bound to other materials such that it does not become airborne under normal conditions. Nonfriable asbestos is usually found in building materials such as linoleum, flooring adhesives, and insulation. When cut or ground, nonfriable asbestos may become friable.

Because of potential adverse health effects such as lung cancer and asbestosis, asbestos is regulated both as a hazardous air pollutant and a potential worker safety hazard. State Occupational Safety and Health Administration (Cal/OSHA) regulations prohibit asbestos emissions during demolition and construction activities, and require various precautions and safe work practices to protect workers from friable asbestos inhalation.

The 706 Mission ESA did not examine the presence of ACMs. Given the age of the building, however, and the common use of asbestos in many types of building materials in the years between the construction of the building and the U.S. Environmental Protection Agency (USEPA) ban on commercial asbestos uses in 1989, asbestos-containing materials are likely to be present in the Aronson Building.

---

[28] Letter from Rajiv Bhatia, Director, Occupational and Environmental Health, San Francisco Department of Public Health, to Kirsten Gonsar, Millennium Partners, re: Environmental Site Assessment, 706 Mission Street, dated February 26, 2010 (one page) (hereinafter referred to as the "SFDPH letter"). A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[29] SFDPH letter.

[30] 706 Mission ESA, p. 2.

Lead-Based Paint

Lead-based paint was widely used before the use of lead in household paint was banned by the USEPA in 1978. Lead can cause gastrointestinal and central nervous system effects in adults and children. The 706 Mission ESA did not address the presence of lead-based paint in the Aronson Building. Given the age of the building, however, and the common use of lead-based paint before 1978, lead-based paint is likely present beneath newer, more recently applied paint on walls, window sills, window frames, doors, door frames, and stairs.

Equipment Containing Polychlorinated Biphenyls (PCBs)

Electric transformers historically contained PCBs; however, the 706 Mission ESA found that there are no liquid-cooled transformers on the project site. Hydraulic elevator lifts often contain PCBs, but the elevators in the existing building do not use hydraulic equipment.

Possible Soil and Groundwater Contamination at Other Sites in the Vicinity

The 706 Mission ESA and Jessie Square ESA examined records of environmental protection agencies, such as the USEPA and California Department of Toxic Substances Control, that show information about contaminated sites (referred to as "listed sites") and progress regarding site cleanup. The results of the regulatory database review were incorporated in the ESAs. The 706 Mission Building site and the Jessie Square site were not listed in any regulatory database as having any "open" environmental contamination cases. Review of nearby listed sites indicated that none of the contaminated sites had the potential to affect the soil or groundwater conditions at the 706 Mission Street or Jessie Square sites (thus including the current project site).

REGULATORY FRAMEWORK

Table IV.P.1: Overview of Selected Health and Safety laws and Regulations, presents an overview of selected major Federal, State, and local laws and regulations designed to minimize the potential adverse health and environmental effects of hazardous materials and wastes. The table also discusses implementing agencies and examples of particular regulatory programs.

Table IV.P.1: Overview of Selected Health and Safety Laws and Regulations

Hazardous Materials Management	State, Federal, and local laws require planning to ensure that hazardous materials are properly used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to minimize injury to health or the environment. These laws require hazardous materials users (businesses) to prepare written plans, such as Hazard Communications Plans, Hazardous Materials Business Plans (called "registrations" in San Francisco), and Chemical Hygiene Plans. Laws and regulations require hazardous materials users to store hazardous materials appropriately and to train employees to manage these materials safely. A number of agencies participate in enforcing hazardous materials management requirements, but the San Francisco Department of Public Health is the agency most involved in overseeing hazardous materials management within San Francisco. The Department of Public Health is the Certified Unified Program Agency in San Francisco. Businesses that handle certain very hazardous substances must undertake a systematic analysis of their operations, study the potential consequences of possible worst-case accidents, and prepare Risk Management Plans to reduce apparent risks. In San Francisco, this process is overseen by the Department of Public Health, which determines compliance with Accidental Release Prevention program requirements. Risk Management Plans are to be made available to the public for review. In addition, the State Office of Emergency Services administers the California Emergency Plan to respond to hazardous materials incidents and to coordinate the responses of other agencies, including the San Francisco Public Health and Fire Departments. Both departments provide hazardous materials emergency response services, if needed.
Building and Fire Safety	The San Francisco Building and Fire Codes amend and otherwise incorporate the California Building and Fire Codes. These laws specify management practices for flammable materials, including some packaging and containment requirements. They also set forth appropriate construction standards (e.g., fire separations and fire suppression systems) depending on occupancy classifications. The San Francisco Fire Department and Building Inspection review proposed building design plans to ensure compliance with Fire and Building Code requirements.
Hazardous Waste Management	The California Environmental Protection Agency, Department of Toxic Substances Control, regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. Laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner intended to protect human health and the environment. The San Francisco Department of Public Health enforces on-site waste management requirements that apply to hazardous waste generators, such as requirements for secondary containment around stored wastes to prevent environmental contamination in the event of a spill. The Department of Public Health also inspects for compliance with State permitting requirements applicable to facilities conducting hazardous waste operations subject to permit by rule, conditional exemption, or conditional authorization.
Hazardous Materials Transportation	The U.S. Department of Transportation regulates hazardous materials transport between states. 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 and the California Department of Transportation. Together, Federal and State agencies determine driver training requirements, load labeling procedures, and container specifications. Although certain requirements apply to the transport of hazardous materials, requirements for transportation of hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

Table IV.P.1 (continued)

Occupational 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 handling and use of hazardous materials in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. California regulations require construction contractors to take steps to reduce dermal (skin) contact and ingestion of lead by construction workers. This regulation is called the Lead in Construction Standard. The existing standard requires that workers are not exposed to concentrations of airborne lead greater than 50 micrograms per cubic meter of air, and took into account the use of respirators. In 2011, Cal OSHA proposed refinements of the Lead in Construction Standard based upon more recent medical information demonstrating harmful effects of chronic and low-level exposures to lead in adults. The proposed regulation takes a different approach by using medical surveillance (e.g., requiring measurement of blood lead levels in workers) and requiring various measures, including worker clothing, hygiene, training, warnings, and engineering and work practice controls.

Source: Turnstone Consulting, February 2012

IMPACTS

SIGNIFICANCE CRITERIA

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

P.1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

P.2 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;

P.3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

P.4 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;

P.5 For a project located within 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, would the project result in a safety hazard for people residing or working in the project area;

P.6 For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

P.7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;

P.8 Expose people or structures to a significant risk of loss, injury or death involving fires.

The project site is not within an airport land use plan or within 2 miles of an airport or a private airstrip (Criteria P.5 and P.6), nor is it listed as hazardous materials site (Criterion P.4). Therefore, these topics do not apply to the project site and are not discussed further in this EIR.

PROJECT FEATURES

Construction of the proposed project would involve ground disturbance. Excavation to a depth of approximately 41 feet below the surface would occur beneath the area currently occupied by the 1978 annex and adjacent site corridor on the west side of the Aronson Building. Excavation would occur beneath the 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. A total of approximately 9,610 cubic yards of soil would be excavated and removed. In addition, due to the presence of groundwater at depths of approximately 18 to 30 feet, construction dewatering may be needed at the lower depths of excavation.

There would be no excavation underneath the Mexican Museum parcel because the existing Jessie Square Garage is located below ground there. However, on the north side of the Aronson Building, project construction activities to remove the 1978 annex, install a driveway, and install the proposed car elevators in the basement of the proposed tower would result in minimal soils disturbance. As discussed and analyzed in Chapter VI, Project Variants, Variant 2 and Variant 4 would call for additional excavation north of the Aronson Building to construct a vehicular access ramp from Third Street to the Jessie Square Garage. Impacts relating to the ramp's effects on hazards and hazardous materials are discussed and analyzed in Chapter VI.

A back-up diesel emergency generator would be installed as part of the proposed project, and diesel fuel would be stored on site. As part of the proposed project, the Aronson Building, which was constructed in 1903, would be rehabilitated and restored. The Aronson Building also would have sprinklers installed throughout.

IMPACT EVALUATION

Impact HZ-1: The proposed project would not have a substantial adverse effect on the public or the environment through the routine transport, use, or disposal of hazardous materials. *(Less than Significant)* (Criterion P.1)

Project construction and operations could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. During operation, relatively small quantities of hazardous materials associated with janitorial (e.g., cleaners) and maintenance activities (e.g., lubricants, paints) would be used in the proposed residential, retail, and garage uses. Use of these hazardous materials would be limited, and transport, storage, use, and disposal of these materials would be subject to Federal, State, and local health and safety requirements. These products would be labeled to inform users of proper application and disposal, and provide warnings regarding risks, if any. Diesel fuel storage for the project's emergency generator would be subject to Federal, State, and local safety requirements. On-site storage of a limited quantity of diesel fuel for emergency generators is a common practice, and would not present unusual risks. Fuel storage would be clearly labeled with warning signs against smoking nearby. Because contractors and owners must comply with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, as described in Table IV.P.1, on pp. IV.P.9-IV.P.10, and above, there would be less-than-significant impacts to public health and safety. Therefore, mitigation would not be necessary.

Impact HZ-2: The proposed project would have a substantial adverse effect on the public or the environment through the accidental release of hazardous materials into the environment. *(Less than Significant with Mitigation)* (Criterion P.2)

Demolition

The proposed project would involve renovation of the Aronson Building and demolition of the two annexes added to the building in 1978. If hazardous materials are present in building materials that would be disturbed during construction phases involving demolition or renovation, as described below, implementation of the proposed project could result in an accidental release of hazardous materials, potentially affecting the public or the environment.

Asbestos-Containing Materials

Any activity that involves cutting, grinding, or drilling of Asbestos-Containing Materials during building renovation or demolition could release asbestos fibers, unless proper precautions are taken. Federal, State, and local regulations require testing of building materials that may contain asbestos prior to demolition or renovation. Any testing, removal, or disturbance of Asbestos-Containing Materials must be performed by licensed, qualified asbestos abatement personnel.

State law requires an applicant to demonstrate compliance with notification requirements under applicable Federal regulations regarding hazardous air pollutants, including asbestos, prior to a local agency (in this case, the City's Department of Building Inspection) issuing a permit.[31] The local office of Cal/OSHA must be notified of planned asbestos abatement. Asbestos abatement contractors must follow State regulations.[32] Asbestos removal contractors must be certified by the Contractors Licensing Board of the State of California.

The Bay Area Air Quality Management District (BAAQMD) has authority to regulate airborne pollutants, including asbestos, through both inspection and enforcement. BAAQMD rules require that the agency be notified 10 days in advance of any proposed demolition or abatement work involving more than a minimal amount of regulated Asbestos-Containing Material.[33] BAAQMD inspects any removal operation about which a complaint has been received.

Compliance with the regulations and procedures described above would ensure that any potential impacts due to asbestos would be reduced to a less-than-significant level.

Lead Paint

Demolition must comply with Chapter 36 of the San Francisco Building Code, Work Practices for Exterior Lead-Based Paint. Where there is any work that may disturb or remove lead paint on the exterior of any building built prior to 1979, Chapter 36 requires specific notification and work standards, and identifies prohibited work methods and penalties. Any person performing work subject to the ordinance shall 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 shall make all reasonable efforts to remove all visible lead paint contaminants from all regulated areas of the property prior to completion of the work. The ordinance contains provisions regarding Department of Building Inspection enforcement, including inspection and sampling, and describes penalties for non-compliance with the requirements of the ordinance. In addition, the contractor must comply with Cal/OSHA's Lead in Construction Standard (see Table IV.P.1 on pp. IV.P.9-IV.P.10).

[31] Cal. Health and Safety Code§ 19827.5. Available online at http://www.leginfo.ca.gov/cgi-bin/waisgate?WAISdocID=82264927360+6+0+0&WAISaction=retrieve. Accessed May 7, 2011.

[32] California Code of Regulations, title 8, § 1529, §§ 341.6 - 341.14. Available online by using the search function at http://government.westlaw.com/linkedslice/search/default.asp?tempinfo=find&RS=GVT1.0&VR=2.0&SP=CCR-1000. Accessed May 7, 2011 and January 22, 2012.

[33] BAAQMD, Regulation 11, Hazardous Pollutants, Rule 2, Asbestos Demolition, Renovation And Manufacturing, Section 401, "Reporting Demolition and Renovation," subsection 401.3 (adopted December 4, 1991. Available online at http://www.baaqmd.gov/~/media/Files/ Planning%20 and%20Research/Rules%20 and%20Regs/reg%2011/rg1102.ashx?la=en. Accessed December 30, 2011. This regulation would require that notice be provided for the Aronson Building work.

Lead paint is likely present in the two annexes of the Aronson Building that would be demolished and in the Aronson Building, which would be renovated. Compliance with the regulations and procedures described below would ensure that any potential impacts due to lead-based paint would be reduced to a less-than-significant level.

Waste Disposal

State law (California EPA, Department of Toxic Substances Control; see "Hazardous Waste Management" in Table IV.P.1, on pp. IV.P.9-IV.P.10) requires appropriate management and/or disposal of hazardous wastes from demolition and construction activities, including provisions for disposal of ACMs, lead-based paint, spent fluorescent light tubes, etc. Therefore, impacts would be less than significant.

Excavation

In order to construct the proposed tower, excavation to a depth of approximately 41 feet below the surface would occur on the west side of the Aronson Building underneath the existing 1978 annex and continuing west below the 20-foot-wide-by-85-foot-long pedestrian walkway. The proposed project would not require excavation along the north side of the Aronson Building. There would be no excavation underneath the Mexican Museum parcel.

As described above, the ESAs related to the project site indicated it was not a listed site in any Federal or State regulatory database as having any "open" environmental contamination cases. The 706 Mission ESA noted a UST on the northern side of the Aronson Building. The Jessie Square ESA noted pockets of soil contaminated by elevated lead levels adjacent to the project site, but did not investigate the area which is now the Westin Hotel plaza and walkway from Jessie Square to Third Street. Although soil contamination in significant amounts is not expected, the project sponsor would implement Mitigation Measure M-HZ-2: Hazardous Materials – Testing for and Handling of Contaminated Soil, to provide a program of soil testing and management as applicable.

Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling of Contaminated Soil

During excavation, the project sponsor shall hire a consultant to collect soil samples (borings), including, but not limited to, the location of the underground storage tank on the north side of the Aronson Building. The soil samples shall be tested for petroleum hydrocarbons and lead. If petroleum hydrocarbons and/or lead are present in soil, the soil shall be removed under the supervision of the San Francisco Department of Public Health (DPH) and disposed of in a suitable landfill, or otherwise addressed consistent with applicable Federal, State, and local laws. In addition, the sponsor shall perform the following actions with respect to contaminated soil:

Step 1: Soil Testing

Prior to obtaining building permits, the project sponsor shall hire a consultant to collect soil samples (borings) from selected locations in the work area in which soil would be disturbed and/or excavated. (This initial soil sampling and reporting shall be done prior to excavation, but additional soil testing from on-site soil stockpiles may also be required, if there are indications [e.g., odors, visible staining] of contamination in the excavated soil.)

The soil samples shall be tested for these Compounds of Concern: total lead, petroleum hydrocarbons, and volatile organic compounds (VOCs). The consultant shall analyze the soil borings as discrete, not composite samples. The consultant shall prepare a report on the soil testing for the Compounds of Concern that includes the laboratory results of the soil testing and a map that shows the locations from which the consultant collected the soil samples. (See Step 3, below)

The project sponsor shall submit the report on the soil testing for the Compounds of Concern for the Sub-Phase and the current fee in the form of a check payable to the San Francisco Department of Public Health, to the Hazardous Waste Program, Department of Public Health, 1390 Market Street, Suite 210, San Francisco, California 94102. The current fee shall cover three hours of soil testing report review and administrative handling. If additional review is necessary, DPH shall bill the project sponsor for each additional hour of review over the first three hours. These fees shall be charged pursuant to Section 31.23(c) of the San Francisco Administrative Code. DHP shall review the soil testing program to determine whether soils on the project site are contaminated with any of the Compounds of Concern at or above potentially hazardous levels.

Step 2: Preparation of Site Mitigation Plans

The project sponsor shall prepare a Site Mitigation Plan (SMP). The SMP shall include a discussion of the level of contamination of soils by Compounds of Concern, if any, based on the soils testing in Step 1. The SMP shall set forth mitigation measures for managing contaminated soils on the site, if any, including but not limited to: 1) the alternatives for managing contaminated soils on the site (e.g., encapsulation, partial or complete removal, treatment, recycling for reuse, or a combination); 2) the preferred alternative for managing contaminated soils on the site and a brief justification; and 3) the specific practices to be used to handle, haul, and dispose of contaminated soils on the site. The SMP shall be submitted to the DPH for review and approval. A copy of the SMP shall be submitted to the Planning Department to become part of the case file. Additionally, the DPH may require confirmatory samples for the project site.

Step 3: Handling, Hauling, and Disposal Contaminated Soils

(a) Specific work practices: The construction contractor shall be alert for the presence of contaminated soils during excavation and other construction activities on the site (detected through soil odor, color, and texture and results of on-site soil testing), and shall be prepared to handle, profile (i.e., characterize), and dispose of such soils appropriately (i.e., as dictated by local, State, and Federal regulations, including OSHA work practices) when such soils are encountered on the site.

(b) Dust suppression: Soils exposed during excavation for site preparation and project construction activities shall be kept moist throughout the time they are exposed, both during and after work hours.

(c) Surface water runoff control: Where soils are stockpiled, visqueen shall be used to create an impermeable liner, both beneath and on top of the soils, with a berm to contain any potential surface water runoff from the soil stockpiles during inclement weather.

(d) Soils replacement: If necessary, clean fill or other suitable material(s) shall be used to bring portions of the project site, where lead-contaminated soils have been excavated and removed, up to construction grade.

(e) Hauling and disposal: If soils are contaminated such that they must be hauled off-site for treatment and/or disposal, contaminated soils shall be hauled off the project site by waste hauling trucks appropriately certified with the State of California and adequately covered to prevent dispersion of the soils during transit, and shall be disposed of at the permitted hazardous waste disposal facility registered with the State of California.

Step 4: Preparation of Closure/Certification Report

After excavation and foundation construction activities are completed, the project sponsor shall prepare and submit a closure/certification report to DPH for review and approval for that area. The closure/certification report shall include the mitigation measures (if any were necessary) in the SMP for handling and removing contaminated soils, if any, from the project site, and if applicable, whether the construction contractor modified any of these mitigation measures, and how and why the construction contractor modified those mitigation measures.

Construction

Hazardous Materials Use

Many types of hazardous materials would be used during construction. Construction equipment such as trucks, bulldozers, and graders would use gasoline and diesel fuel and various chemicals for vehicle maintenance (oils, battery fluids). Chemicals used in constructing buildings, roadways, and other facilities would include, but not be limited to, solvents, paints, varnishes, other sealants, asphalt, disinfectants, and cleaners. Such materials would be stored and used at the construction sites and staging areas. In addition, such chemicals would be transported to and from the site. Routine air emissions would occur. Without proper precautions, an accidental release of hazardous materials could enter the City stormwater collection system.

Compliance with existing laws would ensure that potential impacts would be less-than-significant. First, contractors are obligated under Federal, State, and local laws to properly label, handle, store, and use hazardous materials and properly manage hazardous wastes (see "Hazardous Materials Management" in Table IV.P.1, on p. IV.P.9). Second, as discussed in Section IV.O, Hydrology and Water Quality, pp. IV.O.8-IV.O.9, the RWQCB requirements seek to control contaminated runoff. The contractor would have to prepare a Storm Water Pollution Prevention Plan, which would specify handling, storage, and spill response requirements for hazardous materials used during construction. Based on these requirements, use of hazardous materials during construction would be controlled and no significant impact would occur.

Construction equipment and vehicles, along with construction activities, would emit toxic air contaminants, including particulate matter in diesel exhaust. Refer to Section IV.G, Air Quality, for a discussion of these pollutants.

Conclusion: Because the contractors and owners must comply with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, as described in Table IV.P.1, on pp. IV.P.9-IV.P.10, and in the discussion above, and with Mitigation Measure HZ-1, the proposed project would not have a substantial adverse effect on the public or the environment through the accidental release of hazardous materials into the environment.

Operation

Hazardous Materials Use

During operation, the proposed project would involve routine residential use of hazardous materials typical of any urban habitation, museum, or office, including solvents (e.g., degreasers, paint thinners, aerosol propellants), paints (both latex and oil), oils (motor oil and hydraulic oil), motor fuels, acids and bases (cleaners automobile battery fluids), disinfectants, and metals (thermometers and batteries). The property manager would use routine herbicides, pesticides, and fertilizers for landscaping.

The hazardous products would be labeled to inform users of risks and to instruct them in proper disposal methods. Most of these materials are consumed or neutralized through use, resulting in little hazardous waste. Businesses are required by law to ensure employee safety by identifying hazardous materials, providing safety information, and adequately training workers in hazardous material handling. For these reasons, hazardous material use by the occupants of the proposed project would not pose a substantial hazard, and the impact would be less than significant.

The proposed project would have a diesel-powered emergency generator located in the basement with diesel fuel storage. With modern design and construction, the risk of oil release, fire, and explosion with respect to modern diesel fuel storage would be low.

The operation of the proposed project would not create a significant hazard to the public or environment through the accidental release of hazardous materials. Therefore, this impact would be less than significant. No mitigation would be required.

Impact HZ-3: The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. *(Less than Significant)* (Criterion P.3)

The project site is not within one-quarter mile of an existing or proposed school. The closest day care center is Yerba Buena Gardens Child Development Center at 790 Folsom Street, which is 0.28 mile from the project site, farther than a quarter mile away.

This significance criterion, regarding hazardous emissions and handling of acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, is generally geared toward projects that are industrial in nature. The purpose is to avoid locating hazardous materials close to locations where children would be regularly present.

The proposed project is a mixed-use project, with residential, retail, and museum uses. During operation, it is not expected to emit hazardous pollutants of a type or degree substantially different than any other nearby building with a heating system and an emergency generator. (Section IV.G, Air Quality, discusses hazardous emissions during construction.) During operation, the proposed project is not expected to include the handling of acutely hazardous materials, substances, or wastes. Rather, the proposed project would include handling of routine hazardous materials, substances, or wastes for cleaning and maintenance (e.g., paint). For these reasons, the proposed project would have a less-than-significant impact with respect to this significance criterion.

Impact HZ-4: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. *(Less than Significant)* (Criterion P.7)

The existing Aronson Building at 706 Mission Street has a Safety and Evacuation Plan for the building that would be updated to accommodate the proposed project. Implementation of the proposed project would not result in changes to the local street network. Occupants of the proposed project would contribute to congestion if an emergency evacuation were required. The proposed project would have to conform to the provisions of the Building and Fire Codes that require additional life-safety protections for high-rise buildings. For example, buildings over 75 feet in height must have a certified Fire Safety Director.[34] In addition to the Safety and Evacuation Plan, there are now, and would continue to be, several entrances/exits to the proposed project that could be used in an emergency. See the discussion in "Emergency Access Impacts," under Impact TR-6, on p. IV.E.51, which indicates that there would be no significant impacts regarding emergency access. Therefore, project impacts related to interference with emergency

[34] San Francisco Fire Code, Section 404.2. Available online at http://library.municode.com/index.aspx?clientId=14135&stateId=5&stateName=California. Accessed May 8, 2011.

response or evacuation plans would be less than significant. No mitigation measures are necessary.

Impact HZ-5: The proposed project would not expose people or structures to a risk of loss, injury or death involving fires. *(Less than Significant)* (Criterion P.8)

San Francisco ensures fire safety primarily through provisions in the San Francisco Building Code and the Fire Code. Development of the proposed project would be required to conform to those provisions, which include additional life-safety protections for high-rise buildings. Extra protections for high-rise buildings include pressurized stairwells, elevator recall, and a high-rise incident command system.[35] As part of the proposed project, the Aronson Building would have sprinklers installed throughout. Therefore, the proposed project would not expose people or structures to fire hazards risk. This impact would be less than significant, and no mitigation measures are necessary.

Impact C-HZ-1: The proposed project, when combined with other past, present and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact on hazards and hazardous materials. *(Less than Significant)*

Development of the proposed project, with mitigation, would have less-than-significant impacts related to hazardous materials impacts. Future development proposed in the immediate project vicinity would not introduce types or quantities of hazardous materials that are not already present in this area. Impacts from hazards and hazardous materials are generally localized and site-specific and typically do not result in cumulative impacts. The proposed project, combined with the cumulative projects in the immediate site vicinity, could result in cumulative impacts related to excavation and disposal of soil; exposure of construction workers to lead, asbestos, and other hazardous building materials during construction activities; and the handling, storage, use, transport, and disposal of hazardous waste during construction and/or operation. Like the proposed project, these cumulative projects would be subject to oversight by Federal, State, regional, and local agency regulations and policies and code requirement similar to proposed project. Therefore, compliance with these regulations and site-specific hazardous materials management would ensure that there would be no significant considerable contribution to significant cumulatively impacts related to hazards and hazardous materials. No mitigation measures are necessary.

[35] San Francisco Fire Department, *High Rise Manual*, Jan. 2008, pp. 2.2, 3.1, et seq. Available online at http://ufsw.org/pdfs/high_rise_manual.pdf. Accessed January 16, 2012.

This page is intentionally blank.

Q. MINERAL AND ENERGY RESOURCES

This section describes the setting and impacts of the proposed project on mineral and energy resources of the project site and vicinity.

SETTING

MINERAL RESOURCES

In accordance with the Surface Mining and Reclamation Act of 1975, the California Department of Conservation, Division of Mines and Geology (CDMG) has mapped non-fuel mineral resources of the State to show where economically significant mineral deposits are either present or likely to occur, based on the best available scientific data. These resources have been mapped using the California Mineral Land Classification System, which includes the following four Mineral Resource Zones (MRZs):

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence;
- MRZ-2: Areas where adequate information indicates that significant mineral desposits are present, or where it is judged that a high likelihood exists for their presence;
- MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated; and
- MRZ-4: Areas where available information is inadequate for assignment to any other zone.

All land in the City and County of San Francisco, including the project site, is designated MRZ-4.[1] Thus, the site is not a designated area of significant mineral deposits. There are no mining activities on the project site, and no mining activities are known to have occurred there.

ENERGY

The project site is currently developed with an existing building containing retail and office uses. Pacific Gas and Electric Company (PG&E) supplies electricity to the project site and the rest of San Francisco from a variety of renewable and non-renewable sources both within and outside of the State. San Francisco uses about 6,000 gigawatt-hours of electricity per year and is expected to grow at a rate of 1.3 percent per year to about 8,000 gigawatt-hours by 2030.[2] According to the

[1] California Division of Mines and Geology, Open File Report 96-03, 1996 and Special Report 146 Parts I and II, 1986.

[2] San Francisco Public Utilities Commission, *San Francisco's Updated Electricity Resource Plan*, Draft, March 2011 (hereinafter referred to as "*Updated Electricity Resource Plan*"), p. 36. Available online at http://sfwater.org/index.aspx?page=71. Accessed April 25, 2012.

San Francisco Public Utilities Commission's *Updated Electricity Resource Plan*, more than 50 percent of this demand is used for commercial purposes; residential use accounts for 23 percent.[3] PG&E also supplies natural gas to San Francisco from sources in the western United States.

Public electricity providers (such as PG&E) within the State are subject to both State and local utilities regulations. San Francisco makes efforts to promote energy conservation, energy efficiency, and alternative energy sources to achieve greater self-sufficiency and system reliability.

REGULATORY FRAMEWORK

In December 2002, the City adopted the *Electricity Resource Plan*, which includes implementation steps for the following strategies: maximize energy efficiency; develop renewable power; ensure reliable power; support affordable electric bills; improve air quality and prevent other environmental impacts; support environmental justice; promote opportunities for economic development; and increase local control over energy resources. The *Electricity Resource Plan* is a broad policy guide that provides a framework for more specific citywide future programs and actions. In response to the Board of Supervisors' guidance in their 2009 Ordinance 94-09, San Francisco Public Utilities Commission staff have developed an updated *Electricity Resource Plan*.[4] This update identifies proposed recommendations to work towards achieving the broad policy goals laid out in the 2002 Plan.

The City also has a number of programs to further promote energy conservation among residents and businesses. The San Francisco Energy Watch Program offers businesses and multi-family property owners free consultation about energy-efficient appliances and installation at a reduced fee, as well as information about rebates, audits, and incentives. Typical equipment improvements include lighting, domestic hot water heating, heating ventilation and air conditioning units, and washers and dryers.

Title 24 of the California Code of Regulations (CCR), the Building Code, requires that remodel projects of existing buildings and new construction projects meet certain energy and water conservation standards, including implementation of practices such as installation of double-glazed windows and energy-efficient lighting (including light emitting diode), and the installation of low-flow toilets and showerheads.

[3] *Updated Electricity Resource Plan*, p. 38.
[4] *Updated Electricity Resource Plan.*

IMPACTS

SIGNIFICANCE CRITERIA

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

Q.1 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;

Q.2 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

Q.3 Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner.

PROJECT FEATURES

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower (a 520-foot-tall building with a 30-foot-tall elevator/mechanical penthouse). The new tower would be adjacent to and physically connected to the existing 10-story, 154-foot-tall Aronson Building, which would be restored and rehabilitated as part of the proposed project. The existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a new 15-foot-tall solarium would be constructed, resulting in an overall building height of 159 feet. Construction of the proposed tower and renovations to the Aronson Building would comply with the City's Green Building Design Requirements for Construction Projects, and the proposed project's design and construction would achieve a minimum of Leadership in Energy and Environmental Design (LEED) Silver standards. The proposed project would include sustainable energy-saving elements such as energy-saving windows. Other planned sustainable and conservation elements include bicycle parking stalls; car share parking space; water conservation components such as water-efficient plumbing fixtures and water-efficient landscaping and street trees; and waste-reducing strategies such as recycling, composting, and demolition and debris recycling.

IMPACT EVALUATION

Impact ME-1: The proposed project would not have a significant adverse impact on the availability of a known mineral resource and/or a locally important mineral resource recovery site. (*No Impact*) (Criteria Q.1, Q.2)

The project site is already developed and is located in an existing commercial and residential neighborhood in an urbanized area of San Francisco. There are no known mineral resources on the project site or in the vicinity. Therefore, development of the proposed project would not impact any known mineral resources on the project site. Additionally, there are no designated mineral resource recovery sites in the project vicinity whose operations or accessibility would be affected by the construction or operation of the proposed project. Therefore, the proposed project would have no impact on known mineral resources or any locally important mineral resource recovery site. No mitigation measures are necessary.

Impact ME-2: The proposed project would not have a substantial adverse effect on the use of fuel, water, or energy consumption, and would not encourage activities that could result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner. (*Less than Significant)* (Criterion Q.3)

Fuel, Water, and Energy Use

All building alterations are required to conform to energy conservation standards specified by CCR Title 24. Documentation showing Title 24 standards compliance must be submitted by the developer to the San Francisco Department of Building Inspection with the application for building permit.

The proposed project would be required to meet or exceed current State and local codes and ordinances concerning energy consumption so as not to result in a wasteful use of energy. The proposed project would also be designed and constructed to achieve a minimum of LEED Silver standards (or such higher and additional requirements that may be required by the City and County of San Francisco) that would maximize the building's energy efficiency. Sustainable energy-saving and conservation elements of the proposed project would include energy-saving windows, bicycle parking stalls, car-share parking space, and waste-reducing strategies such as recycling, composting, and demolition and debris recycling. (See also Section IV.H, Greenhouse Gas Emissions, for a discussion of project design sustainability features.) The proposed project would also include water conservation practices to reduce the amount of water used. Water-efficient plumbing fixtures would be installed throughout the proposed tower and in the renovated building. All new landscaping and street trees would be water efficient. Therefore, the proposed project would have a less-than-significant impact on the use of fuel, water, or energy and would not result in the use of large amounts or in the wasteful use of fuel, water or energy. No mitigation measures are necessary.

Energy Costs and Supply

The California Energy Commission is considering applications for the development of new power-generating facilities in San Francisco, the Bay Area, and elsewhere in the State. These facilities could supply additional energy to the power supply "grid" within the next few years. These efforts, together with conservation, will be part of a statewide effort to achieve energy sufficiency. The demand for electricity generated by the proposed project would be negligible in the context of overall demand within San Francisco and the State, and would not in and of itself require a major expansion of power facilities.

Therefore, the energy demand associated with the proposed project would not result in a significant environmental effect. This impact would be less than significant. No mitigation measures are necessary.

Impact C-ME-1: The proposed project, in combination with other past, present and reasonably foreseeable future projects in the vicinity, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact on mineral and energy resources. (*Less than Significant*)

Reasonably foreseeable development projects would be subject to similar energy and conservation standards required by CCR Title 24 and the San Francisco Building Code. There are no known mineral resources or resource recovery sites on the project site or in the vicinity. Therefore, the proposed project, combined with these cumulative development projects, would not result in any cumulatively considerable contribution to a significant cumulative impact on mineral and energy resources, either directly or indirectly. No mitigation measures are necessary.

This page is intentionally blank.

R. AGRICULTURAL AND FOREST RESOURCES

This section examines the effects of the proposed project related to agricultural and forest resources.

SETTING

The project site sits within a commercially zoned, urbanized area of San Francisco in the Financial District and is developed with an existing 10-story building and paved landscaped areas. The California Department of Conservation's Farmland Mapping and Monitoring Program identifies the site as "Urban and Built-up Land," which is defined as an area of intensive use with much of the land covered by structures.[1] The project site is not classified as having any farmland, nor is it zoned for agricultural use. There are no areas designated on or near the site as Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance. There are no areas under Williamson Act[2] contract on the project site. The project site contains one significant tree,[3] as defined by the City's Urban Forestry Ordinance (an avocado tree adjacent to the northwest corner of the Aronson Building). There is also a street tree adjacent to the project site along Mission Street, as well as a row of trees north of the project site located on the adjacent Westin San Francisco Market Street Hotel plaza. None of these trees are native species, nor are they harvested for timber.[4] Thus, the project site does not contain any forest land or timberland.

REGULATORY FRAMEWORK

Because no farmlands or forest lands are identified in San Francisco, no Federal, State, or local laws, regulations, plans, or policies related to agricultural and forest resources are applicable to implementation of the proposed project.

---

1 California Department of Conservation, Farmland Mapping and Monitoring Program, 2006. Available online at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2006/fmmp2006_08_11.pdf. Accessed April 24, 2012.

2 The Williamson Act is a California law enacted in 1965 that provides property tax relief to owners of farmland and open space land in exchange for a 10-year agreement that the land will not be developed or converted into another use.

3 The San Francisco Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code) identifies significant trees as trees that are within 10 feet of the property edge of the sidewalk and are more than 20 feet in height, have a canopy greater than 15 feet in diameter, or have a trunk diameter greater than 12inches in diameter at breast height.

4 Tree Disclosure Statement for 706 Mission Street, December 7, 2009. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

IMPACTS

SIGNIFICANCE CRITERIA

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

R.1 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;

R.2 Conflict with existing zoning for agricultural use, or a Williamson Act contract;

R.3 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);

R.4 Result in the loss of forest land or conversion of forest land to non-forest use; or

R.5 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.

PROJECT FEATURES

The proposed project consists of the construction of a new 47-story, 550-foot-tall tower that would be adjacent to and physically connected to the existing 10-story, 154-foot-tall Aronson Building. As part of the proposed project, the Aronson Building would be restored and rehabilitated. The existing 10-foot-tall mechanical penthouse on the roof of the Aronson Building would be removed and a new 15-foot-tall solarium would be constructed, resulting in an overall building height of 159 feet. As described above in the Setting on p. IV.R.1, the project site has no agricultural or forest resources.

The proposed project would plant street trees to comply with the provisions of the Urban Forestry Ordinance (Article 16 of the San Francisco Public Works Code), which requires replacement of the significant and street trees, and Section 138.1(c)(1) of the Planning Code, which requires projects involving the construction of a new building within a C-3 District to plant street trees.

IMPACT EVALUATION

Impact AG-1: The proposed project would not have a substantial adverse effect on the conversion of farmland, would not conflict with existing zoning for agricultural use or with a Williamson Act contract, nor involve other changes that would result in conversion of farmland to non-agricultural use. *(No Impact)* (Criteria R.1, R.2, R.5)

The project site does not contain any agricultural uses. The proposed project would not convert any property designated as Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance to non-agricultural use nor would it conflict with existing zoning for agricultural land use or a Williamson Act contract, because the project site is not zoned for agricultural use nor are there are Williamson Act contracts on any portion of the project site. Therefore, there would be no significant project-level impact with respect to designated farmland as a result of the proposed project. No mitigation is necessary.

Impact AG-2: The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland, nor would it result in the loss of forest land or the conversion of forest land to non-forest use. (*No Impact)* (Criteria R.3, R.4)

There is no timberland (as defined by Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code 51104(g)) on the project site. None of the trees currently growing on or adjacent to the project site are managed for a public benefit, and therefore the project site is not "forest land" pursuant to Public Resources Code Section 12220(g). Thus, the proposed project would not result in the loss of forest land or the conversion of forest to non-forest use. There would be no impact with respect to forest land or timberland, and no mitigation measures are necessary.

Impact C-AG-1: The proposed project, in combination with other past, present and reasonably foreseeable future projects in the vicinity, would not result in a cumulatively considerable contribution to a significant adverse cumulative impact on agricultural resources or forest land or timberland. *(No Impact)*

The project would have no impact on agricultural resources and forest land, nor would other proposed reasonably foreseeable cumulative projects in the vicinity. Therefore, there would be no cumulatively considerable contribution to a significant cumulative impact with respect to agricultural or forest resources, and no mitigation is necessary.

This page is intentionally blank.

V. OTHER CEQA CONSIDERATIONS

A. GROWTH INDUCING IMPACTS

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must consider the ways in which the proposed project could directly or indirectly foster economic or population growth, or the construction of additional housing. Growth-inducing impacts can result from the elimination of obstacles to growth; through increased stimulation of economic activity that would, in turn, generate increased employment or demand for housing and public services; or as a result of policies or measures which do not effectively minimize premature or unplanned growth. Examples of projects likely to have substantial or adverse growth-inducing effects include expansion of infrastructure systems beyond what is needed to serve current demand in the project vicinity, and development of new residential uses in areas that are currently sparsely developed or undeveloped.

The following discussion considers how implementation of the proposed project[1] could potentially affect growth elsewhere in San Francisco and in the region.

Implementation of the proposed project would require a height reclassification and a zoning map amendment to Map HT01 to reflect the change in height limit for the project site. The project as proposed is in compliance with the current bulk designation at the site, the "I" Bulk District. In addition, several possible mechanisms to address the maximum floor to area (FAR) for the project site are under consideration. One possibility is for the site to be rezoned to a Downtown Residential Use (DTR) District. It is also possible that an amendment to the Planning Code to establish a Special Use District (SUD) that would apply only to the project site would be considered. Alternatively, a combination of these two mechanisms would also be possible. The rezoning with the possible addition of the designation of an SUD would address potential conflicts with the Planning Code related to FAR and height limits as well as other land use controls at the project site.

The proposed project would change the mix and types of uses, and intensify development on the site by introducing new residential and visitor-serving museum uses to the project site in the form of residential flex or office flex options. Population growth in the project vicinity would be a

[1] As described in Chapter VI, Project Variants, the proposed project includes consideration and analysis of seven vehicular access variants. These variants differ from the proposed project in how vehicles enter and exit the project site and Jessie Square Garage. The variants do not include changes to the proposed project's programmatic mix of residential, museum, restaurant/retail and possibly office uses. Therefore, population, employment and visitor information under all seven vehicular access variants is identical to the proposed project.

direct impact of the proposed project. The basic premise of the proposed project is to alter the density and character of the project site by developing in-fill, high-density residential development in the downtown near transit, and provide a new cultural use, The Mexican Museum. If implemented, the proposed project would add new residents (up to approximately 490 under the residential flex option and up to approximately 435 residents under the office flex option) and museum visitors (up to approximately 400 daily visitors) in the project vicinity by adding up to 215 new housing units and approximately 52,285 gsf of museum space (The Mexican Museum). Existing office uses would be reduced under the office flex option or eliminated under the residential flex option. The proposed project would increase the City's overall housing stock. However, implementation of the proposed project would not represent significant growth in housing in the context of the City as a whole, which is projected to have an increase of 54,020 households between 2010 and 2030. The maximum of 215 housing units proposed by the project would represent less than 1 percent (0.004 percent) of the projected household growth in the City between 2010 and 2030, and a negligible percentage (0.0004) of the projected household growth in the region (504,600 households) between 2010 and 2030.

Due to the change in the mix of uses on the Aronson Building project site there would be a net decrease of approximately 353 on-site employees under the residential flex option, from approximately 453 existing workers to approximately 100 anticipated workers. Under the office flex option there would be a net decrease of approximately 135 on-site employees, from approximately 453 existing workers to approximately 318 anticipated workers. Because the total number of employees at the project site would decrease under either flex option, the proposed project would not cause substantial growth or concentration in employment that would result in significant growth-inducing impacts related to employment or housing demand in the City or region.

The proposed project is located in an urban area that is already served by the City's municipal infrastructure and public services as well as retail and other services for residential uses. No expansion of municipal infrastructure or public services not already under construction or included with the proposed project would be required to accommodate new development, either directly or indirectly, as a result of the proposed project. The proposed project would not result in development of new public services that would accommodate significant growth in the City or the region.

ABAG *Projections 2009* includes proposed development on the project site and its immediate vicinity as a Priority Development Area (PDA), suitable for high-density housing near transit with existing support services and infrastructure. The project site is within the "Downtown

Neighborhoods and Transit Infill Areas" PDA.[2] While the proposed project itself represents growth, the provision of new housing would not encourage substantial new growth in the region that has not previously been projected.

The proposed project would provide for high-density residential growth (up to approximately 148 units per acre with the residential flex option) supported by existing community facilities, public services, transit service and infrastructure, and new or upgraded public utilities. To the extent that this growth would have been otherwise accommodated at other Bay Area locations, the proposed project would focus growth on underused or undeveloped infill sites near existing regional employment centers and existing and planned transit facilities, infrastructure, retail services, and cultural and recreational facilities.

The proposed project would contribute to meeting ABAG's regional housing objectives and would conform with ABAG's regional goals to focus growth and development by creating compact communities with a diversity of housing, jobs, activities and services, and increasing housing supply, improving housing affordability, and increasing transportation efficiency and choices.[3]

As discussed under Impact C-PH-1 in Section IV.C, Population and Housing, pp. IV.C.16-IV.C.19, implementation of the proposed project in combination with past, present, and reasonably foreseeable future projects would not result in substantial population growth in the City that has not already been accounted for in ABAG projections for the City and region in 2030. Based on the preceding discussion and analysis, the proposed project would not have a substantial growth-inducing impact, and no mitigation measures are necessary.

B. SIGNIFICANT UNAVOIDABLE IMPACTS

In accordance with Section 21067 of CEQA and with Sections 15126(b) and 15126.2(b) of the CEQA Guidelines, the purpose of this section is to identify significant environmental impacts that could not be eliminated or reduced to less-than-significant levels by implementation of mitigation measures included in the proposed project or identified in Chapter IV, Environmental Setting, Impacts, and Mitigation. The findings of significant impacts are subject to final determination by the San Francisco Planning Commission as part of the certification process for this EIR. If

[2] Downtown Neighborhoods and Transit Rich Corridors include the areas addressed in the Downtown Neighborhoods Initiative (which includes the project site); the Transit Center District Plan, The Rincon Hill Plan, and the Japantown Better Neighborhood Plan. These plans are in various stages of planning, adoption and completion, but are projected by ABAG to be fully implemented by 2035.

[3] ABAG administers the FOCUS program, in partnerships with MTC, BCDC, and BAAQMD. FOCUS is a regional development and conservation strategy that promotes more compact land use patterns in the Bay Area.

necessary, this chapter will be revised in the Final EIR to reflect the findings of the Planning Commission.

As identified in Section IV.I, Wind and Shadow, implementation of the proposed project and the reasonably foreseeable future projects, including potential future development under the draft TCDP, would increase the amount of net new shadow on downtown public open spaces. Due to the number of proposed projects adding net new shadow on public open spaces and the layering of additional times of day and times of year when shadow would occur, combined with the impact of the proposed TCDP on the use of some of these open spaces, cumulative shadow impacts would be significant and unavoidable. By contributing net new shadow to several downtown open spaces, the proposed project would make a cumulatively considerable contribution to this significant and unavoidable cumulative impact. As discussed in Chapter VII, Alternatives to the Proposed Project, on p. VII.33 and pp. VII.110-VII.111, the Existing Zoning Alternative and the Reduced Shadow Alternative would eliminate net new shadow on Union Square. However, due to the proximity of the project site to Jessie Square, these two alternatives would result in the same project-level shadow impact to Jessie Square. In addition, like the proposed project, these alternatives would contribute to shadow on other downtown open spaces identified in Section IV.I, Wind and Shadow. The contribution to significant and unavoidable cumulative shadow impacts from these alternatives to downtown parks and other open spaces would be reduced compared to the proposed project, but not to a less than cumulatively considerable level. Therefore, Impact C-WS-2, discussed on pp. IV.I.58-IV.61 would remain significant and unavoidable.

As identified in Chapter VI, Project Variants, under Impact Variant TR-1 on p. VI.42, Variant 6 would result in a significant contribution during the weekday PM peak hour to the existing poor operating conditions at the intersection of Fourth and Market Streets. No mitigation is feasible, and therefore Variant 6 traffic impacts at the intersection of Fourth and Market Streets would be significant and unavoidable.

As identified in Chapter VI, Project Variants, under Impact Variant TR-2 on p. VI.44, Variant 6 would conflict with transit operations on Mission Street. No mitigation is feasible, and therefore Variant 6 impacts on transit operations on Mission Street would remain significant and unavoidable.

As identified in Chapter VI, Project Variants, under Impact Variant TR-3 and Impact Variant TR-4 on p. VI.47, Variant 6 would reassign both existing Jessie Square Garage and project-generated traffic to and from Mission Street and would result in cumulatively considerable contributions to significant cumulative impacts at the intersections of Fourth and Market Streets and Fourth and Mission Streets. No mitigation is feasible, and therefore Variant 6 would result in a cumulatively considerable contribution to significant cumulative traffic impacts

at the intersections of Fourth and Market Streets and Fourth and Mission Streets, which would remain significant and unavoidable.

As identified in Chapter VI, Project Variants, under Impact Variant TR-5 on p. VI.50, Variant 7 would result in project-level impacts at the intersection of Fourth and Market Streets. No mitigation is feasible, and therefore Variant 7 traffic impacts at the intersection of Fourth and Market Streets would be significant and unavoidable.

As identified in Chapter VI, Project Variants, under Impact Variant TR-6 on p. VI.52, Variant 7 would result in project-level impacts on transit operations along Mission Street. No mitigation is feasible, and therefore Variant 7 transit impacts would be significant and unavoidable.

As identified in Chapter VI, Project Variants, under Impact Variant TR-6 and Impact Variant TR-7 on p. VI.54, Variant 7 would reassign both existing Jessie Square Garage and project-generated traffic to and from Mission Street and would result in cumulatively considerable contributions to significant cumulative impacts at the intersections of Fourth and Market Streets and Fourth and Mission Streets. No mitigation is feasible, and therefore Variant 7 would result in a cumulatively considerable contribution to significant cumulative traffic impacts at the intersections of Fourth and Market Streets and Fourth and Mission Streets, which would remain significant and unavoidable.

C. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS

In accordance with Section 21100 (b)(2)(B) of CEQA, and Section 15126.2(c) of the CEQA Guidelines, an EIR must identify any significant irreversible environmental changes that could result from implementation of the proposed project. This may include current or future uses of non-renewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. According to the CEQA Guidelines, irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. The CEQA Guidelines describes three distinct categories of significant irreversible changes: 1) changes in land use that would commit future generations, 2) irreversible changes from environmental actions, and 3) consumption of nonrenewable resources. Each of these categories is discussed below in relation to the proposed project. The conclusions for the proposed project and its vehicular access variants are the same, except where noted.

CHANGES IN LAND USE WHICH WOULD COMMIT FUTURE GENERATIONS

As described throughout this EIR, the proposed project would result in the rehabilitation of the historic Aronson Building, the demolition of its two non-historic annexes (added in 1978), and construction of a high-rise residential tower within an urbanized area. The major change in use on the project site would be related to the construction of a new residential tower and the introduction of new residential, museum, and retail/restaurant uses on the project site under either the residential or office flex options. The change in use at the existing Aronson Building, from office use to residential, museum, and retail/restaurant use, is also considered. The project site is currently occupied and developed with office-related uses and retail at the ground floor. Future generations could eventually redevelop the site with other uses, if the rehabilitated Aronson Building and proposed residential tower with a museum/institutional use were to no longer operate. Therefore, the proposed residential, museum and retail/restaurant uses would not constitute a significant adverse effect.

IRREVERSIBLE CHANGES FROM ENVIRONMENTAL ACTIONS

No significant irreversible environmental damage, such as an accidental spill or explosion of hazardous materials, is anticipated to occur with implementation of the proposed project. Compliance with Federal, State and local regulations related to residential and museum uses identified in Section IV.P, Hazards and Hazardous Materials, would reduce the possibility that hazardous substances from the demolition, construction, and operation of proposed project would cause significant and unavoidable environmental damage.

The proposed project and all vehicular access variants (Variants 1, 2, 3, 4, 5, 6 and 7) would include excavation to a depth of approximately 41 feet below the surface underneath the site of the 1978 annex nearest Mission Street and underneath the pedestrian walkway west of the annex. Variant 2 and Variant 4 would require additional excavation to the north of the Aronson Building for a below-grade vehicular access ramp from Third Street into the Jessie Square Garage. Construction of the proposed vehicular ramp would measure about 20 feet wide by 102 feet long, and result in excavation to an excavation depth of about 29 feet. Variant 5 would require additional soils disturbance on the north side of the Aronson Building for construction of the ground-floor residential drop off area. Generally, the site excavation for the proposed project and vehicular access variants would not substantially alter the relatively flat topography of the project site. However under Variant 2 and Variant 4, excavation for the below-grade vehicular ramp would result in a visible change to the site.

No other irreversible permanent changes such as those that might result from construction of a large-scale mining project, hydroelectric dam, or other industrial project would result from development of the proposed project.

CONSUMPTION OF NONRENEWABLE RESOURCES

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands to urban uses, and loss of access to mineral reserves. No agricultural lands would be converted and no access to mining reserves would be lost with construction of the proposed project or any of the vehicular access variants.

Implementation of the proposed project or vehicular access variants would commit future generations to an irreversible commitment of energy resources in the form of usage of nonrenewable fossil fuels, due to vehicle and equipment use during demolition, construction, and operation of the proposed project or vehicular access variants. The proposed project would comply with California Code of Regulations Title 24 standards and City's Building Code Requirements for Construction Projects; it would not use energy in a wasteful manner. Resources consumed during demolition, construction, and operation would include lumber, concrete, gravel, asphalt, masonry, metals, and water. Similar to the existing uses on the project site, the proposed project would irreversibly use water and solid waste landfill resources. However, the proposed project or vehicular access variants would not involve a large commitment to those resources relative to existing conditions and also relative to supply, nor would it consume any of those resources wastefully. The proposed project and vehicular access variants would be designed and constructed with the goal of obtaining, at minimum, Leadership in Energy and Environmental Design (LEED) Silver certification, or as required by the San Francisco Building Code. Design, construction, and operation according to LEED standards would ensure the efficient use of water, energy, and materials resources. Further, the proposed project or vehicular access variants would not require the construction of new power plant, or major new transmission lines to deliver energy.

The proposed project or vehicular access variants would introduce new residential, museum and retail/restaurant uses to the project site. The project site is already served by existing utilities and construction of new major sewer construction would not be necessary. The project site is almost completely impervious; other than a small landscaped area west of the Aronson Building. However, construction of the proposed project or vehicular access variants would not substantially increase the amount of impervious surface area on the project site. Accordingly, the proposed project or vehicular access variants would not increase the amount of surface runoff, or exceed the capacity of the existing drainage system. The amount of impermeable surface area that receives rain under existing conditions would change with project development. However, it is anticipated that there would be no net increase in the amount of storm water runoff with the proposed project or project variants because the City's Stormwater Management Ordinance requirements now make mandatory a reduction in at-source runoff. The proposed project and vehicular access variants would meet these requirements; however, the majority of stormwater would continue to be handled by the City's combined sewer collection system. Neither the

proposed project nor any of the vehicular access variants would require construction of new water or wastewater treatment facilities or expansion of the *2010 Urban Water Management Plan for the City and County of San Francisco*, which includes all known or expected development projects and projected development in San Francisco through 2030. Furthermore, the proposed project or any of the vehicular access variants would not require new or expanded water supply resources or entitlements. Therefore, service providers would have the capacity to provide for the proposed level of development on the project site.

D. AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

The Planning Department published a Notice of Preparation of an EIR (NOP) on April 13, 2011, announcing its intent to prepare and distribute an EIR (the NOP is included in this EIR as Appendix A). The public review period began on April 14, 2011 and ended on May 13, 2011. During the NOP public review period, four comment letters were submitted to the Planning Department by public agencies and other interested parties. An additional comment letter was received after the public review period ended. A Notice of Preparation Public Comments Summary Report was prepared.[4] Comments identified the following topics to be evaluated in the Draft EIR:

- Potential effects on private views (analyzed in the Section IV.B, Aesthetics);
- Potential project-related effects on increased density (analyzed in Section IV.C, Population and Housing);
- Potential effects on traffic, trip generation, distribution and assignment, and cumulative traffic volumes (analyzed in Section IV.E, Transportation and Circulation);
- Potential project-related effects on Stevenson Street (analyzed in Section IV.E, Transportation and Circulation);
- Potential wind effects in and around Jessie Square (analyzed in Section IV.I, Wind and Shadow);
- Effects on stormwater (analyzed in Section IV.O, Hydrology and Water Quality);
- Request for consideration of additional vehicular access variants (analyzed in Chapter VI, Project Variants);
- Consideration of alternatives that would fully comply with current zoning and not create new shadow on Union Square (analyzed in Chapter VII, Alternatives to the Proposed Project);
- Request for an alternative for a porte-cochere with access from Mission Street and not Third Street (analyzed in Chapter VI, Project Variants); and

[4] The *706 Mission Street – The Mexican Museum and Residential Tower Project Notice of Preparation Public Comments Summary Report*, October 2011, is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2008.1084E.

