### TABLE V.B.1 (Continued)

<table>
<thead>
<tr>
<th>Assessor's Block, Lot</th>
<th>Height (Stories)</th>
<th>Gross Floor Area /a/ (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 3832, Lot 2</td>
<td>W1</td>
<td>59,900</td>
</tr>
<tr>
<td>1400 Sixth St.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3835, Lot 3</td>
<td>2</td>
<td>12,600</td>
</tr>
<tr>
<td>1624 Sixth St.</td>
<td>1</td>
<td>3,700</td>
</tr>
<tr>
<td>1600 Sixth St.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3837, Lot 2</td>
<td>2</td>
<td>18,200</td>
</tr>
<tr>
<td>1401 Third St.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3837, Lot 4</td>
<td>2</td>
<td>22,600</td>
</tr>
<tr>
<td>Fire Station No. 30 /d/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3837, Lot 6</td>
<td>2</td>
<td>21,900</td>
</tr>
<tr>
<td>1455/1475 Third St.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blocks 3837, Lot 7; and 3841, Lot 2</td>
<td>2</td>
<td>31,400</td>
</tr>
<tr>
<td>1481/1501 Third St.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blocks 3838, Lots 1, 2; and 3840, Lots 1, 2</td>
<td>W1</td>
<td>37,600</td>
</tr>
<tr>
<td>1420 Fourth St.</td>
<td></td>
<td>2,500</td>
</tr>
<tr>
<td>Misc. Bldgs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blocks 3838, Lots 1, 2; 3840, Lots 1, 2, 3; and 3850, Lots 1, 1A, 2</td>
<td>W1</td>
<td>128,300</td>
</tr>
<tr>
<td>1420 Fourth St./299 Illinois St. (2 bldgs.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misc. Bldg.</td>
<td>W1</td>
<td>1,700</td>
</tr>
<tr>
<td>Blocks 3849, Lots 1, 2; and 3853, Lot 1</td>
<td>2</td>
<td>11,200</td>
</tr>
<tr>
<td>300 16th St.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blocks 3852, Lot 2; and 3892, Lot 1</td>
<td>1</td>
<td>5,200</td>
</tr>
<tr>
<td>375 Illinois St.</td>
<td>W1</td>
<td>1,600</td>
</tr>
<tr>
<td>377 Illinois St. (2 bldgs.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3880, Lot 1(SW338)</td>
<td>W1</td>
<td>10,100</td>
</tr>
<tr>
<td>440 T. François Blvd.</td>
<td></td>
<td>3,500</td>
</tr>
<tr>
<td>74 Mission Rock St.</td>
<td>W1</td>
<td></td>
</tr>
<tr>
<td>Block 3940, Lot 1</td>
<td>1</td>
<td>43,800</td>
</tr>
<tr>
<td>499 Illinois St.</td>
<td></td>
<td>3,500</td>
</tr>
<tr>
<td>Misc. Bldg.</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
### V. Environmental Setting and Impacts
#### B. Land Use Impacts

#### TABLE V.B.1 (Continued)

<table>
<thead>
<tr>
<th>Assessor's Block, Lot</th>
<th>Height (Stories)</th>
<th>Gross Floor Area /a/ (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 3941, Lot 1(SW343) Illinois/Mariposa</td>
<td>2</td>
<td>14,100</td>
</tr>
<tr>
<td>Block 3942, Lots 2, 3 420 17th St.</td>
<td>W1</td>
<td>36,400</td>
</tr>
<tr>
<td>Block 3942, Lot 4 Third &amp; Mariposa</td>
<td>2</td>
<td>4,500</td>
</tr>
<tr>
<td>Third &amp; Mariposa</td>
<td>1</td>
<td>1,800</td>
</tr>
<tr>
<td>Block 3943, Lot 1 1810 Third St.</td>
<td>1</td>
<td>2,700</td>
</tr>
<tr>
<td>Block 3943, Lot 7 1830 Third St.</td>
<td>1</td>
<td>4,600</td>
</tr>
<tr>
<td>Block 3943, Lot 6 Misc. bldgs.</td>
<td>1</td>
<td>600</td>
</tr>
<tr>
<td>Block 3944, Lot 4 701 16th St. 750/770 Mariposa St. 800/880 Mariposa St.</td>
<td>W1</td>
<td>44,400</td>
</tr>
<tr>
<td></td>
<td>W1</td>
<td>70,100</td>
</tr>
<tr>
<td></td>
<td>W1</td>
<td>66,500</td>
</tr>
<tr>
<td>Block 3992, Lot 3 1900 Third St.</td>
<td>W2</td>
<td>253,800</td>
</tr>
</tbody>
</table>

**Mission Bay South Subtotal**

1,682,200

**PROJECT AREA TOTAL**

1,698,300

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**Notes:**

a. Numbers have been rounded to the nearest hundred.

b. Standard building height is about 10 ft. per floor; warehouse building heights (W) are about 25 ft. at the ground floor.

c. Does not include temporary structures.

d. Fire Station No. 30 may be demolished.