- Request for an alternative that is consistent with the original development program under the now-expired Redevelopment Plan (Project Alternatives are analyzed in Chapter VII, Alternatives to the Proposed Project).

One comment expressed support for the project, citing the benefits of increased density on local businesses, restaurants, and stores within walking distance of the project site and the concurrent benefit of improved local traffic. Other issues such as merits of the project design and potential discretionary approvals granted by the City are not environmental issues and will be considered by decision-makers during the project approval process.

Since publication of the NOP, the design of the proposed project tower has been modified. At the first and second floors, the southwest corner of the tower is chamfered. Modifications to the proposed project's floor plan have been made, resulting in minor changes to the overall proposed square footage.

In addition, three project variants related to vehicular access to and from the project site have been added to the four discussed in the NOP, for a total of seven vehicular access variants that are analyzed in this EIR.

This page is intentionally blank.

VI. PROJECT VARIANTS

INTRODUCTION

This chapter describes and discusses the following seven variants to the proposed project related to vehicular access to and from the project site:

- **Variant 1: No Third Street Access** – Under this variant, access to and from the Jessie Square Garage would not change from existing conditions. All vehicles, both public and project-related, would enter the garage from Stevenson Street. Delivery trucks and service vehicles would exit the garage onto Stevenson Street only, and all other public and project-related vehicles could exit the garage onto Mission Street or Stevenson Street. Unlike the proposed project, there would be no public or project-related vehicular access to the Jessie Square Garage from Third Street.
- **Variant 2: Residential Ingress from Third Street and Stevenson Street** – Under this variant, project residents could enter the Jessie Square Garage from Third Street via a new ramp or via the existing entrance on Stevenson Street, and all other vehicles would have to enter the garage from Stevenson Street only. As under existing conditions, delivery trucks and service vehicles would exit the garage onto Stevenson Street only, but all other public and project-related vehicles could exit the garage onto Mission Street or Stevenson Street.
- **Variant 3: Residential Ingress from Mission Street and Stevenson Street** – Under this variant, project residents could enter the Jessie Square Garage from Mission Street or Stevenson Street, and all other vehicles would have to enter the Jessie Square Garage from Stevenson Street only. To accommodate residential ingress from the Mission Street garage entrance, the existing ramp would be widened from 16 feet eight inches to 25 feet to allow for two-way operations. As under existing conditions, larger delivery trucks and service vehicles would exit the garage onto Stevenson Street only, but all other public and project-related vehicles could exit the garage onto either Mission Street or Stevenson Street. Unlike the proposed project, there would be no public or project-related vehicular access to the Jessie Square Garage from Third Street.
- **Variant 4: Truck and Service Vehicle Access from Third Street** – Under this variant, delivery trucks and service vehicles would enter the Jessie Square Garage only from Third Street via a new ramp, and all other public and project-related vehicles would enter the garage only from Stevenson Street. As under existing conditions, large delivery trucks would exit the garage onto Stevenson Street only, but all other public and project-related vehicles could exit the garage onto Mission Street or Stevenson Street.
- **Variant 5: Residential Drop-Off within Aronson Building** – Under this variant, project residents could drive onto the project site from Third Street and leave their vehicles with a valet parking attendant in the residential drop-off area on the ground floor of the Aronson Building. The drop-off would be created by the demolition of an approximately 16-foot-tall-by-20-foot-wide-by-80-foot-long portion of the ground floor along the north wall of the Aronson Building. The second through tenth floors of the Aronson Building would cantilever over the residential drop-off area. Project residents who choose to park

their own vehicles would be require to enter the Jessie Square Garage from Stevenson Street. All other public and project-related vehicles would enter the garage from Stevenson Street. As under existing conditions, larger delivery trucks and service vehicles would exit the garage onto Stevenson Street only, but all other public and project-related vehicles could exit the garage onto Mission Street or Stevenson Street.

- **Variant 6: Vehicular Ingress/Egress from Mission Street Only Except for Trucks** – Under this variant, all public and project-related vehicles except for delivery trucks and service vehicles would enter and exit the Jessie Square Garage from Mission Street only. To accommodate residential ingress from the Mission Street garage entrance, the existing ramp would be widened from 16 feet, 8 inches to 25 feet to allow for two-way operations. As under existing conditions, delivery trucks and service vehicles would enter and exit the garage from Stevenson Street only. Unlike the proposed project, there would be no public or project-related vehicular access to the Jessie Square Garage from Third Street.
- **Variant 7: All Vehicular Ingress/Egress from Mission Street Only** – Under this variant, all public and project-related vehicles would enter and exit the Jessie Square Garage from Mission Street only. To accommodate residential ingress from the Mission Street garage entrance, the existing ramp would be widened from 16 feet, 8 inches to 25 feet and the vertical clearance increased from 13 feet, 6 inches to 14 feet in order to accommodate both ingress and egress by truck. There would be no public or project-related vehicular access to and from the garage via Third Street or Stevenson Street. Unlike existing conditions and unlike the proposed project, the existing Stevenson Street entrance to and exit from the Jessie Square Garage would be permanently closed.

Variants 1-5 are under consideration for the proposed project. Variants 6 and 7 are included in the analysis in response to comments received on the Notice of Preparation of an Environmental Impact Report (NOP) for this project. All these variants modify limited features or aspects of the proposed project, unlike the alternatives to the proposed project (described and analyzed in Chapter VII, Alternatives to the Proposed Project), which analyze different approaches to developing the project site in order to address significant impacts that may result from the proposed project. Therefore, each variant is the same as the proposed project except for the specific variation described. Each variant is analyzed at the same level of detail as the proposed project and would be available for selection by the project sponsor and decision-makers as part of an approval action.

This chapter describes each variant and analyzes the environmental impacts of the variant. As summarized below, the access variants address different designs related to circulation and access for the project site. For some environmental topics the impacts under any variant would be the same as for the proposed project. However, in some respects the impacts of the proposed project under a particular variant would differ from the impacts identified for the proposed project in Chapter IV, Environmental Setting, Impacts, and Mitigation. Unless otherwise stated, all mitigation and improvement measures described for these topics under the proposed project in Chapter IV, Environmental Setting, Impacts, and Mitigation, would be applicable to these variants.

ENVIRONMENTAL TOPICS MERITING NO FURTHER ANALYSIS UNDER THE VARIANTS

The seven vehicular access variants to the proposed project analyzed in this chapter do not involve any change to the mix of land uses, the space allocation of uses, or the residential unit count under the proposed project. Likewise, the variants do not involve any change to the location, configuration, or building envelope (massing, height, and bulk) of development under the proposed project. Therefore, physical environmental effects under each variant would be the same as those identified for the proposed project for the following environmental topics: Land Use and Land Use Planning, Population and Housing, Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, Mineral and Energy Resources, and Agricultural and Forest Resources. Unless otherwise stated, all mitigation and improvement measures described for these topics under the proposed project would be applicable to these variants.

Variant 1, Variant 3, Variant 6, and Variant 7 would vary from the proposed project in that for these variants there would be no vehicular access from Third Street, and therefore there would be no construction of the surface driveway from Third Street, or construction of the car elevators. However, as under the proposed project, there would continue to be pedestrian access via a paved walkway to the Aronson Building from Third Street. Thus, the physical environmental effects related to excavation and soils disturbance that would result from these variants would be the similar to or less impactful as that from the proposed project. For this reason, the physical environmental effects of these variants under Aesthetics, Cultural and Paleontological Resources (Archaeological Resources and Historic Architectural Resources), Geology and Soils, Hydrology and Water Quality, and Hazards and Hazardous Materials would be substantially the same as those identified for the proposed project. No further analysis of these topics under Variant 1, Variant 3, Variant 6, and Variant 7 is required.

Variant 2 and Variant 4 would include the construction of a below-grade vehicular ramp from Third Street into the Jessie Square Garage along the north side of the Aronson Building. The ramps under these variants would differ visually from the proposed project. Construction of the ramps would require additional excavation to the north of the Aronson Building not called for under the proposed project. Therefore, Variant 2 and Variant 4 merit additional analysis under the following environmental topics: Aesthetics, Cultural and Paleontological Resources (Archaeological Resources and Historic Architectural Resources), Geology and Soils, Hydrology and Water Quality, and Hazards and Hazardous Materials.

Variant 5 would include the construction of a residential drop-off within the Aronson Building and would require demolition of a portion of the north wall and a portion of the interior of the Aronson Building. The residential drop-off under this variant would differ visually from the

proposed project and would include the removal of more historic fabric from the Aronson Building than the proposed project. Therefore, Variant 5 merits additional analysis under the environmental topics of Aesthetics and Cultural and Paleontological Resources (Historic Architectural Resources). However, excavation for the proposed tower and related site disturbance under this variant would be the same as that of the proposed project. Therefore, physical environmental effects of Variant 5 under Archaeological and Paleontological Resources, Geology and Soils, Hydrology and Water Quality, and Hazards and Hazardous Materials would be substantially the same as those identified for the proposed project. No further analysis of these topics under Variant 5 is required.

Transportation and Circulation Subtopics Requiring No Further Analysis under the Project Variants

Vehicle trip assignment with respect to the location of access into the project site would differ for each variant from that of the proposed project; however, the travel demand associated with the proposed project would remain the same for all variants. The variants do not require additional analysis under the Transportation and Circulation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking, as described below.

Bicycle Impacts

The variants would not result in features that would affect bicycle travel in the vicinity of the project site. Vehicle trip generation under the variants would be the same under the proposed project. Therefore, similar to the proposed project, impacts on bicyclists would be less than significant for all variants.

Emergency Access Impacts

As with the proposed project, emergency vehicles could access the project site along its Mission Street and Third Street frontages. Emergency vehicles could also access the Jessie Square Garage from Stevenson Street. Therefore, similar to the proposed project, the variants would not affect emergency vehicle access to the project site or vicinity or the configuration or capacity of adjacent travel lanes. Therefore, as with the proposed project, impacts on emergency access would be less than significant for all variants.

Construction Impacts

Construction activities associated with the variants would be the same as those described for the proposed project, and construction-related transportation impacts would be less than significant. As with the proposed project, to reduce the variants' less-than-significant transportation-related construction effects, the following improvement measures would be applicable to the variants:

Improvement Measures I-TR-I: Construction - Traffic Control Plan, I-TR-J: Construction – Carpools, I-TR-K: Construction – Truck Traffic Management, and I-TR-L: Construction - Update Adjacent Businesses and Residents, on pp. IV.E.54-IV.E.55. Improvement Measures I-TR-I through I-TR-L would reduce potential conflicts between construction activities and pedestrians, transit and autos, and include the preparation of a traffic control plan for construction, carpool and transit access for construction workers, construction truck traffic management, and project construction updates for adjacent businesses and residents. Therefore, as with the proposed project, impacts on construction activities would be less than significant for all variants.

Parking

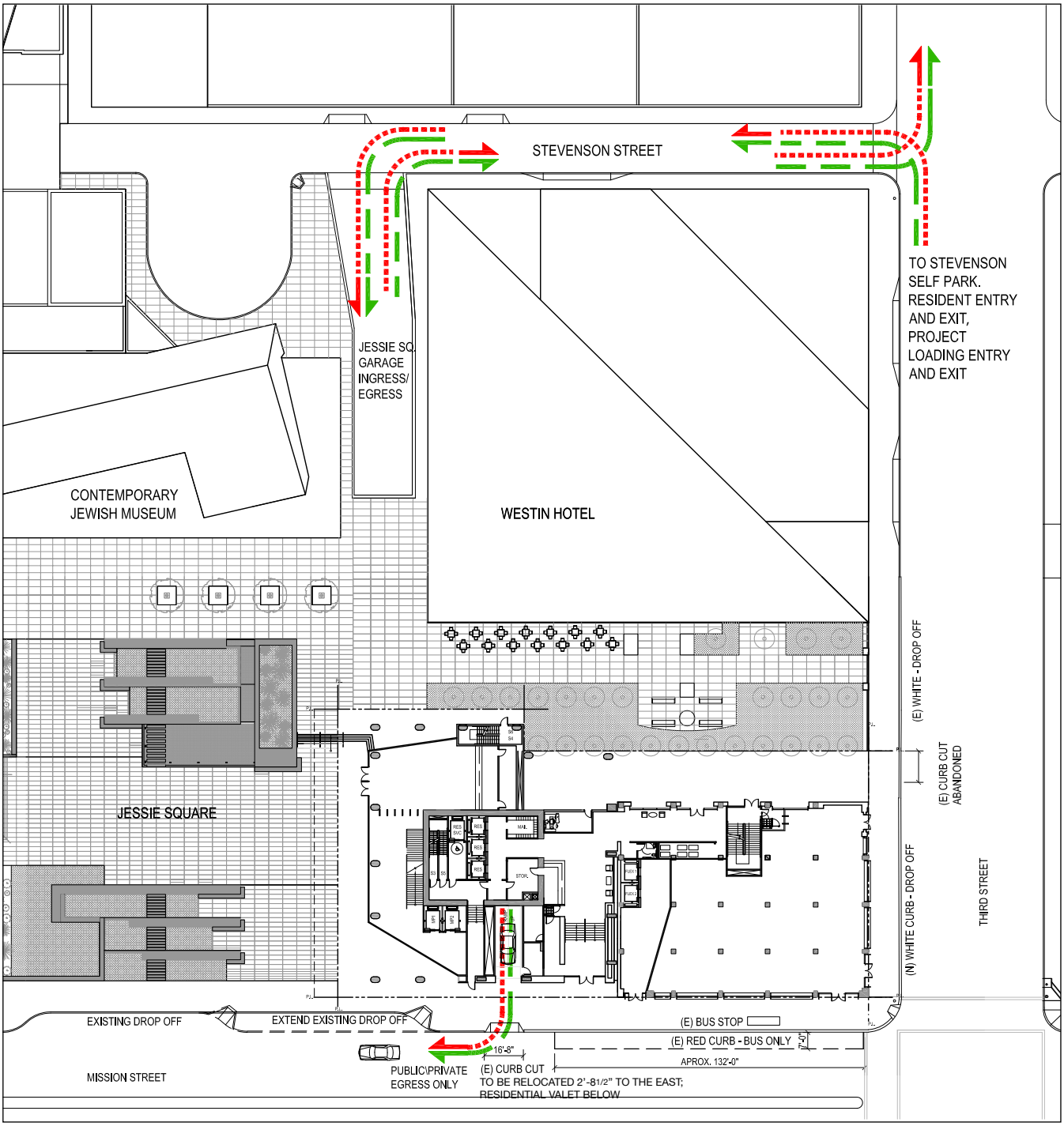
Under the variants, parking demand and supply conditions would be the same as described for the proposed project. As with the proposed project, to encourage transit use and reduce parking demand, Improvement Measure I-TR-M: Transportation Demand Management, described on p. IV.E.59, is applicable to these variant. Under this improvement measure, the project sponsor could provide a transportation insert for the residential and non-residential move-in packet that would provide information on transit service to encourage the use of alternative modes. Therefore, the discussion provided for the proposed project regarding parking conditions would also apply to all vehicular access variants.

A. VARIANT 1: NO THIRD STREET ACCESS

DESCRIPTION

Under Variant 1: No Third Street Access (hereinafter Variant 1), ingress and egress to the Jessie Square Garage for all vehicles (residential, non-residential, and service and delivery vehicles) would remain the same as under existing conditions: all vehicles would enter the Jessie Square Garage from Stevenson Street. (See Figure VI.1: Variant 1 – No Third Street Access) As under existing conditions, while large service and delivery vehicles would be required to exit the garage onto Stevenson Street only, all other vehicles would have the option of exiting the garage onto either Stevenson or Mission Streets. Project residents would have the option of parking and retrieving their own vehicles or using a valet service, which would be provided on Basement Level B2.

The resident-only ingress from Third Street, residential drop-off, and car elevators into the garage included as part of the proposed project would not be constructed under this variant. The existing curb cut on Third Street would be removed. The Mission Street driveway would remain egress-only and would not be widened. As under existing conditions, small service and delivery vehicles could exit via the Mission Street driveway, while larger service and delivery vehicles would exit via the Stevenson Street driveway.



SOURCE: Handel Architects

LEGEND:

RESIDENTS

PUBLIC

0 60

Feet

Existing (E) New (N)

706 MISSION STREET

FIGURE VI.1: VARIANT 1 - NO THIRD STREET ACCESS

As under the proposed project, under Variant 1 the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

As under the proposed project, under Variant 1 the north wall of the Aronson Building would be modified to include a new storefront system and canopy on the ground floor and new windows on the upper floors.

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 1 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Aesthetics, Population and Housing, Cultural and Paleontological Resources (Archaeological and Paleontological Resources and Historic Architectural Resources), Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 1 would also be the same as those described for the proposed project. While this variant would not introduce vehicular access from Third Street, unlike the proposed project, it would propose widening the curb cut on Mission Street. Therefore, as with the proposed project, Variant 1 would potentially conflict with the *General Plan* Transportation Element policy related to curb cuts and driveways on transit-preferential streets. Under this variant, conformity with other plans and policies and growth inducement impacts would be the same as for the proposed project. All mitigation and improvement measures described for these topics under the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 1.

The following environmental topic and subtopics are analyzed below for Variant 1: Transportation and Circulation (Traffic Impacts, Transit Impacts, Pedestrian Impacts, Loading Impacts, and 2030 Cumulative Conditions).

Transportation and Circulation[1]

Traffic Impacts

Under Variant 1, ingress and egress to the Jessie Square Garage for all vehicles (residential, non-residential, and service and delivery vehicles) would remain the same as under existing conditions, with primary ingress and egress on Stevenson Street, and secondary egress-only on Mission Street. The assignment of the project-generated vehicle trips to the study intersections would be the same as for the proposed project, with the exception of the intersection of Third and Stevenson Streets. Since there would be no residential driveway access on Third Street constructed under Variant 1, drivers accessing the project site would continue to the intersection of Third and Stevenson Streets. The number of project-generated vehicles at the intersection of Third and Stevenson Streets would increase from 147 vehicles under the proposed project to 210 vehicles under Variant 1.

The assignment of vehicle trips to the seven study intersections under Variant 1 during weekday PM peak hour Level of Service (LOS) conditions would remain the same as under Existing and Existing plus Project conditions. Variant 1 would result in additional vehicles being added to the Third and Stevenson Streets intersection, as compared to the proposed project, and vehicle delay would be slightly higher. However, the overall operating conditions for the intersection would remain at LOS B. In addition, similar to the proposed project, Variant 1 would not result in a significant contribution to the existing poor operating conditions at the intersections of Third and Market Streets (LOS E) and Fourth and Market Streets (LOS F). Therefore, as with the proposed project, the impact of Variant 1 on traffic operations would be less than significant.

While Variant 1 would not have a significant impact on the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications and I-TR-B: "Garage Full" Sign on Third Street, identified for the proposed project and described on p. IV.E.38, would also be applicable to this variant to lessen its effect on traffic. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street.

[1] LCW Consulting, *706 Mission Street Transportation Study, 2008.1084E, Final Report* (hereinafter referred to as "TIS"), January 24, 2012, pp. 96-98. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E. This discussion summarizes and incorporates the transportation impacts analysis results for the variants from the TIS prepared by the transportation subconsultant for the proposed project.

Improvement Measures I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on p. IV.E.39, would not apply to Variant 1, because access to the project site via Stevenson Street would remain the same as under existing conditions.

Transit Impacts

Under Variant 1, the assignment of transit trips would be the same as for the proposed project; therefore, impacts on local and regional transit capacity utilization under Variant 1 would also be less than significant.

Under Variant 1, the existing curb cut into the project site on Third Street would be abandoned, and ingress and egress to the Jessie Square Garage for all vehicles (residential, non-residential, and service and delivery vehicles) would remain the same as under existing conditions. All vehicles traveling to the project parking would turn left onto Stevenson Street at the intersection of Third and Stevenson Streets. Non-revenue Muni buses[2] would travel within the same lane as turning vehicles; however, due to the limited number of buses within the west lanes of Third Street, impacts of Variant 1 on transit operations would be less than significant.

As with the proposed project, the San Francisco Municipal Transportation Agency (SFMTA) would like the option available under Variant 1 to install eyebolts in the Aronson Building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would be a less-than-significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to Variant 1. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Pedestrian Impacts

Similar to the proposed project, impacts under Variant 1 related to pedestrian LOS on sidewalks, corners, and crosswalks would be less than significant. However, to improve pedestrian conditions on Third Street, Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.46, would also be applicable to Variant 1. This improvement measure would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Unlike the proposed project, under Variant 1 there would be no new driveway from Third Street that residents would use to access the garage. Therefore, under Variant 1 there would be no increase in pedestrian-vehicle interactions because there would be no vehicles crossing the

[2] Non-revenue buses are buses that do not pick up passengers.

sidewalk to enter the project site from Third Street. Improvement Measures I-TR-F: Pedestrian Measures on Third Street and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV-E.46-IV.E.47, would not be applicable to Variant 1. These improvement measures relate to potential treatments and management of the Third Street driveway and recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

Loading Impacts

Variant 1 would have the same loading demand and provide the same off-street loading spaces as would the proposed project. The loading demand would be accommodated within the proposed supply. As with the proposed project, delivery and service vehicles would enter the Jessie Square Garage from Stevenson Street and would exit from Stevenson Street (smaller delivery and service vehicles could exit on Mission Street). As with the proposed project, two full-size loading spaces and four service vehicle spaces would be provided on Basement Level B1 within the existing Jessie Square Garage. Therefore, loading impacts would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to Variant 1. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

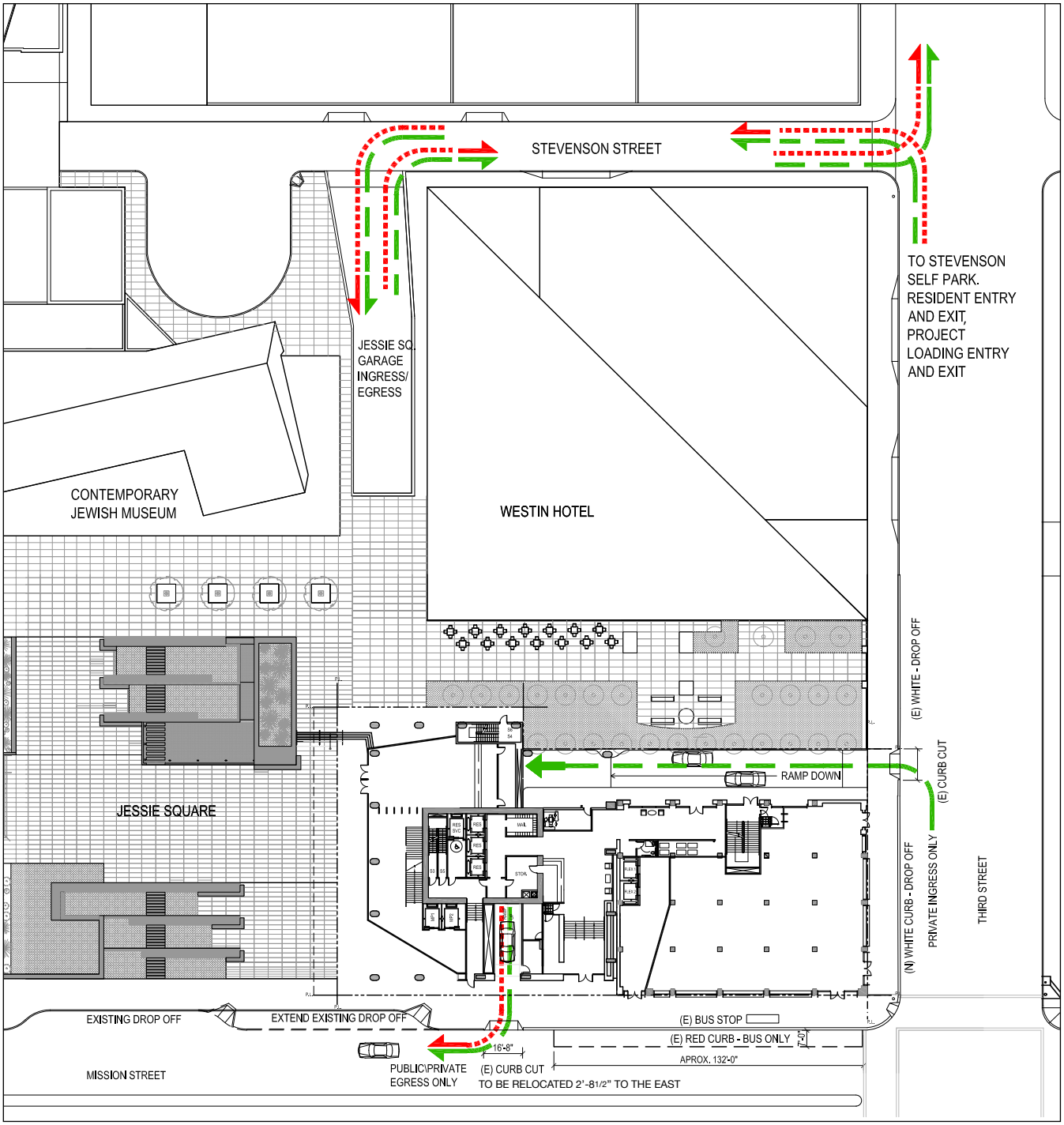
2030 Cumulative Conditions

Under Variant 1, vehicle contributions to the critical movements at the seven study intersections would not result in a cumulatively considerable contribution to significant cumulative traffic impacts. Therefore, as with the proposed project, the contribution of the project under Variant 1 to significant cumulative traffic impacts would be less than cumulatively considerable.

B. VARIANT 2: RESIDENTIAL INGRESS FROM THIRD STREET AND STEVENSON STREET

DESCRIPTION

Under Variant 2: Residential Ingress from Third Street and Stevenson Street (hereinafter Variant 2), all vehicles would continue to be able to enter the Jessie Square Garage from Stevenson Street. (See Figure VI.2: Variant 2 – Residential Ingress from Third Street and Stevenson Street.) As under the proposed project, the existing curb cut on Third Street would



SOURCE: Handel Architects

LEGEND:

RESIDENTS

PUBLIC

0 60

Feet

Existing (E) New (N)

FIGURE VI.2: VARIANT 2 - RESIDENTIAL INGRESS FROM THIRD STREET AND STEVENSON STREET

remain for residential ingress only and project residents would have the option of entering the garage from Third Street or from Stevenson Street. As part of Variant 2, rather than construct a valet drop-off area and two car elevators as under the proposed project, a new ingress driveway ramp, located along the north side of the Aronson Building, would be constructed to access the below-grade garage levels. No ground-level valet would be necessary under this variant. The proposed vehicular ingress ramp would measure about 20 feet wide by 102 feet long, and its construction would result in excavation to an excavation depth of about 29 feet, resulting in excavation and removal of approximately 1,085 cubic yards of soil. Therefore, when combined with the excavation required under the proposed project, a total of approximately 10,695 cubic yards of soil would be needed to be excavated and removed under this variant.

Under existing conditions, delivery and service vehicles are required to exit the Jessie Square Garage only onto Stevenson Street and vans, small trucks, and all other vehicles have the option of exiting the garage onto either Stevenson or Mission Streets. This would remain true under Variant 2. As with the proposed project, the existing curb cuts on Mission Street would continue to be only for egress under this variant.

As under the proposed project, under Variant 2, the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

As under the proposed project, under Variant 2, the north wall of the Aronson Building would be modified to include a new storefront system and canopy on the ground floor and new windows on the upper floors.

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 2 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Population and Housing, Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 2 would be the same as those described for the proposed project, as would conformity with plans and policies and growth inducement impacts. All mitigation and improvement measures described for these topics under

the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 2.

In addition, as discussed below, Variant 2 does not require additional analysis under the transit impacts subtopic. Under Variant 2, the transit impacts would be the same as those identified for the proposed project. As with the proposed project, the residential driveway under this variant would be located on the west side of Third Street, and it is not anticipated that vehicles accessing the project driveway would conflict with Muni buses that use the west-side lanes for non-revenue turnbacks of Market Street buses (i.e., buses do not pick up passengers). Project-generated transit trips would be the same as the proposed project, and therefore impacts on local and regional transit capacity utilization would also be less than significant. As under the proposed project, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would be applicable to this variant.

Likewise, Variant 2 does not require additional analysis under the pedestrian impacts subtopic. Under Variant 2, the pedestrian impacts would be the same as those identified for the proposed project. The residential driveway access at Third Street under this variant would increase the potential for pedestrian-vehicle conflicts along the west Third Street Sidewalk from that of the proposed project. However, impacts on pedestrian LOS on sidewalks, corners, and crosswalks would be less than significant under Variant 2 as under the proposed project. Variant 2 would result in the same number of vehicle trips. Improvement Measures I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, I-TR-F: Pedestrian Measures on Third Street, and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would also apply to Variant 2. These improvement measures relate to potential treatments and management of the Third Street sidewalk and driveway to improvement pedestrian flow and recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

The following environmental topics and subtopics are analyzed below for Variant 2: Aesthetics, Cultural and Paleontological Resources (Archaeological and Paleontological Resources and Historic Architectural Resources), Transportation and Circulation (Traffic Impacts, Loading Impacts, and 2030 Cumulative Conditions), Geology and Soils, Hydrology and Water Quality, and Hazards and Hazardous Materials.

Aesthetics

Like the proposed project, Variant 2 would not result in significant impacts related to scenic vistas and scenic resources. Unlike the proposed project, an approximately 20-foot-wide-by-102-

foot-long vehicular ramp along the north side of the Aronson Building would be constructed under this variant. With respect to visual character and quality, the ramp down into the garage in Variant 2 would be less conducive to an inviting pedestrian realm along Third Street compared to the at-grade driveway under the proposed project. However, the ramp under this variant would not substantially degrade the existing visual character or quality of the site and its surroundings because the ramp would be a primarily below-grade feature and would not be prominent within the visual setting of the proposed project. Therefore, there would be no significant project-level impact or cumulatively considerable contribution to significant cumulative impacts with respect to aesthetics under this variant.

Cultural and Paleontological Resources

Archaeological and Paleontological Resources

Variant 2 would require more excavation than the proposed project. The additional soils disturbance would result from excavation for the ramp into the garage along the north side of the Aronson Building. The excavation of approximately 1,085 cubic yards would increase the potential for encountering archaeological and paleontological resources during construction. Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources, Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, identified for the proposed project and described on pp. IV.D.24-IV.D.31, would also apply to this variant to ensure that potential project-level impacts on archaeological and paleontological resources, if present within the project site, would be less than significant, and that the contributions to significant cumulative impacts on archaeological and paleontological resources under Variant 2 would not be cumulatively considerable.

Historic Architectural Resources

Like the proposed project, Variant 2 would not result in significant impacts related to historic architectural resources as those described for the proposed project.[3] Like the proposed project, under Variant 2 a section of the north façade would be demolished to build a new store front and canopy. However, this area has already been physically impacted by the construction of the 1978 annex on the north façade. In addition, a ramp down to the garage along the north side of the Aronson Building would be constructed under this variant, exposing a below-grade area of the north wall of the Aronson Building. As described in the HRE, the proposed project with

[3] Knapp & VerPlanck Preservation Architects, *Historic Resource Evaluation: The Aronson Building* (hereinafter referred to as "HRE"), June 23, 2011, pp. 81-88. It is incorporated by reference into this EIR. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Variant 2 would comply with the Secretary of the Interior's Standards with respect to Rehabilitation for the incorporated of these elements.[4] Under the Secretary's Standards, such an alteration along the tertiary north façade, including the construction of a ramp, would not rise to a material impairment of the significance of the Aronson Building resource or the historic districts to which contributes, and would therefore not be considered a significant adverse impact on an historical resource under CEQA.[5] Therefore, there would be no significant project-level impact or cumulatively considerable contribution to significant cumulative impacts with respect to historic resources aesthetics under this variant.

Transportation and Circulation[6]

Traffic Impacts

Under Variant 2 vehicular access to the project site would be the same as for the proposed project, except that a ramp into the garage would be constructed, rather than a driveway to two car elevators, to provide access to the below-grade garage levels. The variant would result in the same number of vehicular trips as the proposed project. Therefore, traffic impacts at the study intersections would be the same as for the proposed project, and impacts on traffic operations would be less than significant.

While Variant 2 would not have a significant impact on the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing, I-TR-B: "Garage Full" Sign on Third Street, and I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on pp. IV.E.38-IV.E.39, would also be applicable to this variant to lessen its effect on traffic. Improvement Measure I-TR-A would include review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize the number of vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street and Stevenson Street. Lastly, Improvement Measure I-TR-C would require monitoring of the project access driveway on Third Street, and if a recurring queue occurs, employing abatement methods as needed to abate the queue.

[4] HRE, pp. 82-86.
[5] San Francisco Planning Department, *Historic Resource Evaluation Response, 706 Mission Street* (hereinafter referred to as "HRER"), November 3, 2011, pp. 11-14. This document is included in this EIR as Appendix C and is also available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.
[6] TIS, pp. 98-100.

Loading Impacts

As with the proposed project, delivery and service vehicles under this variant would enter the Jessie Square Garage from Stevenson Street and large delivery and service vehicles would exit from Stevenson Street. All other vehicles have the option of exiting the garage onto either Stevenson or Mission Streets. Variant 2 would have the same loading demand and provide the same off-street loading spaces as the proposed project. Two full-size loading spaces and four service vehicle spaces would be provided on Basement Level B1 within the existing Jessie Square Garage, as with the proposed project. The loading demand could be accommodated within the proposed supply as with the proposed project. Loading impacts under Variant 2 would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to Variant 2. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

2030 Cumulative Conditions

Under Variant 2, vehicle contributions to the critical movements at the seven study intersections were analyzed. Vehicle contributions under this alternative would not result in a cumulatively considerable contribution to significant cumulative traffic impacts. Therefore, as with the proposed project, the contribution of the project under Variant 2 to significant cumulative traffic impacts would be less than cumulatively considerable.

Geology and Soils

Variant 2 would result in an additional soils disturbance and excavation of approximately 1,085 cubic yards of soil in order to construct the proposed vehicular ramp along the north side of the Aronson Building which would lead from Third Street into the Jessie Square Garage. The foundation and earthwork under this variant would otherwise be substantially the same as under the proposed project, and would be evaluated prior to construction and upgraded as necessary. Upgrades may include potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[7] Construction of the proposed vehicular ingress ramp would measure about 20 feet wide by 102 feet long, and result in excavation to an excavation depth of about 29 feet. Though this additional amount of excavation would result in more soil exposure for a short time during demolition activities, compliance with

[7] Treadwell & Rollo, *Updated Preliminary Geotechnical Study, 706 Mission Street, San Francisco, California*, November 18, 2009 (hereinafter referred to as "*Updated Preliminary Geotechnical Study*"), pp. 6-7. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

the City's requirements for protection of exposed soils from erosion and runoff would ensure that there would be no adverse effects related to soils. Therefore, project-level impacts related to geology and soils under Variant 2 would be less than significant and there would be no cumulatively considerable contribution to significant impacts related to geology and soils under this variant.

Hydrology and Water Quality

Like the proposed project, Variant 2 would not result in significant impacts related to hydrology and water quality. Construction of the tower and renovations to the Aronson Building under Variant 2 would be completed in compliance with the City's Stormwater Management Ordinance (SMO). The SMO would require the project sponsor to develop a Stormwater Control Plan that locates and sizes source control and treatment Best Management Practices (BMPs) prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management under this variant would meet the BMPs and the *San Francisco Stormwater Design Guidelines* of the San Francisco Public Utilities Commission, and the applicable LEED guidelines. With compliance with these ordinances and guidelines, and other applicable laws, this variant would not violate water quality standards, degrade water quality, affect groundwater supplies, substantially alter drainage patterns, substantially increase runoff, or substantially add to sources of polluted runoff. Variant 2 would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Similar to the proposed project, there would be no significant project-level impacts and no cumulatively considerable contribution to significant cumulative hydrology and water quality impacts under Variant 2.

Hazards and Hazardous Materials

Variant 2 proposes a vehicular ramp along the north side of the Aronson Building which would lead from Third Street into the Jessie Square Garage. This would result in the excavation and removal of an additional approximately 1,085 cubic yards of soil. Therefore, when combined with the excavation required under the proposed project, a total of approximately 10,695 cubic yards of soil would be excavated and removed under this variant. Due to the potential for contaminated soil to be unearthed during excavation activities, this variant would also require implementation of Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling of Contaminated Soil, identified for the proposed project and described on pp. IV.P.14-IV.P.16. This mitigation measure describes a program of soil testing and management to be implemented by the project sponsor, as applicable. Therefore, with implementation of this measure, there would be no significant project-level impacts related to hazards and hazardous materials or

cumulatively considerable contribution to significant cumulative impacts related to hazards and hazardous materials.

C. VARIANT 3: RESIDENTIAL INGRESS FROM MISSION STREET AND STEVENSON STREET

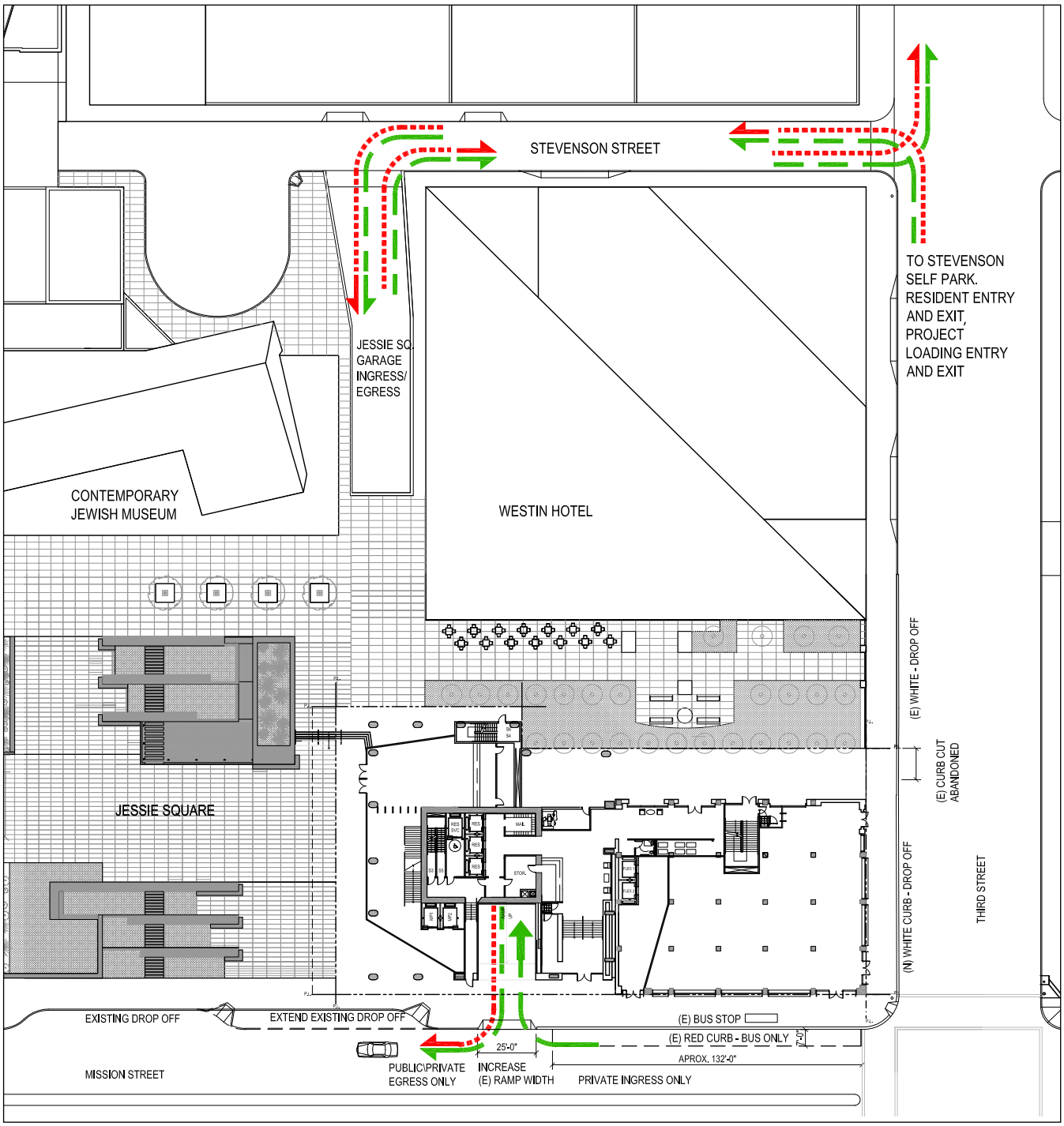
DESCRIPTION

Under Variant 3: Residential Ingress from Mission Street and Stevenson Street (hereinafter Variant 3), all vehicles would continue to be able to enter the Jessie Square Garage from Stevenson Street, but project residents would also have the option of entering the garage from Mission Street. (See Figure VI.3: Variant 3 – Residential Ingress from Mission Street and Stevenson Street.) The existing Jessie Square Garage egress-only driveway ramp and curb cut on Mission Street would be widened from 16 feet, 8 inches to 25 feet to allow for two-way operations. Ingress via this driveway would be for resident vehicular ingress only. Project residents would have the option of parking and retrieving their own vehicles or using a valet service, which would be provided on Basement Level B2. The curb cut on Third Street would be removed and there would be no vehicular access to the project site from Third Street.

Under this variant, project residents could enter the Jessie Square Garage from Mission Street or Stevenson Street, and all other vehicles would have to enter the Jessie Square Garage from Stevenson Street only. As under existing conditions, large delivery trucks and service vehicles would exit the garage onto Stevenson Street only, but all other vehicles could exit the garage onto either Mission Street or Stevenson Street.

As under the proposed project, under Variant 3, the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

As under the proposed project, under Variant 3, the north wall of the Aronson Building would be modified to include a new storefront system and canopy on the ground floor and new windows on the upper floors.



SOURCE: Handel Architects

LEGEND:

RESIDENTS

PUBLIC

0 60

Feet

Existing (E) New (N)

FIGURE VI.3: VARIANT 3 - RESIDENTIAL INGRESS FROM MISSION STREET AND STEVENSON STREET

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 3 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Aesthetics, Population and Housing, Cultural and Paleontological Resources (Archeological and Paleontological Resources and Historic Architectural Resources), Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Hydrology and Water Quality, Biological Resources, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation and Circulation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 3 would be the same as those described for the proposed project. While this variant would not introduce vehicular access from Third Street, unlike the proposed project, it would propose widening the curb cut on Mission Street. Therefore, as with the proposed project, Variant 3 would potentially conflict with the *General Plan* Transportation Element policy related to curb cuts and driveways on transit-preferential streets. Under this variant, conformity with other plans and policies and growth inducement impacts would be the same as for the proposed project All mitigation and improvement measures described for these topics for the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 3.

The following environmental topic and subtopics are analyzed below for Variant 3: Transportation and Circulation (Traffic Impacts, Transit Impacts, Pedestrian Impacts, Loading Impacts, and 2030 Cumulative Conditions).

Transportation and Circulation[8]

Traffic Impacts

Under Variant 3, the existing curb cut into the project site on Third Street would be abandoned. Inbound access to the residential parking would be via the modifications to the existing Jessie Square Garage egress-only driveway ramp on Mission Street. The Mission Street ramp would be widened from 16 feet, 8 inches to 25 feet to allow for two-way operations. To access the revised ramp, residents traveling to the site by auto on Third Street northbound would turn left at Mission Street, while vehicles traveling westbound on Mission Street would continue through at Third Street (as opposed to turning right as under the proposed project). Residents could also access the garage from Stevenson Street.

[8] TIS, pp. 100-103.

Weekday PM peak hour LOS conditions at study intersections would remain the same under this variant as under Existing plus Project conditions. Similar to the proposed project, Variant 3 would not result in a considerable contribution to the existing poor operating conditions at the intersections of Third and Market Streets (LOS E) and Fourth and Market Streets (LOS F). Therefore, the impact of Variant 3 on traffic operations would be less than significant.

While Variant 3 would not have a significant impact on the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications and I-TR-B: "Garage Full" Sign on Third Street, identified for the proposed project and described on p. IV.E.38, would also apply to this variant to lessen its effect on traffic. Improvement Measure I-TR-A would include review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize the number of vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street and Stevenson Street.

Improvement Measures I-TR-C: Monitoring and Abatement Queues, identified for the proposed project and described on p. IV.E.39, would not apply to Variant 3 because there would be no vehicular access to the project site from Third Street.

Transit Impacts

Transit trips generated under Variant 3 would be the same as the proposed project, and therefore, as with the proposed project, impacts on local and regional transit capacity utilization would also be less than significant.

Under Variant 3, the existing Jessie Square Garage egress-only driveway ramp and curb cut on Mission Street would be widened to allow for two-way operations. Ingress via this driveway would be permitted for resident vehicular ingress only.

Based on SFMTA review of operations at the Muni bus stop located adjacent to the project site on the north side of Mission Street and the number of inbound residential vehicles that would be destined to the garage via Mission Street as a result of the proposed project, it was determined that the new ingress would not substantially conflict with Muni and Golden Gate Transit bus operations on Mission Street.[9]

Under Variant 3, the new Mission Street ingress into the Jessie Square Garage would have one entry gate with an access gate located about 130 feet from the building line. A queuing analysis was conducted to determine whether the residential vehicles entering the garage would queue out

[9] TIS, p. 102.

into the adjacent travel lanes on Mission Street, thereby blocking Mission Street transit operations. Under this variant, the number of vehicles accessing the project site during the PM peak hour would be 71 vehicles under the residential flex option and 63 vehicles under the office flex option. Based on the PM peak hour residential demand of 71 vehicles, the 95th percentile queue would be less than two vehicles. The maximum queue would therefore be accommodated within the ramp and would not spill back onto the sidewalk or adjacent travel lanes.[10] The impact of spillover into the adjacent travel lanes from the garage operations would be less than significant.

Similar to the proposed project, the SFMTA would like the option available to install eyebolts in the renovated building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would be a less-than-significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to Variant 3. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Pedestrian Impacts

There would be no significant pedestrian impacts under this variant. Similar to the proposed project, Variant 3 impacts on pedestrian LOS on sidewalks, corners, and crosswalks would be less than significant. However, Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.46, would also be applicable to Variant 3. This improvement measure would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Unlike the proposed project, under Variant 3 there would be no new driveway from Third Street that project residents would use to access the garage. Therefore, under Variant 3 there would be no increase in pedestrian-vehicle interactions because there would be no vehicles crossing the sidewalk to enter the project site from Third Street. Improvement Measures I-TR-F: Pedestrian Measures on Third Street and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would not be applicable to Variant 3. These improvement measures relate to potential treatments and management of the Third Street driveway and recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

[10] TIS, p. 102.

Variant 3 would also widen the existing Jessie Square Garage driveway and ramp on Mission Street (from 16 feet 8 inches clear to 25 feet clear) to enable vehicular ingress for residents as well as continued egress for all vehicles (except large delivery and service vehicles which would exit the garage onto Stevenson Street only). This would result in an intensification of a driveway across a sidewalk with high pedestrian volumes and located adjacent to a bus stop/zone on Mission Street. Similar to Third Street, Mission Street is designated in the *San Francisco General Plan* as a Neighborhood Pedestrian Street (Neighborhood Commercial) and as a Citywide Pedestrian Network Street. Variant 3 would intensify and increase pedestrian-vehicle interactions and conflict with the proposed Mission Street ingress to Jessie Street Garage. However, this situation would not create a hazardous condition for pedestrians in the vicinity of the project site or existing nearby uses, because the vehicles accessing the garage would be accommodated within the ramp, and would not spill back onto the sidewalk or adjacent travel lanes, potentially blocking pedestrians on the sidewalk.

In addition, the following improvement measure, which would not apply to the proposed project, is identified to lessen this variant's less-than-significant effect on pedestrians:

Improvement Measure I-TR-O: Pedestrian Measures on Mission Street

Under Variant 3, during peak periods of pedestrian activity on Mission Street (7 AM to 7 PM), the project sponsor shall staff the driveway entry on Mission Street with a traffic control attendant to facilitate vehicular ingress and egress at the project driveway on Mission Street.

Loading Impacts

Under this variant, delivery and service vehicles would enter the Jessie Square Garage from Stevenson Street and large delivery and service vehicles would exit from Stevenson Street. All other vehicles have the option of exiting the garage onto either Stevenson or Mission Streets. Variant 3 would have the same loading demand and provide the same off-street loading spaces as the proposed project. Two full-size loading spaces and four service vehicle spaces would be provided on Basement Level B1 within the existing Jessie Square Garage, as with the proposed project. The loading demand could be accommodated within the proposed supply as with the proposed project. Loading impacts under Variant 3 would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to Variant 3. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

2030 Cumulative Conditions

Under Variant 3, due to the elimination of residential vehicular access from Third Street under this variant, circulation in the project vicinity would vary slightly from the proposed project. However, vehicle contributions to the critical movements at the seven study intersections would not result in a cumulatively considerable contribution to significant cumulative traffic impacts.[11] Therefore, as with the proposed project, the contribution to significant cumulative traffic impacts under Variant 3 would be less than cumulatively considerable

The bottom of this page is intentionally blank.

.

[11] TIS, pp. 119-120.

D. VARIANT 4: TRUCK AND SERVICE VEHICLE ACCESS FROM THIRD STREET

DESCRIPTION

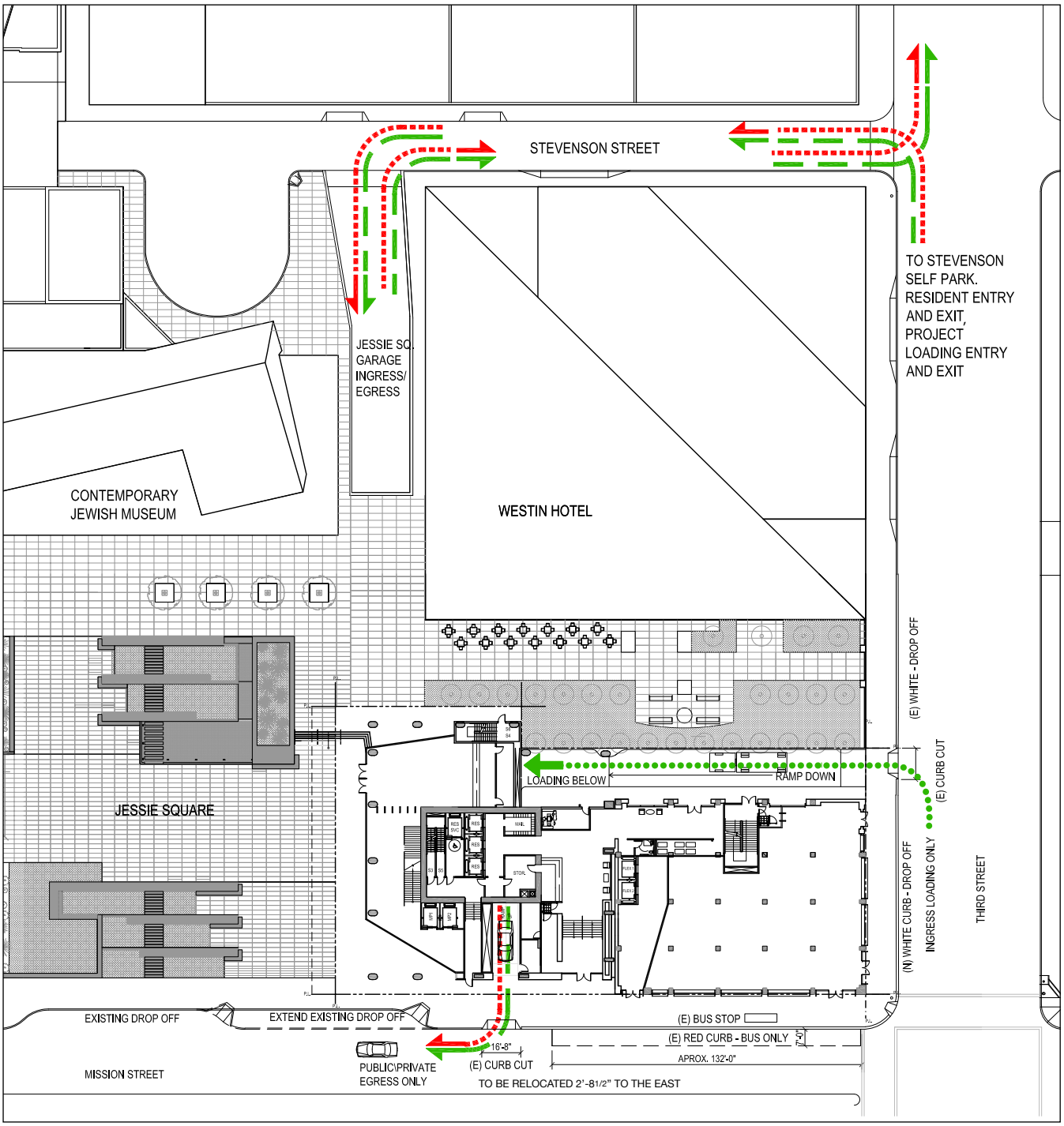
Under Variant 4: Truck and Service Vehicle Access from Third Street (hereinafter Variant 4), only project-related delivery and service vehicles would enter the Jessie Square Garage using the existing Third Street curb cut. (See Figure VI.4: Variant 4 – Truck and Service Vehicle Access from Third Street.) As under Variant 2, Variant 4 would require the construction of the approximately 20-foot-wide-by-102-foot-long vehicular ingress ramp and result in excavation to an excavation depth of about 29 feet, resulting in excavation and removal of an additional approximately 1,085 cubic yards of soil. Therefore, when combined with the excavation required under the proposed project, a total of approximately 10,695 cubic yards of soil would be excavated and removed under this variant.

Ingress and egress to the Jessie Square Garage for residential and non-residential vehicular access would remain the same as under existing conditions. Residents and members of the public would enter and exit the Jessie Square Garage on Stevenson Street, and could also exit on Mission Street. Under Variant 4, project residents would have the option of parking and retrieving their own vehicles or using valet service, which would be provided on Basement Level B2.

Under this variant, delivery trucks and service vehicles would only enter the Jessie Square Garage from Third Street. The Mission Street driveway would remain egress-only and would not be widened. As under existing conditions, small service and delivery vehicles could exit via the Mission Street driveway, while larger service and delivery vehicles would be required to exit via the Stevenson Street driveway.

As with the proposed project, under Variant 4 the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4 inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

As under the proposed project, under Variant 4 the north wall of the Aronson Building would be modified to include a new storefront system and canopy on the ground floor and new windows on the upper floors.



SOURCE: Handel Architects

LEGEND:

PROJECT SERVICE AND DELIVERY

RESIDENTS

PUBLIC

0 60

Feet

Existing (E) New (N)

706 MISSION STREET

FIGURE VI.4: VARIANT 4 - TRUCK AND SERVICE VEHICLE ACCESS FROM THIRD STREET

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 4 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Population and Housing, Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation and Circulation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 4 would be the same as those described for the proposed project, as would conformity with plans and policies and growth inducement impacts. All mitigation and improvement measures described for these topics for the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 4.

The following environmental topic and subtopics are analyzed for Variant 4: Aesthetics, Cultural and Paleontological Resources (Archaeological and Paleontological Resources and Historic Architectural Resources), Transportation and Circulation (Traffic Impacts, Transit Impacts, Pedestrian Impacts, Loading Impacts, and 2030 Cumulative Conditions), Geology and Soils, Hydrology and Water Quality, and Hazards and Hazardous Materials.

Aesthetics

Like the proposed project, Variant 4 would not result in significant impacts related to scenic vistas and scenic resources. Unlike the proposed project, an approximately 20-foot-wide-by-102-foot-long vehicular ramp along the north side of the Aronson Building would be constructed under this variant. With respect to visual character and quality, the ramp down into the garage in Variant 4 would be less conducive to an inviting pedestrian realm along Third Street compared to the at-grade driveway under the proposed project. However, the ramp under this variant would not substantially degrade the existing visual character or quality of the site and its surroundings because the ramp would be a primarily below-grade feature and would not be prominent within the visual setting of the proposed project. Therefore, there would be no significant project-level impact or cumulatively considerable contribution to significant cumulative impacts with respect to aesthetics under this variant.

Cultural and Paleontological Resources

Archaeological and Paleontological Resources

Variant 4 would require more excavation than would the proposed project. The additional soils disturbance would result from excavation for the ramp into the garage along the north side of the Aronson Building. The excavation of approximately 1,085 cubic yards would increase the potential for encountering archaeological and paleontological resources during construction.

Mitigation Measures M-CP-1a:Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources, Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, identified for the proposed project and described on pp. IV.D.24-IV.D.31, would also apply to this variant to ensure that project-level impacts on archaeological and paleontological resources, if present within the project site, would be less than significant and that contributions to significant cumulative impacts on archaeological and paleontological impacts under Variant 4 would not be cumulatively considerable.

Historic Architectural Resources

Like the proposed project, Variant 4 would not result in significant impacts related to historic architectural resources as those described for the proposed project.[12] Like the proposed project, under Variant 2 a section of the north façade would be demolished to build a new store front and canopy. However, this area has already been physically impacted by the construction of the 1978 annex on the north façade. In addition, a ramp to the garage along the north side of the Aronson Building would be constructed under this variant, exposing a below-grade area of the north wall of the Aronson Building. As described in the HRE, the proposed project with Variant 2 would comply with the Secretary of the Interior's Standards with respect to Rehabilitation for the incorporated of these elements.[13] Under the Secretary's Standards, such an alteration along the tertiary north façade would not rise to a material impairment of the significance of the Aronson Building resource or the historic districts to which contributes, and would therefore not be considered a significant adverse impact on an historical resource under CEQA.[14] Therefore, there would be no significant project-level impact or cumulatively considerable contribution to significant cumulative impacts with respect to historic resources aesthetics under this variant.

Transportation and Circulation[15]

Traffic Impacts

Under Variant 4, the existing curb cut into the project site on Third Street would remain, and an ingress-only driveway ramp into the garage would be constructed, similar to Variant 2. As part of this variant, only project-related service and delivery vehicles, not residents, would be permitted use of the new driveway. Residents would enter the garage via Stevenson Street. With the exception of delivery vehicles entering the project site from Third Street under Variant 4 (approximately 40 per day), vehicular access to the project site for Variant 4 would be the same

[12] HRE, pp. 82-88.
[13] HRE, pp. 83-85.
[14] HRER, pp. 11-14.
[15] TIS, pp. 103-107.

as under Variant 1. Primary residential and public ingress/egress would be via Stevenson Street, and secondary egress would be on Mission Street.

The proposed land uses are projected to generate about 40 truck and service vehicle trips per day, with most trips occurring between 10 AM and 1 PM. The average-hour (outside peak demand period) truck trip generation (demand) for the proposed project is anticipated to be two truck trips. When compared to the proposed project, the exclusive use of the Third Street driveway and ramp to access the loading area within the Jessie Square Garage would reduce the number of mid-morning and mid-afternoon inbound truck and service vehicle trips on Stevenson Street by about five to seven trips per hour. However, outbound truck and service vehicle trips would continue to exit via the Mission Street and Stevenson Street driveways, and outbound truck volumes on Stevenson Street would therefore be the same as with the proposed project. Similar to existing conditions, under Variant 4 delivery and service vehicles would exit primarily via the Stevenson Street driveway, although small service and delivery vehicles would be able to use the Mission Street exit.

The assignment of vehicle trips to the seven study intersections under Variant 4 during weekday PM peak hour LOS conditions would remain the same as under Existing and Existing plus Project conditions. In addition, similar to the proposed project, Variant 4 would not result in a significant contribution to the existing poor operating conditions at the intersections of Third and Market Streets (LOS E) and Fourth and Market Streets (LOS F).[16] Therefore, as with the proposed project, the impact of Variant 4 on traffic operations would be less than significant.

While Variant 4 would not have a significant traffic impact any of on the study intersections, Improvement Measures I-TR-A: Traffic Signal Modifications and I-TR-B: "Garage Full" Sign on Third Street, identified for the proposed project and described on p. IV.E.38, would also be applicable to this variant. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street.

Improvement Measure I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and discussed on p. IV.E.39, would not apply to Variant 4, because vehicular access by private vehicles to the project site would remain via Stevenson Street, the same as under existing conditions.

[16] TIS, p. 105.

Transit Impacts

Under Variant 4, project-generated transit trips would be the same as the proposed project, and therefore impacts on local and regional transit capacity utilization would also be less than significant.

Potential conflicts between project vehicles and Muni buses associated with Variant 4 would be similar to those identified for the proposed project. However, due to the limited number of truck and service vehicles generated by the proposed project uses (approximately 40 per day that would enter via Third Street), the potential for conflicts with non-revenue Muni buses would be substantially reduced, and impacts under Variant 4 on transit operations would be less than significant.

Similar to the proposed project, under Variant 4 the SFMTA would like the option available to install eyebolts in the renovated building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would be a less-than-significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and discussed on p. IV.E.43, would also be applicable to Variant 4. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Pedestrian Impacts

As with the proposed project, impacts under Variant 4 on pedestrian LOS on sidewalks, at corners, and in crosswalks would be less than significant. Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.46, would also be applicable to Variant 4. This improvement measurement would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Unlike the proposed project, under Variant 4 a new driveway ramp from Third Street would be constructed instead of a driveway. Variant 4 would allow only service and delivery vehicles to access the project site form Third Street, which would increase the potential for conflicts between service and delivery vehicles and pedestrians. The existing driveway on Third Street is currently used for small service and delivery vehicles to serve the existing uses on the project site, and under Variant 4 this use would intensity. As described above, the proposed land uses are projected to generate about 40 service and delivery vehicle trips per day, and the average-hour (outside peak demand period) truck trip generation (demand) for the proposed project is anticipated to be two truck trips.

While delivery and service vehicles would use this access to the project site, the volume of vehicles crossing the sidewalk to enter the garage from Third Street each day would be lower due to the fact that residents would not use this vehicular access into the garage. Therefore, under Variant 4, pedestrian-vehicle interactions would be lower than under the proposed project. Improvement Measures I-TR-F: Pedestrian Measures on Third Street and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would not be applicable to Variant 4. These improvement measures relate to potential treatments and management of the Third Street driveway and recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

However, Variant 4 would allow service and delivery vehicles to access the project site from Third Street, which would increase the potential for conflicts between service and delivery vehicles and pedestrians. The existing driveway on Third Street is currently used for small service and delivery vehicles to serve the existing uses on the project site, and under Variant 4 this use would intensify. As described above, the proposed land uses are projected to generate about 40 service and delivery vehicle trips per day, and the average-hour (outside peak demand period) truck trip generation (demand) for the proposed project is anticipated to be two truck trips.

Therefore, the following improvement measure, which would not apply to the proposed project, is identified to lessen this variant's less-than-significant effect on traffic:

Improvement Measure I-TR-P: Truck Access Restrictions on Third Street

Under Variant 4, as an improvement measure the project sponsor should limit the hours of use of the Third Street driveway for truck access in order to avoid peak pedestrian volumes on Third Street. No trucks should be permitted to access the project site via the Third Street driveway during the following hours: between 7 AM and 9 AM, between 12 PM and 1 PM, and between 4 PM and 6 PM Monday through Friday. The hours of restrictions could be modified by the Planning Department based on post-occupancy monitoring.

Loading Impacts

Variant 4 would have the same loading demand and provide the same off-street loading spaces as would the proposed project. Since the loading demand could be accommodated within the proposed supply, as with the proposed project, loading impacts would be less than significant. Unlike the proposed project, delivery and service vehicles would enter the Jessie Square Garage from Third Street. Small service and delivery vehicles could exit via the Mission Street driveway while larger service and delivery vehicles would exit via Stevenson Street. Two full-size loading spaces and four service vehicle spaces would be provided on Basement Level B1 within the existing Jessie Square Garage, as with the proposed project. Improvement Measure I-TR-H:

Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable under Variant 4. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

2030 Cumulative Conditions

Under Variant 4, vehicle contributions to the critical movements at the seven study intersections would not result in a cumulatively considerable contribution to significant cumulative traffic impacts. Therefore, as with the proposed project, the contribution to significant cumulative traffic impacts under Variant 4 would be less than cumulatively considerable.

Geology and Soils

As with Variant 2, Variant 4 would result in an additional soils disturbance and excavation of 1,085 cubic yards in order to construct the proposed vehicular ramp along the north side of the Aronson Building which would lead from Third Street into the Jessie Square Garage. The foundation and earthwork under this variant would otherwise be substantially the same as under the proposed project, and would be evaluated prior to construction and upgraded as necessary. Upgrades may include potentially deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[17] Though this additional amount of excavation would result in more soil exposure for a short time during demolition activities, compliance with the City's requirements for protection of exposed soils from erosion and runoff would ensure that there would be no adverse effects related to soils. Therefore, project-level impacts related to geology and soils under Variant 4 would be less than significant and there would be no cumulatively considerable contribution to significant impacts related to geology and soils would under this variant.

Hydrology and Water Quality

Like the proposed project, Variant 4 would not result in significant impacts related to hydrology and water quality. Construction of the tower and renovations to the Aronson Building under Variant 4 would be completed in compliance with the City's SMO. The SMO would require the project sponsor to develop a Stormwater Control Plan that locates and sizes source control and treatment BMPs prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management under this variant would meet the BMPs and the *San Francisco Stormwater Design Guidelines* of the San Francisco Public

[17] *Updated Preliminary Geotechnical Study*, pp. 6-7.

Utilities Commission, and the applicable LEED guidelines. With compliance with these ordinances and guidelines, and other applicable laws, this variant would not violate water quality standards, degrade water quality, affect groundwater supplies, substantially alter drainage patterns, substantially increase runoff, or substantially add to sources of polluted runoff. Variant 4 would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Similar to the proposed project, there would be no significant project-level impacts and no cumulatively considerable contribution to significant cumulative hydrology and water quality impacts under Variant 4.

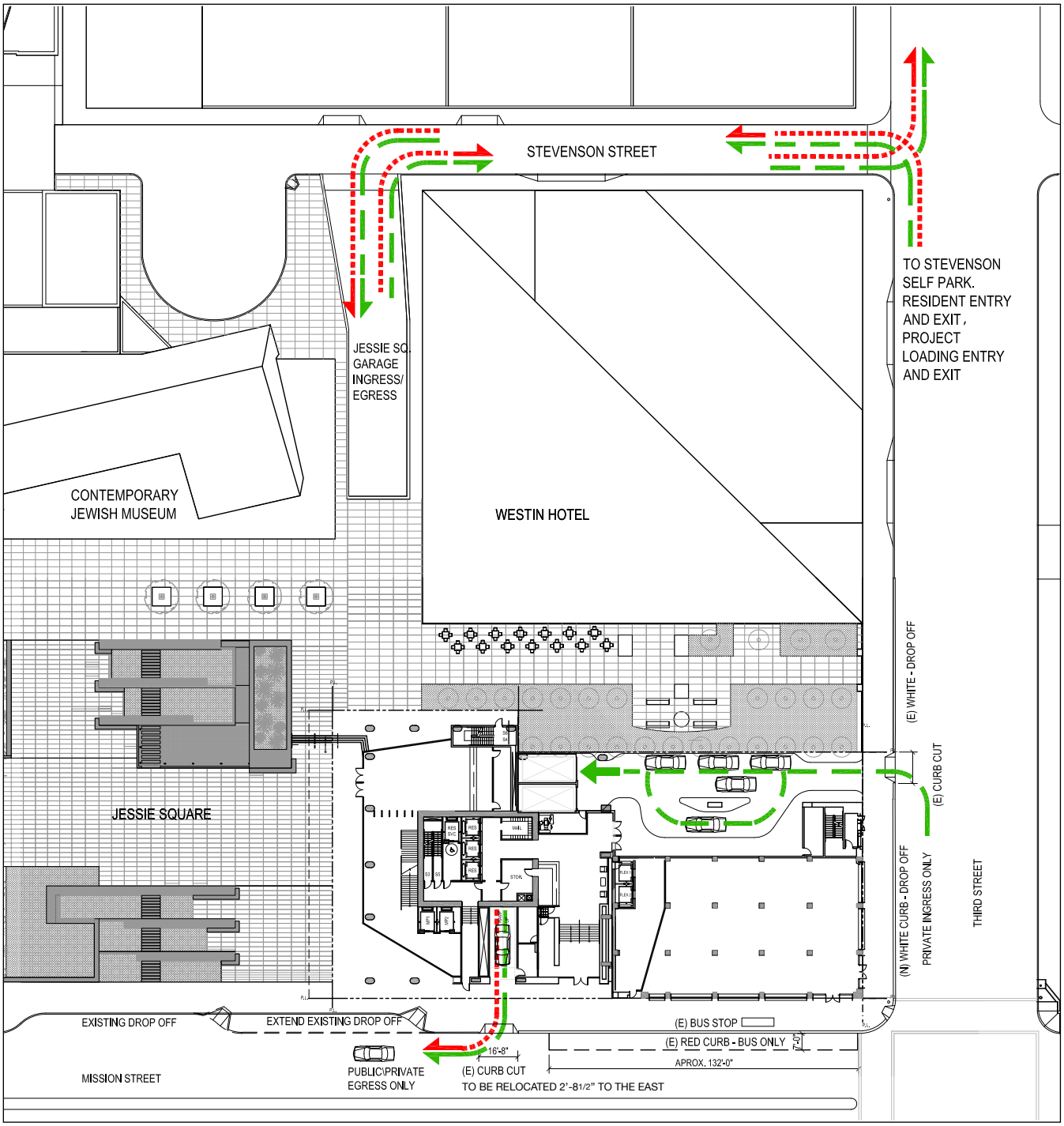
Hazards and Hazardous Materials

As with Variant 2, Variant 4 proposes a vehicular ramp along the north side of the Aronson Building that would lead from Third Street into the Jessie Square Garage, resulting in the excavation and removal of an additional approximately1,085 cubic yards of soil. Due to the potential of soil contamination that could be unearthed during excavation activities, this variant would also require implementation of Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling of Contaminated Soil, identified for the proposed project and described on pp. IV.P.14-IV.P.16. This mitigation measure describes a program of soil testing and management to be implemented by the project sponsor, as applicable. Therefore, with implementation of this measure, the project-level impacts related to hazards and hazardous materials would be less than significant and the project contribution to cumulative impacts related to hazards and hazardous materials would be less than cumulatively considerable.

E. VARIANT 5: RESIDENTIAL DROP-OFF WITHIN ARONSON BUILDING

DESCRIPTION

Under Variant 5: Residential Drop-off Within Aronson Building (hereinafter Variant 5), the existing curb cut into the project site on Third Street would remain, and would only be used for residential vehicle trips entering the project site, similar to the proposed project. (See Figure VI.5: Variant 5 – Residential Drop-off Within Aronson Building.) As part of this variant a residential drop-off area adjacent to and south of the driveway would be configured. This drop-off area would require the demolition of an approximately 16-foot-tall-by-20-foot-wide-by-80-foot-long portion of the ground floor along the north wall of the Aronson Building. The second through tenth floors of the Aronson Building would cantilever over the residential drop-off area. Project residents would have the option of parking and retrieving their own vehicles (using the Stevenson Street garage entrance) or using a valet service, which would be provided at the residential drop-off area (from the Third Street driveway). Project residents who use the valet service would enter the driveway, turn left into the residential drop-off area underneath the



SOURCE: Handel Architects

LEGEND:

RESIDENTS

PUBLIC

0 60

Feet

Existing (E) New (N)

FIGURE VI.5: VARIANT 5 - RESIDENTIAL DROP-OFF WITHIN ARONSON BUILDING

building overhang, and leave their vehicles with the valet service. The valet service would take the vehicles into the parking garage via the car elevators, which, as under the proposed project, would be constructed to access the below-grade garage levels.

Under Variant 5, all service and delivery vehicles would enter the garage from Stevenson Street. All large delivery and service vehicles would exit the Jessie Square Garage onto Stevenson Street or Mission Street, but all other vehicles would have the option of exiting the garage onto either Stevenson or Mission Streets. As with the proposed project, the existing curb cut on Mission Street would not be widened and would continue to be for egress from the existing garage only.

As under the proposed project, under Variant 5 the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

Unlike the proposed project, under Variant 5 the north wall of the Aronson Building would be modified to create a new approximately 80-foot-long opening at the ground floor for the internalized residential drop-off. The ground floor opening would be surmounted by a canopy. Like the proposed project, under Variant 5, new windows would be installed at the upper floors of the north wall of the Aronson Building.

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 5 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Population and Housing, Cultural and Paleontological Resources (Archaeological and Paleontological), Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation and Circulation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 5 would be the same as those described for the proposed project, as would conformity with plans and policies and growth inducement impacts. All mitigation and improvement measures described for these topics under the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 5. In addition, as discussed below, Variant 5 does not require additional analysis of the Transit Impacts and Pedestrian Impacts subtopics.

Under Variant 5, transit impacts would be the same as those identified for the proposed project and does not require additional analysis under the transit impacts subtopic. As with the proposed project, the residential driveway under this variant would be located on the west side of Third Street, and it is not anticipated that vehicles accessing the project driveway would conflict with Muni buses that use the west side lanes for non-revenue turnbacks of Market Street buses. Project-generated transit trips would be the same as those with the proposed project, and therefore impacts on local and regional transit capacity utilization would also be less than significant. Therefore, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to this variant. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Similar to the proposed project, Variant 5 would provide sufficient off-street loading within the Jessie Square Garage, with service vehicle ingress from, and egress to, Stevenson Street, to meet Planning Code requirements and the demand for loading space on the project site and does not require additional analysis under the loading impacts subtopic. As with the project, loading impacts would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable under Variant 5. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

Likewise, Variant 5 does not require additional analysis under the pedestrian impacts subtopic. Under Variant 5, the pedestrian impacts would be the same as those identified for the proposed project. The residential driveway access at Third Street under this variant would increase the same potential for pedestrian-vehicle conflicts along the west Third Street sidewalk as the proposed project. However, impacts on pedestrian LOS on sidewalks, at corners, and in crosswalks would be less than significant under Variant 5, as they would under the proposed project. Variant 5 would result in the same number of vehicle trips. Improvement Measures I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles to Reduce Pedestrian Clutter, I-TR-F: Pedestrian Measures on Third Street, and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would also apply to Variant 5. These improvement measures would reduce existing pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

The following environmental topic and subtopics are analyzed below for Variant 5: Aesthetics, Historic Architectural Resources, and Transportation and Circulation (Traffic Impacts and 2030 Cumulative Conditions).

Aesthetics

Like the proposed project, Variant 5 would not result in significant impacts related to scenic vistas and scenic resources. Unlike the proposed project, the north wall of the Aronson Building would be modified to accommodate the residential drop-off area proposed in this variant. The drop-off area would not be visually prominent is located at the rear of the Aronson Building. These changes would not result in significant impacts on visual character and quality. Like the proposed project, project-level and cumulative aesthetic impacts of this variant would not rise to a significant adverse effect on the visual character and quality of the site and its surroundings and there would be no significant project-level impacts or cumulatively considerable contribution to significant cumulative impacts with respect to aesthetics under this variant.

Cultural Resources and Paleontological Resources

Historic Architectural Resources

Under Variant 5, a residential drop-off area within the Aronson Building would be provided. It would require the demolition of an approximately 16-foot-tall-by-20-foot-wide-by-80-foot-long portion of the ground floor that runs along the north wall of the Aronson Building, as well as a portion of the building structural system, including an approximately 1,794-sq.-ft. section of the floor slab and structural columns. As noted in the Planning Department's Historic Resource Evaluation Response (HRER) for the proposed project, Variant 5 would not be compatible with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings,[18] as it would require removal of red common brick as well as a portion of the building structural system, including section of floor slab and structural columns.[19] It would also provide a drive-aisle through the first floor of the building, in an area that has historically been finished space. This large opening for automobiles would undermine the apparent solidity of the building and transfer a large portion of the historically finished interior to an exterior condition.[20]

[18] Note, however, that Secretary's Standards are not to be construed as CEQA significance criteria. Although compliance with the Secretary's Standards may indicate that a project would have a less-than-significant impact on an historical resource, a project that does not comply with the Secretary's Standards does not, *per se*, result in a significant impact under CEQA. Alterations that are not consistent with the Secretary's Standards may, or may not, result in a significant impact under the "material impairment" significance standard of CEQA Guidelines Section 15064.5(b)(1).

[19] San Francisco Planning Department, Historic Resource Evaluation Response, November 3, 2011, p. 14. See also, Knapp and VerPlanck, *Historic Resource Evaluation for 706 Mission Street*, June 23, 2011, p. 87. This document is available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

[20] HRE, pp. 83-85.

However, such an alteration along the tertiary north façade would not rise to a material impairment of the significance of the Aronson Building resource or the historic districts to which it contributes, and would therefore not be considered a significant adverse project-level impact or cumulatively considerable contribution to cumulative impacts on an historical resource under CEQA.[21] Therefore, there would be no significant project-level impact or cumulatively considerable contribution to significant cumulative impacts with respect to historic resources aesthetics under this variant.

Transportation and Circulation[22]

Traffic Impacts

Since Variant 5 would be the same as the proposed project, except that the on-site residential drop-off area would be provided within the Aronson Building, traffic impacts at the study intersections would be the same as for the proposed project. Since the vehicular traffic assignments to the roadways in the project vicinity for Variant 5 would be the same as under the proposed project, the intersection analysis results would be the same as Existing plus Project conditions.

While Variant 5 would not have a significant impact on the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications, I-TR-B: "Garage Full" Sign on Third Street, and I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on pp. IV.E.38-IV.E.39, would also be applicable to this variant. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street. Improvement Measure I-TR-C would reduce the potential for queuing by vehicles accessing the project site by requiring monitoring of the project access driveway on Third Street, and if a recurring queue occurs, the owner/operator of the proposed project shall employ abatement methods as needed to abate the queue.

2030 Cumulative Conditions

Under Variant 5, vehicle contributions to the critical movements at the seven study intersections would not result in a cumulatively considerable contribution to significant cumulative traffic

[21] HRER, pp. 11-14.
[22] TIS, pp. 107-109.

impacts. As with the proposed project, the project's contribution to significant cumulative traffic impacts under Variant 5 would be less than cumulatively considerable.

F. VARIANT 6: VEHICULAR INGRESS/EGRESS FROM MISSION STREET ONLY EXCEPT FOR TRUCKS

DESCRIPTION

Variant 6: Vehicular Ingress /Egress from Mission Street Only Except for Trucks (hereinafter Variant 6) is not proposed by the project sponsor. Study of this variant in the EIR was requested in comments received from members of the public on the NOP.[23] Under Variant 6 all cars (cars driven by project residents and those driven by members of the public) would enter and exit the Jessie Square Garage from Mission Street only. No cars would be allowed to enter or exit the Jessie Square Garage from Stevenson Street or Third Street. Project residents would have the option of parking and retrieving their own vehicles or using a valet service, which would be provided on Basement Level B2 of the Jessie Square Garage. (See Figure VI.6: Variant 6 – Vehicular Ingress/Egress from Mission Street Only Except for Trucks.)

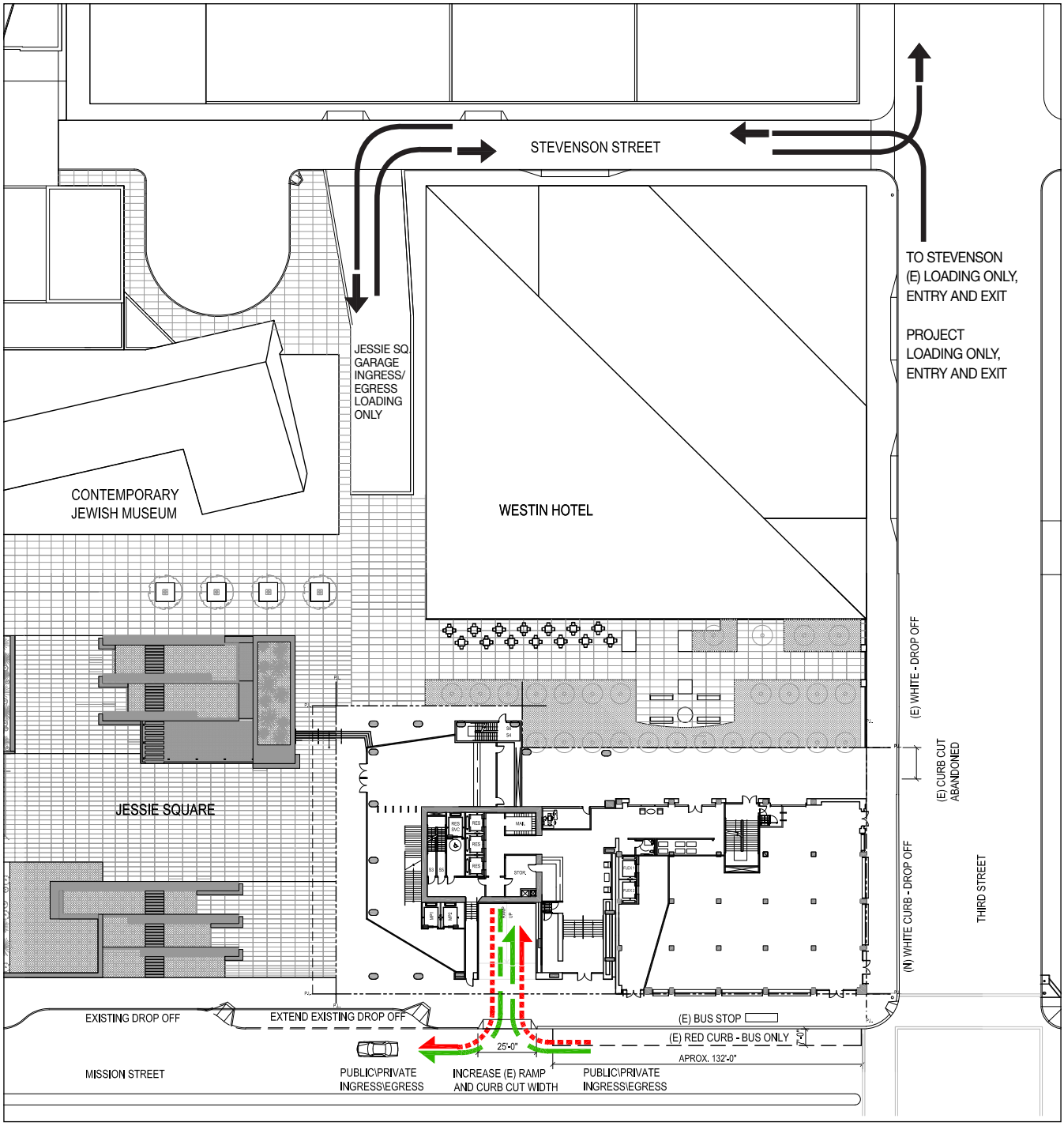
Under Variant 6, the existing curb cut on Third Street would be removed. Unlike the proposed project, under Variant 6 the existing ramp and curb cut on Mission Street would be widened from 16 feet, 8 inches to 25 feet to allow for two-way operations to accommodate both ingress and egress.

As under current conditions, all delivery and service vehicles would enter and exit the Jessie Square Garage from Stevenson Street only, although vans and small trucks would also be able to exist via the Mission Street driveway.

As under the proposed project, under Variant 6 the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

As under the proposed project, under Variant 6 the north wall of the Aronson Building would be modified to include a new storefront system and canopy on the ground floor and new windows on the upper floors.

[23] Letter from Concerned Neighbors from the Residences at the Four Seasons, May 11, 2011. This document is available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.



SOURCE: Handel Architects

0 60
Feet

Existing (E) New (N)

LEGEND:

RESIDENTS

PUBLIC

TRUCKS ONLY

FIGURE VI.6: VARIANT 6 - VEHICULAR INGRESS/EGRESS FROM MISSION STREET ONLY EXCEPT FOR TRUCKS

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 6 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Aesthetics, Population and Housing, Cultural Resources and Paleontological Resources (Archaeological and Paleontological Resources and Historic Architectural Resources), Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Biological Resources, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation and Circulation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 6 would be the same as those described for the proposed project. While this variant would not introduce vehicular access from Third Street, unlike the proposed project, it would propose widening the curb cut on Mission Street. Therefore, as with the proposed project, Variant 6 would potentially conflict with the *General Plan* Transportation Element policy related to curb cuts and driveways on transit-preferential streets. Under this variant, conformity with other plans and policies and growth inducement impacts would be the same as for the proposed project All mitigation and improvement measures described for these topics under the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 6.

The following environmental topic and subtopics are analyzed below for Variant 6: Transportation and Circulation (Traffic Impacts, Transit Impacts, Pedestrian Impacts, Loading Impacts, and 2030 Cumulative Conditions).

Transportation and Circulation[24]

Traffic Impacts

Under Variant 6, all auto access (both project-related and public) into and out of the Jessie Square Garage would be via the existing Jessie Square Garage Mission Street egress-only driveway ramp that would be widened under this variant to allow for two-way operations. To access the modified ramp, drivers traveling to the site by auto on Third Street northbound would turn left at Mission Street, while drivers traveling westbound on Mission Street would continue through at Third Street (as opposed to turning right). There would be a total of 113 PM peak hour vehicles entering and 181 PM peak hour vehicles exiting the Jessie Square Garage via the Mission Street driveway.

Under Variant 6, service and delivery vehicles would be permitted to utilize the existing entrance and exit to the Jessie Square Garage on Stevenson Street. Since autos traveling to and from the

[24] TIS, pp. 109-114.

Jessie Square Garage would no longer access the garage via Stevenson Street, the number of vehicles at the intersection of Third and Stevenson Streets would decrease from existing conditions. As a result, during the PM peak hour, intersection operations would improve to LOS D.

However, under Variant 6 all auto vehicles exiting the Jessie Square Garage would exit onto Mission Street, which would increase the number of westbound vehicles at the Mission Street approach to Fourth Street, and would result in some vehicles making around-the-block movements via Market Street eastbound to access the destinations east of Third Street.[25]

Impact Variant TR-1: Variant 6 would cause a substantial increase in traffic that would cause the level of service to decline from LOS D or better to LOS E or F, or from LOS E to F at the intersection of Fourth Street and Market Street. (*Significant and Unavoidable)* (Criterion E.1)

Unlike the proposed project, Variant 6 would result in a significant contribution during the weekday PM peak hour to the existing poor operating conditions at the intersections of Fourth and Market Streets (LOS F), and therefore the impact of Variant 6 on traffic operations at the intersection of Fourth and Market Streets during the PM peak hour would be significant. At the intersection of Fourth and Market Streets, which currently operates at LOS F conditions during the PM peak hour, the proposed project would add 31 vehicle trips during the PM peak hour. At this intersection, the southbound through/left movement operates at LOS F conditions and the eastbound through/right operates at LOS E conditions. The project would add 12 vehicle trips to the southbound through/left movement, which represent less than 1 percent of the PM peak hour southbound through/left volume of 1,302 vehicles, and would not be considered a considerable contribution. The project contribution to the eastbound through/right would be 6.3 percent for project-generated vehicles only, and 7 percent for combined existing Jessie Square Garage and project-generated vehicles.[26] Therefore, unlike with the proposed project, the project-level contribution to the overall intersection LOS F conditions would be considered a significant traffic impact.

At the intersection of Fourth and Market Streets, travel lane capacity has been maximized, and providing additional travel lanes to mitigate the impact under Variant 6 would require reductions in sidewalk widths. Reducing sidewalk widths would require reconstruction of the BART stairways and elevators, and would be inconsistent with the transit and pedestrian environment encouraged by the City of San Francisco. Signal timing adjustments would be infeasible due to the traffic, transit, and pedestrian signal timing requirements, and the need to maintain transit

[25] Since left turns from Mission Street eastbound are not permitted, vehicles destined to locations south and east would make around-the-block routings via Market Street to assess southbound and eastbound streets.

[26] TIS, pp. 111-112.

signal priority along Market Street. Therefore, there is no feasible mitigation, and Variant 6 traffic impacts at the intersection of Fourth and Market Streets would be significant and unavoidable.

Jessie Square Garage: Mission Street Operations

A queuing analysis was conducted to determine whether vehicles entering the Jessie Square Garage via Mission Street under Variant 6 would queue out into the adjacent travel lanes, thereby blocking Mission Street traffic and transit operations. Under Variant 6, the Jessie Square Garage entrance and exit at Stevenson Street would be closed to all vehicles except for truck deliveries and service vehicles, and both existing Jessie Square Garage and project-generated vehicles (excluding service and delivery vehicles) would enter and exit via a widened Mission Street ramp.

Under Variant 6, the Jessie Square Garage would have one entry gate with an automated ticket machine located about 130 feet from the building line on Mission Street. Based on the AM peak hour demand, the 95th percentile queue would be fewer than five vehicles. The maximum queue could therefore be accommodated with the ramp and would not spill back onto the sidewalk or adjacent travel lanes. The impact of inbound queue spillover into the adjacent travel lanes from the garage operations would be less than significant. Although the impact would be less than significant, the following improvement measures, which are not proposed under the project, are identified for Variant 6 to lessen this variant's less-than-significant effect on traffic as a result of garage queue spillover:

Improvement Measure I-TR-N: Monitoring and Abatement of Queues on Mission Street

Under Variant 6, as an improvement measure to reduce the potential for queuing by vehicles accessing the project site, it shall be the responsibility of the owner/operator of the proposed project to ensure that recurring vehicle queues do not occur on Mission Street adjacent to the proposed project site. A vehicle queue is defined as one or more vehicles (destined to the parking facility) blocking any portion of the Mission Street sidewalk or roadway for a consecutive period of three minutes or longer on a daily or weekly basis. If the Planning Director, or his or her designee, suspects that a recurring queue is present, the Planning Department shall notify the project sponsor in writing. Upon request, the owner/operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than seven days. The consultant shall prepare a monitoring report to be submitted to the Department for review. If the Planning Department determines that a recurring queue does exist, the facility owner/operator shall have 90 days from the date of the written determination to abate the queue.

Improvement Measure I-TR-Q: "Garage Full" Sign on Mission Street (similar to Improvement Measure I-TR-B related to Stevenson Street)

Under Variant 6, as an improvement measure to prevent vehicles from entering the Jessie Square Garage from Mission Street when the garage is full, an LED (or similar) "Garage Full" sign could be installed at the driveway entrance on Mission Street.

Improvement Measures I-TR-A: Traffic Signal Timing Modifications, I-TR-B: "Garage Full" Sign on Third Street, and I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on pp. IV.E.38-IV.E.39, would not be applicable to Variant 6. These improvement measures relate to traffic improvements for garage access to and from Stevenson Street and Third Street.

Transit Impacts

Under Variant 6, project-generated transit trips would be the same as with the proposed project, and therefore impacts on local and regional transit capacity utilization would also be less than significant. However, this variant could conflict with transit operations on Mission Street, as discussed below.

Impact Variant TR-2: Variant 6 would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity; or would cause a substantial increase in delays or costs such that significant adverse impacts in transit service levels could occur. (*Significant and Unavoidable*) (Criterion E.2)

Unlike the proposed project, under Variant 6 the existing curb cut into the project site on Third Street would be abandoned; however, the existing Jessie Square Garage egress-only driveway ramp and curb cut on Mission Street would be widened from 16 feet 8 inches to 25 feet to allow for two-way operations. Similar to Variant 3, providing inbound access for residents on Mission Street could potentially conflict with Muni and Golden Gate Transit bus operations on Mission Street. Buses would be delayed if automobile drivers waiting to access the Jessie Square Garage driveway on Mission Street block the curb travel lane/transit only lane, which would occur when vehicles have to yield to pedestrians on the north Mission Street sidewalk adjacent to the project site. Additionally, a conflict could occur if a bus was loading at the western portion of the bus zone on Mission Street, and vehicles entering the garage would enter the existing transit-only lane and either have to wait until the bus enters back into traffic or turn in front of the loading bus in an attempt to enter the garage.

During the PM peak hour, the number of vehicles entering and exiting via the Mission Street driveway would increase from 45 vehicles (all outbound) under Existing conditions, to 294 vehicles (113 inbound and 181 outbound). Therefore, unlike with the proposed project, Variant 6 would introduce a new significant traffic and transit conflict for the 14-Mission and 14L-Mission

Limited Muni bus lines, potentially cause unsafe traffic maneuvering in front of transit vehicles and make it more difficult for transit vehicles stopped in the bus zone to merge back into Mission Street traffic. For these reasons, the Variant 6 project-level impacts on transit operations would be considered significant.

The significant conflict on Mission Street would be generated by vehicles inbound to the parking garage that could not be controlled. Therefore, no mitigation is feasible, and Variant 6 impacts on transit operations on Mission Street would remain significant and unavoidable.

Similar to the proposed project, the SFMTA would like the option available to install eyebolts in the renovated building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would be a less-than-significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to Variant 6. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Pedestrian Impacts

Similar to the proposed project, Variant 6 impacts on pedestrian LOS on sidewalks, at corners, and in crosswalks would be less than significant. However, the number of existing items on the Third Street sidewalk at the project site, known as "pole clutter," is lowering the pedestrian quality, but not to the extent that the pole clutter or the additional project-related pedestrian trips would create a significant impact on pedestrian travel or access. However, Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.46, would also be applicable to Variant 6. This improvement measure would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Variant 6 would widen the existing Jessie Square Garage driveway on Mission Street to enable vehicular ingress as well as egress for existing Jessie Square Garage autos (service and delivery vehicles would continue to access the loading areas within Jessie Square Garage via Stevenson Street), and increase the number of vehicles crossing the sidewalk. This would result in an intensification of an existing vehicle-pedestrian conflict across a sidewalk with high pedestrian volumes, located adjacent to a bus stop/zone on Mission Street. Similar to Third Street, Mission Street is designated in the *San Francisco General Plan* as a Neighborhood Pedestrian Street (Neighborhood Commercial) and as a Citywide Pedestrian Network Street. Variant 6 would intensify and increase pedestrian-vehicle interactions and conflict at the proposed Mission Street ingress to the Jessie Street Garage. However, this situation would not create a hazardous

condition for pedestrians in the vicinity of the project site or existing nearby uses, because the vehicles entering the garage would be accommodated within the ramp, and would not spill back onto the sidewalk or adjacent travel lanes potentially blocking pedestrians on the sidewalk.

Although impacts would be less than significant, the following improvement measure, which is not proposed under the project, is identified to lessen this variant's less-than-significant effect on pedestrian impacts:

Improvement Measure I-TR-O: Pedestrian Measures on Mission Street

Under Variant 6, as an improvement measure, during peak periods of pedestrian activity on Mission Street (7 AM to 7 PM), the project sponsor shall staff the driveway entry on Mission Street with a traffic control attendant to facilitate vehicular ingress and egress at the project driveway on Mission Street.

Unlike the proposed project, under Variant 6 there would be no new driveway from Third Street that residents would use to access the garage. Therefore, under Variant 6 there would be no increase in pedestrian-vehicle interactions because there would be no vehicles crossing the sidewalk to enter the project site from Third Street. Improvement Measures I-TR-F: Pedestrian Measures on Third Street and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would not be applicable to Variant 6. These improvement measures relate to potential treatments and management of the Third Street driveway and recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

Loading Impacts

As with the proposed project, delivery and service vehicles under this variant would enter and exit the Jessie Square Garage from Stevenson Street. All small delivery and service vehicles have the option of exiting the garage onto either Stevenson or Mission Streets. Variant 6 would have the same loading demand and provide the same off-street loading spaces as the proposed project. Two full-size loading spaces and four service vehicle spaces would be provided on Basement Level B1 within the existing Jessie Square Garage, as with the proposed project. The loading demand could be accommodated within the proposed supply as with the proposed project. Loading impacts under Variant 6 would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to Variant 6. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

2030 Cumulative Conditions

Impact Variant TR-3: Variant 6 would contribute considerably to critical movements at the intersection of Fourth Street and Market Street that would operate at LOS F under 2030 Cumulative conditions, and cumulative contribution to cumulative traffic impacts would be considered significant. (*Significant and Unavoidable*)

Impact Variant TR-4: Variant 6 would contribute considerably to critical movements at the intersection of Fourth Street and Mission Street that would operate at LOS F under 2030 Cumulative conditions, and cumulative contribution to cumulative traffic impacts would be considered significant. (*Significant and Unavoidable*)

For Variant 6, the reassignment of both existing Jessie Square Garage and project-generated traffic to and from Mission Street would result in cumulatively considerable contributions to significant cumulative impacts at the intersections of Fourth and Market Streets (contribution of 5.7 percent) and Fourth and Mission Streets (contribution of 12.9 percent).[27]

At the intersections of Fourth and Market Streets and Fourth and Mission Streets, travel lane capacity has been maximized, and providing additional travel lanes to mitigate impacts would require reductions in sidewalk widths. Reduction in sidewalk widths would require reconstruction of the BART stairways and elevators at the intersection of Fourth and Market, and would be inconsistent with the transit and pedestrian environment encouraged by the City of San Francisco. Conversion of bus-only lanes on either Fourth Street or Mission Street to mixed flow travel lanes would provide additional capacity, but would be inconsistent with the transit environmental encouraged by the City of San Francisco. Signal timing adjustments would be infeasible due to the traffic, transit, and pedestrian signal timing requirements, and the need to maintain transit signal priority along Market Street and Mission Street. Unlike with the proposed project, Variant 6 would result in a cumulatively considerable contribution to significant cumulative traffic impacts at the intersections of Fourth and Market Streets and Fourth and Mission Streets which would remain significant and unavoidable.

[27] TIS, pp. 121-122.

G. VARIANT 7: ALL VEHICULAR INGRESS/EGRESS FROM MISSION STREET ONLY

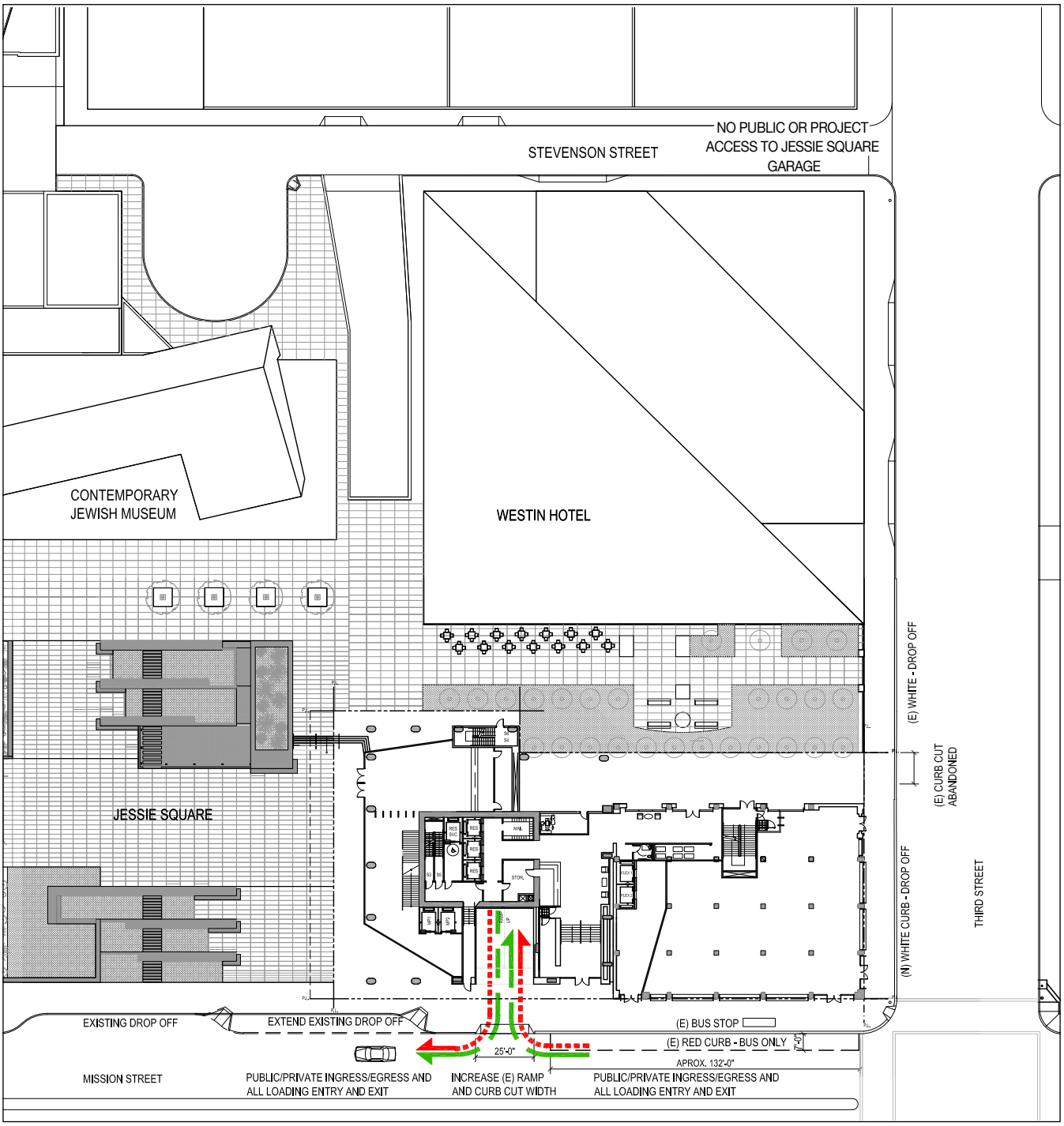
DESCRIPTION

Variant 7: All Vehicular Ingress/Egress from Mission Street Only (hereinafter Variant 7) is not proposed by the project sponsor. Study of this variant in the EIR was requested in comments received from members of the public on the NOP.[28] Under Variant 7, access would be the same as Variant 6, except that all delivery and service vehicles would also enter and exit the Jessie Street Garage from Mission Street only. No cars or service or delivery vehicles would be allowed to enter or exit the Jessie Square Garage from Stevenson Street or Third Street. The Stevenson Street entrance and exit of the Jessie Square Garage would be permanently closed. The existing ramp and curb cut on Mission Street would be widened from 16 feet, 8 inches to 25 feet and the vertical clearance increased from 13 feet, 6 inches to 14 feet in order to accommodate both ingress and egress by truck. To accommodate both ingress and egress, and the existing curb cut on Third Street would be removed. Project residents would have the option of parking and retrieving their own vehicles or using a valet service, which would be provided on Basement Level B2 in the Jessie Square Garage. (See Figure VI.7: Variant 7 – All Vehicular Ingress/Egress from Mission Street Only.)

As under the proposed project, under Variant 7 the project sponsor would request that the existing passenger drop-off zone (white zone) on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone, and that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

As under the proposed project, under Variant 7 the north wall of the Aronson Building would be modified to include a new storefront system and canopy on the ground floor and new windows on the upper floors.

[28] May 11, 2011 letter from Concerned Neighbors from the Residences at the Four Seasons. This letter is available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.



SOURCE: Handel Architects

LEGEND:

RESIDENTS

PUBLIC

0 60

Feet

Existing (E) New (N)

FIGURE VI.7: VARIANT 7 - ALL VEHICULAR INGRESS/EGRESS FROM MISSION STREET ONLY

IMPACT EVALUATION

As discussed in the Introduction on p. VI.3, Variant 7 and the proposed project would have the same physical environmental effects related to Land Use and Land Use Planning, Aesthetics, Population and Housing, Cultural and Paleontological Resources (Archaeological and Paleontological Resources and Historic Architectural Resources), Noise, Air Quality, Greenhouse Gas Emissions, Wind and Shadow, Recreation, Utilities and Service Systems, Public Services, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, Biological Resources, Mineral and Energy Resources, and Agricultural and Forest Resources. The Transportation and Circulation subtopics of Bicycle Impacts, Emergency Access Impacts, Construction Impacts, and Parking for Variant 7 would be the same as those described for the proposed project. While this variant would not introduce vehicular access from Third Street, unlike the proposed project, it would propose widening the curb cut on Mission Street. Therefore, as with the proposed project, Variant 7 would potentially conflict with the *General Plan* Transportation Element policy related to curb cuts and driveways on transit-preferential streets. Under this variant, conformity with other plans and policies and growth inducement impacts would be the same as for the proposed project. All mitigation and improvement measures described for these topics for the proposed project would be applicable to this variant. Therefore, these environmental topics and subtopics require no further analysis under Variant 7.

The following environmental topic and subtopics are analyzed below, for Variant 7: Transportation and Circulation (Traffic Impacts, Transit Impacts, Pedestrian Impacts, Loading Impacts, and 2030 Cumulative Conditions).

Transportation and Circulation[29]

Traffic Impacts

Impact Variant TR-5: Variant 7 would cause a substantial increase in traffic that would cause the level of service to decline from LOS D or better to LOS E or F, or from LOS E to F at the intersection of Fourth Street and Market Street. (*Significant and Unavoidable*) (Criterion E.1)

Under Variant 7, all project-generated and existing Jessie Square Garage vehicle trips (including public access and service and delivery vehicles) would be restricted to the reconfigured Mission Street driveway. All delivery and service vehicles would also enter and exit from the Mission Street driveway which would be widened from 16 feet, 8 inches to 25 feet as well as increased in height from 13 feet, 6 inches to 14 feet in order to accommodate both ingress and egress and vertical clearance by truck. However, during the PM peak hour, the truck and service vehicle demand would be low and would not substantially affect intersection operations. As under

[29] TIS, pp. 114-117.

Variant 6, project-level traffic impacts under Variant 7 at the intersection of Fourth and Market Streets would result in a significant impact.

Jessie Square Garage: Mission Street Operations

Garage operations at Mission Street under Variant 7 would also be similar to those described for Variant 6. A queuing analysis was conducted to determine whether the vehicles entering the Jessie Square Garage would queue out into adjacent travel lanes, thereby blocking Mission Street traffic and transit operations. The Jessie Square Garage entrance and exit at Stevenson Street would be closed to all vehicles, and both existing Jessie Square Garage and project-generated vehicles would enter and exit via a widened Mission Street ramp under this variant.

Under Variant 7, the Jessie Square Garage would have one entry gate with an automated ticket machine located about 130 feet from the building line on Mission Street. Based on the AM peak hour demand, the 95th percentile queue would be less than five vehicles. The maximum queue could therefore be accommodated with the ramp and would not spill back onto the sidewalk or adjacent travel lanes. The impact of inbound queue spillover into the adjacent travel lanes from the garage operations would be less than significant. Although the impact would be less than significant, the following improvement measures, which would not apply to the proposed project, are identified to lessen this variant's less-than-significant effect on traffic:

Improvement Measure I-TR-N: Monitoring and Abatement of Queues on Mission Street

Under Variant 7, as an improvement measure to reduce the potential for queuing by vehicles accessing the project site, it shall be the responsibility of the owner/operator of the proposed project to ensure that recurring vehicle queues do not occur on Mission Street adjacent to the proposed project site. A vehicle queue is defined as one or more vehicles (destined to the parking facility) blocking any portion of the Mission Street sidewalk or roadway for a consecutive period of three minutes or longer on a daily or weekly basis. If the Planning Director, or his or her designee, suspects that a recurring queue is present, the Planning Department shall notify the project sponsor in writing. Upon request, the owner/operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than 7 days. The consultant shall prepare a monitoring report to be submitted to the Department for review. If the Planning Department determines that a recurring queue does exist, the facility owner/operator shall have 90 days from the date of the written determination to abate the queue.

Improvement Measure I-TR-O: Pedestrian Measures on Mission Street

Under Variant 7, as an improvement measure, during peak periods of pedestrian activity on Mission Street (7 AM to 7 PM), the project sponsor shall staff the driveway entry on Mission Street with a traffic control attendant to facilitate vehicular ingress and egress at the project driveway on Mission Street.

Improvement Measure I-TR-Q: "Garage Full" Sign on Mission Street (similar to Improvement Measure I-TR-B related to Stevenson Street)

Under Variant 7, as an improvement measure to prevent vehicles from entering the Jessie Square Garage from Mission Street when the garage is full, an LED (or similar) "Garage Full" sign could be installed at the driveway entrance on Mission Street.

Improvement Measures I-TR-A: Traffic Signal Timing Modifications, I-TR-B: "Garage Full" Sign on Third Street, and I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on pp. IV.E.38-IV.E.39, would not be applicable to Variant 7. These improvement measures relate to traffic improvements for garage access to and from Stevenson Street and Third Street.