**Source:** EIP Associates.
Businesses to Be Relocated

There are no residential units in the Project Area that would be displaced by the proposed project. Project-related development could displace any businesses and their employees. Their relocation would be assisted to the extent required by applicable law. In brief, the goal of relocation assistance is to find a new location of comparable rent and business characteristics, so that loss from the relocation is minimized.

Existing uses would be replaced gradually as the Project Area developed in accordance with the Redevelopment Plans. It is not yet known when and where specific businesses would relocate. Most existing businesses would relocate to areas that make sense for the particular business and where permitted by zoning. Depending on the activity and where it relocates, environmental impacts could occur at the new location. If impacts could occur from any such proposal requiring a discretionary permit from any public agency, environmental review would be carried out at such time as relocations of specific uses to specific new sites were proposed. For example, in January 1998 RMC Lonestar submitted an environmental review application to the Planning Department for a proposal to relocate its existing ready-mix concrete batch plant in the Project Area at Third and Mariposa Streets to Pier 90-92 on port property as an interim land use. That environmental review will examine the potential impacts of that particular use at that proposed site.

Construction Effects of Project Area Development

Construction would occur over about 20 years alongside existing, remaining industrial, light industrial, office, retail, and commercial uses and new residential, public school, UCSF, office, industrial, and retail uses. Generally, the pace of project construction would be determined by the rate of market absorption of these uses. Construction would most likely occur at various locations in the Project Area concurrently. For example, the occupants of residential development anticipated in the blocks bounded by North Common Street, Third Street, Mission Rock Street, and Terry A. Francois Boulevard, could at various times, or consecutively, encounter construction work: construction of other dwelling units on the west could occur, followed by construction of the police/fire station immediately north, followed by construction of research and development and office use to the south, followed by construction on the UCSF site to the southwest. The UCSF site would be developed in phases to meet campus space needs as capital improvement funding is secured. In all, the new residential development could be in proximity to some construction, construction staging, environmental staging, and rental offices for over 20 years. This could be annoying to residents or workers. People choosing to live or work in the Project Area would be aware that Mission Bay is a developing area with a long-term construction program. The effects of construction on adjacent uses,
both within and outside the Project Area, are addressed individually under each environmental topic in other sections of this document, including contaminated soils and groundwater, noise, air quality (dust), traffic, and health and safety.

**Temporary Uses**

Temporary uses such as carnivals or Christmas tree lots would be allowed in the Project Area. These uses would be limited up to 90 days in duration and are not, therefore, likely to create effects beyond temporary (short-term) noise, air quality (dust), and traffic issues discussed in the noise, air quality, and transportation sections.

**Interim Uses**

The Redevelopment Plans would allow the development of temporary structures and uses that are incidental to the Redevelopment Plans' development program for an initial period of up to 15 years, with five-year extensions. Sales or rental offices affiliated with specific residential developments could be constructed or could be housed within the housing development, and construction staging and environmental clean-up of contaminated soils would be allowed. Open recreation, parking, truck parking, and storage would also be acceptable interim uses. Each interim use would be subject to a finding by the Executive Director of the Redevelopment Agency that such use would “not impede the orderly development of the Project Area.”

Interim uses would also include parking areas. As discussed in “Proposed Interim Use - Giants Ballpark and UCSF Surface Parking” in Section III.B, Project Description, interim surface parking is proposed for Giants Ballpark use just south of the Channel and for UCSF site uses just north of 16th Street. It is anticipated that the previously approved Giants Ballpark parking would only be for the first five years of operation (until about 2005); the UCSF site parking would remain in operation until UCSF determines that development of structured parking on the UCSF site is necessary. In either event, the Project Area could contain at least 35 acres of paved parking area for an indeterminate period. Redevelopment Plans would not limit the amount of interim parking that could be developed in the Project Area pending ultimate build-out by project uses, although any interim parking would be subject to Redevelopment Agency review and the findings described above.