Transit Impacts

Under Variant 7, project-generated transit trips would be the same as with the proposed project, and therefore impacts on local and regional transit capacity utilization would also be less than significant.

Impact Variant TR-6: Variant 7 would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity; or would cause a substantial increase in delays or costs such that significant adverse impacts in transit service levels could occur. (*Significant and Unavoidable*) (Criterion E.2)

Similar to Variant 6, Variant 7 would result in significant impacts on transit operations on Mission Street. Since Variant 7 would require that all existing and project-generated service and delivery vehicles enter and exit via Mission Street, the potential for conflicts between vehicles entering and exiting the garage and transit vehicles on Mission Street would increase over Variant 6 conditions. The significant conflict on Mission Street would be increased by service and delivery vehicles inbound to the parking garage. Because the vehicles would already be on Mission Street, the conflict could not be controlled. Therefore, no mitigation is feasible and, as under Variant 6, the project-level impact on transit operations on Mission Street would remain significant and unavoidable under Variant 7.

Similar to the proposed project, the SFMTA would like the option available to install eyebolts in the renovated building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would be a less-than-significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to Variant 7. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Pedestrian Impacts

Variant 7 would intensify and increase pedestrian-vehicle interactions and conflict at the proposed Mission Street ingress to Jessie Street Garage. However, this situation (which would be exacerbated by service and delivery vehicles entering and exiting the garage on Mission Street) would not create a hazardous condition for pedestrians in the project vicinity, because vehicles accessing the garage would be accommodated within the ramp, and would not spill back onto the sidewalk or adjacent travel lanes potentially blocking pedestrians on the sidewalk.

While pedestrian-vehicle conflicts would be less than significant under this variant, as with the proposed project, the number of existing items on the Third Street sidewalk at the project site, known as "pole clutter," is lowering the pedestrian quality, but not to the extent that the pole clutter or the additional project-related pedestrian trips would create an impact on pedestrian travel or access. Therefore, Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.46, would also be applicable to Variant 7. This improvement measure would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Unlike the proposed project, under Variant 7 there would be no new driveway from Third Street that residents would use to access the garage. Therefore, under Variant 7 there would be no increase in pedestrian-vehicle interactions because there would be no vehicles crossing the sidewalk to enter the project site from Third Street. Improvement Measures I-TR-F: Pedestrian Measures on Third Street and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would not be applicable to Variant 7. These improvement measures relate to potential treatments and management of the Third Street driveway and recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

Variant 7, however, would allow service and delivery vehicles to access the project site from Mission Street, which would increase the potential for conflicts between service and delivery vehicles and pedestrians on Mission Street. The existing driveway on Mission Street currently is too constrained for truck access, but under Variant 7 the driveway would be enlarged to allow truck ingress and egress. As described above, the proposed land uses are projected to generate about 40 truck and service vehicle trips per day, with most trips occurring between 10 AM and 1 PM. The average-hour (outside peak demand period) truck trip generation (demand) for the proposed project is anticipated to be two truck trips. Although impacts would be less than significant, the following improvement measure, which is not proposed under the project, is identified to lessen the effects of Variant 7 on pedestrian impacts:

Improvement Measure I-TR-R: Truck Access Restrictions on Mission Street under Variant 7

Under Variant 7, as an improvement measure, the project sponsor should limit the hours of use of the Mission Street driveway for truck access in order to avoid peak pedestrian volumes on Mission Street. No trucks should be permitted to access the project site via the Mission Street driveway during the following hours: between 7 AM and 9 PM, between 12 PM and 1 PM, and between 4 PM and 6 PM, Monday through Friday. The hours of restrictions could be modified by the Planning Department based on post-occupancy monitoring.

Loading Impacts

Variant 7 would have the same loading demand and provide the same off-street loading spaces as the proposed project. The loading demand could be accommodated within the proposed supply. As with the proposed project, two full-size loading spaces and four service vehicle spaces would be provided on Basement Level B1 within the existing Jessie Square Garage. Like the proposed project, this variant would provide sufficient loading to meet the Planning Code requirement and the demand for loading space on the project site, and therefore loading impacts would be less than significant. However, Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to Variant 7. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

2030 Cumulative Conditions

Impact Variant TR-7: Variant 7 would contribute considerably to critical movements at the intersection of Fourth Street and Market Street that would operate at LOS F under 2030 Cumulative conditions, and cumulative contribution to cumulative traffic impacts would be considered significant. (*Significant and Unavoidable*)

Impact Variant TR-8: Variant 7 would contribute considerably to critical movements at the intersection of Fourth Street and Mission Street that would operate at LOS F under 2030 Cumulative conditions, and cumulative contribution to cumulative traffic impacts would be considered significant. (*Significant and Unavoidable*)

For Variant 7, the reassignment of both existing Jessie Square Garage and project-generated traffic to and from Mission Street would result in cumulatively considerable contributions to significant cumulative impacts at the intersections of Fourth and Market Streets (contribution of 5.7 percent) and Fourth and Mission Streets (contribution of 12.9 percent).

At the intersections of Fourth and Market Streets and Fourth and Mission Streets, travel lane capacity has been maximized, and providing additional travel lanes to mitigate impacts would

require reductions in sidewalk widths. Reductions in sidewalk widths would require reconstruction of the BART stairways and elevators at the intersection of Fourth and Market, and would be inconsistent with the transit and pedestrian environment encouraged by the City of San Francisco. Conversion of bus-only lanes on either Fourth Street or Mission Street to mixed flow travel lanes would provide additional capacity, but would be inconsistent with the transit environmental encouraged by the City of San Francisco. Signal timing adjustments would be infeasible due to the traffic, transit, and pedestrian signal timing requirements, and the need to maintain transit signal priority along Market Street and Mission Street. Unlike with the proposed project, under Variant 7 the cumulatively considerable contribution to significant cumulative traffic impacts at the intersections of Fourth and Market Streets and Fourth and Mission Streets would remain significant and unavoidable.

SUMMARY OF PROJECT VARIANTS

Table VI.1: Summary of Impacts of the Proposed Project Compared to Project Variants, summarizes the environmental impacts of the proposed project and those of the seven vehicular access variants to the proposed project.

Improvement measures related to Transportation and Circulation are identified for the project in Section IV.E, Transportation and Circulation. Additional improvement measures that are not identified under the proposed project are identified for Variant 3, Variant 4, Variant 6, and Variant 7 to lessen the variants' less-than-significant effects on traffic and pedestrian impacts. Table VI.2: Applicable Transportation and Circulation Improvement Measures for Proposed Project and Vehicular Access Variants, presents the applicable transportation and circulation improvement measures for the proposed project (I-TR-A to I-TR-M) and shows whether each of these improvement measures would apply to each variant. Table VI.2 also presents the additional improvement measures (I-TR-N to I-TR-R) not identified for the proposed project, but identified for Variant 3, Variant 4, Variant 6, and Variant 7.

The bottom of this page is intentionally blank.

Table VI.1: Summary of Impacts of the Proposed Project Compared to Project Variants

Environmental Topic	Proposed Project	Variant 1	Variant 2	Variant 3	Variant 4	Variant 5	Variant 6	Variant 7
Land Use	LS	LS	LS	LS	LS	LS	LS	LS
Aesthetics	LS	LS	LS	LS	LS	LS	LS	LS
Population and Housing	LS	LS	LS	LS	LS	LS	LS	LS
Cultural and Paleontological Resources								
Historic Architectural Resources	LS	LS	LS	LS	LS	LS	LS	LS
Archaeological and Paleontological Resources	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Transportation and Circulation	LS	LS	LS	LS	LS	LS	**SU**	**SU**
Noise	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Air Quality	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Greenhouse Gas Emissions	LS	LS	LS	LS	LS	LS	LS	LS
Wind and Shadow								
Wind	LS	LS	LS	LS	LS	LS	LS	LS
Shadow	**SU** (cumulative)	**SU** (cumulative)	**SU** (cumulative)	**SU** (cumulative)	**SU** (cumulative)	**SU** (cumulative)	**SU** (cumulative)	**SU** (cumulative)
Recreation	LS	LS	LS	LS	LS	LS	LS	LS
Utilities and Services Systems	LS	LS	LS	LS	LS	LS	LS	LS
Public Services	LS	LS	LS	LS	LS	LS	LS	LS

(continued)

Biological Resources	LS	LS	LS	LS	LS	LS	LS	LS
Geology and Soils	LS	LS	LS	LS	LS	LS	LS	LS
Hydrology and Water Quality	LS	LS	LS	LS	LS	LS	LS	LS
Hazards and Hazardous Materials	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Mineral and Energy Resources	LS	LS	LS	LS	LS	LS	LS	LS
Agricultural Resources	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact

Source: Turnstone Consulting
Notes: LS = Less than Significant
LSM = Less than Significant with Mitigation
SU = Significant and Unavoidable
Underlined = Differs from the proposed project

Table VI.2: Applicable Transportation and Circulation Improvement Measures for Proposed Project and Vehicular Access Variants

Applicable Transportation and Circulation Improvement Measures	Proposed Project	Variant 1	Variant 2	Variant 3	Variant 4	Variant 5	Variant 6	Variant 7
Improvement Measure I-TR-A: Traffic Signal Timing Modifications	Yes	Yes	Yes	Yes	Yes	Yes	**No**	**No**
Improvement Measure I-TR-B: "Garage Full" Sign on Third Street	Yes	Yes	Yes	Yes	Yes	Yes	**No**	**No**
Improvement Measure I-TR-C: Monitoring and Abatement of Queues	Yes	**No**	Yes	**No**	**No**	Yes	**No**	**No**
Improvement Measure I-TR-D: Installation of Eyebolts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-F: Pedestrian Measures on Third Street	Yes	**No**	Yes	**No**	**No**	Yes	**No**	**No**
Improvement Measure I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas	Yes	**No**	Yes	**No**	**No**	Yes	**No**	**No**

(continued)

Applicable Transportation and Circulation Improvement Measures	Proposed Project	Variant 1	Variant 2	Variant 3	Variant 4	Variant 5	Variant 6	Variant 7
Improvement Measure I-TR-H: Coordination of Moving Activities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-I: Construction - Traffic Control Plan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-J: Construction - Carpools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-K: Construction - Truck Traffic Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-L: Construction - Update Adjacent Businesses and Residents	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-M: Transportation Demand Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improvement Measure I-TR-N: Monitoring and Abatement of Queues on Mission Street *(similar to Improvement Measure I-TR-C related to Third Street)*	No	No	No	No	No	No	**Yes**	**Yes**

(continued)

Applicable Transportation and Circulation Improvement Measures	Proposed Project	Variant 1	Variant 2	Variant 3	Variant 4	Variant 5	Variant 6	Variant 7
Improvement Measure I-TR-O: Pedestrian Measures on Mission Street	No	No	No	**Yes**	No	No	**Yes**	**Yes**
Improvement Measure I-TR-P: Truck Access Restrictions on Third Street	No	No	No	No	**Yes**	No	No	No
Improvement Measure I-TR-Q: "Garage Full" Sign on Mission Street *(similar to Improvement Measure I-TR-B related to Stevenson Street)*	No	No	No	No	No	No	**Yes**	**Yes**
Improvement Measure I-TR-R: Truck Access Restrictions on Mission Street	No	No	No	No	No	No	No	**Yes**

VII. ALTERNATIVES TO THE PROPOSED PROJECT

INTRODUCTION

This chapter describes alternatives to the proposed 706 Mission Street project; evaluates the environmental impacts associated with each alternative relative to existing conditions and to the environmental impacts of the proposed project; and discusses the ability of each alternative to meet the project sponsor's and the Successor Agency's objectives, while still avoiding or substantially reducing the proposed project's significant impacts. This chapter identifies one of the alternatives as an environmentally superior alternative, which is the alternative that would result in the least adverse effect on the environment.

The analysis of alternatives is of benefit to decision-makers because it provides more complete information about the potential impacts of land use decisions and, consequently, a better understanding of the interrelationships among all of the environmental topics under evaluation. Decision-makers must consider approval of an alternative if the alternative would substantially lessen or avoid significant environmental impacts identified for the proposed project and the alternative is determined to be feasible.

RANGE OF ALTERNATIVES CONSIDERED

CEQA Guidelines Section 15126.6(a) requires that an EIR evaluate "a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives." An EIR need not consider every conceivable alternative to a proposed project. Rather, it must consider a range of potentially feasible alternatives governed by the "rule of reason" in order to foster informed decision-making and public participation (CEQA Guidelines Section 15126.6(f)).

CEQA Guidelines Sections 15126.6(f)(1) and (f)(3) state that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" and that an EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." The final determination of feasibility will be made by project decision-makers based on substantial evidence in the record, which includes, but is not limited to, information presented in the EIR, comments received on the Draft EIR, and responses to those comments.

The intent of the alternatives discussed in this chapter is to consider designs and development programs that could avoid or lessen significant and unavoidable impacts resulting from development (demolition/alteration and new construction) under the proposed project, as identified in Chapter IV, Environmental Setting, Impacts, and Mitigation. The EIR concludes that the project, if implemented as proposed, would result in significant and unavoidable cumulative impacts related to Shadow.

Five alternatives are evaluated in this chapter:

- Alternative A: No Project;
- Alternative B: Existing Zoning;
- Alternative C: Separate Buildings;
- Alternative D: Increased Residential Density; and
- Alternative E: Reduced Shadow.

These alternatives are summarized in Table VII.1: Summary of EIR Alternatives Compared to the Proposed Project, and Table VII.2: Comparison of Project and Alternatives Impacts, and further described in this chapter. This chapter identifies one of the alternatives as an environmentally superior alternative that would result in the least adverse effect on the environment.

As summarized below, four of the five alternatives do not include the project variants to vehicular access that are being considered for the proposed project (described Chapter VI, Project Variants):

- Under the No Project Alternative, existing access conditions would remain as they are, so there would be no change in access to the project site. No vehicular access variants are applicable to this alternative.
- Under the Existing Zoning Alternative, there would be no driveway on Third Street and all vehicular access routes to and from the existing Jessie Square Garage would remain as they are under existing conditions. Therefore, there would be no change to existing access to the project site. Vehicular access would effectively be the same as Variant 1 (pp. VI.5-VI.10), and no other vehicular access variants would be applicable to this alternative.
- Under the Separate Buildings Alternative, a new driveway ramp would be constructed for residents and project-related delivery and service vehicles along the north side of the Aronson Building (similar to conditions described under Vehicular Access Variant 2 on pp. VI.10-VI.18). All other vehicles would enter the Jessie Square Garage from Stevenson Street and no variation to this planned access is considered under this alternative.
- Under the Reduced Shadow Alternative, as under the Existing Zoning Alternative, there would be no driveway on Third Street and all vehicular access routes to and from the existing Jessie Square Garage would remain as they are under existing conditions. Therefore, there would be no change to existing access to the project site. Vehicular access would effectively be the same as Variant 1, and no other vehicular access variants would be applicable to this alternative.

Table VII.1: Summary of EIR Alternatives Compared to the Proposed Project

	Proposed Project		No Project Alternative	Existing Zoning Alternative		Separate Buildings Alternative	Increased Residential Density Alternative		Reduced Shadow Alternative	
Dwelling Units										
Residential Flex Option	Up to 215 units (2BR and 3BR units)		None	Up to 74 units (2BR and 3BR units)		Residential flex space not applicable under this alternative	Up to 325 units (30% 1BR units and 70% 2BR units)		Up to 186 units (2BR and 3BR units)	
Office Flex Option	Up to 191 units (2BR and 3BR units)		None	Up to 50 units (2BR and 3BR units)		Up to 187 units (2BR and 3BR units)	Up to 283 units (30% 1BR and 70% 2BR units)		Up to 162 units (2BR and 3BR units	
Total GSF	710,525 gsf		120,340 gsf	275,590 gsf		704,280 gsf	710,525 gsf		418,441 gsf	
Residential	519,310 gsf		None	122,780 gsf		487,630 gsf	519,310 gsf		265,631 gsf	
Residential Amenity	22,199 gsf		None	2,000 gsf		19,215 gsf	22,199 gsf		2,000 gsf	
Retail GSF	4,800 gsf		10,660 gsf	4,800 gsf		4,800 gsf	4,800 gsf		4,800 gsf	
Flex Space [a]	61,320 gsf [a]		95,980 gsf	52,560 gsf [a]		78,840 gsf	61,320 gsf [a]		52,560 gsf [a]	
Institutional (museum) gsf	52,285 gsf		None	45,000 gsf		46,655 gsf	52,285 gsf		45,000 gsf	
Other [b]	50,611 gsf		13,700 gsf	48,450 gsf		67,140 gsf	50,611 gsf		48,450 gsf	
Open Space	**Res. Flex Option**	**Office Flex Option**		**Res. Flex Option**	**Office Flex Option**		**Res. Flex Option**	**Office Flex Option**	**Res. Flex Option**	**Office Flex Option**
Required [c]	10,294 gsf	9,145 gsf	None	3,543 gsf	2,394 gsf	8,954 gsf	15,561 gsf	13,550 gsf	8,906 gsf	7,757 gsf
Proposed	12,131 gsf	12,131 gsf	None	14,484 gsf	14,484 gsf	3,506 gsf	12,131 gsf	12,131 gsf	14,484 gsf	14,484 gsf
Difference	+1,837 gsf	+2,986 gsf	None	+10,941 gsf	+12,090 gsf	-5,448 gsf	-3,430 gsf	-1,419 gsf	+5,578 gsf	+6,727 gsf
Parking										
Spaces Allocated to Project or other private uses	260		None	None		260	260		260	
Spaces Allocated to General Public	210		442 existing	442 existing		210	210		210	

Notes:
sf – square feet
[a] Flex space would consist of office space or dwelling units beginning on either the fourth or fifth floor through the tenth floor of the Aronson Building.
[b] Includes space devoted to loading, mechanical, storage, and utility areas, and space for the existing ramp that leads out of the existing Jessie Square Garage.
[c] Existing office and retail uses that are continued would not trigger additional open space requirements or other requirements that would apply to a change of use.
[d] Height given to top of mechanical penthouse.

(Continued)

Table VII.1 (Continued)

	Proposed Project	No Project Alternative	Existing Zoning Alternative	Separate Buildings Alternative	Increased Residential Density Alternative	Reduced Shadow Alternative
Garage Access /Residential Drop Off	Residential access from Third Street via elevators (valet only); all other ingress/egress to remain unchanged. Seven vehicular access variants are analyzed for consideration.	No change from existing Stevenson/Mission Streets access.	No change from existing Stevenson/Mission Streets access.	Residential and residential service vehicles access from Third Street via ramp; all other ingress/egress to remain unchanged from the proposed project.	Residential access from Third Street via elevators (valet only); all other ingress/egress to remain unchanged. The seven vehicular access variants analyzed in Chapter VI, are applicable.	No change from existing Stevenson/Mission Street access.
Height [d]	550 feet	154 feet (existing Aronson Building)	195 feet, 6 inches	550 feet	550 feet	351 feet
Stories	47	10	13	47	47	27
Total Project Site Lot Area	63,468 sf	15,460 sf	25,240 sf	63,468 sf	63,468 sf	25,240 sf
Aronson Building Parcel	15,460 sf	15,460 sf	15,460 sf	15,460 sf	15,460 sf	15,460 sf
The Mexican Museum Parcel	9,778 sf	Not included	9,778 sf	9,778 sf	9,778 sf	9,778 sf
Stevenson Street Ramp Parcel	1,636 sf	Not included	Not included	1,636 sf	1,636 sf	1,636 sf
Jessie Square Garage Parcel	36,594 sf	Not included	Not included	36,594 sf	36,594 sf	36,594 sf
Aronson Building						
Retention	Yes	Yes	Yes	Yes	Yes	Yes
Restoration and Rehabilitation	Yes	No	Yes	Yes (repairs and seismic work only)	Yes	Yes
Connection to New Building on the Mexican Museum Parcel	Yes	No	Yes	No	Yes	Yes
Required Approvals	Rezoning, Conditional Use 309 Exceptions (if adoption of SUD) or 309.1 Exceptions (if adoption of DTR)	None	309 Exceptions	Rezoning, Conditional Use 309 Exceptions (if adoption of SUD) or 309.1 Exceptions (if adoption of DTR), Variances	Rezoning, Conditional Use 309 Exceptions (if adoption of SUD) or 309.1 Exceptions (if adoption of DTR), Variances	Rezoning, Conditional Use 309 Exceptions (if adoption of SUD) or 309.1 Exceptions (if adoption of DTR)

Notes:

sf – square feet

[a] Flex space would consist of office space or dwelling units beginning on either the fourth or fifth floor through the tenth floor of the Aronson Building.

[b] Includes space devoted to loading, mechanical, storage, and utility areas, and space for the existing ramp that leads out of the existing Jessie Square Garage.

[c] Existing office and retail uses that are continued would not trigger additional open space requirements or other requirements that would apply to a change of use.

[d] Height given to top of mechanical penthouse.

Table VII.2: Comparison of Project and Alternatives Impacts[a]

Environmental Topic	Proposed Project	No Project Alternative	Existing Zoning Alternative	Separate Buildings Alternative	Increased Residential Density Alternative	Reduced Shadow Alternative
Land Use	LS	No impact	LS	LS	LS	LS
Aesthetics	LS	No impact	LS	LS	LS	LS
Population and Housing	LS	No impact	LS	LS	LS	LS
Cultural and Paleontological Resources						
Historic Architectural Resources	LS	No impact	LS	LS	LS	LS
Archaeological and Paleontological Resources	LSM	No impact	LSM	LSM	LSM	LSM
Transportation and Circulation	LS	No impact	LS	LS	LS	LS
Noise	LSM	No impact	LSM	LSM	LSM	LSM
Air Quality	LSM	No impact	LSM	LSM	LSM	LSM
Greenhouse Gas Emissions	LS	No impact	LS	LS	LS	LS
Wind and Shadow						
Wind	LS	No impact	LS	LS	LS	LS
Shadow	**SU (cumulative)**	No impact	**SU (cumulative)**	**SU (cumulative)**	**SU (cumulative)**	**SU (cumulative)**
Recreation	LS	No impact	LS	LS	LS	LS
Utilities and Services Systems	LS	No impact	LS	LS	LS	LS
Public Services	LS	No impact	LS	LS	LS	LS
Biological Resources	LS	No impact	LS	LS	LS	LS
Geology and Soils	LS	No impact	LS	LS	LS	LS
Hydrology and Water Quality	LS	No impact	LS	LS	LS	LS
Hazards and Hazardous Materials	LSM	No impact	LSM	LSM	LSM	LSM
Mineral and Energy Resources	LS	No impact	LS	LS	LS	LS
Agricultural Resources	No impact	No impact	No impact	No impact	No impact	No impact

Notes:
[a] This table represents a broad overview of project-related impacts by topic. For some topics, conclusions of less-than-significant impacts result from application of mitigation measures, as noted.

LS = Less than Significant
LSM = Less than Significant with Mitigation
SU = Significant and Unavoidable

Vehicular access variants are considered for the Increased Residential Density Alternative (pp. VII.65-VII.92). The same seven vehicular access variants that are analyzed for the proposed project could be applied to this alternative. Impacts identified in Chapter VI, Project Variants, for each variant would be the same under this alternative.

Each alternative (except the No Project Alternative) would be built to Leadership in Energy and Environmental Design (LEED) standards as required by the San Francisco Building Code, and would employ high-quality architectural design and materials.

This chapter also discusses alternatives to the proposed project that were considered but not analyzed further because they were rejected as infeasible or failed to meet key project objectives of the City and County of San Francisco as successor agency to the San Francisco Redevelopment Agency (Successor Agency) or the private project sponsor. Four such alternatives are discussed: an Off-Site Alternative, a Freestanding Alternative, an Office Use Alternative, and an Elliptical Tower Plan Alternative.

A. NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e) requires that, among the project alternatives, a "no project" alternative be evaluated. CEQA Guidelines Section 15126.6(e)(2) requires that the no project alternative analysis "discuss the existing conditions…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and policies and consistent with the available infrastructure and community services." As noted in CEQA Guidelines Section 15126.6, an EIR on "a development project on identifiable property," typically analyzes a no project alternative, i.e., "the circumstance under which the project does not proceed. Such a discussion would compare the environmental effects of the property remaining in its existing state against environmental effects that would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed."

DESCRIPTION

Under the No Project Alternative, the existing conditions on the project site would remain. The Aronson Building would be retained, but it would not undergo restoration nor rehabilitation, and existing office and retail tenants would continue to occupy their respective spaces. The Mexican Museum parcel, west of and adjacent to the Aronson Building parcel, would remain vacant. An approximately 18,000-gross-square-foot (gsf) subsurface structure underneath the Mexican Museum parcel would remain vacant. Unlike with the proposed project, there would be no new construction of a residential tower and no space developed for The Mexican Museum. Unlike the

proposed project, the below-grade, four-level, 442-space Jessie Square Garage would not be conveyed to a private entity. All 442 existing parking spaces within the garage would continue to be available to the general public. Vehicular access into and out of the existing subsurface Jessie Square Garage would not change. This alternative does not include any of the seven vehicular access variants analyzed for the proposed project.

The No Project Alternative would not further any of the project sponsor's objectives, presented in Chapter II, Project Description, pp. II.6-II.7. It also would not further any of the Successor Agency's objectives, presented on pp. II.5-II.6, to see that the project site is developed in a manner that is consistent with the goals and objectives of the expired *Yerba Buena Center Redevelopment Plan*, including an objective to provide for the development of a museum facility and an endowment for The Mexican Museum on San Francisco City-owned property located adjacent to Jessie Square, at the heart of San Francisco's cultural district location.

ENVIRONMENTAL ANALYSIS

This analysis assumes that the existing on-site structures and uses on the project site would not change and that the existing physical conditions, as described in detail for each environmental topic in Chapter IV, Environmental Setting, Impacts, and Mitigation, would remain the same.

If the No Project Alternative were implemented, none of the impacts associated with the proposed project, as described in Chapter IV, would occur. The No Project Alternative does not preclude future development of the project site with a range of land uses that are principally permitted at the project site. Development and growth would continue within the vicinity of the project site as nearby projects are approved, constructed, and occupied. These projects would contribute to significant cumulative impacts in the vicinity, but under the No Project Alternative, land use activity on the project site would not contribute to these cumulative impacts beyond existing levels.

Land Use and Land Use Planning

Under the No Project Alternative, existing land use conditions on the project site would not change. The existing Aronson Building would continue to operate as an office and retail building. No residential use would be introduced to the site, and space for The Mexican Museum would not be developed. None of the project approvals required for the proposed project would be required. Similar to the proposed project, this alternative would not result in any significant land use effects and would not physically divide an established community, nor would it have an adverse impact upon the existing character of the project vicinity. Unlike the proposed project, this alternative would not conflict with any applicable land use plan, policy, or regulation with jurisdiction over the project. Therefore, compared to the proposed project, which would have less-than-significant

land use impacts as described in Section IV.A, Land Use and Land Use Planning, the No Project Alternative would not have any impacts related to land use.

Aesthetics

Under the No Project Alternative, existing visual quality conditions for the project site and its surroundings would not change. There would be no change to or rehabilitation of the existing Aronson Building. Under this alternative, no 550-foot-tall residential tower would be constructed, so there would be no change in effects to scenic vistas, resources, existing visual quality or any impacts to light or glare, unlike the proposed project. Therefore, compared to the proposed project, which would have less-than-significant impacts on aesthetics as described in Section IV.B, Aesthetics, the No Project Alternative would not have any impacts related to aesthetics.

Population and Housing

Under the No Project Alternative, the up to 215 residential units proposed by the project, resulting in up to approximately 490 residents, would not be developed on the project site. The number of employees on the project site (approximately 453) would be expected to remain essentially the same as under existing conditions. Unlike the proposed project, there would no increase in population in the area, either directly or indirectly, and no housing units or persons would be displaced. Unlike the proposed project, there would be no increase in demand for additional housing or for construction of new housing units. Therefore, compared to the proposed project, which would have less-than-significant population and housing impacts as described in Section IV.C, Population and Housing, the No Project Alternative would not have any impacts related to population and housing.

Cultural and Paleontological Resources

Under the No Project Alternative, existing cultural and paleontological resources would not be affected. Since the No Project Alternative would not result in any excavation or ground disturbance, there would not be any disturbance to potential paleontological or archaeological deposits or human remains. Potentially significant archaeological and paleontological impacts and the required mitigation measures identified for the proposed project (M-CP-1a: Archaeological Testing, Monitoring, Data Recovery, and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, described on pp. IV.D.24-IV.D.31) would not be applicable to this alternative. Therefore, compared to the proposed project, which would have less-than-significant paleontological and archaeological resources impacts with mitigation, as described in Section

IV.D, Cultural and Paleontological Resources, the No Project Alternative would not have any related to paleontological and archaeological resources.

Under the No Project Alternative, there would be no restoration or rehabilitation of the Aronson Building, unlike under the proposed project. The Aronson Building would continue to operate as an office and retail building. The Aronson Building's 1978 annexes would remain. Under this alternative, the building would continue to be rated "A" (highest importance) by the Foundation for San Francisco's Architectural Heritage, and would remain eligible for listing on the National Register of Historic Places and under the California Register of Historical Resources. Under the No Project Alternative, there would be no change to the significance of either the Aronson Historic District or the proposed New Montgomery-Mission- Second Street Conservation District under this alternative. Therefore, compared to the proposed project, which would have less-than-significant historic architectural resources impacts as described in Section IV.D, Cultural and Paleontological Resources, the No Project Alternative would not have any impacts related to historic architectural resources.

Transportation and Circulation

Under the No Project Alternative, existing conditions would continue. The on-site Third Street curb cut, which provides access to the existing loading area in the Aronson Building, and the curb cut on Mission Street, which provides an exit for the Jessie Square Garage, would remain and continue to be used. There would be no change to the configuration or operation of the Jessie Square Garage. Bicycle and pedestrian conditions would remain unchanged. There would be no increase in traffic or transportation trips. Trip generation, parking, transit and loading demands would remain the same as under existing conditions. The suggested transportation and circulation improvement measures identified for the proposed project (I-TR-A through I-TR-M, described in Section IV.E, Transportation and Circulation, on pp. IV.E.38-IV.E.59) would not be applicable. Unlike the proposed project, there would be no changes to traffic, loading, parking, or transit would occur compared to existing conditions under the No Project Alternative. Therefore, compared to the proposed project, which would have less-than-significant transportation and circulation impacts, the No Project Alternative would not have any impacts related to transportation and circulation.

Noise

Under the No Project Alternative, there would be no demolition or construction activities on the project site, and, consequently, no new sources of construction-related noise or vibration. No new operational noise would occur. Ambient noise levels would remain as in the existing conditions. Potential noise impacts and the required mitigation measures and the improvement measure identified for the proposed project (M-NO-1a: Reduce Noise Levels During Construction; M-NO-

1b: Noise-Reducing Techniques and Muffling Devices for Pile Installation; M-NO-2a: Minimize Vibration Levels During Construction; M-NO-2b: Pre-Construction Assessment to Protect Structures from Ground Vibration Associated with Pile Installation; M-NO-2c: Vibration Monitoring and Management Plan; and M-NO-3: Stationary Operational Noise Sources, described on pp. IV.F.21-IV.F.30, and I-NO-A: Residential Use/Cultural Component Plan Review by Qualified Acoustical Consultant, described on p. IV.F.32) would not be applicable. Therefore, compared to the proposed project, which would have less-than-significant noise impacts with mitigation as described in Section IV.F, Noise, the No Project Alternative would not have any impacts related to noise.

Air Quality

Under the No Project Alternative, there would be no demolition or construction activities on the project site, and, consequently, new sources of air pollutants would be added. Existing stationary sources of air pollution near the project site and major roadways contributing to air pollution in the project vicinity would remain as in existing conditions. Because potential construction air quality impacts that would occur under the proposed project would not occur under this alternative, the construction emissions minimization plan mitigation measure identified for the proposed project (M-AQ-3: Construction Emissions Minimization, described on pp. IV.G.34-IV.G.35) would not be applicable to this alternative. Therefore, compared to the proposed project, which would have less-than-significant air quality impacts with mitigation as described in Section IV.G, Air Quality, the No Project Alternative would not have any impacts related to air quality.

Greenhouse Gas Emissions

Under the No Project Alternative, there would be no new sources of greenhouse gas (GHG) emissions. Because there would be no proposed development activities on the project site under this alternative, the City of San Francisco's GHG reduction strategy would be applicable to only the existing uses and continued operation of uses on the project site. Therefore, compared to the proposed project, which would have less-than-significant GHG impacts as described in Section IV.H, Greenhouse Gas Emissions, the No Project Alternative would not have any impacts related to GHG.

Wind and Shadow

Wind

Under the No Project Alternative, wind conditions would not change from existing conditions. Pedestrian comfort criterion would continue to be exceeded on the north side of Mission Street in front of St. Patrick's Church and Jessie Square, the southwest and southeast corners of the intersection of Third and Market Streets, and Yerba Buena Lane at the southwest corner of the

Four Seasons under this alternative (identical to existing conditions). The seating comfort criterion would also continue to be exceeded in various areas located in Jessie Square, along the pedestrian path between the Westin San Francisco Market Street Hotel (Westin Hotel) and the Aronson Building, and in and around the Yerba Buena Gardens Esplanade.

Under the Existing Conditions Configuration, the wind hazard criterion is exceeded on the south side of Mission Street at one of the entrances to Yerba Buena Gardens, the southwest and southeast corners of the intersection of Third and Market Streets, and Yerba Buena Lane at the southwest corner of the Four Seasons. Since existing wind conditions would remain unchanged under this alternative, there would be no reduction in these existing wind hazard exceedances, as under the proposed project. The suggested wind improvement measures identified for the proposed project (I-WS-A and I-WS-B) would not be applicable to this alternative.

Compared to the proposed project, which would have less-than-significant wind impacts as described in Section IV.I, Wind and Shadow, the No Project Alternative would not have any impacts related to wind.

Shadow

Under the No Project Alternative, there would be no new construction on the Mexican Museum parcel, or modifications to the existing Aronson Building. There would be no change to existing sunlight conditions on Union Square, Jessie Square, or any of the nearby privately owned publicly accessible open spaces and public sidewalks. Unlike the proposed project, the No Project Alternative would not cast net new shadow on Union Square. Therefore, compared to the proposed project, which would have less-than-significant project-level shadow impacts but would make a cumulatively considerable contribution to significant cumulative shadow impacts as described in Section IV.I, Wind and Shadow, the No Project Alternative would not have any impacts related to shadow.

Recreation

Under the No Project Alternative, there would be no new residential units or museum uses that would result in an increase in residential and visitor population at the project site. Therefore, there would be no incremental increase in demand for and use of existing adjacent parks, recreational facilities, nearby City recreational facilities, or regional, State, and Federal recreational facilities under this alternative, unlike under the proposed project. Therefore, compared to the proposed project, which would have less-than-significant recreation impacts as described in Section IV.J, Recreation, the No Project Alternative would not have any impacts related to recreation.

Utilities and Service Systems

Under the No Project Alternative, existing utilities and infrastructure on the project site would remain the same as under current conditions. Under existing conditions, the project site is adequately served by utilities and service systems. There would be no changes in the demand for water or treatment of water, or the generation of wastewater and solid waste, unlike the proposed project. The project site would also continue to be adequately served by electricity, natural gas, and telecommunications. Therefore, compared to the proposed project, which would have less-than-significant utilities and service systems impacts as described in Section IV.K, Utilities and Service Systems, the No Project Alternative would not have any impacts related to utilities and service systems.

Public Services

Under the No Project Alternative, the proposed residential units or museum uses would not be built, and there would not be an increase in the residential and visitor population at the project site, unlike under the proposed project. The project site is currently adequately served by existing police protection, fire protection and emergency medical services, public school facilities, and public libraries. Therefore, compared to the proposed project, which would have less-than-significant public services impacts as described in Section IV.L, Public Services, the No Project Alternative would not have any impacts related to public services.

Biological Resources

Under the No Project Alternative, existing site conditions would continue. The existing significant tree in the northwest corner of the Aronson parcel and one street tree that would be removed under the proposed project would remain. Since there would be no new structures proposed under the No Project Alternative, Planning Code Section 139, Standards for Bird-Safe Buildings, would not be applicable. As with the proposed project, there would be no habitat modification that would result in adverse effects on any species. Therefore, compared to the proposed project, which would have less-than-significant biological resources impacts as described in Section IV.M, Biological Resources, the No Project Alternative would not have any impacts related to biological resources.

Geology and Soils

Under the No Project Alternative, no demolition or construction activities would occur on the project site, and there would be no increase in the number of people at the site who would be exposed to seismic risk or other hazards, unlike under the proposed project. The existing Aronson Building would not be seismically upgraded. Therefore, compared to the proposed project, which would have less-than-significant geology and soils impacts as described in Section

IV.N, Geology and Soils, the No Project Alternative would not have any impacts related to geology and soils.

Hydrology and Water Quality

The No Project Alternative would not result in any construction activities, unlike under the proposed project. The project site is not within a flood hazard area, nor is it sited in a location that would expose people or structures to loss, injury or death as a result of a levee or dam failure or through inundation by seiche, tsunami or mudflow. Similar to the proposed project, this alternative would not violate water quality standards, affect groundwater supplies, alter drainage patterns, contribute to runoff, or degrade water quality. Therefore, compared to the proposed project, which would have less-than-significant hydrology and water quality impacts as described in Section IV.O, Hydrology and Water Quality, the No Project Alternative would not have any impacts related to hydrology and water quality.

Hazards and Hazardous Materials

The No Project Alternative would not result in any excavation or other construction activities, unlike under the proposed project. This alternative would not involve the transport, use or disposal of hazardous materials, result in the release of hazardous materials into the environment, emit or handle hazardous emissions within an existing or proposed school, impair implementation of an emergency evacuation plan or expose people or structures to a risk involving fire. The potential hazards and hazardous materials impacts and the required mitigation measure identified for the proposed project (M-HZ-2: Hazardous Materials – Testing for and Handling of Contaminated Soil, described in Section IV.P, Hazards and Hazardous Materials, on pp. IV.P.14-IV.P.16) would not be necessary for this alternative. Therefore, compared to the proposed project, which would have less-than-significant hazards and hazardous materials impacts with mitigation, the No Project Alternative would not have any impacts related to hazards and hazardous materials.

Mineral and Energy Resources

Under the No Project Alternative, there would be no change in the level of energy consumption unlike under the proposed project. There would be no improvements made to the existing Aronson Building to improve energy efficiency. Similar to the proposed project, there would be no loss of availability of a known mineral resource or mineral recovery site, nor any proposed activities which would result in the use of wasteful or large amounts of fuel, water or energy under this alternative. Therefore, compared to the proposed project, which would have less-than-significant mineral and energy resources impacts as described in Section IV.Q, Mineral

and Energy Resources, the No Project Alternative would not have any impacts related to mineral and energy resources.

Agricultural and Forest Resources

As with the proposed project, the No Project Alternative would not convert farmland, conflict with agricultural or forest land zoning or a Williamson Act contract, nor result in a loss or conversion of forest land or farmland. Therefore, like the proposed project, which would have no impact on agricultural and forest resources, as described in Section IV.R, Agricultural and Forest Resources, the No Project Alternative would also not have any impacts related to agricultural and forest resources.

CONCLUSION

The No Project Alternative would continue existing conditions on the project site. Under this alternative, there would be no net new shadow created on Union Square or other parks or open spaces. Unlike the proposed project, the No Project Alternative would not create net new shadow on Union Square, or any other public open spaces, privately owned publicly accessible open spaces, or public sidewalks, and therefore would not result in a cumulatively considerable contribution to the significant unavoidable cumulative shadow impact. Since existing conditions on the project site would not change under this alternative, there would be no impacts related to land use and land use planning, aesthetics, population and housing, cultural and paleontological resources, transportation and circulation, noise, air quality, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral and energy resources or agricultural and forest resources. Under the proposed project, the impacts with respect to these environmental topics would be either less than significant or less than significant with mitigation, except for agricultural and forest resources. Both the No Project Alternative and the proposed project would have no impact on agricultural and forest resources.

The No Project Alternative would not achieve the objectives of the Successor Agency or the private project sponsor. Among the many project objectives that would not be achieved, the No Project Alternative would not complete the redevelopment of the YBC Redevelopment Project Area, provide for development of a museum facility and endowment for The Mexican Museum on City-owned property, create a residential development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel, provide housing near cultural amenities and attractions, transfer ownership of the Jessie Square Garage to a private entity, rehabilitate the historically important Aronson Building, nor provide temporary and permanent employment and contracting opportunities.

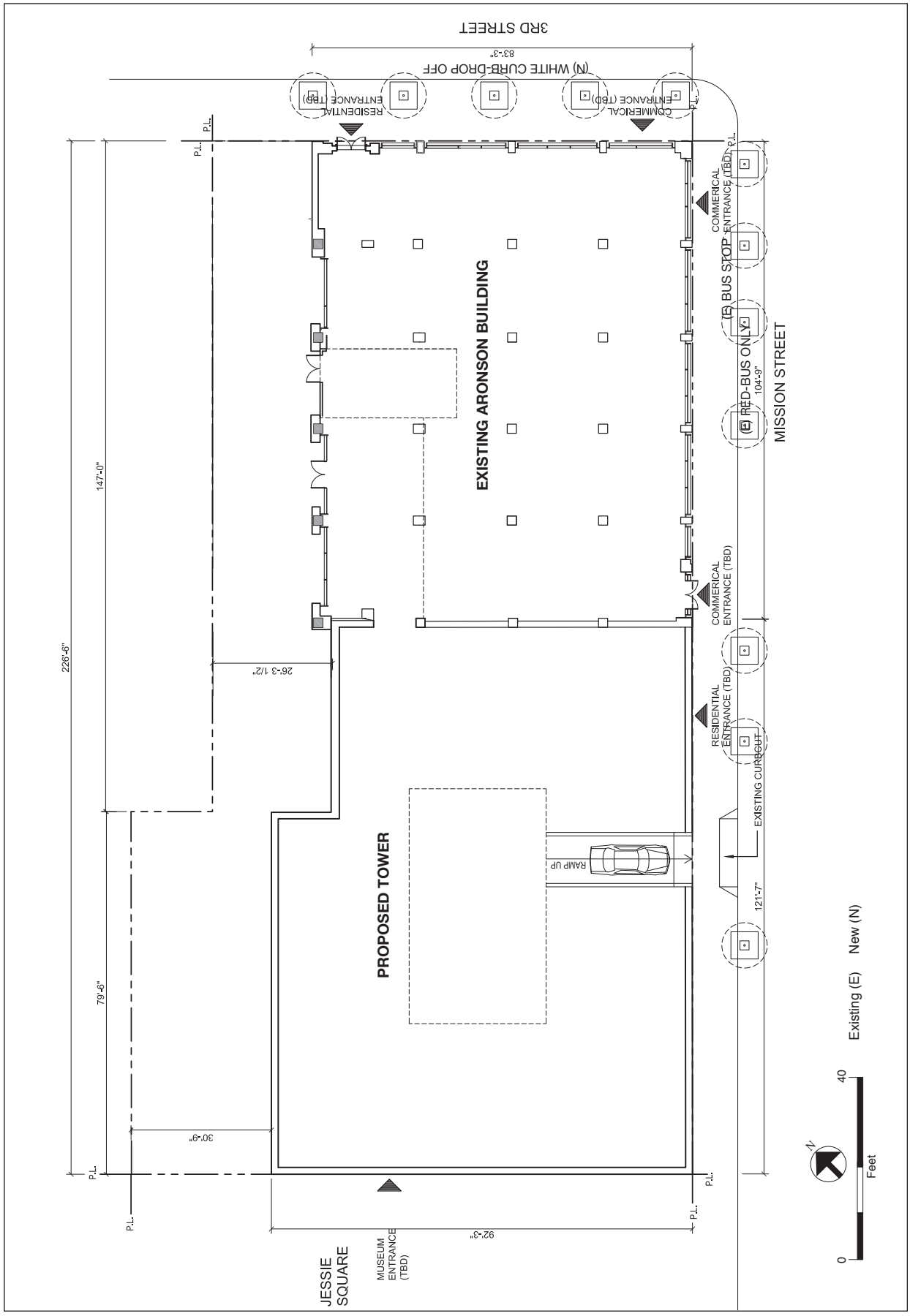
B. EXISTING ZONING ALTERNATIVE

DESCRIPTION

The intent of the Existing Zoning Alternative is to provide an alternative that meets all applicable provisions of the Planning Code. In addition, this alternative would reduce but not eliminate the significant cumulative shadow impact compared to the proposed project. Under this alternative, the project site would remain within the Downtown Retail (C-3-R) District and in a 400-I Height and Bulk District (the proposed project would include a zoning reclassification, as discussed in Section II.D, Project Characteristics, in Chapter II, Project Description, p. II.23). Development under this alternative would be limited to a maximum horizontal dimension of 170 feet and a maximum diagonal dimension of 200 feet. Conditional Use authorization or variances would not be required.

There would be no Special Use District or rezoning or height reclassification proposed under the Existing Zoning Alternative, whereas under the proposed project, there would be a request for rezoning to a Downtown Residential District (DTR), or alternatively, a Special Use District (SUD) overlay to the C-3-R could be established, or an SUD overlay on the DTR. Unlike under the proposed project, this alternative would not require a Section 309 Determination of Compliance and Request for Exceptions, or in the event rezoning to DTR is pursued, a Section 309.1 Determination of Compliance and Request for Exceptions. Under this Existing Zoning Alternative, pursuant to Sections 123 and 128 of the Planning Code, the purchase and use of transferable development rights (TDR) would be required under this alternative to increase the floor area ratio (FAR) of the project site from 6.0 to 1 to 9.0 to 1. For the purposes of calculating FAR, the lot area of the project site for this alternative would include the Aronson Building parcel (15,460 square feet) and the Mexican Museum parcel (9,780 square feet).

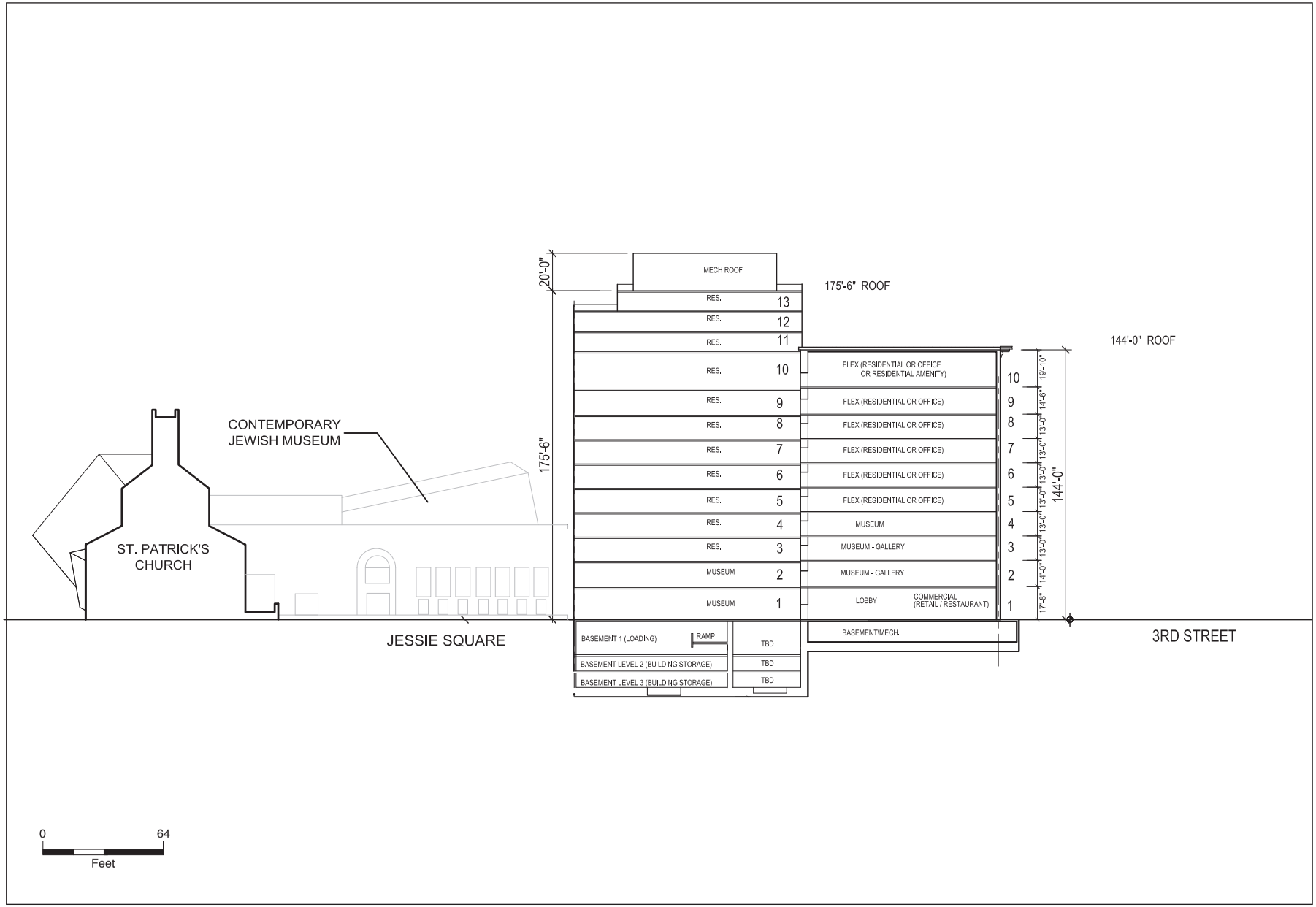
Under this alternative, a new 13-story, approximately 196-foot-tall tower would be constructed on the lot adjacent to and west of the Aronson Building (see Figure VII.1: Existing Zoning Alternative Ground Floor Plan, and Figure VII.2: Existing Zoning Alternative Section). The Existing Zoning Alternative would be 34 stories or 354 feet shorter than the tower with the proposed project. Although the height limit for the project site would allow a 400-foot-tall building, the envelope of the new building under the Existing Zoning Alternative would be constrained by the maximum FAR of 9.0 to 1, with the purchase of TDR.



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.1: EXISTING ZONING ALTERNATIVE GROUND FLOOR PLAN



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.2: EXISTING ZONING ALTERNATIVE SECTION

As under the proposed project, the historic Aronson Building would also be similarly restored and rehabilitated, in accordance with the project sponsor's Design Intent Statement,[1] to ensure the Aronson Building's long-term retention and contribution to the historic district of which it is part. The design and materials of the new tower under this alternative would be high in quality, and would, like the proposed project, contrast with and yet relate in a compatible manner to the Aronson Building and nearby historic resources on Jessie Square.

As with the proposed project, the new construction would be connected to the Aronson Building. Some floors in the new tower would be aligned with the existing floors in the Aronson Building, and some floors would be offset due to differences in the floor to ceiling heights between the proposed new tower and the existing building.

This alternative would provide an approximately 45,000 gsf cultural space for The Mexican Museum, located on floors one through four, compared to approximately 52,285 gsf of cultural space provided for the museum under the proposed project. Unlike the proposed project, this alternative would not result in a financeable endowment for The Mexican Museum or create a development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel.

Due to the differences in the programmatic configuration of museum space between this alternative and the proposed project, there would be six floors (floors five through ten) in the Aronson Building that would be designated as flex space, rather than seven floors called for under the proposed project. Under the residential flex option, these six floors would be converted from office space to residential use, resulting in a total of up to 74 residential units (141 fewer residential units than planned under the proposed project's residential flex option) and no office space on the project site. Under the office flex option, these six floors would continue to be used as office space, resulting in up to 50 residential units (141 fewer residential units than planned under the proposed project's office flex option) and approximately 52,560 gsf of office space.

Under the residential flex option of this alternative, there would be approximately 175,340 gsf of residential space, approximately 2,000 gsf of residential amenity space, approximately 4,800 gsf of retail/restaurant space, and approximately 48,450 gsf of mechanical, storage and utility space, including space for the existing ramp that exits the Jessie Square Garage to Mission Street. Up to 74 dwelling units, consisting of a mix of two- and three-bedroom units with approximately 14,484 gsf of usable open space are proposed under the residential flex option. (See Table VII.1, pp. VII.3-VII.4, for a summary of the space allocated to the various uses under the Existing Zoning Alternative and the proposed project.)

[1] Handel Architects, 706 Mission Street Architectural Design Intent Statement, January 11, 2012. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Under the office flex option of this alternative, there would be approximately 122,780 gsf of residential space and approximately 52,560 gsf of office space. The square footages of residential amenity space, museum space, retail/restaurant space, storage space, building core, mechanical, and service space, including space for the existing ramp that exits the Jessie Square Garage to Mission Street would be the same as for the residential flex option described above. Up to 50 dwelling units, consisting of a mix of two- and three-bedroom units would be proposed along with about 14,484 gsf of usable open space.

Unlike the proposed project, the Existing Zoning Alternative would not include a driveway on Third Street to serve the residential units. In addition, unlike the proposed project, the SFMTA Board of Directors would not convey the below-grade, four-level, 442-space Jessie Square Garage to the project sponsor. All 442 existing parking spaces within the garage would continue to be available to the general public. There would be no dedicated parking for residential uses within the project site under this alternative. Vehicular access into and out of the existing subsurface Jessie Square Garage would not change from existing conditions under this alternative.

Like the proposed project, this alternative would provide two truck and two service loading vehicle spaces located within a loading area on the first basement level of the new tower, with access via the Jessie Square Garage. Like the proposed project, this alternative would extend the existing recessed passenger loading and unloading bay on Mission Street and would convert existing metered on-street freight loading spaces adjacent to the project site on Third Street to passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses. Class I and Class II bicycle parking spaces would be provided under this alternative within the basement level storage areas of the proposed tower.

The vehicular access variants under consideration for the proposed project would not be applicable to this alternative.

ENVIRONMENTAL ANALYSIS

Land Use and Land Use Planning

As with the proposed project, the Existing Zoning Alternative would include a mix of residential, museum, retail/restaurant, and possibly office uses, and would be compatible with nearby residential, cultural, retail and office uses in the surrounding area. Unlike the proposed project, under the Existing Zoning Alternative, the proposed 13-story tower would comply with existing height and bulk requirements. The project site would remain within the Downtown Retail (C-3-R) District and in a 400-I Height and Bulk District. Conditional Use authorization or variances would not be required. There would be no rezoning to a DTR, or SUD, or DTR with an

SUD overlay. Unlike the proposed project, this alternative would not conflict with any applicable land use plan, policy, or regulations with jurisdiction over the project site. Similar to the proposed project, this alternative would not result in any significant land use effects and would not physically divide an established community, nor would it have an adverse impact upon the existing character in the vicinity of the site. The proposed project would have greater impacts compared to this alternative related to Land Use and Land Use Planning due to the proposed legislative land use amendments. These, however, would be resolved once land use amendments are adopted and implemented and other necessary project approvals are granted by the decision-makers. Both the proposed project and the Existing Zoning Alternative would have similar less-than-significant impacts related to land use and land use planning. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative land use and land use planning impacts under the Existing Zoning Alternative.

Aesthetics

As under the proposed project, under the Existing Zoning Alternative the existing Aronson Building would be restored and rehabilitated, and a new 13-story tower would be constructed adjacent, and physically connected, to the Aronson Building. The new tower under this alternative would occupy the same location within the project site as would the development under the proposed project, but would be shorter than the new building under the proposed project. As with the proposed project, this alternative would not have a substantial adverse effect on a scenic vista, including long-range scenic vistas of downtown, the Mission Street view corridor, and scenic vistas from Yerba Buena Gardens. The proposed new tower's height would be closer to the height of the Aronson Building and would contrast with the high-rise towers at the southwest edge of the downtown core. The design and materials of the new tower under this alternative would be high in quality, and would, like the proposed project, include features that relate visually with the surrounding visual setting. As such, this alternative would not have an adverse effect on a scenic resource or on visual character or quality. Lower scale (196-foot-tall) development under this alternative, compared to the substantially taller (550-foot-tall) development under the proposed project, would have less potential for impacts related to visual character and light and glare than would the proposed project. Similar to the proposed project, the potential impacts under this alternative would be less than significant. As with the proposed project, this alternative would result in less-than-significant project-level aesthetic impacts and no cumulatively considerable contribution to significant cumulative impacts related to aesthetics.

Population and Housing

Under the Existing Zoning Alternative, there would be fewer residential units proposed under both the residential and office flex options than under the proposed project. Under the residential

flex option, this alternative would introduce up to approximately 74 residential units and up to approximately 169 residents to the project site (approximately 141 fewer residential units and approximately 321 fewer residents than under the proposed project). Under the residential flex option, the total number of existing employees would be reduced from approximately 453 (under current conditions) to 65 total employees (approximately 35 fewer employees than under the proposed project). Under the office flex option, up to approximately 50 residential units and up to approximately 114 residents would be introduced to the project site (approximately 141 fewer residential units and 321 fewer residents than under the proposed project). The number of existing employees would be reduced under the office flex option from approximately 453 to approximately 252 total employees (approximately 66 fewer than under the proposed project).

Similar to the proposed project, the increased population growth would contribute a negligible percentage to the anticipated citywide and region-wide growth in population, either directly or indirectly. As with the proposed project, this alternative would not displace any housing units or residents. This alternative would displace the existing retail use employees and, under the residential flex option, all the existing office employees currently located in the Aronson Building uses, similar to the proposed project. It is likely that these existing workers who rent or own and live in their homes would remain in their current residences and either change their commute or change jobs in response to the proposed alternative. Thus, there would be no new housing demand, since units that would be vacated or newly occupied by tenants would be part of the existing housing stock in the City and the region. As with the project, this alternative would decrease the total number of employees on site, and would not create a demand for additional housing or for construction of new housing. As with the proposed project, there would be less-than-significant project-level level impacts and no cumulatively considerable contribution to significant cumulative impacts related to population and housing under the Existing Zoning Alternative.

Cultural and Paleontological Resources

Archaeological and Paleontological Resources

Excavation required for this alternative would be similar to that required for the proposed project in terms of location and depth, except that the lower height of the new tower under this alternative would require a reduced foundation structure. As such, potential impacts on archaeological and paleontological resources under this alternative would be slightly reduced than under the proposed project. However, Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, identified for the proposed project and described on pp. IV.D.24-IV.D.31, would also be applicable to this alternative to ensure that, similar to the proposed project, potential project-level impacts on

archaeological and paleontological resources, if present within the project site, would be less than significant (with mitigation incorporated) under this alternative and that contributions to significant cumulative impacts to archaeological and paleontological resources would not be cumulatively considerable.

Historic Architectural Resources

As with the proposed project, under the Existing Zoning Alternative the historic Aronson Building would be restored and rehabilitated in accordance with the project sponsor's Architectural Design Intent Statement[2] under this alternative, to ensure the Aronson Building's long-term retention and contribution to the historic district of which it is a part. The design and materials of the new tower under this alternative would be high in quality, and would, like those for the proposed project, contrast yet relate in a compatible manner to the Aronson Building and nearby historic resources. As such, potential impacts on historic resources under this alternative would be similar to the proposed project. Like the proposed project, this alternative would not cause a substantial adverse change in the significance of the Aronson Building, the historic districts of which it is part, or nearby historic architectural resources. Therefore, as with the proposed project, this alternative would not cause a significant adverse change in the significance of a historic architectural resource. Therefore, as with the proposed project, project-level impacts less-than-significant and there would be no cumulatively considerable contribution to significant cumulative impacts related to historic resources under the Existing Zoning Alternative.

Transportation and Circulation[3]

Under the Existing Zoning Alternative, vehicular access into and out of the existing subsurface Jessie Square Garage would remain unchanged from existing conditions; access into the garage would continue to be from Stevenson Street, and all 442 existing parking spaces within the Jessie Square Garage would continue to be available to the general public. Unlike the proposed project, this alternative would not include a driveway on Third Street to serve the residential units, and the existing driveway on Mission Street would not be widened.

Under the Existing Zoning Alternative, the SFMTA Board of Directors would not convey the Jessie Square Garage to the project sponsor, as proposed with the project. All 442 existing parking spaces within the garage would continue to be available to the general public. There would be no dedicated parking for residential uses within the project site under this alternative.

---

[2] Handel Architects, 706 Mission Street Architectural Design Intent Statement, January 11, 2012.

[3] LCW Consulting, Memo to Debra Dwyer Re: 706 Mission Street Project – Alternatives Assessment, June 14, 2012 (hereinafter "706 Mission Street Project – Alternatives Assessment"), pp. 3-7. A copy of this document is available for review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Under the Existing Zoning Alternative, the number of weekday PM peak hour person and vehicle trips would be substantially less than with the proposed project. See Table VII.3: Net New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Existing Zoning Alternative.

Traffic Impacts

Under the Existing Zoning Alternative, as shown in Table VI.3, project travel demand would be less than under the proposed project, and therefore traffic impacts at the study intersections would be similar to, but less than, those with the proposed project. Therefore, the impact on traffic operations under this alternative would be less than significant, as under the proposed project.

While the Existing Zoning Alternative, like the proposed project, would result in a less-than-significant impact at the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications and I-TR-B: "Garage Full" Sign on Third Street, identified for the proposed project and described on p. IV.E.38, would also be applicable to this alternative to lessen its effect on traffic. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street.

Transit Impacts

As shown in Table VII.3, the Existing Zoning Alternative, transit trips generated by the alternative would be less than those under the proposed project. Therefore, similar to the proposed project, impacts on local and regional transit capacity utilization with this alternative would be less than significant.

Similar to the proposed project, the San Francisco Municipal Transportation Agency (SFMTA) would like the option available to install eyebolts in the renovated building to support its overhead wire system. While transit impacts would be a less-than-significant, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to the Existing Zoning Alternative. Under this improvement merasure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Table VII.3: Net New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Existing Zoning Alternative

Proposed Project and Existing Zoning Alternative					
	Person Trips				Vehicle Trips
Project/Alternative	Auto	Transit	Walk/Other[a]	Total	
Proposed Project					
Residential Flex Option					
Proposed Project	179	99	273	551	142
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**170**	**94**	**254**	**518**	**137**
Office Flex Option					
Proposed Project	197	149	257	603	154
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**188**	**144**	**238**	**570**	**149**
Existing Zoning Alternative					
Residential Flex Option					
Alternative	103	69	133	305	73
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**94**	**64**	**114**	**272**	**68**
Office Flex Option					
Alternative	117	111	116	344	81
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**108**	**106**	**97**	**311**	**76**

Note:
[a] "Other" mode includes bicycles, motorcycles, and taxis.

Source: *SF Guidelines*, *2000 U.S. Census*, LCW Consulting, 2012

Bicycle Impacts

The Existing Zoning Alternative would not substantially change bicycle travel in the vicinity of the project site, and therefore, similar to the proposed project, impacts to bicyclists would be less than significant.

Pedestrian Impacts

The Existing Zoning Alternative would generate fewer pedestrian trips than the proposed project. During the weekday PM peak hour, the new uses associated with the Existing Zoning Alternative residential flex option would generate 178 pedestrian trips, while the Existing Zoning Alternative office flex option would generate 203 pedestrian trips (as compared with 348 pedestrian trips generated by the proposed project's residential flex option, and 382 pedestrian trips generated by the office flex option). As with the proposed project, impacts on pedestrian level of service (LOS) on sidewalks, corners, and crosswalks with this alternative would be less than significant. As noted above, vehicular access into and out of the existing subsurface Jessie Square Garage would not change from existing conditions. Unlike the proposed project, the Existing Zoning Alternative would not include a driveway on Third Street to serve the residential units.

As under the proposed project, the number of existing items on the Third Street sidewalk at the project site, known as "pole clutter," is lowering the pedestrian quality, but not to the extent that the pole clutter or the additional project-related pedestrian trips would create a significant impact on pedestrian travel or access with this alternative. However, Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.46, would also be applicable to this alternative. This improvement measure would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Loading Impacts

As with the proposed project, the Existing Zoning Alternative would provide off-street loading on the project site. The Existing Zoning Alternative would provide two truck and two service loading vehicle spaces located within a loading area on the first basement level of the new tower, with access via the Jessie Square Garage, unlike the proposed project, which would provide two full-size loading spaces and four service vehicle loading spaces. Under the Existing Zoning Alternative, the existing loading access curb cut into the project site on Third Street would be abandoned, unlike under the proposed project. As under existing conditions, delivery and service vehicles would enter and exit the Jessie Square Garage via the Stevenson Street driveway, although vans and small trucks would also be able to exit via the Mission Street driveway. Similar to the proposed project, trucks and delivery vehicles under this alternative would not access the loading spaces from Third Street (as noted above, the existing loading access curb cut into the project site on Third Street would be abandoned). Since the Existing Zoning Alternative would provide off-street loading spaces, and since the loading demand could be accommodated within the proposed supply, loading impacts under this alternative would be less than significant, as with the proposed project. Under this alternative, there would be a smaller amount of residential, museum, restaurant/retail, and possibly office uses than under the proposed project. Therefore, loading demand would be reduced under this alternative compared to the proposed project.

Like the proposed project, the Existing Zoning Alternative would extend the existing recessed passenger loading and unloading bay on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone to support the proposed museum and residential uses, as well as the current users of the existing passenger bay. In addition, similar to the Proposed Project, the project sponsor would request that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

Like the proposed project, this alternative would provide sufficient loading to meet the Planning Code requirement of three spaces and the demand for loading space on the project site, therefore loading impacts would be less than significant. However, Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to the Existing Zoning Alternative. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

Emergency Access Impacts

As with the proposed project, the Existing Zoning Alternative would not change the configuration or capacity of the travel lanes adjacent to the project site. Therefore, it would not affect emergency vehicle access to the project site or project vicinity, nor would it change the configuration or capacity of adjacent travel lanes. Similar to the proposed project, the Existing Zoning Alternative impacts on emergency access would be less than significant.

Construction Impacts

Construction activities associated with the Existing Zoning Alternative would be similar to, but less than, those described for the proposed project. Overall, the construction-related transportation impacts of this alternative would be less than significant due to their temporary and limited duration, as under the proposed project. Therefore, the construction-related transportation impacts under this alternative would be less than significant, particularly since this alternative involves less on-site development compared to the proposed project.

Improvement Measures I-TR-I through I-TR-L, identified for the proposed project and described on pp. IV.E.54-IV.E.55, would also be applicable to this alternative to reduce its less-than-significant transportation-related effects. Improvement Measures I-TR-I: Construction - Traffic Control Plan could require the contractor to prepare a traffic control plan for project construction to reduce potential conflicts between construction activities and pedestrians, transit, and autos. Under Improvement Measure I-TR-J: Construction – Carpools, the project sponsor could request the construction contractor to encourage carpooling and transit access to the site by construction workers. Improvement Measure I-TR-K: Construction - Truck Traffic Management could require the construction contractor to retain San Francisco Police Department traffic control officers during peak construction periods to minimize construction traffic impacts on Third Street and Mission Street and on pedestrian, transit and traffic operations. Improvement Measure I-TR-L: Construction - Update Adjacent Businesses and Residents could require the project sponsor to provide nearby residences and adjacent businesses with regularly updated information regarding project construction.

Parking Information

As with the proposed project, under the Existing Zoning Alternative, the existing public parking at Jessie Square Garage would not change from existing conditions, and residents, visitors and employees associated with the proposed uses on the project site would be able to pay to use the Jessie Square Garage (ingress/egress on Stevenson Street, and egress-only on Mission Street). Parking demand associated with the Existing Zoning Alternative would be less than that for the proposed project with its larger development. The new uses associated with the Existing Zoning Alternative would generate a demand of 154 parking spaces for the residential flex option and 178 parking spaces for the office flex option. Compared to a supply of 442 parking spaces within the Jessie Square Garage, the garage closest to the project site, the Existing Zoning Alternative parking demand, in addition to the existing parking demand for the Jessie Square Garage, would result in a shortfall of between 41 and 54 spaces, depending on the flex option chosen with this alternative. This shortfall would be less than the proposed project's shortfall of between 271 and 328 spaces, depending on the flex option chosen with the proposed project.

To encourage transit use and reduce parking demand, Improvement Measure I-TR-M: Transportation Demand Management, identified for the proposed project and described on p. IV.E.59, would also be applicable to the Existing Zoning Alternative. Under this improvement measure, the project sponsor could provide a transportation insert for the residential and non-residential move-in packet that would provide information on transit service.

Therefore, similar to but less than the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to traffic, transit, bicycle, pedestrian, loading, emergency access, construction, or parking under the Existing Zoning Alternative.

2030 Cumulative Conditions

As shown in Table VII.3 on p. VII.24, the Existing Zoning Alternative would generate fewer vehicle trips than would the proposed project. Under 2030 Cumulative conditions, vehicle delays under the Existing Zoning Alternative would increase at the study intersections compared to existing conditions, and, as under the proposed project, all seven study intersections would operate at LOS F conditions under this alternative (as compared with two at LOS E or LOS F under Existing conditions). Like the proposed project, this alternative would result in less than cumulatively considerable contributions to significant impacts related to intersections, which operate at LOS E or LOS F under 2030 Cumulative conditions, based on consideration of the alternative's contribution to critical movements. Therefore, the Existing Zoning Alternative's traffic impacts under 2030 Cumulative conditions at the study intersections would be less than

cumulatively considerable under the Existing Zoning Alternative, especially since its contribution to critical movements would be less than for the proposed project.

In summary, similar to the proposed project, under the Existing Zoning Alternative there would be less-than-significant significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to transportation.

Noise

Similar to the proposed project, the Existing Zoning Alternative would result in demolition, excavation, and building construction activities (which encompass new construction as well as Aronson Building restoration activities) that would occur over a period of approximately 36 months, the same duration as the construction period for the proposed project. As under the proposed project, these activities would temporarily and intermittently increase noise in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. Like the proposed project, the installation of drilled piles could also potentially occur as part of this alternative. Construction activities would be required to comply with the San Francisco Noise Ordinance. However, as with the proposed project, noise from construction may still be substantially greater than existing noise levels in the project vicinity and could significantly impact nearby sensitive receptors. To ensure construction noise is reduced to the maximum amount feasible, Mitigation Measures M-NO-1a: Reduce Noise Levels During Construction, and M-NO-1b: Noise-Reducing Techniques and Muffling Devices for Pile Installation, identified for the proposed project and described in Section IV.F, Noise, pp. IV.F.21-IV.F.22, would also be required under this alternative. Mitigation Measure M-NO-1a would require the project contractor to use equipment with lower noise emissions and sound controls or barriers where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a noise coordinator, and obtain noise variances when required consistent with Police Code Section 2910. Mitigation Measure M-NO-1b would require the use of feasible noise-reducing techniques for installing piles such as pre-drilling pile holes where feasible. As with the proposed project, implementation of these measures under this alternative would decrease significant project-level noise impacts and cumulatively considerable contributions to cumulative construction noise impacts to a less-than-significant level.

Under the Existing Zoning Alternative, the proposed demolition, excavation, and building construction activities would also temporarily generate ground borne vibration that could be considered an annoyance and potentially significant for vibration-related damage to nearby structures, as under the proposed project. The mitigation measures related to construction noise and vibration issues that are identified for the proposed project would be applicable to this alternative. As under the proposed project, Mitigation Measure M-NO-2a: Minimize Vibration Levels During Construction, described on p. IV.F.26, would mitigate human annoyance caused by

vibration under this alternative by providing a community liaison to respond to and address complaints, by requiring protective techniques (pre-drilling for piles), by limiting and avoiding impact pile driving, and by phasing activities where feasible. To protect neighboring vibration-sensitive structures, Mitigation Measure M-NO-2b: Pre-Construction Assessment to Protect Structures from Ground Vibration Associated with Pile Installation, described on pp. IV.F.26-IV.F.27, would require implementation of a pre-construction assessment and, if needed, monitoring to detect ground settlement or lateral movement of structures. Additionally, Mitigation Measure M-NO-2c: Vibration Monitoring and Management Plan, described on p. IV.F.27, would require assessment, monitoring, and management of vibration that could damage the Aronson Building. As with the proposed project, with implementation of these mitigation measures, significant project-level ground borne noise and groundborne construction impacts of this alternative would be reduced to less-than-significant levels. There would also be no cumulatively considerable contribution to significant cumulative groundborne noise and groundborne construction impacts under this alternative.

To address stationary operational noise sources, Mitigation Measure M-NO-3: Stationary Operational Noise Sources, identified for the proposed project and described on pp. IV.F.29-IV.F.30, would also be applicable to this alternative. This mitigation measure would require that all fixed stationary sources of noise be installed with noise reducing shields or constructed with some other adequate noise attenuating features. With implementation of this mitigation measure, operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the noise level limits of the San Francisco Noise Ordinance, and this impact would be mitigated to less-than-significant levels for this alternative, similar to the proposed project. As with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative operational ambient noise levels in the project vicinity under this alternative.

In order to ensure that new residences and cultural uses would not be substantially affected by existing noise levels in the project vicinity, Improvement Measure I-NO-A: Residential Use/Cultural Component Plan Review by Qualified Acoustical Consultant, identified for the proposed project and described on p. IV.F.32, would also be applicable to the Existing Zoning Alternative. Under this improvement measure, a qualified acoustical consultant shall review plans for all new residential uses, cultural component areas (The Mexican Museum), and any other sensitive uses and provide recommendations regarding acoustical insulation or other equivalent measures to reduce interior noise levels to comply with applicable standards under Title 24. As under the proposed project, while this alternative would result in less-than-significant project-level noise impacts and no cumulatively considerable contribution to significant cumulative impacts related to interior noise levels, the improvement measure is

identified to lessen this alternative's less-than-significant effect on noise sensitive uses at the site by specifying how the alternative would be in compliance with Title 24 standards.

As with the proposed project, there would be no significant project-level impacts or cumulatively considerable contribution to significant cumulative noise impacts on new residences and cultural uses under this alternative.

Air Quality

Similar to the proposed project, the Existing Zoning Alternative would result in demolition, excavation, and building construction activities that would cause emissions of criteria air pollutants and toxic air contaminants that would affect local air quality during the construction schedule. Activities that create dust would be subject to the Construction Dust Control Ordinance. With construction activities, equipment, and phasing similar to (but less than with) the proposed project, this alternative would result in construction emissions of criteria air pollutants that would be below the applicable significance thresholds, as under the proposed project. Diesel-powered construction equipment would generate diesel particulate matter (DPM), which is identified as a toxic air contaminant (TAC) and carcinogen by the California Air Resources Board (ARB), and as with the proposed project, the construction activity could expose off-site sensitive receptors to substantial pollutant concentrations exceeding the thresholds for community risk and hazards. Implementation of Mitigation Measure M-AQ-3: Construction Emissions Minimization, identified for the proposed project and described in Section IV.G, Air Quality, pp. IV.G.34- IV.G.35, would be applicable to this alternative. This mitigation measure, which calls for the development of a construction emissions minimization plan, would reduce construction emissions of TACs and therefore reduce the exposure of nearby sensitive receptors to these TACs during construction. As under the proposed project, with implementation of this mitigation measure, estimates of increased cancer risk to off-site receptors as a result of exposure during construction of this alternative would be reduced to a level below the project-level threshold of significance.

Due to a smaller amount of residential, museum, restaurant/retail, and possibly office uses, operational emissions for this alternative would be similar to, but likely less than, those of the proposed project. Sources of operational emissions for this alternative would include a standby generator, mechanical systems, other area sources, and mobile sources. The emissions from mobile sources would be less than those of the proposed project, because of the lower travel demand under this alternative. As with the proposed project, operational criteria air pollutant emissions would be below the thresholds of significance and would not violate any air quality standard or contribute substantially to a violation of a standard. As with the proposed project, new sources would generate DPM, which could expose sensitive receptors to substantial pollutant concentrations. Under this alternative, the likelihood that sensitive receptors (residents) would be

exposed to substantial pollutant concentrations would be slightly greater than for the proposed project because new sensitive receptors (residents) would be located at the third floor, which would be closer to the ground-level stationary sources of emissions and major roadways that are sources of toxic air contaminants (the third floor would be occupied by museum use under the proposed project). Although some residents under this alternative could potentially be exposed to slightly greater risks and hazards due to higher pollutant concentrations than under the proposed project, refined modeling for the proposed project indicates that the potential to expose sensitive receptors to substantial pollutant concentrations under this alternative should be below the thresholds of significance.

As with the proposed project, this alternative would not conflict with or obstruct implementation of the applicable air quality plan, and this alternative would not expose a substantial number of people to objectionable odors.

Project-level criteria air pollutant emissions at levels below the thresholds are not anticipated to contribute to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants. No additional mitigation would be necessary for cumulative air quality impacts related to risk and hazards. Similar to the proposed project, construction or operation of this alternative, in combination with other reasonably foreseeable projects in the project vicinity, would not expose sensitive receptors to substantial pollutant concentrations. Therefore, as with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to air quality under the Existing Zoning Alternative.

Greenhouse Gas Emissions

A variety of controls are in place to ensure that development in San Francisco would not impair the State's ability to meet Statewide GHG reduction targets outlined in AB 32, nor impact the City's ability to meet San Francisco's local GHG reduction targets. Projects that are consistent with San Francisco's regulations would not contribute significantly to global climate change. Similar to the proposed project, the Existing Zoning Alternative would be required to comply with these regulations and requirements for GHG reduction strategies. Under the Existing Zoning Alternative, trip operation and the associated GHG emissions would be less than with the proposed project. As with the proposed project, this alternative would introduce a mixed-use infill development in a transit-oriented area, and would include Class I and Class II bicycle parking spaces, energy efficiency features beyond Title 24 requirements, low-impact stormwater management design, water-efficient landscaping, water-conserving interior design, convenient recycling and composting, street trees, and other features consistent with San Francisco's ordinances and requirements. Implementation of local GHG reduction requirements would substantially reduce a project's local GHG impacts. Therefore, as with the proposed project, the

Existing Zoning Alternative would have a less than cumulatively considerable contribution to significant cumulative GHG impacts.

Wind and Shadow

Wind

As with the proposed project, wind tunnel testing was conducted for the Existing Zoning Alternative. The results of the wind tunnel test[4] are included in Appendix H: Wind. The Existing Zoning Alternative would have effects on ground-level wind currents in the project vicinity that would be similar to the effects of the proposed project. Implementation of this alternative would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would increase from 12.6 to 12.8 mph, compared to 12.6 to 12.7 under the proposed project, and there would be some areas in the project vicinity that would exceed the comfort criteria. However, exceeding the seating comfort criterion or the pedestrian comfort criterion is not a significant wind impact under CEQA. Improvement Measure I-WS-A, identified for the proposed project and described on p. IV.I.14, would be applicable to this alternative to make wind conditions more comfortable for pedestrians or seated individuals. This improvement measure calls for the use of treatments such as hedges, trees and trellises to reduce winds in areas used for public seating.

As with the proposed project, the Existing Zoning Alternative would eliminate one existing wind hazard (on the south side of Mission Street at one of the entrances to Yerba Buena Gardens), but would not eliminate three other existing wind hazards (at the southwest and southeast corners of the intersection of Third and Market Streets and along Yerba Buena Lane at the southwest corner of the Four Seasons Hotel and Residences). Overall, the total duration of hazardous wind would increase by about one hour per year under the Existing Zoning Alternative, compared to a decrease in about 90 hours under the proposed project.

Although there would be localized changes throughout the project vicinity, the overall wind conditions would remain substantially the same with implementation of the Existing Zoning Alternative as compared to existing conditions or to the proposed project. Increases in wind speed and duration at some test points under this alternative would be slight when compared to the proposed project, and decreases in wind speed and duration at other test points under this alternative would be more substantial when compared to the proposed project. Therefore, similar to the proposed project, the Existing Zoning Alternative would not result in a significant project-

[4] Rowan Williams Davies & Irwin, Inc., 706 Mission Street Pedestrian Wind Study, January 25, 2012. A copy of this document is included as Appendix H in this EIR and is also available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

level wind impact or a cumulatively considerable contribution to significant cumulative impacts related to wind.

Like the proposed project, the Existing Zoning Alternative would have private roof terraces on the tower, but there would be no terrace on the roof of the Aronson Building. Improvement Measure I-WS-B, identified for the proposed project and described on p. IV.I.29, would be applicable to this alternative to make wind conditions more comfortable on these private roof terraces. This improvement measure calls for the project sponsor to implement building design considerations as well as wind control measures, which may include trellises, landscaping, tall parapets and/or wind screens.

Shadow

Due to the proximity of the project site adjacent to Jessie Square, the Existing Zoning Alternative would have the same shadow impact on Jessie Square as would the proposed project, shading it during the same times of the day and during the same times of the year. Since it is the lower portion of the tower that would shadow Jessie Square and the Existing Zoning Alternative is adjacent to Jessie Square, the reduced height of the Existing Zoning Alternative would not reduce the amount of shadow cast on Jessie Square, compared to the proposed project.

Unlike the proposed project, the Existing Zoning Alternative would not cast net new shadow on Union Square. A shadow envelope analysis determined that any building at or below a height of 351 feet on the project site would not cast net shadow on Union Square.[5] As a result, the Existing Zoning Alternative would have no project-level shadow impact on Union Square.

Although it would have a shorter tower than would the project, shadow from the Existing Zoning Alternative could reach some of the same public open spaces, privately owned publicly accessible open spaces, and public sidewalks that would be shadowed by the proposed project. Like the proposed project, the Existing Zoning Alternative would have less-than-significant project-level shadow impacts. The Existing Zoning Alternative's contribution to significant cumulative shadow impacts would be reduced compared to the proposed project, but not to a less than cumulatively considerable level. Therefore, as with the proposed project, there would be a significant cumulatively considerable contribution to the significant cumulative shadow impact with this alternative.

[5] CADP. Shadow Envelope Analysis, April 2009. This document is available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Recreation

Under the Existing Zoning Alternative, there would be 141 fewer residential units proposed under either the residential or office flex options than planned under the proposed project. This alternative would introduce up to approximately 169 residents to the project site, approximately 321 fewer residents than the proposed project. Under the office flex option for the Existing Zoning Alternative, up to approximately 114 residents would be anticipated. Under either flex option, approximately 14,484 gsf of common and private open space would be provided as a mixture of a ground-level plaza and private roof terraces.

Similar to the proposed project, given the wide variety and quantity of existing nearby public parks, plazas, and recreational opportunities, including children-oriented park and recreation facilities, the anticipated increase in on-site population would not result in substantial physical deterioration or acceleration of deterioration of existing facilities under the Existing Zoning Alternative, and there would be less-than-significant impacts on existing public open space and recreational facilities. Due to introduction of fewer residents and employees under the Existing Zoning Alternative, the impacts related to recreation would be slightly less under this alternative than under the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative recreation impacts under the Existing Zoning Alternative.

Utilities and Service Systems

Because there would be fewer residents and employees on the project site under this alternative than with the proposed project, the increase in water demand and in wastewater flows would be less than for the proposed project. Like the proposed project, this alternative would not result in the exceedance of any wastewater treatment requirements. Stormwater would be handled along the lines described for the proposed project. This alternative would not require or result in the construction of new or the expansion of existing water wastewater treatment facilities, or stormwater drainage facilities, the construction of which could have significant environmental effects. Like the proposed project, construction of the Existing Zoning Alternative in combination with reasonably foreseeable projects in the project vicinity would not result in a cumulatively considerable contribution to significant and adverse cumulative impacts on the treatment of stormwater runoff or affect capacity of wastewater treatment facilities or stormwater drainage facilities. The project site would continue to be adequately served by electricity, natural gas, and telecommunications. Due to the reduced size of this alternative with fewer residential units and museum, restaurant/retail, and possibly office space under the Existing Zoning Alternative, the impacts related to utilities and service systems would be slightly less than those of the proposed project. Therefore, as with the proposed project, project-level impacts would be

less-than-significant and no cumulatively considerable contribution to significant cumulative impacts on utilities and service systems under the Existing Zoning Alternative.

Public Services

The increase in residents and the number of employees on the project site under this alternative would be less than under the proposed project. As with the proposed project, this alternative would not adversely affect the ability for the site to be adequately served by existing police protection, fire protection and emergency medical services, public school facilities, and public libraries. Due to the reduced size of this alternative, with fewer residents and employees under the Existing Zoning Alternative, the impacts related to public services would be slightly less than those of the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on public services under the Existing Zoning Alternative.

Biological Resources

Demolition and construction activities for the Existing Zoning Alternative would be similar to those for the proposed project. Under this alternative, the one existing significant tree (avocado tree) on the project site near the northwest corner of the Aronson Building and one street tree (magnolia tree) adjacent to the project site along Mission Street would be removed, as they would under the proposed project. As with the proposed project, the removal and replacement would be in accordance with the requirements specified by the Urban Forestry Ordinance.

These trees provide a very small amount of nesting habitat for resident urban-adapted and migratory songbirds and neither of them is considered to be rare, threatened, or endangered species; however, the existing row of trees (poplar trees) north of the project site could support active nests during the bird nesting season (March through August). While construction activities for this alternative may take place during the bird nesting season, potentially disturbing nesting birds in the poplar trees, compliance with Federal and State regulations for vegetation removal and preconstruction surveys would result in a less-than-significant impact to migratory birds, as is the case with the proposed project.

As under the proposed project, the Existing Zoning Alternative would also be required to comply with Planning Code Section 139, Standards for Bird-Safe Buildings, to reduce the potential for bird collisions. Under this alternative, there would be no habitat modification nor adverse effects on any species, no substantial adverse effect on protected wetlands, nor any interference with established wildlife migratory corridors or nursery sites. This alternative would not conflict with any local policies or ordinances protecting biological resources, and it would not conflict with any adopted conservation plan. The potential impacts of the Existing Zoning Alternative related

to biological resources would be the same as, or very similar to, those for the proposed project. Therefore, similar to the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on biological resources under the Existing Zoning Alternative.

Geology and Soils

Similar to the proposed project, construction of the proposed 13-story tower on the Mexican Museum parcel adjacent to and west of the Aronson Building and renovations to the Aronson Building under the Existing Zoning Alternative, would require disturbance of soil underneath the existing 1978 annex on the west side of the Aronson Building and underneath the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. Like with the proposed project, under this alternative excavation to a depth of approximately 41 feet below the surface would occur underneath the site of the annex following its demolition and underneath the pedestrian walkway under this alternative. Unlike the proposed project, there would be no car elevator to the parking garage constructed on the north side of the Aronson Building under this alternative, and therefore would result in less excavation and grading activities than for the proposed project. Under the Existing Zoning Alternative, there would be approximately 7,962 cubic yards of soil would be excavated and removed, compared to 9,610 cubic yards under the proposed project (1,658 fewer cubit yards). As under the proposed project, adherence to building code requirements would reduce the potential impacts from groundshaking to less-than-significant levels under this alternative. As with the proposed project, under this alternative, soil would be exposed for a short time during demolition activities; however, compliance with the City's requirements for protection of exposed soils from erosion and runoff would ensure that there would be no substantial loss of topsoil. As under the proposed project, the foundation of the existing historic Aronson Building under this alternative would be evaluated prior to construction and upgraded as necessary, including, potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[6] The potential impacts of the Existing Zoning Alternative related to geology and soils impacts would be similar to, but slightly less than, those for the proposed project. These retrofit measures and adherence to the City's building code requirements would ensure that the alternative would have less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on seismic hazards, rupture, ground shaking or liquefaction, landslides, soil erosion, soil stability, soil expansiveness, and topography or unique geologic features, similar to the proposed project.

[6] Treadwell & Rollo, *Updated Preliminary Geotechnical Study, 706 Mission Street, San Francisco, California*, November 18, 2009 (hereinafter referred to as "*Updated Preliminary Geotechnical Study*"), pp. 6-7. A copy of this document is available for public review at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, as part of Case File No. 2008.1084E.

Hydrology and Water Quality

Similar to the proposed project, construction of the proposed 13-story tower on the Mexican Museum parcel and renovations to the Aronson Building under the Existing Zoning Alternative, would be completed in compliance with the City's Stormwater Management Ordinance (SMO). The SMO would require the project sponsor to develop a Stormwater Control Plan that locates and sizes source control and treatment Best Management Practices (BMPs) prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management under this alternative would meet the BMPs and the *San Francisco Stormwater Design Guidelines* of the San Francisco Public Utilities Commission, and the applicable LEED guidelines. With compliance with these ordinances and guidelines, and other applicable law, this alternative would not violate water quality standards, degrade water quality, affect groundwater supplies, substantially alter drainage patterns, substantially increase runoff, or substantially add to sources of polluted runoff. This alternative would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. The site is not within a flood hazard area, nor is it sited in a location that would expose people or structures to loss, injury or death as a result of a levee or dam failure or through inundation by seiche, tsunami or mudflow. The potential impacts related to hydrology and water quality under the Existing Zoning Alternative would be similar to those for the proposed project. Therefore, similar to the proposed project, there would be less-than-significant project-level hydrology and water quality impacts and no cumulatively considerable contribution to significant cumulative impacts on hydrology and water quality impacts under the Existing Zoning Alternative.

Hazards and Hazardous Materials

The construction of the proposed 13-story tower on the Mexican Museum parcel and renovations to the Aronson Building under the Existing Zoning Alternative would involve excavation similar to but less than that for the proposed project. As under the proposed project, this alternative would include excavation to a depth of approximately 41 feet below the surface underneath the site of the 1978 annex and underneath the pedestrian walkway west of the annex on the west side of the Aronson Building. Approximately 7,962 cubic yards of soil would be excavated and removed, compared to 9,610 cubic yards under the proposed project(1,658 fewer cubic yards). Construction dewatering would potentially be needed at the lower depths of excavation. As with the proposed project, there would be no excavation underneath the Mexican Museum parcel nor along the north side of the Aronson Building. Due to the potential for soil contamination that could be unearthed during excavation activities, this alternative would also require implementation of Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling

of Contaminated Soil, identified for the proposed project and described on pp. IV.P.14- IV.P.16. This mitigation measure describes a program of soil testing and management to be implemented by the project sponsor, as applicable.

Similar to the proposed project, this alternative would result in potential impacts related to the use of hazardous materials during project construction and operation, and potential inadvertent release of hazardous materials. The Existing Zoning Alternative would also follow State regulations for asbestos abatement and Cal OSHA Lead Construction Standard to ensure that any potential impacts due to asbestos and lead-based paint removal would be reduced to a less-than-significant level.

Because the contractors and owners must comply with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, this alternative would not have a substantial adverse effect on the public or the environment through the routine transport, use, or disposal of hazardous materials. The alternative, like the proposed project, would not have a substantial adverse effect on the public or the environment through the accidental release of hazardous materials into the environment, nor would it emit hazardous emissions or involve the transport, use or disposal of hazardous materials within one-quarter mile of an existing or proposed school.

As with the proposed project, the Existing Zoning Alternative is not within an airport land use plan or within 2 miles of an airport or a private airstrip, nor is the site listed as hazardous materials site.

Like the proposed project, the alternative would have to conform to the provisions of the Building and Fire Codes that require additional life safety protections for high-rise buildings. This alternative would not impair implementation of an emergency evacuation plan or expose people or structures to a risk involving fire (due to fire-related requirements for high-rise buildings).

The potential impacts related to hazards and hazardous materials under the Existing Zoning Alternative would be similar to those for the proposed project. Therefore, as with the proposed project, with compliance with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, and with implementation of Mitigation Measure M-HZ-2, the Existing Zoning Alternative, would have less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on the public or the environment related to hazards or hazardous materials.

Mineral and Energy Resources

Similar to the proposed project, construction of the proposed 13-story tower on the Mexican Museum parcel and renovations to the existing Aronson Building under the Existing Zoning

Alternative, would comply with the City's Building Code Requirements for Construction Projects. This alternative would also be required to achieve a minimum of Leadership in Energy and Environmental Design (LEED) Silver standards and would include sustainable energy-saving elements such as energy-saving windows. Similar to the proposed project, there would be no loss of availability of a known mineral resource or mineral recovery site, nor would there be activities which would result in the use of wasteful or large amounts of fuel, water or energy under this alternative. The potential impacts related to minerals and energy resources under the Existing Zoning Alternative would be similar to, but slightly less than, those of the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impact and no cumulatively considerable contribution to significant cumulative impacts related to mineral and energy resources under the Existing Zoning Alternative.

Agricultural and Forest Resources

Similar to the proposed project, the Existing Zoning Alternative would not convert farmland, conflict with agricultural or forest land zoning or a Williamson Act contract, nor result in a loss or conversion of forest land or farmland. The potential impacts related to agricultural and forest resources under the Existing Zoning Alternative would be the same as those for the proposed project. Therefore, as with the proposed project, there would be no impacts related to agricultural and forest resources under the Existing Zoning Alternative.

CONCLUSION

The Existing Zoning Alternative, like the proposed project, would result in a cumulatively considerable contribution to a significant and unavoidable cumulative shadow impact. While the reduced building height of the new tower under this alternative would not create net new shadow on Union Square, unlike the proposed project, shadow from the proposed tower could still reach some of the same public open spaces, privately owned publicly accessible open spaces, and public sidewalks that would be shadowed by the proposed project, and therefore may contribute to a cumulatively significant shadow impact. As with the proposed project (but generally to a lesser degree than with the proposed project), there would be less-than-significant impacts related to land use and land use planning, aesthetics, population and housing, transportation and circulation, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and mineral and energy resources. As with the proposed project (but generally to a lesser degree than with the proposed project), there would be less-than-significant impacts with mitigation related to cultural and paleontological resources, noise, air quality, and hazards and hazardous materials. Both the Existing Zoning Alternative and the proposed project would have no impact on agricultural and forest resources.

The Existing Zoning Alternative would achieve most of the basic project objectives. This alternative would complete the redevelopment of the YBC Redevelopment Project area, construction of residential housing near cultural amenities, and rehabilitation of the Aronson Building. Project objectives that may not be achieved by this alternative pertain to the development of a financially feasible museum facility and conveyance of the Jessie Square Garage to a private entity. According to the project sponsor, development under the Existing Zoning Alternative would not be able to sufficiently support the costs of providing the public benefits that are proposed under the project. The project sponsor has indicated that this alternative would not result in a financeable endowment for The Mexican Museum or create a development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel.

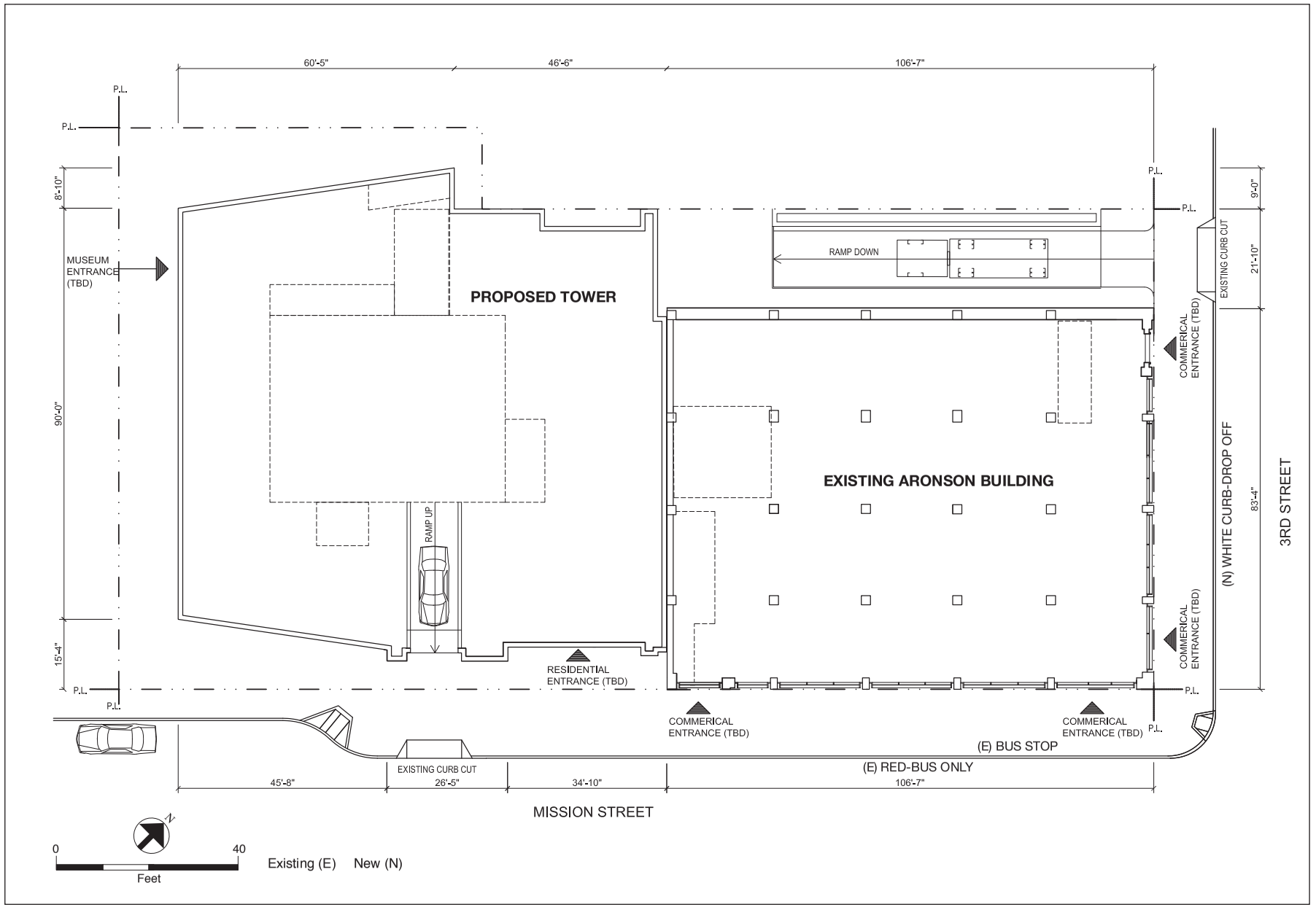
C. SEPARATE BUILDINGS ALTERNATIVE

DESCRIPTION

The purpose of the Separate Buildings Alternative is to minimize changes to the Aronson Building, while still meeting most of the Successor Agency and project sponsor objectives. Under this alternative, a new 47-story, 550-foot-tall tower would be constructed adjacent to and west of the Aronson Building. The Mexican Museum would occupy space on the first through fifth floors of the new tower; the building design and configuration of the proposed tower would be the same as under the proposed project. Unlike the proposed project, the new building would not be connected to the Aronson Building. The second through tenth floors of the Aronson Building would continue to be occupied by office uses, and the ground floor would be occupied by a restaurant/retail use (see Figure VII.3: Separate Buildings Alternative Ground Floor Plan, and Figure VII.4: Separate Buildings Alternative Section).

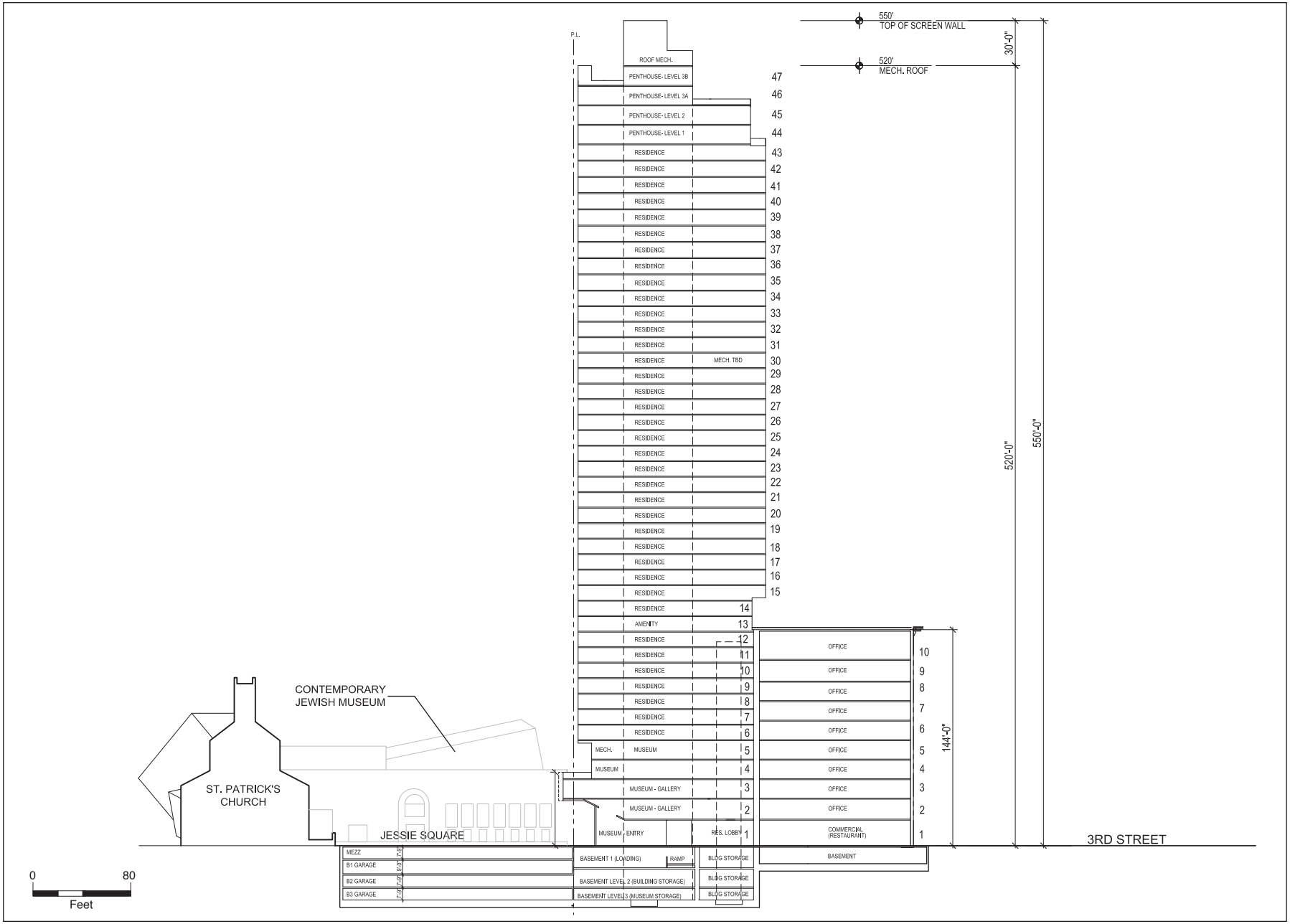
As with the proposed project, the non-historic annexes on the north and west sides of the Aronson Building, which were added in 1978, would be removed, because they are not part of the building's historic fabric. Because the annexes contain the elevators, stairs, and restrooms, a new building core would be constructed within the existing envelope of the Aronson Building under this alternative similar to the proposed project. Universal accessibility, electrical, and mechanical improvements would be made, and the Aronson Building would be seismically upgraded to address structural deficiencies that would result from the removal of the west-side annex.

Unlike the proposed project, the Separate Buildings Alternative would not undertake the full scope of rehabilitation and restoration of the Aronson Building; only repairs and improvements necessary to prevent further deterioration of the Aronson Building and/or to permit continued occupancy of the Aronson Building would be undertaken. This approach would not (1) replace missing features, (2) remove non-historic fabric that detracts from the character of the building



SOURCE: Handel Architects

FIGURE VII.3: SEPARATE BUILDINGS ALTERNATIVE GROUND FLOOR PLAN



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.4: SEPARATE BUILDINGS ALTERNATIVE SECTION

except for the 1978 annexes on the north and west façades, or (3) include other improvements that might restore the building's character. This alternative would include repairs that, if not addressed, would contribute to further deterioration of the Aronson Building. The exposed brick would be repaired and the openings from annex removal would be filled in with new brick that closely matches the existing material. There would be no new window openings on the north wall. Damaged or deteriorating terra cotta brick and ornamentation would be repaired. Damaged Colusa sandstone would be stabilized as opposed to fully repaired. On the ground floor, a storefront in keeping with what is known of the original storefront design would be reintroduced in place of the existing brick infill, similar to the proposed project.

The Separate Buildings Alternative would contain a total of approximately 704,280 gsf, with approximately 487,630 gsf of residential space, approximately 19,215 gsf of residential amenity space, approximately 78,840 gsf of office space, approximately 4,800 gsf of retail/restaurant space, and approximately 67,140 gsf of mechanical, storage, and utility space. This alternative would include approximately 46,655 gsf of space for The Mexican Museum. There would be up to 187 dwelling units, consisting of a mix of two- and three-bedroom units and a total of approximately 3,500 gsf of public open space. (See Table VII.1, pp. VII.3-VII.4, for a summary of the space allocated to the various uses under the Separate Buildings Alternative and the proposed project.) Unlike with the proposed project, there would be no residential flex option. There would also be no rooftop garden or solarium on the roof of the Aronson Building.

This alternative would include a down ramp along the north side of the Aronson Building from Third Street into the Jessie Square Garage. The existing curb cut on Third Street would be used to provide vehicular ingress to the existing Jessie Square Garage via a ramp (similar to Vehicular Access Variant 2). This access would be for use by project residents for below-grade valet access only. Self-park residential access would be via the exiting driveway into the Jessie Square Garage from Stevenson Street.

Under this alternative, delivery and service vehicles would enter and exit via the Stevenson Street driveway, although vans and small trucks would also be able to exit via the Mission Street driveway. Project-related delivery and service vehicles for residents would also be able to enter the Jessie Square Garage from Third Street via the existing curb cut and driveway and a new ramp into the garage.

As with the proposed project, the City, through the Oversight Board and the SFMTA Board of Directors, would convey the Jessie Square Garage to the project sponsor. Similar to the proposed project, the total number of parking spaces in the Jessie Square Garage would be increased from 442 to 470 under this alternative by incorporating existing space under the Contemporary Jewish Museum into the garage. The additional spaces would result from demolishing an existing wall to incorporate space currently being used for a storage area into the garage and restriping existing

parking spaces. Of the 470 parking spaces, 260 would be allocated to private use under this alternative. The remaining 210 parking spaces would continue to be available to the general public.

As with the proposed project, the Separate Buildings Alternative would remain within the Downtown Retail (C-3-R) District and would require a Zoning Map amendment to reclassify the existing 400-I Height and Bulk District. As with the proposed project, potential rezoning or the adoption of a Special Use District (SUD), to address floor area ratio (FAR) and height and bulk limits, would be required. There are several possible mechanisms to accomplish this. The sponsor could request rezoning to a Downtown Residential District (DTR). Alternatively, a Special Use District (SUD) overlay to the C-3-R could be established. It is also possible that an SUD could overlay the DTR and specify other provisions for the project site. Like the proposed project, this alternative would require a Section 309 Determination of Compliance and Request for Exceptions, or in the event rezoning to DTR is pursued, a Section 309.1 Determination of Compliance and Request for Exceptions. As with the proposed project, Conditional Use authorization may be required because this alternative would provide dwelling units in an amount that exceeds one unit for every 125 square feet of lot area. The vehicular access variants under consideration for the proposed project would not be applicable to this alternative.

ENVIRONMENTAL ANALYSIS

Land Use and Land Use Planning

Like the proposed project, the Separate Buildings Alternative would propose a mix of residential, museum, retail, and possibly office uses, and would be compatible with nearby residential, cultural, retail and office uses in the surrounding area. Under this alternative, the proposed 47-story tower would not comply with height and bulk requirements and FAR limits applicable to the project site. Therefore, like the proposed project, this alternative would require rezoning to a DTR, or SUD, or DTR with an SUD overlay. It would also remain in a 400-I Height and Bulk District. As with the proposed project, this alternative would require a Section 309 Determination of Compliance and Request for Exceptions, or in the event rezoning to DTR is pursued, a Section 309.1 Determination of Compliance and Request for Exceptions. While this alternative would conflict with land use plans and regulations, conflicts in and of themselves do not result in physical environmental impacts. The physical effects of a taller structure onsite have been analyzed for the proposed project under the topics in Section IV.A, Land Use and Land Use Planning, Section IV.B, Aesthetics, Section IV.D, Cultural and Paleontological Resources (Historic Architectural Resources), and Section IV.I, Wind and Shadow. Analyses for other environmental topics for this alternative are discussed below. Similar to the proposed project, this alternative would introduce the same uses to the project site, and it would not result in any

significant land use effects, would not physically divide an established community, nor would it have an adverse impact upon the existing character in the vicinity of the site. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on land use under the Separate Buildings Alternative.