The parking lot areas outside the UCSF Subarea could also be used for commuter parking on an interim basis at the discretion of the Redevelopment Agency. Commuter parking lot areas are generally all-day parking lots that would experience the most disturbance during the morning and evening commute hours. The effects of potential commuter parking lot areas is discussed in “Interim
Uses and Interim Conditions” under “Transportation Issues During Build-out” in Section V.E, Transportation: Impacts. No plan has been established to provide for Giants Ballpark parking after the Catellus lease term has expired.27/

Land Use Changes by Subarea

For purposes of SEIR analysis, the project is assumed to be built out in the year 2015. In general, development would include approximately 3,000 residential units with ground-floor retail and 611,000 gross sq. ft. of retail uses in the North Subarea; approximately 3,090 residential units with ground-floor retail and a hotel with associated retail in the Central Subarea; about 5,557,000 gross sq. ft. of research and development/light industrial/office with ground floor retail and about 583,000 gross sq. ft. of city-serving retail in the combined East and West Subareas; and a UCSF site with about 2,650,000 gross sq. ft. of instruction, research, and support uses in the UCSF Subarea. (See Table III.B.1 for a summary of proposed land uses.) The project also includes a public school site in the UCSF Subarea and a police and fire station in the Central Subarea. There would be open space areas and parking uses interspersed throughout the Project Area. (See Table V.B.2 for a summary of proposed land uses by subarea and Figure III.B.3 for a map of the land use program.)

Development of the North and Central Subareas, over the 20-year build-out period, would replace vacant land and interim uses in the northern and central portions of the Project Area with residential, hotel, retail, and public facilities uses and associated parking and open space areas.

Development of the UCSF, East, and West Subareas would change the type of the industrial uses in these subareas, and replace some of the uses with instruction, research, and support uses, and research and development, light manufacturing, office, UCSF’s retail, accessory parking, and open space uses. The existing industrial uses of the Project Area are primarily warehousing, truck terminals, and heavy equipment repair and storage. The proposed light industrial uses are primarily research and development (such as medical research, computer, semi-conductor, multimedia, and other R&D) and light manufacturing uses.

North Subarea

The North Subarea would be developed with approximately 3,000 dwelling units, up to 667,000 gross sq. ft. of retail uses, about 6 acres of open space, and associated parking for about 5,700 vehicles. The retail uses would include about 389,000 gross sq. ft. of commercial entertainment; an additional 222,000 gross sq. ft. would be city-serving retail; and about 56,000 gross sq. ft. would be neighborhood-serving retail associated with the residential development. Commercial uses would be
### TABLE V.B.2
PROPOSED MISSION BAY LAND USE BY SUBAREA

<table>
<thead>
<tr>
<th>Subarea</th>
<th>Size/a (acres)</th>
<th>Residential (dwelling units)</th>
<th>R&amp;D/Office (gsf)/b/</th>
<th>UCSF Site (gsf)</th>
<th>City-Serving Retail (gsf)</th>
<th>Commercial, Entertainment-Oriented (gsf)</th>
<th>Neighborhood-Serving Retail (gsf)</th>
<th>Open Space Land (acres)</th>
<th>Public Facilities (acres)/f/</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH</td>
<td>65</td>
<td>3,000</td>
<td>0</td>
<td>0</td>
<td>222,000</td>
<td>389,000</td>
<td>56,000</td>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>Subtotal for Mission Bay North Redevelopment Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CENTRAL</td>
<td>85</td>
<td>3,090</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>500-room hotel 56,000</td>
<td>111,000 /d/</td>
<td>20.3</td>
<td>1.52</td>
</tr>
<tr>
<td>EAST</td>
<td>51</td>
<td>0</td>
<td>2,952,000</td>
<td>0</td>
<td>273,000 /c/</td>
<td>0</td>
<td>67,000 /d/</td>
<td>7.2</td>
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<td>WEST</td>
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<td>2,605,000</td>
<td>0</td>
<td>310,000</td>
<td>0</td>
<td>23,000 /d/</td>
<td>5.4</td>
<td>0</td>
</tr>
<tr>
<td>UCSF</td>
<td>45</td>
<td>0</td>
<td>0</td>
<td>2,650,000</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>2.2 /e/</td>
<td></td>
</tr>
<tr>
<td>Subtotal for Mission Bay South Redevelopment Area</td>
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<td>3,090</td>
<td>5,557,000</td>
<td>2,650,000</td>
<td>583,000</td>
<td>56,000</td>
<td>201,000</td>
<td>40.9</td>
<td>3.72</td>
</tr>
<tr>
<td><strong>GRAND TOTALS</strong></td>
<td><strong>303</strong></td>
<td><strong>6,090</strong></td>
<td><strong>5,557,000</strong></td>
<td><strong>2,650,000</strong></td>
<td><strong>805,000</strong></td>
<td><strong>445,000</strong></td>
<td><strong>257,000</strong></td>
<td><strong>46.9</strong></td>
<td><strong>5.22</strong></td>
</tr>
</tbody>
</table>

**Notes:**

a. Acreage includes freeway, rail, and net streets.
b. gsf = gross sq. ft.
c. City-serving retail, 23,000, to be dispersed throughout a portion of the subarea.
d. Neighborhood-serving to be dispersed throughout subarea.
e. Exact location of school site in UCSF Subarea to be determined.
f. In addition to the acreage shown in the table, land under I-280 that is not otherwise designated Public Open Space would be designated Public Facilities.