Aesthetics

Under the Separate Buildings Alternative, a new 47-story tower would be independently constructed adjacent to the Aronson Building without structural or interior connections between the two buildings. The new tower under this alternative would have substantially the same project-level impacts and contribution to cumulative impacts as those described for the proposed project tower related to scenic vistas, scenic resources, and visual character and quality. Like the proposed project, the visually obtrusive non-historic north and west annexes to the Aronson Building would be removed. This alternative differs from the proposed project in that it does not call for new openings on the north façade of the Aronson Building. The beneficial impact on visual character and quality resulting from façade restoration of the Aronson Building under the proposed project would not occur under the Separate Buildings Alternative. Unlike under this proposed project, a ramp down to the Jessie Square Garage along the north side of the Aronson Building and accessed from Third Street would be constructed under this alternative. Although this alternative does not include the beneficial impacts of façade restoration, and the down ramp called for under this alternative would be less conducive to an inviting pedestrian realm compared to the grade level driveway under the proposed project, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on aesthetics under the Separate Buildings Alternative.

Population and Housing

Unlike the proposed project, there would be no residential flex option for space within the Aronson Building proposed under the Separate Buildings Alternative. Under this alternative, there would be up to 187 residential units resulting in approximately 426 residents introduced to the project site (approximately 4 fewer units and approximately 10 fewer residents than the proposed project's office flex option). As under the proposed project, this alternative would reduce the total number of existing employees on the site. Under this alternative, employment would be reduced from approximately 453 employees on the project site under existing conditions to approximately 377 employees (approximately 76 fewer employees than under existing conditions; approximately 59 more employees than under the proposed project). Similar to the proposed project, the increase in population would contribute a negligible percentage to anticipated citywide and region-wide growth, either directly or indirectly. As with the proposed project, this alternative would not result in any displacement of housing or residents. Due to

construction activities, existing retail employees and existing office employees currently located in the Aronson Building would likely need to vacate; however, similar to the proposed project, displacement of these existing workers who rent or own and live in their homes would likely remain in their current residences and either change their commute or change jobs in response to the changes proposed under this alternative. Thus, like the propose project, the Separate Buildings Alternative would not create new housing demand, since units that would be vacated or newly occupied would be part of the existing housing stock in the City and the region. Similar to the proposed project, this alternative would not create a demand for additional housing or for construction of new housing. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on population and housing under the Separate Buildings Alternative.

Cultural and Paleontological Resources

Archaeological and Paleontological Resources

Excavation and associated soils disturbance required for this alternative would be increased compared to that required for the proposed project, due to the ramp to the Jessie Square Garage along the north side of the Aronson Building. The excavation would result in approximately 1,085 cubic yards more soil removal than under the proposed project. However, Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, identified for the proposed project and described on pp. IV.D.24-IV.D.31, would also be applicable to this alternative to ensure that potential impacts on archaeological and paleontological resources, if present within the project site, would be less than significant. Therefore, as with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on archaeological and paleontological resources under the Separate Buildings Alternative.

Historic Architectural Resources

Under the Separate Buildings Alternative, a new 47-story tower would be independently constructed adjacent to the Aronson Building without structural or interior connections between the two buildings. The new tower under this alternative would have similar project-level and cumulative impacts as the proposed project tower on the historic Aronson Building, resulting in a less-than-significant impact on the Aronson Building and the historic districts of which it is a part, and nearby historic architectural resources. However, the less-than-significant impact to the Aronson Building from the construction of the new tower would be slightly reduced under this alternative. Under the proposed project, there would be interior connections for The Mexican

Museum at the first through third floors of both buildings; under the Separate Buildings Alternative, these interior connections between the new tower and the Aronson Building would not exist. Thus this alternative would reduce the amount of historic fabric removed for construction. Unlike the proposed project, this alternative would not call for new openings on the north façade of the Aronson Building. This alternative does not include the façade restoration of the Aronson Building as under the proposed project, or the beneficial effect that façade restoration would provide for the historic districts of which the Aronson Building is part. As with the proposed project, however, this alternative would not cause a significant adverse change in the significance of an historic architectural resource. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to historic architectural resources under the Existing Zoning Alternative.

Transportation and Circulation[7]

Under the Separate Buildings Alternative, as shown in Table VII.4: Net New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Separate Building Alternative, the existing curb cut on Third Street would be used to provide vehicular ingress to the existing Jessie Square Garage via a ramp. (Vehicular access via a ramp down into the garage would be similar to access conditions described in Variant 2.) This access would be for use by project residents only. Unlike the proposed project, this proposed vehicular access would not include a residential drop-off area on the north side of the Aronson Building. In addition, under this alternative, residential delivery and service vehicles would enter the Jessie Square Garage from Third Street via the existing curb cut and driveway and the new ramp into the garage. All other (i.e., non-residential) vehicles would enter the garage from Stevenson Street.

As with the proposed project, the City, through the Oversight Board and SFMTA Board of Directors, would convey the Jessie Square Garage to the project sponsor. The total number of parking spaces in the Jessie Square Garage would be increased from 442 to 470 under this alternative, similar to the proposed project and as described above. Of the 470 parking spaces, 260 would be allocated to private uses. The remaining 210 parking spaces would continue to be available to the general public.

Under the Separate Buildings Alternative, the number of weekday PM peak hour person and vehicle trips generated by the proposed uses would be greater than the proposed project (but less than Alternative D, Increased Residential Density), as shown in Table VII.4.

[7] LCW Consulting, 706 Mission Street Project – Alternatives Assessment, pp. 8-12.

Table VII.4: Net New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Separate Buildings Alternative

Proposed Project and Separate Buildings Alternative					
	Person Trips				Vehicle Trips
Project/Alternative	Auto	Transit	Walk/Other[a]	Total	
Proposed Project					
Residential Flex Option					
Proposed Project	179	99	273	551	142
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**170**	**94**	**254**	**518**	**137**
Office Flex Option					
Proposed Project	197	149	257	603	154
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**188**	**144**	**238**	**570**	**149**
Separate Buildings Alternative					
Alternative	203	163	256	622	159
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**194**	**158**	**237**	**589**	**154**

Note:
[a] "Other" mode includes bicycles, motorcycles, and taxis.

Source: SF Guidelines, 2000 U.S. Census, LCW Consulting, 2012

Traffic Impacts

Under the Separate Buildings Alternative, project travel demand would be slightly more, but similar to the proposed project. Vehicular access would be similar to the proposed project in that residents would access the site via Third Street, and therefore traffic impacts at the study intersections would be the same as for the proposed project. Therefore, for the Separate Buildings Alternative, the impact on traffic operations would be less than significant, similar to the proposed project.

While the Separate Buildings Alternative would not have a less-than-significant impact on the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications, Improvement Measure I-TR-B: "Garage Full" Sign on Third Street, and I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on pp. IV.E.38-IV.E.39, would also be applicable to this alternative to lessen its effect on traffic. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street. Improvement Measure I-TR-C would reduce the potential for queuing by vehicles accessing the project site by requiring monitoring of the project access driveway on

Third Street, and if a recurring queue occurs, the owner/operator of the proposed project shall employ abatement methods as needed to abate the queue.

Transit Impacts

As shown in Table VII.4, the Separate Buildings Alternative, transit trips generated by the alternative would be slightly more than, but similar to, the proposed project. During the PM peak hour, the Separate Buildings Alternative would generate 158 net-new transit trips, as compared with 94 net-new transit trips for the proposed project residential flex option, and 144 net-new transit trips for the proposed project office flex option, an increase of up to 14 transit trips. A local and regional transit screenline analysis was conducted for the Separate Buildings Alternative, and the addition of the net-new transit trips would not substantially affect the capacity utilization of the local and regional transit lines. Therefore, impacts on local and regional transit capacity utilization would also be less than significant with this alternative, similar to the proposed project.

Under the Separate Buildings Alternative, the residential driveway would be located on the west side of Third Street, the same as the proposed project. Similar to the proposed project, it is not anticipated that vehicles accessing the project driveway would conflict with Muni buses that use the west side lanes for non-revenue turnbacks of Market Street buses (i.e., buses do not pick up passengers). Therefore, impact of the Separate Buildings Alternative driveway on transit operations would be less than significant, similar to the proposed project.

Similar to the proposed project, the SFMTA would like the option available to install eyebolts in the renovated building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would not result in a significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to the Separate Buildings Alternative. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Bicycle Impacts

The Separate Buildings Alternative would not substantially change bicycle travel in the vicinity of the project site, and therefore, similar to the proposed project, impacts to bicyclists would be less than significant.

Pedestrian Impacts

Similar to the proposed project, the Separate Buildings Alternative would include a walkway from Third Street that would be used for residential access into the project. This walkway would be adjacent to and south of the proposed ramp. The Separate Buildings Alternative would generate a similar number of pedestrian trips as the proposed project office flex option. During the weekday PM peak hour, the new uses associated with the Separate Buildings Alternative would generate 395 pedestrian trips (as compared with 348 pedestrian trips generated by the proposed project residential flex option, and 382 pedestrian trips generated by the office flex option). Similar to the proposed project, the Separate Buildings Alternative's impacts on pedestrian LOS on sidewalks, corners, and crosswalks would be less than significant.

Similar to the proposed project, the Separate Buildings Alternative would construct a new driveway into the existing Jessie Square Garage on Third Street at the location of an existing curb cut. The new driveway would be for inbound residential vehicles only to access the below-grade valet drop-off area (located on Basement Level 2). Self-park access for residents would be via the existing driveway into the Jessie Square Garage on Stevenson Street.

As noted above, the Separate Buildings Alternative would generate a similar number of peak hour vehicle trips as the proposed project and the number of vehicles entering the Third Street driveway would be similar to that with the proposed project. Like with the proposed project, the project-related traffic using the Third Street driveway under this alternative would increase pedestrian vehicle conflict along the western Third Street sidewalk by adding a new location for such interactions in close proximity to an existing condition (i.e., the existing Westin Hotel passenger loading area vehicle entrance). Similar to the proposed project, this impact would be considered less than significant.

As under the proposed project, the number of existing items on the Third Street sidewalk at the project site, known as "pole clutter," is lowering the pedestrian quality, but not to the extent that the pole clutter or the additional project-related pedestrian trips would create a significant impact on pedestrian travel or access with this alternative. However, improvement measures identified for the proposed project would also be applicable to the Separate Buildings Alternative. Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, p. IV.E.46, would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site. Improvement Measure I-TR-F: Pedestrian Measures on Third Street, pp. IV.E.46-IV.E.47, would minimize pedestrian-vehicle conflicts on Third Street adjacent to the project by positioning a traffic control attendant at the project driveway and by ensuring adequate on-site queuing space. Improvement Measure I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, p. IV.E.47, would recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or

treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

Loading Impacts

Similar to the proposed project, the Separate Buildings Alternative would provide off-street loading on the project site. The Separate Buildings Alternative would provide two truck and four service loading vehicle spaces located within a loading area on the first basement level, with access via the Jessie Square Garage. Other than residential vehicles, which would enter from Third Street, delivery and service vehicles would enter and exit via the Stevenson Street driveway, although vans and small trucks would also be able to exit via the Mission Street driveway. Unlike the proposed project, trucks and delivery vehicles for residents under this alternative would also be able to access the loading spaces from the Third Street driveway. Similar to the proposed project, the Separate Buildings Alternative would provide off-street loading spaces, and the loading demand could be accommodated within the garage. Therefore, loading impacts under this alternative would be less than significant, as with the proposed project.

Similar to the proposed project, the Separate Buildings Alternative would extend the existing recessed passenger loading/unloading bay on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone to support the proposed museum and residential uses, as well as the current users of the existing passenger bay. In addition, similar to the proposed project, the project sponsor would request that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

Like the proposed project, this alternative would provide sufficient loading to meet the Planning Code requirement of three spaces and the demand for loading space on the project site, loading impacts would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to the Separate Buildings Alternative. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

Emergency Access Impacts

The Separate Buildings Alternative would not affect emergency vehicle access to the project site or vicinity or the configuration and capacity of adjacent travel lanes. Similar to the proposed

project, the Separate Buildings Alternative's impacts on emergency access would be less than significant.

Construction Impacts

Construction activities associated with the Separate Buildings Alternative would be similar to those described for the proposed project, and construction-related transportation impacts would be less than significant.

Improvement Measures I-TR-I through I-TR-L, identified for the proposed project and described on pp. IV.E.54-IV.E.55, would also be applicable to this alternative to reduce its less-than-significant transportation-related effects. Improvement Measures I-TR-I: Construction - Traffic Control Plan could require the contractor to prepare a traffic control plan for project construction to reduce potential conflicts between construction activities and pedestrians, transit, and autos. Under Improvement Measure I-TR-J: Construction – Carpools, the project sponsor could request the construction contractor to encourage carpooling and transit access to the site by construction workers. Improvement Measure I-TR-K: Construction - Truck Traffic Management could require the construction contractor to retain San Francisco Police Department traffic control officers during peak construction periods to minimize construction traffic impacts on Third Street and Mission Street and on pedestrian, transit and traffic operations. Improvement Measure I-TR-L: Construction - Update Adjacent Businesses and Residents could require the project sponsor to provide nearby residences and adjacent businesses with regularly updated information regarding project construction.

Parking Information

Under the Separate Buildings Alternative parking demand associated with the Separate Buildings Alternative would be less than that for the proposed project. The new uses associated with this Alternative would generate a demand of 281 parking spaces for the residential use and 132 parking spaces for the office, retail/restaurant and museum uses, for a total parking demand of 413 spaces. The total parking shortfall would include the residential shortfall of 66 spaces, plus the Jessie Square Garage public parking shortfall of 251 spaces, for a total shortfall of 317 spaces. The Separate Buildings Alternative shortfall of 317 parking spaces would be more than the proposed project residential flex option shortfall of 271 spaces, but less than the proposed project office flex option shortfall of 328 spaces.

To encourage transit use and reduce parking demand, Improvement Measure I-TR-M: Transportation Demand Management, identified for the proposed project and described on p. IV.E.59, is applicable to this alternative. Under this improvement measure, the project sponsor

could provide a transportation insert for the residential and non-residential move-in packet that would provide information on transit service.

Therefore, similar to the proposed project, under the Separate Buildings Alternative there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to traffic, transit, bicycle, pedestrian, loading, emergency access, construction, or parking.

2030 Cumulative Conditions

Under 2030 Cumulative conditions, vehicle delays would increase at the study intersections compared to existing conditions, and as under the proposed project, all seven study intersections would operate at LOS F conditions (as compared with two at LOS E or LOS F under Existing conditions). The number of weekday PM peak hour vehicle trips under the Separate Buildings Alternative would be slightly more than for the proposed project. Similar to the proposed project, the vehicle trips would represent less than cumulatively considerable contributions to intersections operating at LOS F under 2030 Cumulative conditions, based on consideration of the alternative's contribution to critical movements. Therefore cumulative traffic impacts at the study intersections would be less than significant under this alternative.

In summary, similar to the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to transportation under the Separate Buildings Alternative.

Noise

As with the proposed project, the Separate Buildings Alternative would result in demolition, excavation, and building construction activities, including restoration of the Aronson Building, as described above, that would occur over a period of approximately 36 months, the same duration as the construction period for the proposed project as under the proposed project. These activities would temporarily and intermittently increase noise in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. Similar to the proposed project, installation of drilled piles could also potentially occur as part of this alternative. Construction would be required to comply with the San Francisco Noise Ordinance. However, there may be times when construction noise would be greater than existing noise in the project vicinity. To ensure construction noise is reduced to the maximum amount feasible, Mitigation Measures M-NO-1a: Reduce Noise Levels During Construction and M-NO-1b: Noise-Reducing Techniques and Muffling Devices for Pile Installation, identified for the proposed project and described on pp. IV.F.21-IV.F.22, would also be required under this alternative. Mitigation Measure M-NO-1a would require the project contractor to use equipment with lower noise emissions and sound

controls or barriers where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a noise coordinator, and obtain noise variances when required, consistent with Police Code Section 2910. Mitigation Measure M-NO-1b would require the use of feasible noise-reducing techniques for installing piles such as pre-drilling pile holes where feasible. As with the proposed project, implementation of these measures under this alternative would decrease significant project-level impacts and cumulatively considerable contributions to cumulative construction noise impacts to a less-than-significant level.

Under the Separate Buildings Alternative, the construction activities would also temporarily generate groundborne vibration that could be considered an annoyance and potentially significant for vibration-related damage to nearby structures as under the proposed project. The mitigation measures identified for the proposed project regarding construction noise and vibration would also be applicable to this alternative. As under the proposed project, Mitigation Measure M-NO-2a: Minimize Vibration Levels During Construction, described on p. IV.F.26, would mitigate human annoyance caused by vibration under this alternative by providing a community liaison to respond to and address complaints, by requiring protective techniques (pre-drilling for piles), by limiting and avoiding impact pile driving, and by phasing activities where feasible. To protect neighboring vibration-sensitive structures, Mitigation Measure M-NO-2b: Pre-Construction Assessment to Protect Structures from Ground Vibration Associated with Pile Installation, described on pp. IV.F.26-IV.F.27, would require implementation of a pre-construction assessment and, if needed, monitoring to detect ground settlement or lateral movement of structures. Additionally, Mitigation Measure M-NO-2c: Vibration Monitoring and Management Plan, described on p. IV.F.27, would require assessment, monitoring, and management of vibration that could potentially damage the Aronson Building. As with the proposed project, with implementation of these mitigation measures, significant project-level groundborne vibration or groundborne noise levels impacts of this alternative would be reduced to less-than-significant levels. There would also be no cumulatively considerable contributions to significant cumulative groundborne vibration or groundborne noise levels under this alternative.

To address stationary operational noise sources, Mitigation Measure M-NO-3: Stationary Operational Noise Sources, identified for the proposed project and described on pp. IV.F.29-IV.F.30, would also be applicable to this alternative. This mitigation measure would require that all fixed stationary sources of noise be installed with noise reducing shields or constructed with some other adequate noise attenuating features. With implementation of this mitigation measure, operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the noise level limits of the San Francisco Noise Ordinance, and this impact would be mitigated to less-than-significant levels for this alternative, similar to the proposed project. As with the proposed project, significant project-level operational noise impacts and

cumulatively considerable contributions to significant cumulative operational noise impacts would be less than significant with mitigation incorporated.

In order to ensure that new residences and cultural uses would not be substantially affected by existing noise levels in the project vicinity, Improvement Measure I-NO-A: Residential Use/Cultural Component Plan Review by Qualified Acoustical Consultant, identified for the proposed project and described on p. IV.F.32, would also be applicable to the Separate Buildings Alternative. Under this improvement measure, a qualified acoustical consultant shall review plans for all new residential uses, cultural component areas (The Mexican Museum), and any other sensitive uses and provide recommendations regarding acoustical insulation or other equivalent measures to reduce interior noise levels to comply with applicable standards under Title 24. While this alternative would not result in significant project-level noise impacts or a cumulatively considerable contribution to significant cumulative impacts related to interior noise levels, the improvement measure is identified to further reduce the alternative's less-than-significant effect on noise sensitive uses at the site by specifying how this alternative would be in compliance with Title 24.

As with the proposed project, under the Separate Buildings Alternative project-level noise impacts on new residences and cultural uses would be less than significant with mitigation, and the Separate Buildings Alternative would not have a cumulatively considerable contribution to significant cumulative impacts related to noise.

Air Quality

Similar to the proposed project, the Separate Buildings Alternative would result in demolition, excavation, and building construction activities that would cause emissions of criteria air pollutants and toxic air contaminants that would affect local air quality during the construction schedule. Activities that create dust would be subject to the Construction Dust Control Ordinance. With construction activities, equipment, and phasing similar to the proposed project, this alternative would result in construction emissions of criteria air pollutants that would be below the applicable significance thresholds, as like the proposed project. Diesel-powered construction equipment would generate DPM, which is identified as a TAC and carcinogen by ARB, and as with the proposed project, the construction activity could expose off-site sensitive receptors to substantial pollutant concentrations exceeding the thresholds for community risk and hazards. Implementation of Mitigation Measure M-AQ-3: Construction Emissions Minimization, identified for the proposed project and described on pp. IV.G.34-IV.G.35, would also be applicable to this alternative. This mitigation measure, which calls for the development of a construction emissions minimization plan, would reduce construction emissions of TACS and therefore reduce the exposure of nearby sensitive receptors to these TACs during construction. With implementation of this mitigation measure, estimates of increased excess cancer risk to off-site

receptors as a result of exposure during construction of this alternative would be reduced to a level below the project-level threshold of significance.

Operational emissions for the Separate Buildings Alternative would be slightly more than, but similar to, those of the proposed project. Sources of operational emissions for this alternative would include a standby generator, mechanical systems, other area sources, and mobile sources. The emissions from mobile sources would be slightly greater than those of the proposed project because of the higher travel demand under this alternative. However, the increase in emissions due to mobile sources under this alternative would not be substantial. As with the proposed project, operational criteria air pollutant emissions would be below the thresholds of significance and would not violate any air quality standard or contribute substantially to a violation of a standard. The likelihood under this alternative to expose sensitive receptors to substantial pollutant concentrations would be similar to that of the proposed project, because new sensitive receptors (residential uses) would be located above the fourth floor and at a greater distance from ground-level stationary sources of emissions and major roadways. As with the proposed project, the potential to expose sensitive receptors to substantial pollutant concentrations under this alternative would be below the thresholds of significance.

As with the proposed project, this alternative would not conflict with or obstruct implementation of the applicable air quality plan, and this alternative would not expose a substantial number of people to objectionable odors.

Similar to the proposed project, project-level criteria air pollutant emissions at levels below the thresholds are not anticipated to contribute to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants for this alternative. As under the proposed project, construction or operation of this alternative in combination with other reasonably foreseeable projects in the project vicinity would not expose sensitive receptors to substantial pollutant concentrations. However, as with the proposed project, implementation of Mitigation Measure M-AQ-3: Construction Emissions Minimization would further reduce the alternative's less-than-significant contribution to significant cumulative impacts related to risk and hazards due to construction and operation.

As with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level air quality impacts and no cumulatively considerable contribution to significant cumulative air quality impacts under the Separate Buildings Alternative.

Greenhouse Gas Emissions

A variety of controls are in place to ensure that development in San Francisco would not impair the State's ability to meet Statewide GHG reduction targets outlined in AB 32, nor impact the

City's ability to meet San Francisco's local GHG reduction targets. Projects that are consistent with San Francisco's regulations would not contribute significantly to global climate change. Similar to the proposed project, the Separate Buildings Alternative would be required to comply with these regulations and requirements for GHG reduction strategies. Under the Separate Buildings Alternative, trip generation and the associated GHG emissions would be slightly more, but similar to the proposed project. As with the proposed project, this alternative would introduce a mixed-use infill development in a transit-oriented district, and likely would include Class I and Class II bicycle parking spaces, energy efficiency features beyond Title 24 requirements, low-impact stormwater management design, water-efficient landscaping, water-conserving interior design, convenient recycling and composting, street trees, and other features consistent with San Francisco's requirements. Implementation of local GHG reduction requirements would reduce a project's local GHG impacts. Therefore, as with the proposed project, the Separate Buildings Alternative would not result in a cumulatively considerable contribution to significant cumulative GHG impacts.

Wind and Shadow

Wind

Under the Separate Buildings Alternative, wind conditions on the project site would be substantially the same as under the proposed project, due to the fact that under this alternative the resulting structure would have the same building envelope as the proposed project. As under the proposed project, the southwest corner of the proposed tower under this alternative would be chamfered to help reduce wind speeds at the base of the tower. Implementation of this alternative would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would remain close to the existing speed of 12.6 mph, and there would be some areas in the project vicinity that would exceed the comfort criteria. However, exceeding the seating comfort criterion or the pedestrian comfort criterion is not a significant wind impact under CEQA. Although there would be localized changes throughout the project vicinity, the overall comfort wind conditions would remain substantially the same as existing conditions with implementation of this alternative. Improvement Measure I-WS-A, identified for the proposed project and described on p. IV.I.14, would also be applicable to this alternative to make wind conditions more comfortable for pedestrians or seated individuals. This improvement measure calls for the use of treatments such as hedges, trees and trellises to reduce winds in areas used for public seating.

As with the proposed project, the Separate Buildings Alternative would result in an overall net improvement over existing hazard wind conditions. Therefore, as with the proposed project, this alternative would have a less-than-significant wind impact, and no mitigation measures are necessary.

As with the proposed project, implementation of this alternative and reasonably foreseeable future projects would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would decrease from 12.6 to 12.5 mph, and there would be some areas in the project vicinity that would exceed the comfort criteria. Improvement Measure I-WS-A would also be applicable to this alternative's cumulative scenario. Regarding hazard wind conditions, implementation of this alternative and reasonably foreseeable future projects would result in an overall net improvement, and therefore, as with the proposed project, would have a less than cumulatively considerable contribution to significant cumulative wind impacts.

Like the proposed project, the Separate Buildings Alternative would have private roof terraces on the tower, but there would be no terrace on the roof of the Aronson Building. Improvement Measure I-WS-B, identified for the proposed project and described on p. IV.I.29, would be applicable to this alternative to make wind conditions more comfortable on these private roof terraces. This improvement measure calls for the project sponsor to implement building design considerations as well as wind control measures, which may include trellises, landscaping, tall parapets and/or wind screens.

Shadow

Under the Separate Buildings Alternative, shadow conditions on the project would be the same as under the proposed project. The proposed 47-story (550-foot-tall) tower would cast net new shadow on Union Square during the morning hours from early October through early November and from early February through early March. Like the proposed project, this alternative would cast 337,744 square foot hours (sfh) of net new shadow on Union Square, which would exceed the remaining shadow budget of 323,123 sfh of shadow for Union Square. In order for the Separate Buildings Alternative to be implemented, the quantitative standard allowing additional shadow on Union Square would have to be amended by the Planning Commission and the Recreation and Park Commission. Like the proposed project, the new shadow under this alternative would not impair the use of Union Square, and the project-level shadow impact would be less than significant.

As with the proposed project, the Separate Buildings Alternative would cast net new shadow on Jessie Square from the early morning until the early afternoon throughout the year. Some of the seating areas in Jessie Square would be shadowed by the proposed tower during the morning throughout the year, but these shadows would move off the seating areas by late morning. Additional shadows on the square during the morning would not substantially affect the use of Jessie Square. For these reasons, like the proposed project, this alternative would have less-than-significant shadow impacts on Jessie Square.

Effects of the Separate Buildings Alternative on other publicly accessible parks and open space would be the same as the proposed project, and would be less than significant.

As with the proposed project, in combination with past, present, and reasonably foreseeable future projects in the project vicinity including the development anticipated under the *Transit Center District Plan* (TCDP), this alternative would create new shadow in a manner that could substantially affect outdoor recreation facilities and open space. The cumulative shadow impact has been identified in the TCDP EIR and would be significant and unavoidable. As with the proposed project, this alternative would make a cumulatively considerable contribution to the significant and unavoidable cumulative shadow impact.

Recreation

Under this alternative, there would be up to approximately 187 residential units resulting in approximately 426 residents introduced to the project site (approximately 4 fewer units, approximately 10 fewer residents than the proposed project's office flex option). Like the proposed project, this alternative would reduce the total number of employees on the site (from approximately 453 under existing uses to approximately 382 under this alternative), but would increase in the number of employees compared to the proposed project (approximately 64 more than under the proposed project).

As under the proposed project, pursuant to Section 138(b) of the Planning Code, institutional uses, such as museums, are not required to provide open space. Under this alternative, open space would be provided in an approximately 3,500-gsf ground-level plaza. Unlike the proposed project, under this alternative there would be no roof terrace on the top of the Aronson Building. Planning Code Section 135 would require approximately 8,900 gsf of common open space, therefore the Separate Buildings Alternative would not satisfy the City's residential open space requirements, and an exception to Section 135 would be needed.

Under the Separate Buildings Alternative, the residential units, office, restaurant / retail space, and museum uses on the project site would result in an increase in residential and visitor population at the project site. Therefore there would be a slight increase in demand for and use of existing adjacent parks, recreational facilities, nearby City recreational facilities, as well as regional, State, and Federal recreational facilities under this alternative. Given the wide variety and quantity of existing nearby public parks, plazas, and recreational opportunities, including children-oriented park and recreation facilities, the anticipated increase in on-site population would not result in substantial physical deterioration or acceleration of deterioration of existing facilities, and there would be no significant impacts on existing public open space and recreational facilities, under this alternative, as with the proposed project. The potential impacts related to recreation would be similar to but slightly greater than those for the proposed project.

Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts to recreation under the Separate Buildings Alternative.

Utilities and Service Systems

Under the Separate Buildings Alternative, there would be four fewer residential units proposed than planned under the proposed project's office flex option. There would be 28 fewer residential units than under the proposed project's residential flex option. Under the Separate Buildings Alternative, there would be an increase in water demand, and an increase in wastewater flows; however, the increases would be slightly less than for the proposed project. Like the proposed project, this alternative would not result in the exceedance of any wastewater treatment requirements. Stormwater would be handled along the lines described for the proposed project. This alternative would not require or result in the construction of new or the expansion of existing water, wastewater treatment facilities, or stormwater drainage facilities, the construction of which could have significant environmental effects. Like the proposed project, construction of this alternative in combination with reasonably foreseeable projects in the project vicinity would not make a cumulatively considerable contribution to significant adverse cumulative impacts on the treatment of stormwater runoff or affect capacity of wastewater treatment facilities or stormwater drainage facilities. The project site would also continue to be adequately served by electricity, natural gas, and telecommunications. The potential impacts related to utilities and service systems would be similar to but slightly less than those for the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to utilities and service systems under the Separate Buildings Alternative.

Public Services

Like the proposed project, this alternative would reduce the total number of existing employees on the site (from 453 to 382), which is a slight increase in the number of retained employees (64 more) than under the proposed project. The proposed increase in residents and the proposed number of employees on the project site under this alternative would be similar to the proposed project, and would not adversely affect the ability for the site to be adequately served by existing police protection, fire protection and emergency medical services, public school facilities, and public libraries. The potential impacts related to public services would be similar to, but slightly less than, those for the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on public services under the Separate Buildings Alternative.

Biological Resources

Demolition and construction activities for the Separate Buildings Alternative would be similar to those for the proposed project. Under this alternative, the one existing tree (avocado tree) on the project site near the northwest corner of the Aronson Building and one street tree (magnolia tree) adjacent to the project site along Mission Street would be removed, as they would under the proposed project. As with the proposed project, the removal and replacement would be in accordance with the requirements specified by the Urban Forestry Ordinance.

These trees provide a very small amount of nesting habitat for resident urban-adapted and migratory songbirds and neither of them is considered to be rare, threatened, or endangered species; however, the existing row of trees (poplar trees) north of the project site could support active nests during the bird nesting season (March through August). While construction activities for this alternative may take place during the bird nesting season, potentially disturbing nesting birds in the poplar trees, compliance with Federal and State regulations for vegetation removal and preconstruction surveys would result in a less-than-significant impact to migratory birds, as is the case with the proposed project.

As under the proposed project, the Separate Buildings Alternative would also be required to comply with Planning Code Section 139, Standards for Bird-Safe Buildings, to reduce the potential for bird collisions. Under this alternative, there would be no habitat modification nor adverse effects on any species, no substantial adverse effect on protected wetlands, nor any interference with established wildlife migratory corridors or nursery sites. This alternative would not conflict with any local policies or ordinances protecting biological resources, and it would not conflict with any adopted conversation plan. The potential impacts of the Separate Buildings Alternative with respect to biological resources would be the same as or very similar to those for the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on biological resources under the Separate Buildings Alternative.

Geology and Soils

Similar to the proposed project, construction of the proposed 47-story building on the Mexican Museum parcel and renovations to the Aronson Building under the Separate Buildings Alternative would require disturbance of soil underneath the annex on the west side of the Aronson Building and underneath the 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. However, unlike the proposed project, this alternative would include excavation under the proposed vehicular ingress ramp from Third Street continuing along the north side of the Aronson Building that would lead into the existing Jessie Square Garage. Similar to the proposed project, excavation to a depth of approximately 41 feet below the surface would occur underneath the site

of the annex following its demolition and underneath the pedestrian walkway under this alternative. Construction of the proposed vehicular ingress ramp would measure about 20 feet wide by 102 feet long, and result in excavation to an excavation depth of about 29 feet. Approximately 10,695 total cubic yards of soil would be excavated and removed under this alternative, about 1,085 cubic yards more than the proposed project.

Under the Separate Buildings Alternative, adherence to Building Code requirements would reduce the potential impacts from groundshaking to less-than-significant levels, as it would for the proposed project. Soil would be exposed for a short time during demolition activities, as it would with the proposed project; however, compliance with the City's requirements for protection of exposed soils from erosion and runoff would ensure that there would be no substantial loss of topsoil. As under the proposed project, the foundation of the existing historic Aronson Building under this alternative would be evaluated prior to construction and upgraded as necessary, including, potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[8] The potential impacts of the Separate Buildings Alternative with respect to geology and soils impacts would be similar to those for the proposed project. These retrofit measures and adherence to the City's building code would ensure that the alternative would have less than significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to seismic hazards, rupture, ground shaking or liquefaction, landslides, soil erosion, soil stability, soil expansiveness, and topography or unique geologic features.

Hydrology and Water Quality

Similar to the proposed project, construction of the tower and renovations to the Aronson Building under the Separate Buildings Alternative would be completed in compliance with the City's SMO. The SMO would require the project sponsor to develop a Stormwater Control Plan that locates and sizes source control and treatment BMPs prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management under this alternative would meet the BMPs and the *San Francisco Stormwater Design Guidelines* of the San Francisco Public Utilities Commission, and the applicable LEED guidelines. With compliance with these ordinances and guidelines, and other applicable laws, this alternative would not violate water quality standards, degrade water quality, affect groundwater supplies, substantially alter drainage patterns, substantially increase runoff, or substantially add to sources of polluted runoff. This alternative would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As with the

[8] *Updated Preliminary Geotechnical Study*, pp. 6-7.

proposed project, the site is not within a flood hazard area, nor is it sited in a location that would expose people or structures to loss, injury or death as a result of a levee or dam failure or through inundation by seiche, tsunami or mudflow. The potential impacts related to hydrology and water quality under the Separate Buildings Alternative would be similar to those for the proposed project. Therefore, similar to the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative hydrology and water quality impacts under the Separate Buildings Alternative.

Hazards and Hazardous Materials

The construction of the proposed 47-story tower on the Mexican Museum parcel and renovations to the Aronson Building under the Separate Buildings Alternative would involve excavation similar to, but slightly greater than, the proposed project, as described above in "Geology and Soils." As with the proposed project, there would be no excavation underneath the Mexican Museum parcel. Due to the potential of soil contamination that could be unearthed during excavation activities, Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling of Contaminated Soil, identified for the proposed project and described in Section IV.P, Hazards and Hazardous Materials, pp. IV.P.14-IV.P.16, would also be applicable to this alternative. This mitigation measure describes a program of soil testing and management to be implemented by the project sponsor.

Similar to the proposed project, this alternative would result in potential impacts related to the use of hazardous materials during project construction and operation, and potential inadvertent release of hazardous materials. The Separate Buildings Alternative would also follow State regulations for asbestos abatement and Cal OSHA Lead Construction Standard to ensure that any potential impacts due to asbestos and lead-based paint removal would be reduced to a less-than-significant level.

Because the contractors and owners must comply with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, this alternative, like the proposed project, would not have a substantial adverse effect on the public or the environment through the routine transport, use, or disposal of hazardous materials. This alternative, like the proposed project, would not have a substantial adverse effect on the public or the environment through the accidental release of hazardous materials into the environment, nor would it emit hazardous emissions or involve the transport, use, or disposal of hazardous materials within one-quarter mile of an existing or proposed school.

As with the proposed project, the Separate Buildings Alternative would not be within an airport land use plan or within 2 miles of an airport or a private airstrip, nor would it be included as a hazardous materials site.

Like the proposed project, the alternative would have to conform to the provisions of the Building and Fire Codes that require additional life safety protections for high-rise buildings. This alternative would not impair implementation of an emergency evacuation plan or expose people or structures to a risk involving fire (due to fire-related requirements for high-rise buildings).

The potential impacts related to hazards and hazardous materials under the Separate Buildings Alternative would be similar to those for the proposed project. Therefore, as with the proposed project, compliance with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, and with implementation of Mitigation Measure M-HZ-2, the Separate Buildings Alternative would have less-than-significant project-level impacts (with mitigation incorporated) and no cumulatively considerable contribution to significant cumulative impacts on the public or the environment through the accidental release of hazardous materials into the environment.

Mineral and Energy Resources

Similar to the proposed project, construction of the proposed 47-story tower on the Mexican Museum parcel and renovations to the existing Aronson Building under the Separate Buildings Alternative would comply with the City's Building Code requirements and would be required to achieve a minimum of LEED Silver standards and would include sustainable energy-saving elements such as energy-saving windows. Similar to the proposed project, there would be no loss of availability of a known mineral resource or mineral recovery site, nor would there be activities which would result in the use of wasteful or large amounts of fuel, water or energy under this alternative. The potential impacts related to mineral and energy resources under the Separate Buildings Alternative would be similar to those for the proposed project. Therefore, as with the proposed project, there would be no significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on mineral and energy resources under the Separate Buildings Alternative.

Agricultural and Forest Resources

Similar to the proposed project, the Separate Buildings Alternative would not convert farmland, conflict with agricultural or forest land zoning or a Williamson Act contract, nor result in a loss or conversion of forest land or farmland. The potential impacts related to agricultural and forest resources under the Separate Buildings Alternative would be the same as those for the proposed project. Therefore, as with the proposed project, there would be no impacts related to agricultural and forest resources under the Separate Buildings Alternative.

CONCLUSION

The Separate Buildings Alternative would result in similar project-level and cumulative impacts as identified under the proposed project. Since the building design and configuration of the proposed tower would be the same as under the proposed project, this alternative would result in significant unavoidable cumulative shadow impact due to the creation of net new shadow on Union Square and some public open spaces, privately owned publicly accessible open spaces, and public sidewalks. As with the proposed project, there would be less-than-significant impacts related to land use and land use planning, aesthetics, population and housing, transportation and circulation, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and mineral and energy resources. As with the proposed, there would be less-than-significant impacts with mitigation related to cultural and paleontological resources, noise, air quality, and hazards and hazardous materials. Both the Separate Buildings Alternative and the proposed project would have no impact on agricultural and forest resources.

The Separate Buildings Alternative would achieve most of the basic project objectives. This alternative would complete the redevelopment of the YBC Redevelopment Project Area, provide for development of a museum facility and endowment for The Mexican Museum on City-owned property, create a development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel, provide housing near cultural amenities and attractions, transfer ownership of the Jessie Square Garage to a private entity, and provide temporary and permanent employment and contracting opportunities. This alternative would not undertake the full scope of rehabilitation and restoration of the Aronson Building; only repairs and improvements necessary to prevent further deterioration of the Aronson Building and/or to permit continued occupancy of the Aronson Building would be undertaken, and therefore this alternative would not meet the objective to rehabilitate the historically important Aronson Building and to incorporate it into the overall design and development program of the project.

D. INCREASED RESIDENTIAL DENSITY ALTERNATIVE

DESCRIPTION

The purpose of the Increased Residential Density Alternative is to provide more residential dwelling units within the same amount of floor area than would be provided by the proposed project by reducing the size of units from two- and three-bedroom units under the proposed project, to one- and two-bedroom units under the alternative. Under this alternative, a new 47-story, 550-foot-tall tower would be constructed adjacent to and west of the Aronson Building. As with the proposed project, the Aronson Building would be restored and rehabilitated, and the new tower would be connected to the Aronson Building. Some floors in the new building would be

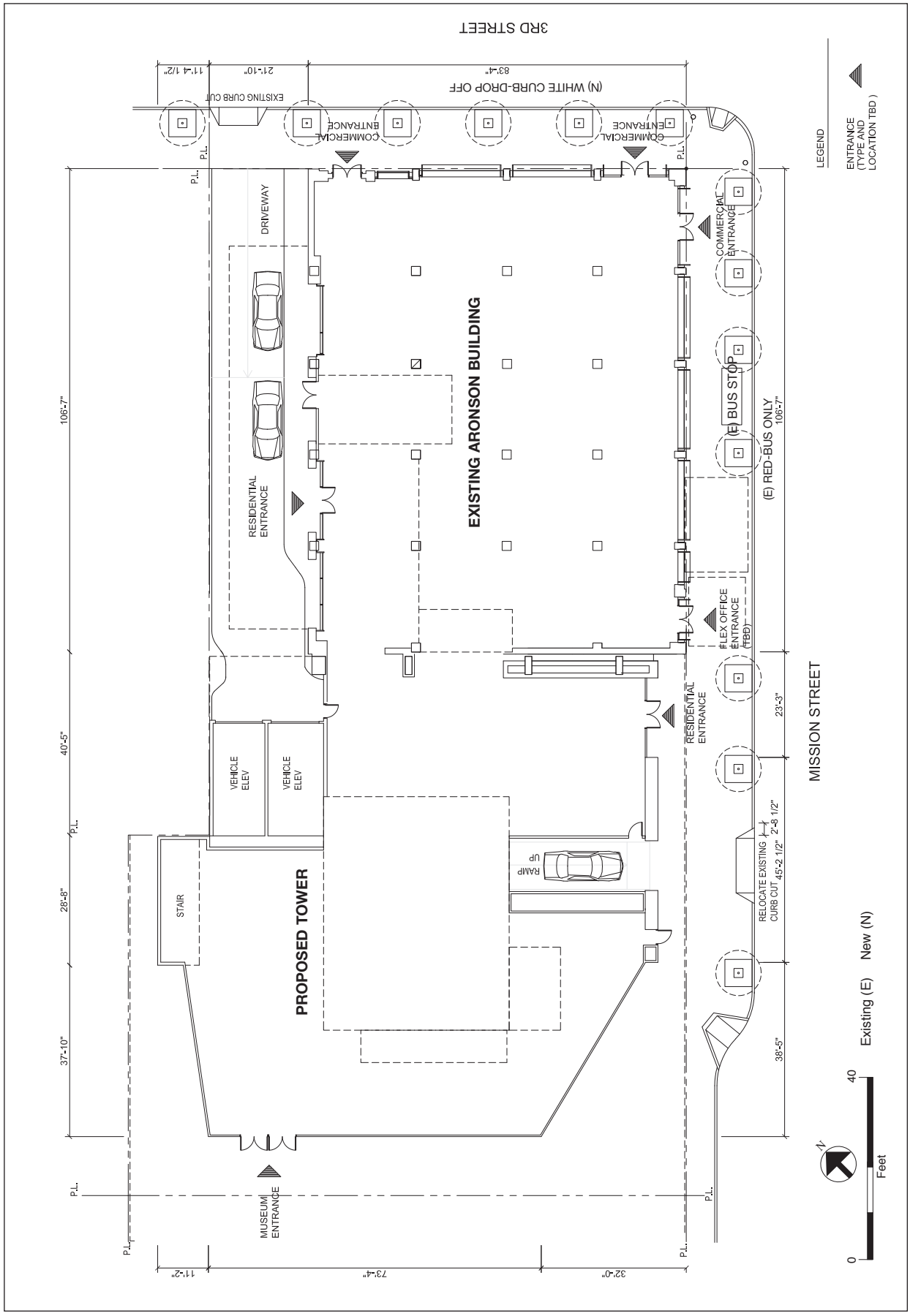
aligned with the existing floors in the Aronson Building, and some floors would be offset. (See Figure VII.5: Increased Residential Density Alternative Ground Floor Plan, and Figure VII.6: Increased Residential Density Alternative Section.) As with the proposed project, this alternative would provide an approximately 52,285-gsf cultural space for The Mexican Museum.

As with the proposed project, seven floors in the Aronson Building would be designated as flex space for the residential and office flex options. The fourth through tenth floors of the Aronson Building are currently occupied by approximately 61,320 gsf of office space, which would either be converted from office use to residential or remain as office use under this alternative. Under the residential flex option, these seven floors would be converted from office space up to 42 residential units, which would result in up to 325 residential units (110 more units than under the proposed project residential flex option) and no office space. Under the office flex option, these seven floors would continue to be used as office space, which would result in up to 283 residential units (92 more units than under the proposed project office flex option) and approximately 61,320 gsf of office space.

Under the residential flex option, this alternative would contain a total of approximately 710,525 gsf, with approximately 580,630 gsf of residential space, approximately 22,199 gsf of residential amenity space, approximately 4,800 gsf of retail/restaurant space, and approximately 50,611 gsf of loading, parking, mechanical, storage, and utility space, and space for the existing ramp that exits the existing Jessie Square Garage to Mission Street. There would be up to 325 dwelling units, consisting of a mix of one- and two-bedroom units, and a total of approximately 12,131 gsf of usable open space.

Under the office flex option, this alternative would contain a total of approximately 710,525 gsf, with approximately 519,310 gsf of residential space and approximately 61,320 gsf of office space. The square footages of residential amenity space, museum space, retail/restaurant space, storage space, building core, mechanical, and service space, and space for the existing ramp that exits the existing Jessie Square Garage on Mission Street would be the same as they are for the residential flex option described above. There would be up to 283 dwelling units, consisting of a mix of one- and two-bedroom units, and a total of approximately 12,131 gsf of usable open space. (See Table VII.1, pp. VII.3-VII.4, for a summary of the space allocated to the various uses under the Increased Density Alternative and the proposed project.)

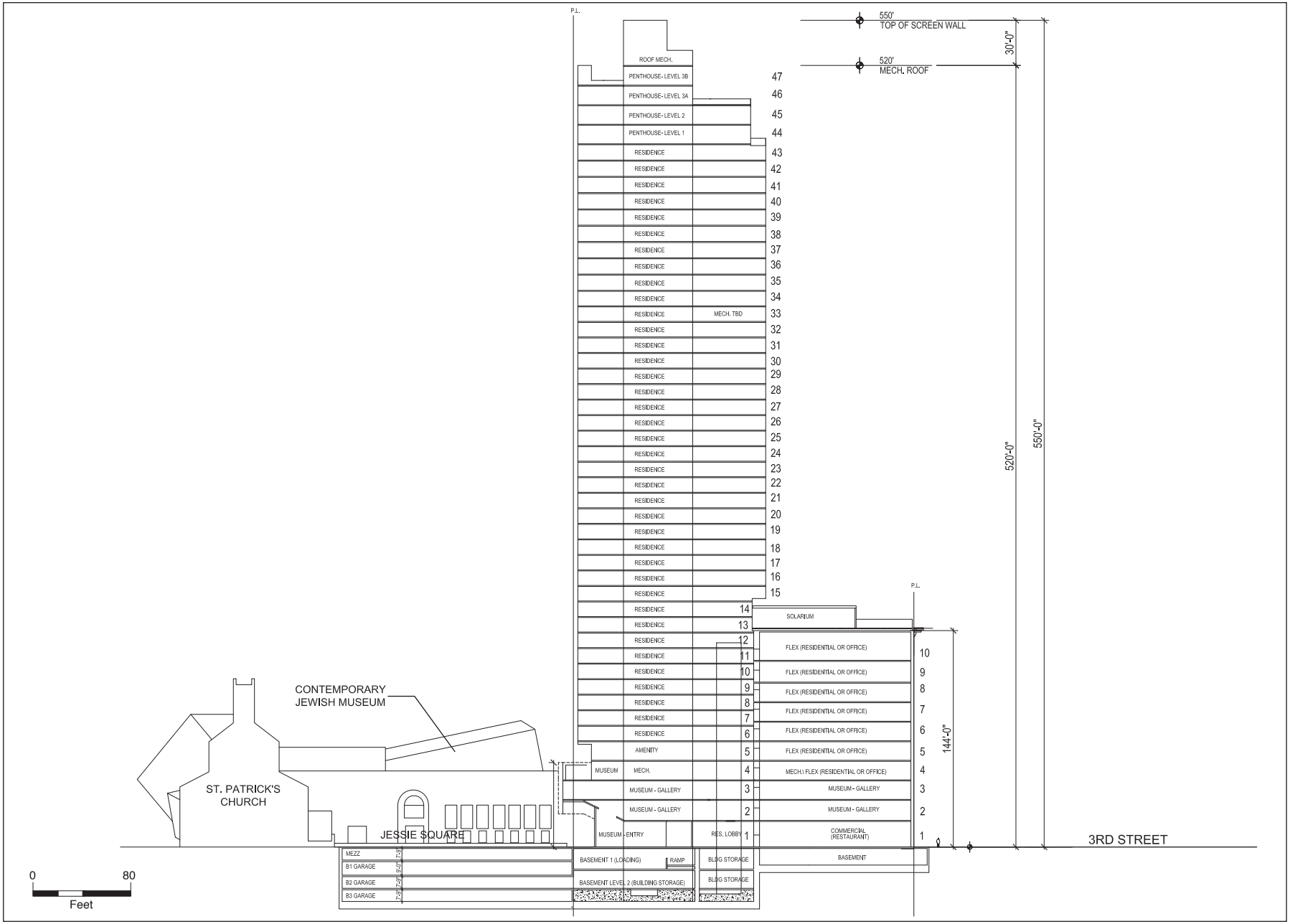
As with the proposed project, the Increased Residential Density Alternative would use the existing curb cut on Third Street to provide vehicular ingress to the existing Jessie Square Garage. This access would be for use by project residents only. As with the proposed project, this alternative would include a residential drop-off area (vehicular access would be the same as under the proposed project).



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.5: INCREASED RESIDENTIAL DENSITY ALTERNATIVE GROUND FLOOR PLAN



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.6: INCREASED RESIDENTIAL DENSITY ALTERNATIVE SECTION

As with the proposed project, the total number of parking spaces in the Jessie Square Garage would be increased from 442 to 470 by incorporating existing space under the Contemporary Jewish Museum into the garage. Of the 470 parking spaces, 260 would be allocated to private uses under this alternative. The remaining 210 parking spaces would continue to be available to the general public.

As with the proposed project, this alternative would remain within the Downtown Retail (C-3-R) District and would require a Zoning Map amendment to reclassify the existing 400-I Height and Bulk District. As with the proposed project, potential rezoning or the adoption of an SUD, to address floor area ratio (FAR) and height and bulk limits, would be required. There are several possible mechanisms to accomplish this. The sponsor could request rezoning to a Downtown Residential District (DTR). Alternatively, a Special Use District (SUD) overlay to the C-3-R could be established. It is also possible that an SUD could overlay the DTR and specify other provisions for the project site. Like the proposed project, this alternative would require a Section 309 Determination of Compliance and Request for Exceptions, or in the event rezoning to DTR is pursued, a Section 309.1 Determination of Compliance and Request for Exceptions. As with the proposed project, Conditional Use authorization may be required because this alternative would provide dwelling units in an amount that exceeds one unit for every 125 square feet of lot area.

As with the proposed project, the seven vehicular access variants could be applied to the Increased Residential Density Alternative. Environmental impacts identified and analyzed for each variant if it would applied to the proposed project in Chapter VI, Project Variants, would be the same under this alternative if each variant if it were applied to this alternative. Mitigation measures and improvement measures identified for the variants in Chapter VI, Project Variants would also be applicable to this alternative.

ENVIRONMENTAL ANALYSIS

Land Use and Land Use Planning

Like the proposed project, the Increased Residential Density Alternative would include a mix of residential, museum, retail/restaurant, and possibly office uses, and would be compatible with nearby residential, cultural, retail and office uses in the surrounding area. As with the proposed project, the proposed 550-foot-tall, 47-story proposed tower under the Increased Residential Density Alternative would not comply with height requirements. Therefore, like the proposed project, this alternative would require a height reclassification and rezoning to a DTR, or SUD, or DTR with an SUD overlay to address FAR at the site. It would also remain in a 400-I Height and Bulk District. As with the proposed project, this alternative would require a Section 309 Determination of Compliance and Request for Exceptions, or in the event rezoning to DTR is pursued, a Section 309.1 Determination of Compliance and Request for Exceptions. While this

alternative would conflict with existing land use plans and regulations, conflicts in and of themselves do not result in physical environmental impacts. The physical environmental impacts of this alternative are described below. Similar to the proposed project, this alternative would not result in any significant land use effects and would not physically divide an established community, nor would it have an adverse impact upon the existing character in the vicinity of the site. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on land use under the Increased Residential Density Alternative.

Aesthetics

The Increased Residential Density Alternative would have the same height, form, and massing of the structures as the proposed project. Therefore, impacts related to scenic vistas, scenic resources, visual character and quality, and light and glare would be the same as those described for the proposed project. As with the proposed project, this alternative would result in less-than-significant project-level aesthetic impacts and no cumulatively considerable contribution to significant cumulative impacts on aesthetics.

Population and Housing

Under the Increased Residential Density Alternative, there would be an increase in the number of residential units on the project site than under the proposed project. Up to 30 percent of the units would be one-bedroom units and remaining units would be two-bedroom units. Under the residential flex option, up to approximately 325 residential units resulting in approximately 741 residents, would be introduced to the project site (approximately 110 more units and approximately 251 more residents than under the proposed project). Under the office flex option, up to approximately 283 residential units, resulting in approximately 645 residents, would be introduced (92 more units and 210 more residents than under the proposed project). This increase would be not be substantial, as under the proposed project, as it would represent less than one-half percent (0.005) of the total citywide population growth from in 2030, and a negligible percentage (0.0005) of population growth in the nine-county San Francisco Bay Area region in 2030.

Under this alternative, the number of employees would be the same as under the proposed project. There would be up to approximately 100 anticipated employees under the residential flex option (approximately 353 fewer than under existing conditions) and up to approximately 318 employees under the office flex option (approximately 135 fewer than under existing conditions).

The increased residential population growth under the Increased Residential Density Alternative would contribute a negligible percentage to the anticipated citywide and region-wide growth in

population, either directly or indirectly. Like the proposed project, this alternative would not result in any displaced housing units or persons. This alternative under the residential flex option would displace the existing retail use employees and all the existing office employees currently located in the Aronson Building uses, the same as under the proposed project, but it is likely that these existing workers who rent or own and live in their homes would remain in their current residences and either change their commute or change jobs in response to the proposed alternative. Thus, like the proposed project, this alternative would not create new housing demand, since units that would be vacated or newly occupied by tenants would be part of the existing housing stock in the City and the region. As with the project, this alternative would decrease the total number of employees on site, and thus would not create a demand for additional housing or for construction of new housing. Therefore, as with the proposed project, under the Increased Residential Density Alternative there would be less-than-significant project-level impacts and no cumulatively considerable contributions to significant cumulative impacts related to population and housing.

Cultural and Paleontological Resources

Archaeological and Paleontological Resources

Excavation required for the Increased Residential Density Alterative would be the same as that required for the proposed project including consideration of variants. As such, potential impacts on archaeological and paleontological resources under this alternative would be the same as those described for the proposed project. Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, identified for the proposed project and discussed on pp. IV.D.24-IV.D.31, would also be applicable to this alternative to ensure that impacts on archaeological and paleontological resources, if present within the project site, would be less than significant (with mitigation incorporated) under this alternative. Therefore, like the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on archaeological and paleontological resources under the Increased Residential Density Alternative.

Historic Architectural Resources

Under the Increased Residential Density Alternative, impacts on historic architectural resources would be the same as those described for the proposed project. Therefore, as with the proposed project, this alternative would not cause a significant adverse change in the significance of an historic architectural resource or historic district. Therefore, as with the proposed project, there

would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on historic resources under this alternative.

Transportation and Circulation[9]

As with the proposed project, the Increased Residential Density Alternative would use the existing curb cut on Third Street to provide vehicular ingress to the existing Jessie Square Garage. This access would be for use by project residents only. As with the proposed project, this alternative would include a residential drop-off area with valet service (vehicular access would be the same as under the proposed project). This alternative could include the same seven vehicular access variants as analyzed for the proposed project. As with the proposed project, the total number of parking spaces in the Jessie Square Garage would be increased from 442 to 470 by incorporating existing space under the Contemporary Jewish Museum into the garage. Of the 470 parking spaces, 260 would be allocated to this alternative. The remaining 210 parking spaces would continue to be available to the general public.

Under the Increased Residential Density Alternative, the number of weekday PM peak hour person and vehicle trips generated by the proposed uses would be greater than the proposed project. See Table VII.5: Net-New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Increased Residential Density Alternative.

Traffic Impacts

As shown in Table VII.5, since the number of PM peak hour net-new vehicle trips generated with the Office Flex Option (184 vehicles – 99 inbound, 85 outbound) under the Increased Residential Density Alternative would be more than the number generated by the residential flex option (180 vehicles – 110 inbound, 70 outbound), and because the office flex option would add more vehicle trips to the intersection of Third and Stevenson Streets (because office and museum trips would not enter via the Third Street curb cut), the intersection LOS analysis was based on the Office Flex Option as the most conservative approach. The office flex option would result in 11 fewer inbound vehicles than the residential flex option, but 15 more outbound vehicles, and in total, four more vehicle trips than the residential flex option. The differences at the study intersections between the office flex option and the residential flex option would not materially change the intersection LOS analysis results. The determination that the differences at the study intersection between the office flex option and the residential flex option would not materially change the intersection LOS analysis results was based on a sensitivity analysis for the 15 additional outbound trips during the PM peak hour that would be associated with the office flex option.

[9] LCW Consulting, 706 Mission Street Project – Alternatives Assessment, pp. 12-19.

Table VII.5: Net-New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Increased Residential Density Alternative

Proposed Project and Increased Residential Density Alternative					
	Person Trips				Vehicle Trips
Project/Alternative	Auto	Transit	Walk/Other[a]	Total	
Proposed Project					
Residential Flex Option					
Proposed Project	179	99	273	551	142
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**170**	**94**	**254**	**518**	**137**
Office Flex Option					
Proposed Project	197	149	257	603	154
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**188**	**144**	**238**	**570**	**149**
Increased Residential Density Alternative					
Residential Flex Option					
Alternative	225	116	357	698	185
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net-New Trips	**216**	**111**	**338**	**665**	**180**
Office Flex Option					
Alternative	235	163	326	725	189
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**226**	**158**	**307**	**692**	**184**

Note:
[a] "Other" mode includes bicycles, motorcycles, and taxis.

Source: *SF Guidelines*, *2000 U.S. Census*, LCW Consulting, 2012

During the weekday PM peak hour, the Increased Residential Density Alternative would generate 99 inbound and 85 outbound vehicle trips, for a total of 184 net-new vehicle trips. Project-generated vehicle trips were assigned to and from the project residential driveway on Third Street or to the Jessie Square Garage driveways on Stevenson Street and Mission Street, based on whether the trip would be a residential, office, retail/restaurant, or museum trip, an inbound or outbound trip, and the projected directional distribution.

As under the proposed project, the project-generated office, retail/restaurant and museum vehicle trips were assigned to the Jessie Square public parking garage, with access via Stevenson Street, and egress via both Stevenson Street and Mission Street under this alternative. All residential vehicle-trips accessing the building were assumed to access the project parking via the Third Street driveway into the project site, although residents would also be able to access the parking garage via the existing ramp on Stevenson Street. Residents leaving the project site would pick up their vehicle within the project parking garage and exit via the Stevenson Street or Mission Street exits.

Of the 99 inbound vehicle trips, 87 vehicles were assigned to the Third Street project driveway and 12 vehicles were assigned to the Jessie Square Garage Stevenson Street driveway. Of the 85

outbound vehicle trips, 44 vehicles were assigned to the Jessie Square Garage Mission Street exit, and 41 vehicles to the Jessie Square Garage Stevenson Street driveway.

Table VII.6: Intersection LOS, Existing Plus Proposed Project and Existing Plus Increased Residential Density Conditions, Weekday PM Peak Hour, presents the existing plus Increased Residential Density Alternative intersection levels of service for the weekday PM peak hour. In general, the addition of the 184 project-generated net-new vehicle trips would result in small increases in the average delay per vehicle at the study intersections. All study intersections would continue to operate at the same LOS as under Existing conditions. The proposed project would generate fewer vehicles than the Increased Residential Density Alternative, and the increase in average vehicle delay at the study intersections would be less under the proposed project than under the Increased Residential Density Alternative.

Table VII.6: Intersection LOS, Existing Plus Proposed Project and Existing Plus Increased Residential Density Conditions, Weekday PM Peak Hour

Intersection	Existing		Existing plus Proposed Project		Existing plus Increased Residential Density Alternative	
	Delay (v/c)[a]	LOS	Delay (v/c)[a]	LOS	Delay (v/c)[a]	LOS
1. Third/Market	**56.2**	**E**	**63.2**	**E**	**65.1**	**E**
2. Third/Stevenson	12.1	B	12.7	B	12.8	B
3. Third/Mission	20.1	C	20.9	C	21.3	C
4. Third/Howard	36.1	D	40.4	D	41.8	D
5. Fourth/Market	**>80 (1.1)**	**F**	**>80 (1.1)**	**F**	**>80 (1.1)**	**F**
6. Fourth/Mission	41.8	D	45.6	D	46.6	D
7. Fourth/Howard	42.5	D	44.5	D	45.1	D

Note:
[a] Delay presented in seconds per vehicle. Intersections operating at LOS E or LOS F highlighted in **bold.** Volume-to-capacity (v/c) ratio presented for intersections operating at LOS F.

Source: LCW Consulting

The intersection of Third and Market Streets would continue to operate at LOS E, and the intersection of Fourth and Market Streets would continue to operate at LOS F. The contribution of the Increased Residential Density Alternative to the critical movements that operate poorly was reviewed to determine if the alternative's contribution would be significant.

- At the intersection of Third and Market Streets, which currently operates at LOS E conditions during the PM peak hour, the Increased Residential Density Alternative would add 41 vehicle trips during the PM peak hour. At this intersection, the northbound approach operates at LOS F conditions. The alternative would add 41 vehicle trips to the northbound movement, which represents 2.1 percent of the total PM peak hour northbound approach volume of 1,946 vehicles. The alternative's contribution to this poorly operating approach would not be considerable, and therefore the contribution to the overall intersection LOS E conditions would not be considered significant.

- At the intersection of Fourth and Market Streets, which currently operates at LOS F conditions during the PM peak hour, the Increased Residential Density Alternative would add 39 vehicle trips during the PM peak hour. At this intersection, the southbound through/left movement operates at LOS F conditions. The alternative would add 17 vehicle trips to the southbound through/left movement, which represent 1.3 percent of the PM peak hour southbound through/left volume of 1,305 vehicles. The alternative's contribution to this poorly-operating approach would not be considerable, and therefore, the contribution to the overall intersection LOS F conditions would not be considered significant.

The Increased Residential Density Alternative traffic would not represent a considerable contribution to the Existing plus Increased Residential Density Alternative intersection operating conditions, and therefore, the Increased Residential Density Alternative would not result in significant traffic impacts at these intersections, and impacts on traffic operations would be less than significant and no mitigation is required.

While the Increased Residential Density Alternative would not have a significant impact on the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications, I-TR-B: "Garage Full" Sign on Third Street, and I-TR-C: Monitoring and Abatement of Queues, identified for the proposed project and described on pp. IV.E.38- IV.E.39, would also be applicable to this alternative to lessen its effect on traffic. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street. Improvement Measure I-TR-C would reduce the potential for queuing by vehicles accessing the project site by requiring monitoring of the project access driveway on Third Street, and if a recurring queue occurs, the owner/operator of the proposed project shall employ abatement methods as needed to abate the queue.

Transit Impacts

Under the Increased Residential Density Alternative, the project-generated transit trips would be more than, but similar to, those with the proposed project. During the PM peak hour, the Increased Residential Density Alternative residential flex option would generate 111 net-new transit trips, as compared with 94 net-new transit trips for the proposed project residential flex option. The Increased Residential Density Alternative office flex option would generate 158 net-new transit trips, as compared with 144 net-new transit trips for the proposed project office flex option. A local and regional transit screenline analysis was conducted for the Increased Residential Density Alternative office flex option, and the addition of the net-new transit trips

would not substantially affect the capacity utilization of the local and regional transit lines. Therefore, similar to the proposed project, the impacts of the Increased Residential Density Alternative on local and regional transit capacity utilization would be less than significant.

Under the Increased Residential Density Alternative, the residential driveway would be located on the west side of Third Street, the same as the proposed project. Similar to the proposed project, it is not anticipated that vehicles accessing the project driveway would conflict with Muni buses that use the west side lanes for non-revenue turnbacks of Market Street buses (i.e., buses do not pick up passengers). Therefore, impact of the Increased Residential Density Alternative driveway on transit operations would be less than significant.

Similar to the proposed project, the SFMTA would like the option to install eyebolts in the renovated building to support its overhead wire system, as this can reduce "pole clutter" on Third and Mission Streets. While this issue would be a less-than-significant impact, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to the Increased Residential Density Alternative. Under this improvement measure, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Bicycle Impacts

The Increased Residential Density Alternative would not substantially change bicycle travel in the vicinity of the project site, and therefore, similar to the proposed project, impacts on bicyclists would be less than significant.

Pedestrian Impacts

The Increased Residential Density Alternative would generate more pedestrian trips than the proposed project. During the weekday PM peak hour, the new uses associated with the Increased Residential Density Alternative residential flex option would generate 449 pedestrian trips, while the Increased Residential Density Alternative office flex option would generate 465 pedestrian trips (as compared with 348 pedestrian trips generated by the proposed project residential flex option, and 382 pedestrian trips generated by the office flex option). While the number of pedestrian trips generated by the Increased Residential Density Alternative would be somewhat greater than the proposed project, similar to the proposed project, the Increased Residential Density Alternative impacts on pedestrian LOS on sidewalks, corners, and crosswalks would be less than significant.

Similar to the proposed project, the Increased Residential Density Alternative would include the construction of a driveway into the existing Jessie Square Garage from Third Street at the

location of an existing curb cut; valet service would be provided. Also similar to the proposed project, the new driveway would be for inbound residential vehicles only to access the ground floor valet drop-off area. Self-park access for residents would be via the existing driveway into the Jessie Square Garage on Stevenson Street.

As noted above, the Increased Residential Density Alternative would generate more peak hour vehicle trips than the proposed project and because this alternative would have more residential units than the proposed project, the number of vehicles entering the Third Street driveway would be greater than for the proposed project. Similar to the proposed project, the proposed driveway would increase pedestrian-vehicle conflict along the western Third Street sidewalk in close proximity to an existing substantial pedestrian-vehicle conflict area (i.e., the existing Westin passenger loading area vehicle entrance). Similar to the proposed project, this impact would be considered less than significant.

Improvement Measures I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, I-TR-F: Pedestrian Measures on Third Street and I-TR-G: Reduce Pedestrian-Vehicle Conflict Areas, identified for the proposed project and described on pp. IV.E.46-IV.E.47, would also be applicable to this alternative. Improvement Measure I-TR-E would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site. Improvement Measure I-TR-F would minimize pedestrian-vehicle conflicts on Third Street adjacent to the project by positioning a traffic control attendant at the project driveway and by ensuring adequate on-site queuing space. Improvement Measure I-TR-G would recommend that the project sponsor work with the Planning Department, SFMTA, DPW, and nearby property owners to assess the feasibility of measures or treatments to reduce pedestrian-vehicle conflicts along Third Street between Mission and Market Streets.

Loading Impacts

Similar to the proposed project, the Increased Residential Density Alternative would provide sufficient number of off-street loading spaces. The Increased Residential Density Alternative would provide two truck and four service loading vehicle spaces located within a loading area on the first basement level, with access via the Jessie Square Garage. Delivery and service vehicles would enter and exit via the Stevenson Street driveway, although vans and small trucks would also be able to exit via the Mission Street driveway. Similar to the proposed project, trucks and delivery vehicles would not access the loading spaces from the Third Street driveway. Since the Increased Residential Density Alternative would provide off-street loading spaces, and since the loading demand could be accommodated within the proposed number of loading spaces provided under this alternative, loading impacts under this alternative would be less than significant, as with the proposed project.

Similar to the proposed project, the Increased Residential Density Alternative would extend the existing recessed passenger loading/unloading bay on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone to support the proposed museum and residential uses, as well as the current users of the existing passenger bay. In addition, similar to the proposed project, the project sponsor would request that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

Like the proposed project, this alternative would provide sufficient loading to meet the Planning Code requirement of three spaces and the demand for loading space on the project site, and loading impacts would be less than significant. Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on p. IV.E.51, would also be applicable to the Increased Residential Density Alternative. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

Emergency Access Impacts

The Increased Residential Density Alternative would not affect emergency vehicle access to the project site or vicinity, and therefore would not change the configuration or capacity of adjacent travel lanes. Similar to the proposed project, the Increased Residential Density Alternative impacts on emergency access would be less than significant.

Construction Impacts

Construction activities associated with the Increased Residential Density Alternative would be similar to those described for the proposed project, and construction-related transportation impacts would be less than significant.

Improvement Measures I-TR-I through I-TR-L, identified for the proposed project and described on pp. IV.E.54-IV.E.55, would also be applicable to this alternative to further reduce its less-than-significant transportation-related effects. Improvement Measures I-TR-I: Construction - Traffic Control Plan would require the contractor to prepare a traffic control plan for project construction to reduce potential conflicts between construction activities and pedestrians, transit, and autos. Under Improvement Measure I-TR-J: Construction – Carpools, the project sponsor could request the construction contractor to encourage carpooling and transit access to the site by construction workers. Improvement Measure I-TR-K: Construction - Truck Traffic Management could require the construction contractor to retain San Francisco Police Department traffic control officers

during peak construction periods to minimize construction traffic impacts on Third Street and Mission Street, and on pedestrian, transit and traffic operations. Improvement Measure I-TR-L: Construction - Update Adjacent Businesses and Residents could require the project sponsor to provide nearby residences and adjacent businesses with regularly updated information regarding project construction.

Parking Information

Under the Increased Residential Density Alternative, parking supply conditions would be similar to those described for the proposed project. Parking demand associated with this alternative would be greater than demand generated by the residential flex option or the office flex option under the proposed project. The new uses associated with this alternative would generate a demand of 491 parking spaces for the residential flex option, and 504 parking spaces for the office flex option. Compared to the proposed parking supply, the Increased Residential Density Alternative would result in a shortfall of 395 spaces for the residential flex option and 432 spaces for the office flex option. The Increased Residential Density Alternative shortfall of between 395 and 432 parking spaces would be more than the proposed project shortfall of between 271 and 328 parking spaces, depending on the flex option chosen with the proposed project.

To encourage transit use and reduce parking demand, Improvement Measure I-TR-M: Transportation Demand Management, identified for the proposed project and described on p. IV.E.59, would also be applicable to this alternative. Under this improvement measure, the project sponsor could provide a transportation insert for the residential and non-residential move-in packet that would provide information on transit service.

2030 Cumulative Conditions

Under 2030 Cumulative conditions, the number of weekday PM peak hour vehicle trips generated by the Increased Residential Density Alternative would be more than for the proposed project. Vehicle delays under this alternative would increase at the study intersections over existing conditions, and, as under the proposed project, all seven study intersections would operate at LOS F conditions under this alternative (as compared with two at LOS E or LOS F under Existing conditions). The Increased Residential Density Alternative contribution to 2030 Cumulative traffic volumes at the critical movements was examined. Based on this assessment, it was determined that Increased Residential Density Alternative vehicle trips would represent less than cumulatively considerable contributions to intersections operating at LOS F and therefore, traffic impacts at the study intersections would be less than significant.

In summary, similar to the proposed project, under the Increased Residential Density Alternative project-level impacts on transportation would be less-than-significant and there would be no cumulatively considerable contribution to significant cumulative impacts related to transportation.

Noise

Similar to the proposed project, the Increased Residential Density Alternative would result in demolition, excavation, and building construction activities, including activities for the Aronson Building restoration, that would occur over a period of approximately 36 months, the same duration as the construction period for the proposed project. These activities would temporarily and intermittently increase noise in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. The installation of drilled piles could also potentially occur as part of this alternative as under the proposed project. Construction would be required to comply with the San Francisco Noise Ordinance. However, there may be times when construction noise would be greater than existing noise in the project vicinity, as under the proposed project. To ensure construction noise is reduced to the maximum amount feasible, Mitigation Measures M-NO-1a: Reduce Noise Levels During Construction and M-NO-1b: Noise-Reducing Techniques and Muffling Devices for Pile Installation, identified for the proposed project and described on pp. IV.F.21-IV.F.22, would also be required under this alternative. As identified, Mitigation Measure M-NO-1a would require the project contractor to use equipment with lower noise emissions and sound controls or barriers where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a noise coordinator, and obtain noise variances when required consistent with Police Code Section 2910. Mitigation Measure M-NO-1b would require the use of feasible noise-reducing techniques for installing piles such as pre-drilling pile holes where feasible. Implementation of these measures for this alternative, similar to the proposed project, would decrease significant noise impacts from project-level construction noise to a less-than-significant level. The combination of these measures also would cause this alternative to have a less than cumulatively considerable contribution to significant cumulative construction noise impacts.

Under the Increased Residential Density Alternative, the construction activities would also temporarily generate groundborne vibration that could be considered an annoyance and potentially significant for vibration-related damage to nearby structures. The mitigation measures identified for the proposed project regarding construction noise and vibration would also be applicable to this alternative. Mitigation Measure M-NO-2a: Minimize Vibration Levels During Construction, described on p. IV.F.26, would mitigate human annoyance caused by vibration by providing a community liaison to respond to and address complaints, by requiring protective techniques (pre-drilling for piles), by limiting and avoiding impact pile driving, and by phasing activities where feasible. To protect neighboring vibration-sensitive structures, Mitigation Measure M-NO-2b: Pre-Construction Assessment to Protect Structures from Ground Vibration

Associated with Pile Installation, pp. IV.F.26-IV.E.27, would require implementation of a pre-construction assessment and, if needed, monitoring to detect ground settlement or lateral movement of structures. Additionally, Mitigation Measure M-NO-2c: Vibration Monitoring and Management Plan, p. IV.F.27, would require assessment, monitoring, and management of vibration that could potentially damage the Aronson Building. As with the proposed project, with implementation of these mitigation measures, there would be less-than-significant project-level groundborne noise and groundborne vibration impacts and no cumulatively considerable contribution to a significant impact related to groundborne noise and groundborne vibration under this alternative.

To address stationary operational noise sources, Mitigation Measure M-NO-3: Stationary Operational Noise Sources, identified for the proposed project and described on pp. IV.F.29-IV.F.30, would also be applicable to this alternative. This mitigation measure would require that all fixed stationary sources of noise be installed with noise reducing shields or constructed with some other adequate noise attenuating features. Similar to the proposed project, with implementation of this mitigation measure, operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the noise level limits of the San Francisco Noise Ordinance, and this impact would be mitigated to less-than-significant levels for this alternative,. With implementation of this mitigation measure, there would be less-than-significant (with mitigation incorporated) project-level operational noise impacts and no cumulatively considerable contribution to significant cumulative operational impacts related to noise under this alternative.

In order to ensure that new residences and cultural uses would not be substantially affected by existing noise levels, implementation of Improvement Measure I-NO-A: Residential Use/Cultural Component Plan Review by Qualified Acoustical Consultant, identified for the proposed project and described on p. IV.F.32, would also be applicable to the Increased Residential Density Alternative. Under this improvement measure, a qualified acoustical consultant shall review plans for all new residential uses, cultural component areas (The Mexican Museum), and any other sensitive uses and provide recommendations regarding acoustical insulation or other equivalent measures to reduce interior noise levels to comply with applicable standards under Title 24. As under the proposed project, while this alternative would result in less-than-significant project-level noise impacts and no cumulatively considerable contribution to significant cumulative impacts related to interior noise levels, an improvement measure is identified to lessen the alternative's less-than-significant effect on noise-sensitive uses at the site by specifying how the alternative would be in compliance with Title 24 standards.

As with the proposed project, under the Increased Residential Density Alternative there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative noise impacts on new residences and cultural uses (with mitigation incorporated).

Air Quality

Similar to the proposed project, the Increased Residential Density Alternative would result in demolition, excavation, and building construction activities that would cause emissions of criteria air pollutants and toxic air contaminants that would affect local air quality during the construction schedule. Activities that create dust would be subject to the Construction Dust Control Ordinance. With construction activities, equipment, and phasing similar to the proposed project, this alternative would result in construction emissions of criteria air pollutants that would be below the applicable significance thresholds, as like the proposed project. Diesel-powered construction equipment would generate DPM, which is identified as a TAC and carcinogen by ARB, and as with the proposed project, the construction activity could expose off-site sensitive receptors to substantial pollutant concentrations exceeding the thresholds for community risk and hazards. As identified for the proposed project, Mitigation Measure M-AQ-3: Construction Emissions Minimization, identified for the proposed project and described on pp. IV.G.34-IV.G.35, would also be applicable to this alternative. This mitigation measure, which calls for the development of a construction emissions minimization plan, would reduce construction emissions of TACs and therefore reduce the exposure of nearby sensitive receptors to these TACs during construction. With implementation of this mitigation measure, estimates of increased excess cancer risk to off-site receptors as a result of exposure during construction of this alternative would be reduced to a level below the project-level threshold of significance.

Due to the greater number of residential units proposed under this alternative, operational emissions for the Increased Residential Density Alternative would be more than, but similar to, those of the proposed project. Sources of operational emissions for this alternative would include a standby generator, mechanical systems, other area sources, and mobile sources. The emissions from mobile sources would be greater than those of the proposed project because of the higher travel demand under this alternative. However, the increase in emissions due to mobile sources under this alternative would not be substantial. As with the proposed project, operational criteria air pollutant emissions would be below the thresholds of significance and would not violate any air quality standard or contribute substantially to a violation of a standard. Under this alternative, the likelihood that sensitive receptors would be exposed to substantial pollutant concentrations would be similar to that of the proposed project because new sensitive receptors (residential uses) would be located at the fourth floor or a similar distance from ground-level stationary sources of emissions and major roadways. As with the proposed project, the potential to expose sensitive receptors to substantial pollutant concentrations under this alternative would be below the thresholds of significance.

As with the proposed project, this alternative would not conflict with or obstruct implementation of the applicable air quality plan, and this alternative would not expose a substantial number of people to objectionable odors.

Similar to the proposed project, project-level criteria air pollutant emissions at levels below the thresholds are not anticipated to contribute to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants for this alternative. As under the proposed project, construction or operation of this alternative in combination with other reasonably foreseeable projects in the project vicinity would not expose sensitive receptors to substantial pollutant concentrations. However, as with the proposed project, implementation of Mitigation Measure M-AQ-3: Construction Emissions Minimization would further reduce the alternative's less-than-significant contribution to significant cumulative impacts related to risk and hazards due to construction and operation.

As with the proposed project, there would be less-than-significant project-level air quality impacts and no cumulatively considerable contribution to significant cumulative air quality impacts (with mitigation incorporated) under the Increased Residential Density Alternative.

Greenhouse Gas Emissions

A variety of controls are in place to ensure that development in San Francisco would not impair the State's ability to meet Statewide GHG reduction targets outlined in AB 32, nor impact the City's ability to meet San Francisco's local GHG reduction targets. Projects that are consistent with San Francisco's regulations would not contribute significantly to global climate change. Similar to the proposed project, the Increased Residential Density Alternative would be required to comply with these regulations and requirements for GHG reduction strategies. Under the Increased Residential Density Alternative, trip generation and the associated GHG emissions would be greater than, but similar to, the proposed project. As with the proposed project, this alternative would introduce a mixed-use infill development in a transit-oriented district, and likely would include Class I and Class II bicycle parking spaces, energy efficiency features beyond Title 24 requirements, low-impact stormwater management design, water-efficient landscaping, water-conserving interior design, convenient recycling and composting, street trees, and other features consistent with San Francisco's requirements. Implementation of local GHG reduction requirements would substantially reduce a project's local GHG impacts. Therefore, as with the proposed project, the Increased Residential Density Alternative would have a less than cumulatively considerable contribution to significant cumulative GHG impacts.

Wind and Shadow

Wind

Since the Increased Density Alternative would have the same height and massing as the proposed project, implementation of this alternative would result in the same wind conditions that would be expected with implementation of the proposed project. Under the Increased Residential Density

Alternative, wind conditions on the project site would be the same as under the proposed project. Implementation of this alternative would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would increase from 12.6 to 12.7 mph, and there would be some areas in the project vicinity that would exceed the comfort criteria. However, exceeding the seating comfort criterion or the pedestrian comfort criterion is not a significant wind impact under CEQA. Although there would be localized changes throughout the project vicinity, the overall comfort wind conditions would remain substantially the same with implementation of the proposed project. Improvement Measure I-WS-A, identified for the proposed project and discussed on p. IV.I.14, would also be applicable to this alternative to make wind conditions more comfortable for pedestrians or seated individuals. This improvement measure calls for the use of treatments such as hedges, trees and trellises to reduce winds in areas used for public seating.

There are four locations in the project site vicinity that have existing wind hazard exceedances. Implementation of this alternative would eliminate one existing hazard exceedance, improve wind conditions substantially at one location with an existing hazard exceedance, and make wind conditions slightly worse at two locations with existing hazard exceedances. As with the proposed project, the Increased Residential Density Alternative would result in an overall net improvement in hazard wind conditions; the duration of hazardous wind at the four locations would decrease by about 90 hours per year. Therefore, this alternative would have a less-than-significant project-level wind impact, and no mitigation measures are necessary.

As with the proposed project, implementation of this alternative and reasonably foreseeable future projects would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would decrease from 12.6 to 12.5 mph, and there would be some areas in the project vicinity that would exceed the comfort criteria. Improvement Measure I-WS-A would be applicable to this alternative's cumulative scenario.

Regarding hazard wind conditions, implementation of this alternative and reasonably foreseeable future projects would result in an overall net improvement, and therefore this alternative would not result in a cumulatively considerable contribution to significant cumulative wind impacts.

Like the proposed project, the Increased Residential Density Alternative would have private roof terraces on the tower and a terrace on the roof of the Aronson Building. Improvement Measure I-WS-B, identified for the proposed project and described on p. IV.I.29, would be applicable to this alternative to make wind conditions more comfortable on these roof terraces. This improvement measure calls for the project sponsor to implement building design considerations as well as wind control measures, which may include trellises, landscaping, tall parapets and/or wind screens.

Shadow

Under the Increased Residential Alternative, shadow conditions from the alternative would be the same as under the proposed project. The proposed 47-story (550-foot-tall) tower would cast net new shadow on Union Square during the morning hours from early October through early November and from early February through early March. Like the proposed project, this alternative would cast 337,744 sfh of net new shadow on Union Square, which would exceed the remaining shadow budget of 323,123 sfh of shadow for Union Square. In order for the Increased Residential Alternative to be implemented, the quantitative standard allowing additional shadow on Union Square would have to be amended by the Planning Commission and the Recreation and Park Commission. As with the proposed project, the new project shadow would not impair the use and enjoyment of any public recreation or open space and would not be considered a significant project-level impact.

Effects of the Increased Residential Density Alternative on other publicly accessible parks and open space would be the same as the proposed project, resulting in less-than-significant impacts.

As with the proposed project, the Increased Residential Density Alternative would cast net new shadow on Jessie Square from the early morning until the early afternoon throughout the year. Some of the seating areas in Jessie Square would be shadowed by the proposed tower during the morning throughout the year, but these shadows would move off the seating areas by late morning. Additional shadows on the square during the morning would not substantially affect the use of the square. For these reasons, like the proposed project, this alternative would have less-than-significant shadow impacts on Jessie Square.

As with the proposed project, in combination with past, present, and reasonably foreseeable future projects in the project vicinity including the development anticipated by the *Transit Center District Plan* (TCDP), this alternative would create new shadow on public recreation or open space in a manner that could substantially affect outdoor recreation facilities or other public areas. Net new shadow would affect these open spaces at additional times of the year and additional times of the day. Therefore, the cumulative shadow impact as identified in the TCDP EIR would be significant and unavoidable. As with the proposed project, this alternative would result in a cumulatively considerable contribution to the significant cumulative shadow impact identified in the TCDP.

Recreation

Under the residential flex option of the Increased Residential Density Alternative, up to approximately 325 residential units resulting in approximately 741 residents, would be introduced to the project site (approximately 110 more units and approximately 251 more residents than

under the proposed project). Under the office option for the Increased Residential Density Alternative, up to approximately 283 residential units, resulting in approximately 645 residents, would be introduced (92 more units and 210 more residents than under the proposed project). Under either flex option, approximately 14,484 gsf of common and private open space (the same amount of open space as under the proposed project) would be provided as a mixture of a ground-level plaza and private roof terraces.

Under this alternative, the number of employees would be the same as under the proposed project. There would be up to approximately 100 anticipated employees under the residential flex option (approximately 353 fewer than under existing conditions) and up to approximately 318 employees under the office flex option (approximately 135 fewer than under existing conditions).

Similar to the proposed project, given the wide variety and quantity of existing nearby public parks, plazas, and recreational opportunities, including children-oriented park and recreation facilities, the anticipated increase in on-site population would not result in substantial physical deterioration or acceleration of deterioration of existing facilities under the Increased Residential Density Alternative, and there would be less-than-significant impacts on existing public open space and recreational facilities. Due to the increased number of residents under this alternative, the impacts related to recreation would be slightly more than under the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on recreation under the Increased Residential Density Alternative.

Utilities and Service Systems

Under the Increased Residential Density Alternative, there would be up to 110 more residential units proposed under the residential flex option than under the proposed project, and 92 more units than under the proposed project's office flex option. The amount of floor area devoted to residential units would be the same. Under the Increased Residential Density Alternative, there would be an increase in water demand and an increase in wastewater flows; these increases would be similar to those for the proposed project. Like the proposed project, this alternative would not result in the exceedance of any wastewater treatment requirements. Stormwater would be handled as described for the proposed project. This alternative would not require or result in the construction of new or the expansion of existing water wastewater treatment facilities, or stormwater drainage facilities, the construction of which could have significant environmental effects. Like the proposed project, construction of the alternative, in combination with reasonably foreseeable projects, would not have a significant project-level impact or cumulatively considerable contribution to significant cumulative impacts on the treatment of stormwater runoff or affect capacity of wastewater treatment facilities or stormwater drainage facilities. The project site would continue to be adequately served by electricity, natural gas, and telecommunications.

Due to the increased number of residents under this alternative, the impacts related to utilities and service systems would be slightly more than under the proposed project. However, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts to utilities and service systems under the Increased Residential Density Alternative.

Public Services

The Increased Residential Density Alternative would introduce up to 251 additional residents and the same number of employees to the site compared to the proposed project. Similar to the proposed project, the proposed increase in residents and the proposed number of employees on the project site under the Increased Residential Density Alternative would not adversely affect the ability of existing police protection, fire protection and emergency medical services, public school facilities, and public libraries to adequately serve the site. Due to the increased number of residents under this alternative, the impacts related to public services would be slightly more than under the proposed project. However, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts to public services under the Increased Residential Density Alternative.

Biological Resources

Demolition and construction activities for the Increased Residential Density Alternative would be similar to those for the proposed project. Under this alternative, the one existing significant tree (avocado tree) on the project site near the northwest corner of the Aronson Building and one street tree (magnolia tree) adjacent to the project site along Mission Street would be removed, as they would under the proposed project. As with the proposed project, the removal and replacement would be in accordance with the requirements specified by the Urban Forestry Ordinance.

The trees provide a very small amount of nesting habitat for resident urban-adapted and migratory songbirds and neither of them is considered to be rare, threatened, or endangered species; however, the existing row of trees (poplar trees) north of the project site could support active nests during the bird nesting season (March through August). While construction activities for this alternative may take place during the bird nesting season, potentially disturbing nesting birds in the poplar trees, compliance with Federal and State regulations for vegetation removal and preconstruction surveys would result in a less-than-significant impact to migratory birds, as is the case with the proposed project.

As under the proposed project, the Increased Residential Density Alternative would also be required to comply with Planning Code Section 139, Standards for Bird-Safe Buildings, to reduce

the potential for bird collisions. Under this alternative, there would be no habitat modification nor adverse effects on any species, no substantial adverse effect on protected wetlands, nor any interference with established wildlife migratory corridors or nursery sites. This alternative would not conflict with any local policies or ordinances protecting biological resources, and it would not conflict with any adopted conservation plan. The potential impacts of the Increased Residential Density Alternative with respect to biological resources would be the same those for the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts to biological resources under the Increased Residential Density Alternative.

Geology and Soils

As under the proposed project, construction of the 47-story building on the Mexican Museum parcel and renovations to the Aronson Building under Increased Residential Density Alternative would require disturbance of soil underneath the annex on the west side of the Aronson Building and underneath the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. As with the proposed project, excavation to a depth of approximately 41 feet below the surface would occur underneath the site of the annex following its demolition and underneath the pedestrian walkway under this alternative. Approximately 9,610 cubic yards of soil would be excavated and removed, as under the proposed project. As under the proposed project, adherence to Building Code requirements would reduce the potential impacts from groundshaking to less-than-significant levels under this alternative. As with the proposed project, under this alternative, soil would be exposed for a short time during demolition activities; however, compliance with the City's requirements for protection of exposed soils from erosion and runoff would ensure that there would be no substantial loss of topsoil. As under the proposed project, the foundation of the existing historic Aronson Building under this alternative would be evaluated prior to construction and upgraded as necessary, including, potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear elements or new footings.[10] The potential impacts of the Increased Residential Density Alternative with respect to geology and soils impacts would be the same as those for the proposed project. These retrofit measures would and adherence to the City's building code would ensure that the alternative would have less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to seismic hazards, rupture, ground shaking or liquefaction, landslides, soil erosion, soil stability, soil expansiveness, and topography or unique geologic features, similar to the proposed project.

[10] *Updated Preliminary Geotechnical Study*, pp. 6-7.

Hydrology and Water Quality

As with the proposed project, construction of the proposed 47-story building on the Mexican Museum parcel and renovations to the Aronson Building under the Increased Residential Density Alternative, would be completed in compliance with the City's SMO. The SMO would require the project sponsor to develop a Stormwater Control Plan that locates and sizes source control and treatment BMPs prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management under this alternative would meet the BMPs and the *San Francisco Stormwater Design Guidelines* of the San Francisco Public Utilities Commission, and the applicable LEED guidelines. With compliance with these ordinances and guidelines, and other applicable law, this alternative would not violate water quality standards, degrade water quality, affect groundwater supplies, substantially alter drainage patterns, substantially increase runoff, or substantially add to sources of polluted runoff. This alternative would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. The site is not within a flood hazard area, nor is it sited in a location that would expose people or structures to loss, injury or death as a result of a levee or dam failure or through inundation by seiche, tsunami or mudflow. The potential impacts of the Increased Residential Density Alternative with respect to hydrology and water quality would be the same as those for the proposed project. Therefore, similar to the proposed project, there would be less-than-significant adverse project-level impacts and no cumulatively considerable contribution to significant cumulative hydrology and water quality impacts under the Increased Residential Density Alternative.

Hazards and Hazardous Materials

The construction of the proposed 47-story building on the Mexican Museum parcel and renovations to the Aronson Building under the Increased Residential Density Alternative would involve excavation that would be the same as that for the proposed project. As under the proposed project, excavation to a depth of approximately 41 feet below the surface would occur beneath the area currently occupied by the 1978 annex and adjacent site corridor on the west side of the Aronson Building. Excavation would occur beneath the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. Due to the potential of soil contamination that could be unearthed during excavation activities, Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling of Contaminated Soil, identified for the proposed project and described on pp. IV.P.14-IV.P.16, would also be applicable to this alternative. This mitigation measure describes a program of soil testing and management to be implemented by the project sponsor, as applicable.

As with the proposed project, this alternative would result in potential impacts related to the use of hazardous materials during project construction and operation, and potential inadvertent release of hazardous materials. The Increased Residential Density Alternative would also follow State regulations for asbestos abatement and Cal OSHA Lead Construction Standard to ensure that any potential impacts due to asbestos and lead-based paint removal would be reduced to a less-than-significant level.

Because the contractors and owners must comply with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, this alternative would not have a substantial adverse effect on the public or the environment through the routine transport, use, or disposal of hazardous materials. This alternative, like the proposed project, would not have a substantial adverse effect on the public or the environment through the accidental release of hazardous materials into the environment, nor would it emit hazardous emissions or involve the transport, use or disposal of hazardous materials within one-quarter mile of an existing or proposed school.

As with the proposed project, the Increased Residential Density Alternative would not be within an airport land use plan or within 2 miles of an airport or a private airstrip, nor would the site be a hazardous materials site.

Like the proposed project, the alternative would have to conform to the provisions of the Building and Fire Codes that require additional life safety protections for high-rise buildings. This alternative would not impair implementation of an emergency evacuation plan or expose people or structures to a risk involving fire (due to fire-related requirements for high-rise buildings).

The potential impacts of the Increased Residential Density Alternative with respect to hazards and hazardous materials would be the same those for the proposed project. Therefore, as with the proposed project, with compliance with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, and with implementation of Mitigation Measure M-HZ-2, the Increased Residential Density Alternative would have less-than-significant (with mitigation incorporated) project-level impacts and no cumulatively considerable contribution to significant cumulative hazards or hazardous materials impacts.

Mineral and Energy Resources

Like the proposed project, construction of the proposed 47-story tower adjacent to and west of the Aronson Building and renovations to the existing Aronson Building under the Increased Residential Density Alternative, would comply with the City's Building Code requirements and would be required to achieve a minimum of Leadership in Energy and Environmental Design (LEED) Silver standards and would include sustainable energy-saving elements such as energy-

saving windows. Similar to the proposed project, there would be no loss of availability of a known mineral resource or mineral recovery site. The additional proposed residential units planned under this alternative (110 more residential units under the residential flex option than under the proposed project, and 92 more units under the office flex option than under the proposed project) would not substantially increase the demand for electricity generated in the context of overall demand within San Francisco and the State. The potential impacts related to minerals and energy resources under the Increased Residential Density Alternative would be similar to those of the proposed project. Therefore, as under the proposed project, this alternative would not require a major expansion of power facilities, nor would there be activities which would result in the use of wasteful or large amounts of fuel, water or energy. As with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to mineral and energy resources under the Increased Residential Density Alternative.

Agricultural and Forest Resources

Like the proposed project, the Increased Residential Density Alternative would not convert farmland, conflict with agricultural or forest land zoning or a Williamson Act contract, nor result in a loss or conversion of forest land or farmland. The potential impacts related to agricultural and forest resources under the Increased Residential Density Alternative would be the same as those of the proposed project. Therefore, as with the proposed project, there would be no impacts related to agricultural and forest resources under the Increased Residential Density Alternative.

CONCLUSION

The Increased Residential Density Alternative would result in similar project-level and cumulative impacts as identified under the proposed project. The Increased Residential Density Alternative would not avoid or reduce any significant environmental effects of the proposed project. Since the building design and configuration of the proposed tower would be the same as under the proposed project, this alternative would result in significant unavoidable cumulative shadow impact due to the creation of net new shadow on Union Square and some public open spaces, privately owned publicly accessible open spaces, and public sidewalks. As with the proposed project, there would be less-than-significant impacts related to land use and land use planning, aesthetics, population and housing, transportation and circulation, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and mineral and energy resources. As with the proposed, there would be less-than-significant impacts with mitigation related to cultural and paleontological resources, noise, air quality, and hazards and hazardous materials. Both the Increased Residential Density Alternative and the proposed project would have no impact on agricultural and forest resources.

The Increased Residential Density Alternative would achieve most of the basic project objectives. This alternative would complete the redevelopment of the YBC Redevelopment Project Area, rehabilitate the historically important Aronson Building, provide for development of a museum facility and endowment for The Mexican Museum on City-owned property, create a development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel, provide housing near cultural amenities and attractions, transfer ownership of the Jessie Square Garage to a private entity, and provide temporary and permanent employment and contracting opportunities.

E. REDUCED SHADOW ALTERNATIVE

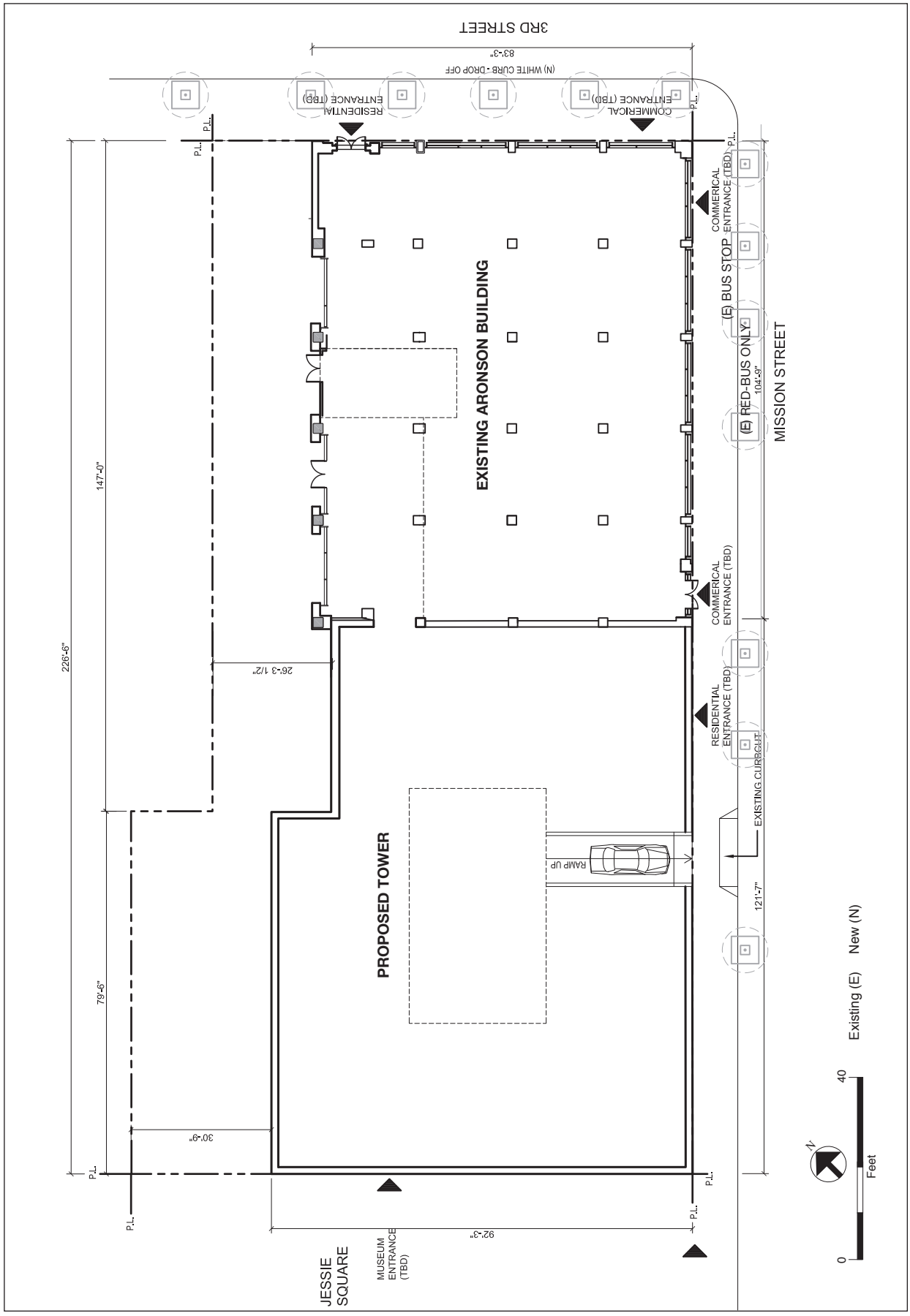
DESCRIPTION

The intent of the Reduced Shadow Alternative is to provide an alternative that would reduce the shadow impacts when compared to the proposed project. In particular, this alternative would not cast net new shadow on Union Square. Under this alternative, a new 27-story, approximately 351-foot-tall tower, including a mechanical penthouse, would be constructed on the lot adjacent to and west of the Aronson Building (see Figure VII.7: Reduced Shadow Alternative Ground Floor Plan, and Figure VII.8: Reduced Shadow Alternative Section). The Reduced Shadow Alternative would be 20 stories, or approximately 199 feet, shorter than the new tower under the proposed project. Like the proposed project, the existing Jessie Square Garage would be conveyed to the project sponsor and converted from a public garage to a private garage. Like the proposed project, the mechanical penthouse located on the rooftop of the Aronson Building would be removed under this alternative; unlike the proposed project, the rooftop solarium would not be constructed.

As with the proposed project, under the Reduced Shadow Alternative the historic Aronson Building would be restored and rehabilitated in accordance with the project sponsor's Architectural Design Intent Statement[11] to ensure the building's long-term retention and contribution to the historic district of which it is part. The design and materials of the new building under this alternative would be high in quality and would, like those for the proposed project, contrast with and yet relate in a compatible manner to the Aronson Building and nearby historic resources on Jessie Square.

As with the proposed project, the new construction would be connected to the Aronson Building. Some floors in the new building would be aligned with the existing floors in the Aronson Building, and others would be offset due to differences in the floor to ceiling heights between the proposed new building and the existing Aronson Building.

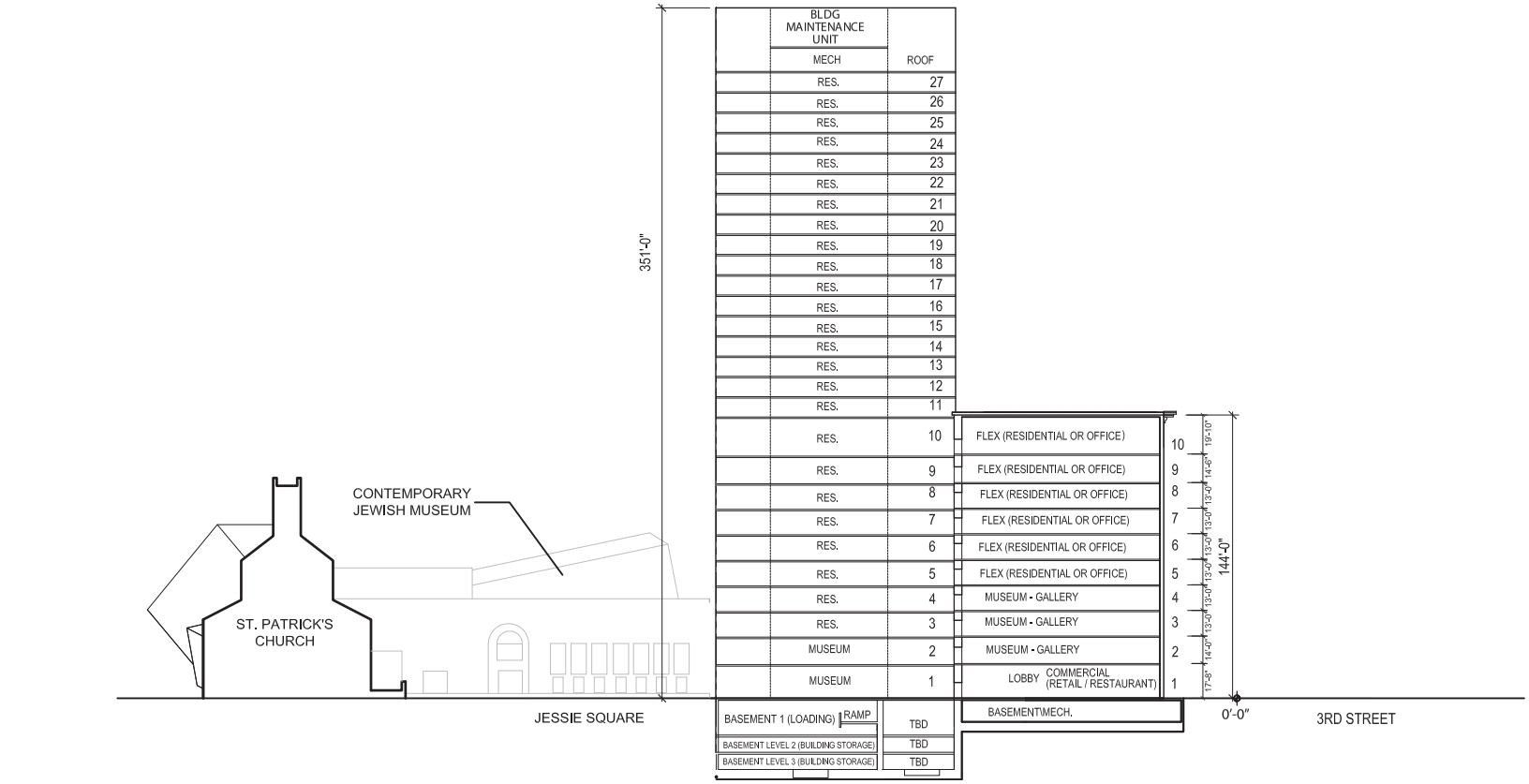
[11] Handel Architects, 706 Mission Street Architectural Design Intent Statement, January 11, 2012.



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.7: REDUCED SHADOW ALTERNATIVE GROUND FLOOR PLAN



SOURCE: Handel Architects

706 MISSION STREET

FIGURE VII.8: REDUCED SHADOW ALTERNATIVE SECTION

Unlike the proposed project, this alternative would have six floors (floors five through ten) in the Aronson Building that would be designated as residential or office flex space. This alternative's residential flex option would include up to 186 residential units (29 fewer residential units than planned under the proposed project's residential flex option) and no office space on the project site. This alternative's office flex option would include up to 162 residential units (29 fewer residential units than under the proposed project's office flex option) and approximately 52,560 gsf of office space.

Under this alternative's residential flex option, there would be approximately 318,191 gsf of residential space. The dwelling units would consist of a mix of two- and three-bedroom units, with approximately 14,484 gsf of usable open space. (See Table VII.1, pp. VII.3-VII.4, for a summary of the space allocated to the various uses under the Reduced Shadow Alternative and the proposed project.) There would be approximately 2,000 gsf of residential amenity space, approximately 4,800 gsf of retail/restaurant space, approximately 48,450 gsf of mechanical, storage and utility space, including area for the existing ramp that connects the Jessie Square Garage to Mission Street.

Under the Reduced Shadow Alternative, there would be approximately 45,000 gsf of cultural space for The Mexican Museum, located on floors one through four, compared to 52,285 gsf provided for the museum under the proposed project. According to the project sponsor, the proposed project, this alternative would not result in a financeable endowment for The Mexican Museum or create a development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel.

Under this alternative's office flex option, there would be approximately 265,631 gsf of residential space and approximately 52,560 gsf of office space. The up to 162 dwelling units would consist of a mix of two- and three-bedroom units, and there would be about 14,484 gsf of usable open space. The square footages of residential amenity space, museum space, retail/restaurant space, storage space, building core, mechanical, and service space, and space for the existing ramp that connects the Jessie Square Garage to Mission Street would be the same as those for the alternative's residential flex option.

Unlike the proposed project, the Reduced Shadow Alternative would not include a driveway from Third Street to serve the residential units. In addition, like the proposed project, the City, through the Oversight Board and the SFMTA Board of Directors, would convey the below-grade, four-level, 442-space Jessie Square Garage to the project sponsor. As with the proposed project, the total number of parking spaces in the Jessie Square Garage would be increased from 442 to 470 by incorporating existing space under the Contemporary Jewish Museum into the garage. Of the 470 parking spaces, 260 would be allocated to private uses under this alternative. The remaining 210 parking spaces would continue to be available to the general public.

Like the proposed project, this alternative would provide two truck and two service loading vehicle spaces located within a loading area on the first basement level of the new tower, with access via the Jessie Square Garage. Like the proposed project, this alternative would extend the existing recessed passenger loading and unloading bay on Mission Street and would convert existing metered on-street freight loading spaces adjacent to the project site on Third Street to passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses. Like the proposed project, Class I and Class II bicycle parking spaces would be provided under this alternative within the Jessie Square Garage.

Unlike the proposed project, the FAR for the Reduced Shadow Alternative would not exceed 9:1, the maximum FAR allowed at the project site with the purchase of transferable development rights (TDR) under the current C-3-R zoning district. The FAR for the Reduced Shadow Alternative would be approximately 7.3:1, and would require the purchase of TDR. Unlike the proposed project, the FAR under this alternative would be permitted with the purchase of TDR. Therefore, development under the Reduced Shadow Alternative would not require rezoning to DTP or establishment of an SUD. Like the proposed project, this alternative would require a Section 309 Determination of Compliance and Request for Exceptions. As with the proposed project, Conditional Use authorization may be required because this alternative would provide dwelling units in an amount that exceeds one unit for every 125 square feet of lot area.

The project site is currently within a 400-I height and bulk district. Unlike the proposed project, height reclassification would not be required for the Reduced Shadow Alternative as the building would not be taller than 400 feet.

The vehicular access variants under consideration for the proposed project would not be applicable to this alternative.

Land Use and Land Use Planning

As with the proposed project, the Reduced Shadow Alternative would include a mix of residential, museum, retail/restaurant, and possibly office uses, and would be compatible with nearby residential, cultural, retail and office uses in the surrounding area. Under the Reduced Shadow Alternative, the proposed 27-story building would comply with the existing height and bulk requirements, and it would comply with Planning Code provisions related to FAR with the purchase of TDR as described above. The project site would remain within the C-3-R District. It would also remain in a 400-I Height and Bulk District. As with the proposed project, this alternative would require a Section 309 Determination of Compliance and Request for Exceptions. This alternative would not conflict with existing land use plans and regulations. The physical environmental impacts of this alternative are described below. Similar to the proposed project, this alternative would not result in any significant land use effects and would not

physically divide an established community, nor would it have an adverse impact upon the existing character in the vicinity of the site. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative land use and land use planning impacts under the Reduced Shadow Alternative.

Aesthetics

As under the proposed project, under the Reduced Shadow Alternative the existing Aronson Building would be restored and rehabilitated, and a new 27-story tower would be constructed adjacent to and physically connected to the Aronson Building. The new tower under this alternative would occupy the same location within the project site as would the tower under the proposed project, but would it be 20 stories (approximately 199 feet) shorter than the new tower under the proposed project. As with the proposed project, this alternative would not have a substantial adverse effect on a scenic vista, including long-range scenic vistas of downtown, the Mission Street view corridor, and scenic vistas from Yerba Buena Gardens. The design and materials of the new building under this alternative would be high in quality, and would, like those for the proposed project, include features that relate visually with the surrounding visual setting. As such, the Reduced Shadow Alternative would not have an adverse effect on a scenic resource or on visual character or quality. Lower scale (351-foot-tall) development under this alternative compared to the substantially taller (550-foot-tall) development under the proposed project would have less potential for impacts related to visual character and light and glare than would the proposed project. Similar to the proposed project, the potential impacts under this alternative would be less than significant. As with the proposed project, this alternative would result in less-than-significant project-level aesthetic impacts and no cumulatively considerable contribution to significant cumulative impacts related to aesthetics.

Population and Housing

Under the Reduced Shadow Alternative, there would be fewer residential units proposed under both the residential and office flex options than under the proposed project. Under the residential flex option, this alternative would add up to 186 residential units and up to 424 residents to the project site (approximately 29 fewer residential units and approximately 66 fewer residents than under the proposed project's residential flex option). The total number of existing employees would be reduced from approximately 453 (under current conditions) to 80 employees (approximately 20 fewer employees than under the proposed project's residential flex option). Under the office flex option, up to 162 residential units and up to 370 residents would be added to the project site (approximately 29 fewer residential units and 66 fewer residents than under the proposed project's office flex option). The number of existing employees would be reduced

under the office flex option from approximately 453 to approximately 268 total employees (approximately 50 fewer than under the proposed project's office flex option).

Similar to the proposed project, the increased population growth under the Reduced Shadow Alternative would contribute a negligible percentage to the anticipated citywide and region-wide growth in population, either directly or indirectly. As with the proposed project, this alternative would not displace any housing units or residents. This alternative would displace the existing retail use employees and, under the residential flex option, all the existing office employees currently located in the Aronson Building uses, similar to the proposed project. It is likely that these existing workers who rent or own and live in their homes would remain in their current residences and either change their commute or change jobs in response to the proposed alternative. Thus, there would be no new housing demand, since units that would be vacated or newly occupied by tenants would be part of the existing housing stock in the City and the region. As with the proposed project, this alternative would decrease the total number of employees on site compared to existing conditions, and would not create a demand for additional housing or for construction of new housing. As with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to population and housing under the Reduced Shadow Alternative.

Cultural and Paleontological Resources

Archaeological and Paleontological Resources

Excavation required for this alternative would be similar to that required for the proposed project in terms of location and depth, except that the lower height of the new building under this alternative would require a reduced foundation structure. As such, potential impacts on archaeological and paleontological resources under this alternative would be slightly reduced than under the proposed project. However, Mitigation Measures M-CP-1a: Archaeological Testing, Monitoring, Data Recovery and Reporting; M-CP-1b: Interpretation; M-CP-3: Paleontological Resources Monitoring and Mitigation Program; and M-CP-4: Accidental Discovery, identified for the proposed project and described on pp. IV.D.24-IV.D.31, would also be applicable to this alternative to ensure that potential project-level impacts on archaeological and paleontological resources, if present within the project site, would be less than significant (with mitigation incorporated) under this alternative, and that contributions to significant cumulative impacts to archaeological and paleontological resources would not be cumulatively considerable, similar to the proposed project.

Historic Architectural Resources

As with the proposed project, under the Reduced Shadow Alternative the historic Aronson Building would be restored and rehabilitated in accordance with the project sponsor's Architectural Design Intent Statement,[12] to ensure the building's long-term retention and contribution to the historic district of which it is a part. The design and materials of the new building under this alternative would be high in quality, and would, like those for the proposed project, contrast yet relate in a compatible manner to the Aronson Building and nearby historic resources. As such, potential impacts on historic resources under this alternative would be similar to the proposed project. Like the proposed project, this alternative would not cause a substantial adverse change in the significance of the Aronson Building, the historic districts of which it is part, or nearby historic architectural resources. Therefore, as with the proposed project, this alternative would not cause a significant adverse change in the significance of a historic architectural resource. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to historic resources under the Reduced Shadow Alternative.

Transportation and Circulation[13]

Under the Reduced Shadow Alternative, vehicular access into and out of the existing subsurface Jessie Square Garage would remain unchanged from existing conditions. Access into the garage would continue to be from Stevenson Street. Like the proposed project, the below-grade, four-level, 442-space Jessie Square Garage would be conveyed to the project sponsor, and the total number of parking spaces in the Jessie Square Garage would be increased from 442 to 470 by incorporating existing space under the Contemporary Jewish Museum into the garage. Of the 470 parking spaces, 260 would be allocated to private uses under this alternative. The remaining 210 parking spaces would continue to be available to the general public. Unlike the proposed project, this alternative would not include a driveway from Third Street to serve the residential units, and the existing driveway on Mission Street would not be widened.

Under the Reduced Shadow Alternative, the number of weekday PM peak hour person and vehicle trips would be substantially less than with the proposed project. See Table VII.7: Net New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Reduced Shadow Alternative.

[12] Handel Architects, 706 Mission Street Architectural Design Intent Statement, January 11, 2012.
[13] 706 Mission Street Project – Alternatives Assessment"), pp. 19-22.

Table VII.7: Net New Trip Generation by Mode, Weekday PM Peak Hour, Proposed Project and Reduced Shadow Alternative

Proposed Project and Reduced Shadow Alternative					
	Person Trips				Vehicle Trips
Project/Alternative	Auto	Transit	Walk/Other[a]	Total	
Proposed Project					
Residential Flex Option					
Proposed Project	179	99	273	551	142
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**170**	**94**	**254**	**518**	**137**
Office Flex Option					
Proposed Project	197	149	257	603	154
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**188**	**144**	**238**	**570**	**149**
Reduced Shadow Alternative					
Residential Flex Option					
Alternative	163	93	243	499	128
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**154**	**88**	**224**	**466**	**73**
Office Flex Option					
Alternative	177	135	226	538	136
Credit for Existing Uses	(9)	(5)	(19)	(33)	(5)
Net New Trips	**168**	**130**	**207**	**505**	**131**

Note:
[a] "Other" mode includes bicycles, motorcycles, and taxis.
Source: *SF Guidelines*, *2000 U.S. Census*, LCW Consulting, 2012

Traffic Impacts

Under the Reduced Shadow Alternative as shown in Table VII.7, travel demand for this alternative would be less than under the proposed project, and therefore traffic impacts at the study intersections would be similar to, but less than, those with the proposed project. Therefore, the impact on traffic operations under this alternative would be less than significant, as under the proposed project.

While the Reduced Shadow Alternative, like the proposed project, would result in a less-than-significant impact at the studied intersections, Improvement Measures I-TR-A: Traffic Signal Timing Modifications and I-TR-B: "Garage Full" Sign on Third Street, identified for the proposed project and described on p. IV.E.38, would also be applicable to this alternative to lessen its effect on traffic. Improvement Measure I-TR-A would enhance the ability of drivers exiting Stevenson Street at Third Street to merge into and across Third Street traffic flow. This improvement measure includes review and adjustment to signal timing at the intersection of Third and Stevenson Streets and relocation of the pedestrian signal heads on Third Street on the north side of Stevenson Street closer to the intersection. Improvement Measure I-TR-B would

minimize vehicles accessing Stevenson Street when the Jessie Square Garage is full by installing "Garage Full" signs at the intersection of Third Street at Stevenson Street.

Transit Impacts

As shown in Table VII.7, the Reduced Shadow Alternative would generate fewer transit trips than the proposed project. Therefore, similar to the proposed project, impacts on local and regional transit capacity utilization with this alternative would be less than significant.

Similar to the proposed project, the San Francisco Municipal Transportation Agency (SFMTA) would like the option available to install eyebolts in the renovated building to support its overhead wire system. While transit impacts would be less than significant, Improvement Measure I-TR-D: Installation of Eyebolts, identified for the proposed project and described on p. IV.E.43, would also be applicable to the Reduced Shadow Alternative. Under Improvement Measure I-TR-D, the project sponsor could review with Planning Department and SFMTA staff whether it would be appropriate to install eyebolts in the renovated building to support Muni's overhead wire system.

Bicycle Impacts

The Reduced Shadow Alternative would not substantially change bicycle travel in the vicinity of the project site, and therefore, similar to the proposed project, impacts to bicyclists would be less than significant.

Pedestrian Impacts

The Reduced Shadow Alternative would generate fewer pedestrian trips than the proposed project. During the weekday PM peak hour, the new uses associated with the Reduced Shadow Alternative residential flex option would generate 312 pedestrian trips, while the Reduced Shadow Alternative office flex option would generate 337 pedestrian trips (as compared with 348 pedestrian trips generated by the proposed project's residential flex option, and 382 pedestrian trips generated by the office flex option). As with the proposed project, impacts on pedestrian level of service (LOS) on sidewalks, corners, and crosswalks with this alternative would be less than significant. As noted above, vehicular access into and out of the existing subsurface Jessie Square Garage would not change from existing conditions. Unlike the proposed project, the Reduced Shadow Alternative would not include a driveway on Third Street to serve the residential units.

As under the proposed project, the number of existing items on the Third Street sidewalk at the project site, known as "pole clutter," is lowering the pedestrian quality, but not to the extent that the pole clutter or the additional project-related pedestrian trips would create a significant impact

on pedestrian travel or access with this alternative. However, Improvement Measure I-TR-E: Consolidation of Traffic Signal and Overhead Wire Poles, identified for the proposed project and described on p. IV.E.47, would also be applicable to this alternative. This improvement measure would reduce pole clutter and pedestrian obstructions on the Third Street sidewalk adjacent to the project site.

Loading Impacts

As with the proposed project, the Reduced Shadow Alternative would provide off-street loading on the project site. Like the proposed project, the Reduced Shadow Alternative would provide two truck and two service loading vehicle spaces located within a loading area on the first basement level of the new building, with access via the Jessie Square Garage. Under the Reduced Shadow Alternative, the existing loading access curb cut into the project site on Third Street would be abandoned, unlike under the proposed project. As under existing conditions, delivery and service vehicles would enter and exit the Jessie Square Garage via the Stevenson Street driveway, although vans and small trucks would also be able to exit via the Mission Street driveway. Similar to the proposed project, trucks and delivery vehicles under this alternative would not access the loading spaces from Third Street (as noted above, the existing loading access curb cut into the project site on Third Street would be abandoned). Under this alternative, there would be fewer residential units under either the residential or office flex space than under the proposed project. Therefore, loading demand would be reduced under this alternative compared to the proposed project. Since the Reduced Shadow Alternative would provide off-street loading spaces, and, since the loading demand could be accommodated within the proposed supply, loading impacts under this alternative would be less than significant, as with the proposed project.

Like the proposed project, the Reduced Shadow Alternative would extend the existing recessed passenger loading and unloading bay on Mission Street in front of Jessie Square would be extended by approximately 83 feet, 6 inches to the east, resulting in a 154-foot-long passenger loading/unloading zone to support the proposed museum and residential uses, as well as the current users of the existing passenger bay. In addition, similar to the proposed project, the project sponsor would request that the existing metered on-street freight loading spaces (four yellow spaces) adjacent to the project site on Third Street be converted to an 83-foot-4-inch-long passenger loading/unloading zone (i.e., a white curb zone) to support the retail/restaurant and residential uses.

Like the proposed project, this alternative would provide sufficient loading to meet the Planning Code requirement of three spaces and the demand for loading space on the project site, therefore loading impacts would be less than significant. However, Improvement Measure I-TR-H: Coordination of Moving Activities, identified for the proposed project and described on

p. IV.E.51, would also be applicable to the Reduced Shadow Alternative. Under this improvement measure, the project sponsor shall encourage that move-in and move-out operations, as well as larger deliveries, should be scheduled and coordinated through building management.

Emergency Access Impacts

As with the proposed project, the Reduced Shadow Alternative would not change the configuration or capacity of the travel lanes adjacent to the project site. Therefore, this alternative would not affect emergency vehicle access to the project site or project vicinity, nor would it change the configuration or capacity of adjacent travel lanes. Similar to the proposed project, the Reduced Shadow Alternative impacts on emergency access would be less than significant.

Construction Impacts

Construction activities associated with the Reduced Shadow Alternative would be similar to, but less than, those described for the proposed project. Overall, the construction-related transportation impacts of the proposed project would be less than significant due to their temporary and limited duration. Therefore, the construction-related transportation impacts under this alternative would be less than significant, particularly since this alternative involves less on-site development compared to the proposed project.

Improvement Measures I-TR-I through I-TR-L, identified for the proposed project and described on pp. IV.E.54-IV.E.55, would also be applicable to this alternative to reduce its less-than-significant transportation-related effects. Improvement Measures I-TR-I: Construction - Traffic Control Plan would require the contractor to prepare a traffic control plan for project construction to reduce potential conflicts between construction activities and pedestrians, transit, and autos. Under Improvement Measure I-TR-J: Construction – Carpools, the project sponsor could request the construction contractor to encourage carpooling and transit access to the site by construction workers. Improvement Measure I-TR-K: Construction - Truck Traffic Management could require the construction contractor to retain San Francisco Police Department traffic control officers during peak construction periods to minimize construction traffic impacts on Third Street and Mission Street, and on pedestrian, transit and traffic operations. Improvement Measure I-TR-L: Construction - Update Adjacent Businesses and Residents could require the project sponsor to provide nearby residences and adjacent businesses with regularly updated information regarding project construction.

Parking Information

As with the proposed project, under the Reduced Shadow Alternative, the existing public parking at Jessie Square Garage would not change from existing conditions, and residents, visitors and employees associated with the proposed uses on the project site would be able to pay to use the Jessie Square Garage (ingress/egress on Stevenson Street, and egress-only on Mission Street). Parking demand associated with the Reduced Shadow Alternative would be less than that for the proposed project with its larger development. The new uses associated with the Reduced Shadow Alternative would generate a demand of 322 parking spaces for the residential flex option and 346 parking spaces for the office flex option. Compared to a supply of 442 parking spaces within the Jessie Square Garage the garage closest to the project site, the Reduced Shadow Alternative parking demand, in addition to the existing parking demand for the Jessie Square Garage, would result in a shortfall of between 139 and 163 spaces, depending on the flex option chosen with this alternative. This shortfall would be less than the proposed project's shortfall of between 271 and 328 spaces, depending on the flex option chosen with the proposed project.

To encourage transit use and reduce parking demand, Improvement Measure I-TR-M: Transportation Demand Management, identified for the proposed project and described on p. IV.E.59, would also be applicable to the Reduced Shadow Alternative. Under this improvement measure, the project sponsor could provide a transportation insert for the residential and non-residential move-in packet that would provide information on transit service.

Therefore, similar to the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts to traffic, transit, bicycle, pedestrian, loading, emergency access, construction, or parking under the Reduced Shadow Alternative.

2030 Cumulative Conditions

As shown in Table VII.7, p. VII.100, The Reduced Shadow Alternative would generate fewer vehicle trips than the proposed project would. Under 2030 Cumulative conditions, vehicle delays under the Reduced Shadow Alternative would increase at the study intersections compared to existing conditions, and, as under the proposed project, all seven study intersections would operate at LOS F under this alternative's 2030 cumulative conditions under this alternative (as compared with two at LOS E or LOS F under Existing conditions). Like the proposed project, this alternative would result in less than cumulatively considerable contributions to those significant impacts related to intersections, which operate at LOS E or LOS F under 2030 Cumulative conditions, based on consideration of the alternative's contribution to critical movements. Therefore, the Reduced Shadow Alternative's traffic impacts under 2030 Cumulative conditions at the study intersections would be less than cumulatively considerable

under the Reduced Shadow Alternative. Additionally, the Reduced Shadow Alternative's contribution to critical movements would be less than for the proposed project due to the fewer number of generated trips.

In summary, similar to the proposed project, there would be less-than-significant significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts related to transportation under the Reduced Shadow Alternative.

Noise

Similar to the proposed project, the Reduced Shadow Alternative would result in demolition, excavation, and building construction activities (which encompass new construction as well as Aronson Building restoration activities) that would occur over a period of approximately 36 months, the same duration as the construction period for the proposed project. These activities would temporarily and intermittently increase noise in the project vicinity to levels that could be considered an annoyance by occupants of nearby properties. The installation of drilled piles could also potentially occur as part of this alternative. Construction activities would be required to comply with the San Francisco Noise Ordinance. However, as with the proposed project, noise from construction may still be substantially greater than existing noise levels in the project vicinity and could significantly impact nearby sensitive receptors. To ensure construction noise is reduced to the maximum amount feasible, Mitigation Measures M-NO-1a: Reduce Noise Levels During Construction, and M-NO-1b: Noise-Reducing Techniques and Muffling Devices for Pile Installation, identified for the proposed project and described in Section IV.F, Noise, pp. IV.F.21-IV.F.22, would also be required under this alternative. Mitigation Measure M-NO-1a would require the project contractor to use equipment with lower noise emissions and sound controls or barriers where feasible, locate stationary equipment as far as possible from sensitive receptors, designate a noise coordinator, and obtain noise variances when required consistent with Police Code Section 2910. Mitigation Measure M-NO-1b would require the use of feasible noise-reducing techniques for installing piles such as pre-drilling pile holes where feasible. As with the proposed project, implementation of these measures under this alternative would decrease significant project-level noise impacts and cumulatively considerable contributions to cumulative construction noise impacts to a less-than-significant level under this alternative.

Under the Reduced Shadow Alternative, the proposed demolition, excavation, and building construction activities would also temporarily generate groundborne vibration that could be considered an annoyance and potentially significant for vibration-related damage to nearby structures. The mitigation measures related to construction noise and vibration that are identified for the proposed project would be applicable to this alternative. As under the proposed project, Mitigation Measure M-NO-2a: Minimize Vibration Levels During Construction, described on p. IV.F.26, would mitigate human annoyance caused by vibration under this alternative by

providing a community liaison to respond to and address complaints, by requiring protective techniques (pre-drilling for piles), by limiting and avoiding impact pile driving, and by phasing activities where feasible. To protect neighboring vibration-sensitive structures, Mitigation Measure M-NO-2b: Pre-Construction Assessment to Protect Structures from Ground Vibration Associated with Pile Installation, described on pp. IV.F.26-IV.F.27, would require implementation of a pre-construction assessment and, if needed, monitoring to detect ground settlement or lateral movement of structures. Additionally, Mitigation Measure M-NO-2c: Vibration Monitoring and Management Plan, described on p. IV.F.27, would require assessment, monitoring, and management of vibration that could damage the Aronson Building. As with the proposed project, with implementation of these mitigation measures, significant project-level construction noise and vibration impacts of this alternative would be reduced to less-than-significant levels. There would also be no cumulatively considerable contribution to significant cumulative construction noise and vibration impacts under this alternative.

To address stationary operational noise sources, Mitigation Measure M-NO-3: Stationary Operational Noise Sources, identified for the proposed project and described on pp. IV.F.29-IV.F.30, would also be applicable to this alternative. This mitigation measure would require that all fixed stationary sources of noise be installed with noise reducing shields or constructed with some other adequate noise attenuating features. With implementation of this mitigation measure, operational noise would not significantly increase the ambient noise levels of the area and would be consistent with the noise level limits of the San Francisco Noise Ordinance, and this impact would be mitigated to less-than-significant levels for this alternative, similar to the proposed project. As with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level impacts and this alternative would not result in a cumulatively considerable contribution to significant cumulative operational ambient noise levels in the project vicinity under this alternative.

In order to ensure that new residences and cultural uses would not be substantially affected by existing noise levels in the project vicinity, Improvement Measure I-NO-A: Residential Use/Cultural Component Plan Review by Qualified Acoustical Consultant, identified for the proposed project and described on p. IV.F.32, would also be applicable to the Reduced Shadow Alternative. Under this improvement measure, a qualified acoustical consultant shall review plans for all new residential uses, cultural component areas (The Mexican Museum), and any other sensitive uses and provide recommendations regarding acoustical insulation or other equivalent measures to reduce interior noise levels to comply with applicable standards under Title 24. As under the proposed project, while this alternative would result in less-than-significant project-level noise impacts and no cumulatively considerable contribution to significant cumulative impacts related to interior noise levels, the improvement measure is

identified to lessen this alternative's less-than-significant effect on noise sensitive uses at the site by specifying how the project would be in compliance with Title 24 standards.

As with the proposed project, there would be no significant project-level impacts or cumulatively considerable contribution to significant cumulative noise impacts on new residences and cultural uses under this alternative.

Air Quality

Similar to the proposed project, the Reduced Shadow Alternative would result in demolition, excavation, and building construction activities that would cause emissions of criteria air pollutants and toxic air contaminants that would affect local air quality during the construction schedule. Activities that create dust would be subject to the Construction Dust Control Ordinance. With construction activities, equipment, and phasing similar to the proposed project, this alternative would result in construction emissions of criteria air pollutants that would be below the applicable significance thresholds, as like the proposed project. Diesel-powered construction equipment would generate DPM, which is identified as a TAC and carcinogen by ARB and, as with the proposed project, construction activity could expose off-site sensitive receptors to substantial pollutant concentrations exceeding the thresholds for community risks and hazards. Implementation of Mitigation Measure M-AQ-3: Construction Emissions Minimization, identified for the proposed project and described on pp. IV.G.34-IV.G.35, would also be applicable to this alternative. This mitigation measure, which calls for the development of a construction emissions minimization plan, would reduce construction emissions of TACs and therefore reduce the exposure of nearby sensitive receptors to these TACs during construction. With implementation of this mitigation measure, estimates of increased excess cancer risk to off-site receptors as a result of exposure during construction of this alternative would be reduced to a level below the project-level threshold of significance.

Due to fewer residential units, operational emissions for the Reduced Shadow Alternative would be slightly less than, but similar to, those of the proposed project. Sources of operational emissions for this alternative would include a standby generator, mechanical systems, other area sources, and mobile sources. As with the proposed project, operational criteria air pollutant emissions would be below the thresholds of significance and would not violate any air quality standard or contribute substantially to a violation of a standard. Under this alternative, the likelihood that sensitive receptors (residents) would be exposed to substantial pollutant concentrations would be similar to that of the proposed project, because new sensitive receptors (residential uses) would be located above the fourth floor and at a slightly greater distance from ground-level stationary sources of emissions and major roadways. As with the proposed project, the potential to expose sensitive receptors to substantial pollutant concentrations under this

alternative would be below the thresholds of significance but would be slightly less than under the proposed project.

As with the proposed project, this alternative would not conflict with or obstruct implementation of the applicable air quality plan, and this alternative would not expose a substantial number of people to objectionable odors.

Similar to the proposed project, criteria air pollutant emissions at levels below the thresholds are not anticipated to contribute to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants for this alternative. As under the proposed project, construction or operation of this alternative in combination with other reasonably foreseeable projects in the project vicinity would not expose sensitive receptors to substantial pollutant concentrations. The proposed project, in combination with other reasonably foreseeable projects in the project vicinity, would not result in an increase in excess cancer risk greater than 100 in a million, and therefore would not result in a cumulative air quality impact with respect to health risks and hazards. Application of Mitigation Measure M-AQ-3 to address project-level construction health risks would further reduce this less-than-significant impact. As described above, project-level air quality impacts would be less than those of the proposed project. Therefore, like the proposed project, the Reduced Shadow Alternative would not result in a considerable contribution to a significant cumulative air quality impact with respect to health risks and hazards.

Due to the reduced size of this alternative with fewer units proposed and resulting in fewer vehicle trips, air quality impacts would be reduced compared to the proposed project. As with the proposed project, there would be less-than-significant (with mitigation incorporated) project-level air quality impacts and no cumulatively considerable contribution to significant cumulative air quality impacts under the Reduced Shadow Alternative.

Greenhouse Gas Emissions

A variety of controls are in place to ensure that development in San Francisco would not impair the State's ability to meet Statewide GHG reduction targets outlined in AB 32, nor impact the City's ability to meet San Francisco's local GHG reduction targets. Projects that are consistent with San Francisco's regulations would not contribute significantly to global climate change. Similar to the proposed project, the Reduced Shadow Alternative would be required to comply with these regulations and requirements for GHG reduction strategies. Under the Reduced Shadow Alternative, trip operation and the associated GHG emissions would be less than with the proposed project. As with the proposed project, this alternative would introduce a mixed-use infill development in a transit-oriented area, and would include Class I and Class II bicycle parking spaces, energy efficiency features beyond Title 24 requirements, low-impact stormwater management design, water-efficient landscaping, water-conserving interior design, convenient

recycling and composting, street trees, and other features consistent with San Francisco's ordinances and requirements. Implementation of local GHG reduction requirements would substantially reduce a project's local GHG impacts. Therefore, as with the proposed project, the Reduced Shadow Alternative would have a less than cumulatively considerable contribution to significant cumulative GHG impacts.

Wind and Shadow

Wind

Wind tunnel testing was conducted on the 550-foot-tall proposed project and the 196-foot-tall Existing Zoning Alternative. The 351-foot-tall Reduced Shadow Alternative did not undergo wind tunnel testing, because the test results for this alternative would fall in between the range of test results for the proposed project and the Existing Zoning Alternative. Wind tunnel analyses for proposed project and the Existing Zoning Alternative scenarios showed similar test results. Based on the wind tunnel test results for the proposed project and the Existing Zoning Alternative, the 351-foot-tall Reduced Shadow Alternative would have similar effects on ground-level wind currents in the project vicinity as the proposed project and the Existing Zoning Alternative.

As with the proposed project, implementation of this alternative would not result in substantial changes to wind conditions in the project vicinity. The average equivalent wind speed would remain close to the existing speed of 12.6 mph, and there would be some areas in the project vicinity that would exceed the comfort criteria. However, exceeding the seating comfort criterion or the pedestrian comfort criterion is not a significant wind impact under CEQA. Improvement Measure I-WS-A, identified for the proposed project and described on p. IV.I.14, however, would also be applicable to this alternative to make wind conditions more comfortable for pedestrians or seated individuals. This improvement measure calls for the use of treatments such as hedges, trees and trellises to reduce winds in areas used for public seating.

As with the proposed project and the Existing Zoning Alternative, the Reduced Shadow Alternative would eliminate one existing wind hazard (on the south side of Mission Street at one of the entrances to Yerba Buena Gardens), but would not eliminate three other existing wind hazards (at the southwest and southeast corners of the intersection of Third and Market Streets and along Yerba Buena Lane at the southwest corner of the Four Seasons Hotel and Residences). Under the proposed project, the total duration of hazardous wind would decrease by about 90 hours per year compared to existing conditions. Under the Existing Zoning Alternative, the total duration of hazardous wind would increase by about one hour per year compared to existing conditions. The height of the Reduced Shadow Alternative is in between the height of the proposed project and the Existing Zoning Alternative. Based on the results of the wind tunnel

testing for the proposed project, construction of a 351-foot-tall building on the project site under the Reduced Shadow Alternative could result in similar decreases in wind hazard conditions (decreased up to 90 hours per year). However, based on the wind tunnel results of the Existing Zoning Alternative, it is expected that there may be some small increases in wind hazard conditions in the range of one to four hours per year. The total duration of hazardous wind under the Reduced Shadow Alternative would not be expected to be worse than what has been analyzed for the proposed project and the Existing Zoning Alternative.

Although there would be localized changes throughout the project vicinity, the overall wind conditions would remain substantially the same with implementation of the Reduced Shadow Alternative as compared to existing conditions or to the proposed project. The proposed project would eliminate one hazard (Yerba Buena Gardens) and significantly improve wind conditions at another location (Yerba Buena Lane). Therefore, similar to the proposed project, the Reduced Shadow Alternative would not result in a significant project-level wind impact or a cumulatively considerable contribution to significant cumulative wind impacts.

Like the proposed project, the Reduced Shadow Alternative would have private roof terraces on the tower, but there would be no terrace on the roof of the Aronson Building. Improvement Measure I-WS-B, identified for the proposed project and described on p. IV.I.29, would be applicable to this alternative to make wind conditions more comfortable on these private roof terraces. This improvement measure calls for the project sponsor to implement building design considerations as well as wind control measures, which may include trellises, landscaping, tall parapets and/or wind screens.

Shadow

Due to the proximity of the project site adjacent to Jessie Square, the Reduced Shadow Alternative would have the same shadow impact on Jessie Square as would the proposed project. The Reduced Shadow Alternative would shadow Jessie Square during the same times of the day and during the same times of the year as would the proposed project. Like the proposed project, since the Reduced Shadow Alternative is adjacent to Jessie Square, the shorter height of the tower under the Reduced Shadow Alternative would not reduce the amount of shadow that it would cast on Jessie Square; it is the lower portion of the building that would shadow Jessie Square. Thus, reducing the tower height from 47 stories (as under the proposed project) to 27 stories (under the Reduced Shadow Alternative) would not result in less shadow on Jessie Square.

The Reduced Shadow Alternative would not cast net new shadow on Union Square. A shadow envelope analysis[14] concerning Union Square was prepared for the project site. The analysis

[14] CADP, *706 Mission Street Project Shadow Envelope Analysis*, April 2009.

determined that any building at or below a height of 351 feet on the project site would not cast net shadow on Union Square. Even with a shorter tower, shadow from the Reduced Shadow Alternative could still reach some of the same Downtown public open spaces, privately owned publicly accessible open spaces, and public sidewalks that may be shadowed by the proposed project. Like the proposed project, the Reduced Shadow Alternative would have less-than-significant project-level shadow impacts. However, as with the proposed project, these buildings may shadow open spaces within the Downtown and may contribute to a significant and unavoidable cumulative shadow impact identified in the *Transit Center District Plan EIR*. The Reduced Shadow Alternative's contribution to significant cumulative shadow impacts would be reduced compared to the proposed project, but not to a less than cumulatively considerable level.

Recreation

Under the Reduced Shadow Alternative, there would be 29 fewer residential units proposed under either the residential or office flex options than under the proposed project. This alternative would add up to 424 residents to the project site, approximately 66 fewer residents than the proposed project. Under the office flex option, up to 370 residents would be anticipated, approximately 65 fewer residents than the proposed project. Under either flex option for the Reduced Shadow Alternative, approximately 14,484 gsf of common and private open space would be provided as a mixture of a ground-level plaza and private roof terraces.

Similar to the proposed project, given the wide variety and quantity of existing nearby public parks, plazas, and recreational opportunities, including children-oriented park and recreation facilities, the anticipated increase in on-site population would not result in substantial physical deterioration or acceleration of deterioration of existing facilities under the Reduced Shadow Alternative, and the alternative would result in less-than-significant impacts on existing public open space and recreational facilities. Due to the introduction of fewer residents under the Reduced Shadow Alternative compared to the proposed project, the impacts related to recreation would be slightly less under this alternative than under the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative recreation impacts under the Reduced Shadow Alternative.

Utilities and Service Systems

Because there would be fewer residents and employees on the project site under this alternative than with the proposed project, the increase in water demand and in wastewater flows would be less than for the proposed project. Like the proposed project, this alternative would not result in the exceedance of any wastewater treatment requirements. Stormwater would be handled along the lines described for the proposed project. This alternative would not require or result in the

construction of new or the expansion of existing water wastewater treatment facilities, or stormwater drainage facilities, the construction of which could have significant environmental effects. Like the proposed project, construction of the Reduced Shadow Alternative, in combination with reasonably foreseeable projects in the project vicinity, would not result in a cumulatively considerable contribution to significant and adverse cumulative impacts on the treatment of stormwater runoff or affect capacity of wastewater treatment facilities or stormwater drainage facilities. The project site would continue to be adequately served by electricity, natural gas, and telecommunications. Due to the reduced size of this alternative with fewer residential units, the less-than-significant impacts with respect to utilities and service systems would be less than those of the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on utilities and service systems under the Reduced Shadow Alternative.

Public Services

The increase in residents and the number of employees on the project site under this alternative would be less than under the proposed project. As with the proposed project, this alternative would not adversely affect the ability of existing police protection, fire protection and emergency medical services, public school facilities, and public libraries to serve the project site adequately. Due to the reduced size of this alternative with fewer residential units, the less-than-significant impacts related to public services would be less than those of the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on public services under the Reduced Shadow Alternative.

Biological Resources

Demolition and construction activities for the Reduced Shadow Alternative would be similar to those for the proposed project. Under this alternative, as with the proposed project, the one existing tree (avocado tree) on the project site near the northwest corner of the Aronson Building and one street tree (magnolia tree) adjacent to the project site along Mission Street would be removed. As with the proposed project, the removal and replacement would be in accordance with the requirements specified by the Urban Forestry Ordinance.

These trees provide a very small amount of nesting habitat for resident urban-adapted and migratory songbirds and none of them are considered to be rare, threatened, or endangered species; however, the existing row of trees (poplar trees) north of the project site could support active nests during the bird nesting season (March through August). While construction activities for this alternative may take place during the bird nesting season, potentially disturbing nesting

birds in the poplar trees, compliance with Federal and State regulations regarding vegetation removal and preconstruction surveys would result in a less-than-significant impact to migratory birds, as is the case with the proposed project.

As under the proposed project, the Reduced Shadow Alternative would also be required to comply with Planning Code Section 139, Standards for Bird-Safe Buildings, to reduce the potential for bird collisions. Under this alternative, there would be no habitat modification nor adverse effects on any species, no substantial adverse effect on protected wetlands, nor any interference with established wildlife migratory corridors or nursery sites. This alternative would not conflict with any local policies or ordinances protecting biological resources, and it would not conflict with any adopted conversation plan. The potential impacts of the Reduced Shadow Alternative with respect to biological resources would be the same those for the proposed project. Therefore, as with the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on biological resources under the Reduced Shadow Alternative.

Geology and Soils

Similar to the proposed project, construction of the proposed 27-story building on the lot adjacent to and west of the Aronson Building and renovations to the Aronson Building under the Reduced Shadow Alternative would require disturbance of soil underneath the existing 1978 annex on the west side of the Aronson Building and underneath the approximately 20-foot-wide-by-85-foot-long pedestrian walkway on the west side of the annex. Like with the proposed project, under this alternative excavation to a depth of approximately 41 feet below the surface would occur underneath the site of the annex following its demolition and underneath the pedestrian walkway. Unlike the proposed project, there would be no car elevator to the parking garage constructed on the north side of the Aronson Building under this alternative, and therefore this alternative would result in less excavation and grading activities than for the proposed project. Under the Reduced Shadow Alternative, there would be approximately 7,962 cubic yards of soil excavated, compared to 9,610 cubic yards under the proposed project (1,658 fewer cubic yards).

As with the proposed project, under this alternative soil would be exposed for a short time during demolition activities; however, compliance with the City's requirements for protection of exposed soils from erosion and runoff would ensure that there would be no substantial loss of topsoil. As under the proposed project, adherence to building code requirements would reduce the potential impacts from groundshaking to less-than-significant levels under this alternative. As under the proposed project, under this alternative the foundation of the existing historic Aronson Building would be evaluated prior to construction and upgraded as necessary, including, potentially, deepening and/or widening of existing footings and/or adding new foundations for new shear

elements or new footings.[15] The potential impacts of the Reduced Shadow Alternative with respect to geology and soils impacts would be the same as, or very similar to, those for the proposed project. These retrofit measures and adherence to the City's building code requirements would ensure that the Reduced Shadow Alternative would have less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative impacts on seismic hazards, rupture, ground shaking or liquefaction, landslides, soil erosion, soil stability, soil expansiveness, and topography or unique geologic features, similar to the proposed project.

Hydrology and Water Quality

Similar to the proposed project, construction of the tower and renovations to the Aronson Building under the Reduced Shadow Alternative would be completed in compliance with the City's SMO. The SMO would require the project sponsor to develop a Stormwater Control Plan that locates and sizes source control and treatment BMPs prior to commencement of construction activities. Also pursuant to the SMO, the project sponsor would maintain and operate the BMPs to retain runoff on site and limit site discharges entering the City's combined stormwater-sewer collection system. In addition, as required by the San Francisco Building Code, stormwater management under this alternative would meet the BMPs and the *San Francisco Stormwater Design Guidelines* of the San Francisco Public Utilities Commission, and the applicable LEED guidelines. With compliance with these ordinances and guidelines, and other applicable laws, this alternative would not violate water quality standards, degrade water quality, affect groundwater supplies, substantially alter drainage patterns, substantially increase runoff, or substantially add to sources of polluted runoff. This alternative would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As with the proposed project, the site is not within a flood hazard area, nor is it sited in a location that would expose people or structures to loss, injury or death as a result of a levee or dam failure or through inundation by seiche, tsunami or mudflow. The potential impacts related to hydrology and water quality under the Reduced Shadow Alternative would be the same as, but slightly less than, those of the proposed project. Therefore, similar to the proposed project, there would be less-than-significant project-level impacts and no cumulatively considerable contribution to significant cumulative hydrology and water quality impacts under the Reduced Shadow Alternative.

Hazards and Hazardous Materials

The construction of the proposed 27-story tower on the Mexican Museum parcel and renovations to the Aronson Building under the Reduced Shadow Alternative would involve excavation similar to, but less than, the proposed project, as described above in "Geology and Soils." As with the

[15] Treadwell & Rollo, *Updated Preliminary Geotechnical Study, 706 Mission Street, San Francisco, California*, November 18, 2009 (hereinafter referred to as "*Updated Preliminary Geotechnical Study*"), pp. 6-7.

proposed project, there would be no excavation underneath the Mexican Museum parcel. Due to the potential that contaminated soil could be unearthed during excavation activities, Mitigation Measure M-HZ-2: Hazardous Materials - Testing for and Handling of Contaminated Soil, identified for the proposed project and described in Section IV.P, Hazards and Hazardous Materials, pp. IV.P.14-IV.P.16, would also be applicable to this alternative. This mitigation measure describes a program of soil testing and management to be implemented by the project sponsor, as applicable.

Similar to the proposed project, this alternative would result in potential impacts related to the use of hazardous materials during project construction and operation, and potential inadvertent release of hazardous materials. The Reduced Shadow Alternative would also follow State regulations for asbestos abatement and Cal OSHA Lead Construction Standard to ensure that any potential impacts due to asbestos and lead-based paint removal would be reduced to a less-than-significant level.

Because the contractors and owners must comply with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, this alternative, like the proposed project, would not have a substantial adverse effect on the public or the environment through the routine transport, use, or disposal of hazardous materials. This alternative, like the proposed project, would not have a substantial adverse effect on the public or the environment through the accidental release of hazardous materials into the environment, nor would it emit hazardous emissions or involve the transport, use, or disposal of hazardous materials within one-quarter mile of an existing or proposed school.

As with the proposed project, the Reduced Shadow Alternative would not be within an airport land use plan or within 2 miles of an airport or a private airstrip, nor is the site included as a hazardous materials site.

Like the proposed project, the alternative would have to conform to the provisions of the Building and Fire Codes that require additional life safety protections for high-rise buildings. This alternative would not impair implementation of an emergency evacuation plan or expose people or structures to a risk involving fire (due to fire-related requirements for high-rise buildings).

Potential impacts related to hazards and hazardous materials would be slightly less under the Reduced Shadow Alternative than for the proposed project due to the fact that it would require less excavation and would include fewer residential units. Therefore, as with the proposed project, compliance with Federal, State, and local laws and regulations regarding hazardous materials and hazardous wastes, and implementation of Mitigation Measure M-HZ-2, would result in less-than-significant project-level impacts (with mitigation incorporated) and no cumulatively considerable contribution to significant cumulative impacts on the public or the

environment through the accidental release of hazardous materials into the environment under this alternative.

Mineral and Energy Resources

Similar to the proposed project, construction under the Reduced Shadow Alternative of the 27-story tower on the Mexican Museum parcel and renovations to the existing Aronson Building under the Reduced Shadow Alternative would comply with the City's Building Code Requirements for Construction Projects. This alternative would also be required to achieve a minimum of Leadership in Energy and Environmental Design (LEED) Silver standards as required by the San Francisco Building Code, and would include sustainable energy-saving elements such as energy-saving windows. Similar to the proposed project, there would be no loss of availability of a known mineral resource or mineral recovery site, nor would there be activities which would result in the use of wasteful or large amounts of fuel, water or energy under this alternative. The potential impacts related to minerals and energy resources under the Reduced Shadow Alternative would be similar to those of the proposed project. Therefore, as with the proposed project, there would be no significant project-level impact and no cumulatively considerable contribution to significant cumulative impacts related to mineral and energy resources under the Reduced Shadow Alternative

Agricultural and Forest Resources

As with the proposed project, the Reduced Shadow Alternative would not convert farmland, conflict with agricultural or forest land zoning or a Williamson Act contract, nor result in a loss or conversion of forest land or farmland. The impacts related to agricultural and forest resources would be the same for the Reduced Shadow Alternative as for the proposed project. Therefore, as with the proposed project, there would be no impacts on agricultural and forest resources under the Reduced Shadow Alternative.

CONCLUSION

The Reduced Shadow Alternative, like the proposed project, would result in a cumulatively considerable contribution to a significant and unavoidable cumulative shadow impact. Although the reduced building height of the new tower under this alternative would substantially reduce shadow impacts and would not create net new shadow on Union Square, unlike the proposed project, shadow from the proposed tower could still reach some of the same public open spaces, privately owned publicly accessible open spaces, and public sidewalks that would be shadowed by the proposed project. Therefore, this alternative may contribute to a cumulatively significant shadow impact. As with the proposed project (but generally to a lesser degree than with the proposed project), there would be less-than-significant impacts related to land use and land use

planning, aesthetics, population and housing, transportation and circulation, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and mineral and energy resources. As with the proposed project (but generally to a lesser degree than with the proposed project), there would be less-than-significant impacts with mitigation related to cultural and paleontological resources, noise, air quality, and hazards and hazardous materials. Both the Reduced Shadow Alternative and the proposed project would have no impact on agricultural and forest resources.

The Reduced Shadow Alternative would achieve most of the basic project objectives. This alternative would complete the redevelopment of the YBC Redevelopment Project area with the construction of residential housing near cultural amenities, rehabilitate the Aronson Building, transfer ownership of the Jessie Square Garage to a private entity, and provide temporary and permanent employment and contracting opportunities. Project objectives that may not be achieved by this alternative pertain to the development of a financially feasible museum facility. According to the project sponsor, development under the Reduced Shadow Alternative would not be able to sufficiently support the costs of providing the public benefits that are proposed under the project. The project sponsor has indicated that this alternative would not result in a financeable endowment for The Mexican Museum or create a development that would fund the project's capital costs and ongoing operation and maintenance costs of the Mexican Museum parcel.

F. ALTERNATIVES CONSIDERED AND REJECTED

This section identifies alternatives that were considered by the San Francisco Planning Department as lead agency, or the Successor Agency, but were rejected as infeasible during the design development and scoping process, and explains the reasons underlying this determination. Among the factors that were considered include the failure to meet most of the basic objectives of the proposed project and inability to avoid significant environmental impacts. These considered and rejected alternatives are the Off-Site Alternative, a Freestanding Alternative, an Office Use Alternative, and Elliptical Tower Plan Alternative.

Off-Site Alternative. An Off-Site Alternative that would consist of a similar project design and programming, but in a different, though comparable in-fill location within the City and County of San Francisco was considered but rejected. An Off-Site Alternative would not meet many of the project objectives of the Successor Agency or private project sponsor, particularly the objective of completing the redevelopment of the Yerba Buena Center Redevelopment Project Area and providing for the development of a museum facility and endowment for The Mexican Museum on the Successor Agency-owned property adjacent to Jessie Square. An Off-Site Alternative was also rejected since it would not include rehabilitation of the Aronson Building.

Freestanding Alternative. A Freestanding Alternative that would result in a development on the Mexican Museum parcel of a freestanding museum with no development, including rehabilitation of the Aronson Building, on the 706 Mission Street parcel, was considered and rejected. Construction of a freestanding museum for The Mexican Museum by the prior SFRA was considered not financeable because the SFRA did not, and the Successor Agency does not, have sufficient funds to cover the costs of constructing a freestanding museum on that parcel. Also, this alternative would not meet any of the project objectives of the project sponsor. Lastly, a Freestanding Alternative was rejected because it would not result in any reduced impacts that are not already being evaluated in other alternatives, such as the Existing Zoning Alternative.

Office Use Alternative. An Office Use Alternative that would include only office use in both the proposed tower and Aronson Building was considered and rejected. This alternative was rejected because the proposed project already has an office flex option that includes fewer proposed residential units and office-only use in the existing Aronson Building, and because an Office Use Alternative would generate more peak hour trips than would the proposed project. Further, an Office Use Alternative would not result in any reduced impacts, due to increased trip generation related to a project containing more office space. In addition, the Office Use Alternative was rejected because it would not meet the Successor Agency's project objective of providing housing in an urban infill location.

Elliptical Tower Plan. The Environmental Evaluation Application, as originally submitted to the Planning Department on September 11, 2008, called for partial demolition of the Aronson Building and construction of a 42-story, approximately 630-foot-tall tower to the west of, adjacent to, and partially within, the Aronson Building at its northwest corner. This scheme was disfavored by Planning Department staff both because of its impacts on the physical integrity of the historic Aronson Building, as well as due to staff concerns regarding aesthetics related to its elliptical tower plan design.

G. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative. If the No Project Alternative is environmentally superior, CEQA requires selection of the "environmentally superior alternative other than the no project alternative" from among the proposed project and the alternatives evaluated. The No Project Alternative is considered the overall environmentally superior alternative, because the impacts associated with implementation of the proposed project would not occur under the No Project Alternative. The No Project Alternative would not meet any of the project objectives of the Successor Agency or project sponsor. To identify the environmentally superior alternative in accordance with the CEQA Guidelines, a comparison of the impacts related to the alternatives is presented in Table VII.2: Comparison of Project and Alternatives Impacts, p. VII.5.

Pursuant to the CEQA Guidelines, an EIR is required to identify the environmentally superior alternative that has the fewest significant environmental impacts from among the alternatives evaluated. The proposed project would result in a significant and unavoidable cumulative impact related to shadow. In addition, the proposed project with Vehicular Access Variants 6 and 7 would result in significant and unavoidable impacts with respect to traffic and transit. These two vehicular access variants are not proposed by the project sponsor, but were analyzed in response to comments received on the Notice of Preparation of an EIR. The Existing Zoning Alternative and Reduced Shadow Alternative would both result in less-than-significant impacts or less-than-significant impacts with mitigation related to land use and land use planning, aesthetics, population and housing, cultural and paleontological resources, transportation and circulation, noise, air quality, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, and mineral and energy resources. As with the proposed project, neither the Existing Zoning Alternative nor the Reduced Shadow Alternative would have an impact on agricultural and forest resources. Neither of these two alternatives would include Vehicular Access Variants 6 or 7, so the significant and unavoidable traffic and transit impacts identified for these two variants would not occur.

Due to the reduced height of the structures developed under the Existing Zoning Alternative or the Reduced Shadow Alternative, neither would result in net new shadow on Union Square and both of these alternatives would substantially reduce cumulative shadow impacts compared to the proposed project. However, as high-rise buildings downtown, these two alternatives would not eliminate the considerable contribution to significant and unavoidable cumulative shadow impacts.

The Existing Zoning Alternative would result in a smaller structure, fewer residential units, and fewer vehicle trips than the Reduced Shadow Alternative. Therefore, the less-than-significant impacts with respect to transportation and air quality for the Existing Zoning Alternative would be reduced compared to the Reduced Shadow Alternative. Thus, besides the No Project Alternative, which would not result in any environmental impacts identified for the proposed project, the Existing Zoning Alternative would be the environmentally superior alternative.

This page is intentionally blank.

VIII. AUTHORS AND PERSONS CONSULTED

EIR AUTHORS

Planning Department, City and County of San Francisco
1650 Mission Street, Suite 400
San Francisco, CA 94103

Environmental Review Officer:	Bill Wycko
EIR Coordinator:	Debra Dwyer
Senior Environmental Planner:	Devyani Jain
Transportation Planner:	Greg Riessen
Air Quality Planner:	Jessica Range / Debra Dwyer
Archaeology Analysis:	Randall Dean
Historic Preservation Planner:	Pilar LaValley / Tim Frye
Shadow Analysis:	Aaron Hollister
Current Planning:	Kevin Guy
Citywide Planning:	Joshua Switzky

Office of the City Attorney, City and County of San Francisco
City Hall, Room 234
One Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

Deputy City Attorney:	Susan Cleveland-Knowles

RESPONSIBLE AGENCY

City and County of San Francisco as the Successor Agency to the
San Francisco Redevelopment Agency
One South Van Ness Avenue, Fifth Floor
San Francisco, CA 94103

Environmental Review Officer:	Stanley Muraoka
Development Specialist:	Christine Maher
Architect:	Matthew Priest

EIR CONSULTANTS

Turnstone Consulting
330 Townsend Street, Suite 216
San Francisco, CA 94107

Principal in Charge:	Barbara W. Sahm
Project Director:	Nancy Cunningham Clark
Project Manager:	Julie Tilley Barlow, AICP
Deputy Project Manager:	Michael Li
	Michael Kometani
	Donna R. Pittman
	Eric Dupre
	Peter Mye
	William F. Dietrich
	Elizabeth Haines

Archeo-Tec (Archaeology)
5283 Broadway
Oakland, CA 96418 — Allen Pastron, Emily Wick

Aspen Environmental Group (Noise, Air Quality, and Greenhouse Gases)
235 Montgomery Street, Suite 935
San Francisco, CA 94104 — Brewster Birdsall, Insun Hwang

Brown-Buntin Associates, Inc. (Noise)
1148 No. Chinowth Street, Suite B
Visalia, CA 93291 — Jim Buntin

CADP Associates (Shadow)
242 Eldridge Avenue
Mill Valley, CA 94941 — Adam Noble

Knapp and VerPlanck Preservation Architects (Historic Resources)
235 Montgomery, Suite 747
San Francisco, CA 94104 — Frederic Knapp, Christopher VerPlanck

LCW Consulting (Transportation)
3990 20th Street
San Francisco, CA 94114 — Luba C. Wyznyckyj, AICP

Rowan Williams Davies & Irwin Inc. (Wind)
650 Woodlawn Road West
Guelph, Ontario
Canada N1K 188 — Daniel Bacon, Hanqing Wu

Square One Productions (Visual Simulations)
1736 Stockton Street, Studio 7
San Francisco, CA 94133 — Angela Lin

PROJECT SPONSORS

706 Mission Street, Co., LLC
Millennium Partners
735 Market Street, 6th Floor
San Francisco, CA 94103 — Sean Jeffries, Kristin Gonsar, Steven Hood

PROJECT ATTORNEYS

Cox Castle & Nicholson, LLP
555 California Street, 10th Floor
San Francisco, CA 94104

Margo N. Bradish, Esq.
Scott B. Birkey, Esq.

PROJECT ARCHITECT

Handel Architects, LLP
735 Market Street, 2nd Floor
San Francisco, CA 94103

Glen Rescalvo
John Ishihara

PROJECT SPONSOR CONSULTANTS

All West (Hazards Consultant)
530 Howard Street, Suite 300
San Francisco, CA 94105

D. Edward MacDaniel

Environ (Air Quality Consultant)
6001 Shellmound Street, Suite 700
Emeryville, CA 94608

Michael Keinath

Page & Turnbull (Historic Resources Consultant)
724 Pine Street
San Francisco, CA 94108

Jay Turnbull
Christina Dikas
Erin McCloskey
Elisa Skaggs

Shen Milsom Wilke (Noise Consultant)
33 New Montgomery Street
San Francisco, CA 94105

Tracie Ferguson

Treadwell & Rollo (Geotechnical Consultant)
555 Montgomery Street, Suite 1300
San Francisco, CA 94111

Ramin Golesorkhi, G.E.
Cary E. Ronan, G.E.

ORGANIZATIONS AND PERSONS CONSULTED

San Francisco Department of Public Health
Environmental Health Section
1390 Market Street, Suite 210
San Francisco, CA 94102

Stephanie Cushing
Tom Rivard

San Francisco Municipal Transportation Agency
One South Van Ness Avenue, 7th Floor
San Francisco, CA 94102 — Jerry Robbins, Rana Ahmadi, Britt Tanner

San Francisco Public Utilities Agency
Bureau of Environmental Health Section
1145 Market Street, 5th Floor
San Francisco, CA 94102 — Irina P. Torrey

San Francisco Historic Preservation Commission /
Architectural Review Committee
1650 Mission Street, Suite 400
San Francisco, CA 94103 — Alan Martinez, Andrew Wolfram, Karl Hasz

San Francisco Recreation and Park Department
Planning Division
30 Van Ness Avenue, 4th Floor
San Francisco, CA 94102 — Karen Mauney-Brodek