**Source:** Catellus Development Corporation, KCA Engineers, July 1997.
located on the western and eastern ends of Mission Bay North with most of these uses planned for the eastern end of the subarea.

Development heights between Fourth and Seventh Streets would be allowable up to 65 feet, with 10% of the developable area allowable up to 90 feet in height, and 15% allowable up to 160 feet in height. Between Fourth and Seventh Streets, buildings would also be restricted to a maximum average of 50 feet high within 20 feet of the public open space parallel to the Channel edge, to 65 feet high within 100 feet of the north side of the Channel, and to 90 feet high south of Berry Street. Development between Third and Fourth Street would be allowable up to 80 feet high, with 50% of the developable area allowable up to 120 feet high, and 20% allowable up to 160 feet in height. The height zones for the Project Area are presented in Figure III.B.5. At about five stories (about 65 feet), the housing and retail uses would be slightly taller than existing retail uses along Townsend Street west of Fourth Street. The height and scale of the retail uses along Third Street, at an average of 120 feet high, would be similar to the height and scale of the Giants Ballpark, which is 130 feet high along King Street with light standards (i.e., posts) at 175 feet. (Visual quality and urban design are discussed further in “Proposed Redevelopment Plans: Mission Bay North Retail” under “Urban Design” in Section V.D, Visual Quality and Urban Design: Impacts.)

The western block of the North Subarea would be developed with retail and residential uses. This area is surrounded by railroad tracks on the north and freeway ramps on the south. The converted four- and five-story industrial buildings of Showplace Square border the area on Townsend and Seventh Streets. The south side of Townsend Street between Seventh and Fourth Streets is used for on-street angled parking. Access to the residential and retail development would be from Berry Street. The I-280 ramps and the Channel Pump Station are immediately to the south and east.

The area between Fourth, Sixth, and King Streets and the Channel would be developed with residential uses, with some ground-floor neighborhood-serving retail dispersed throughout. It is anticipated that these residential uses would be oriented toward Berry Street and the Channel. Public access and a pedestrian pathway would be developed along the north side of the Channel and at Fifth and Berry Streets as part of the project’s open space improvements. A pedestrian bridge is proposed to be constructed at Fifth Street, subject to obtaining the required permits and approvals, and would provide access between the northern and central residential developments.

The residential and neighborhood-serving uses of the North Subarea would be within a block of existing similar neighborhood-serving retail uses that occupy Townsend Street east of Fourth Street and Third Street north of King Street. Residential uses northeast of the Project Area are three- to six-story-tall buildings with ground-floor neighborhood-serving commercial uses that were constructed.
within the last 10 years in the South Beach subarea of the Rincon Point - South Beach Redevelopment Area. The project’s residential development would continue the trend of converting deteriorating industrial areas near the waterfront to new uses, particularly residential.

Outside the Project Area and across the Channel from these proposed residential uses is the houseboat community of Mission Creek. The community includes 20 one- and two-story houseboats and about 25 permitted pleasure craft (there are 35 berths available). The development of the project would surround the houseboat community with a larger residential community of multi-family housing complexes.

The blocks bounded by Third, Townsend, Fourth, and Berry Streets would be developed with retail uses. Various retail programs could be built under the proposed Mission Bay North Redevelopment Plan. For purposes of analysis in this SEIR, the land use program is assumed to include a theater complex with up to 25 screens, sports-oriented retail, small retail stores intended to foster a street-level experience, theme restaurants, new technology and/or game-related retail, and other eating and drinking establishments. The Giants Ballpark Final EIR discussed the demand for pedestrian-serving retail uses in the vicinity of the ballpark. The development of city-serving commercial entertainment and retail uses in the Project Area would address some of the projected demand of ballpark patrons discussed in that document.

Central Subarea

The Central Subarea would be developed with approximately 3,090 dwelling units, up to 111,000 gross sq. ft. of retail uses, a 500-room hotel with associated uses such as banquet and conference facilities, up to 56,000 gross sq. ft. of retail space, a site for police and/or fire facilities, about 20 acres of open space, and associated parking for about 3,500 vehicles. Five- and six-story residential apartment buildings would be constructed throughout the subarea on both sides of Third Street. The hotel would be located next to China Basin Channel between Third and Fourth Streets. The 1.5-acre site of the police and fire station would include the current site of the Fire Station No. 30 on Third Street at Mission Rock Street. Public open space would be developed along the perimeter of the subarea, on the south side of the Channel, along Terry A. François Boulevard, and at the southern edge of the subarea at The Common, a two-lane roadway with a 130-foot-wide median stretching from Seventh Street to Terry A. François Boulevard.

In this subarea, development would generally be allowable up to 65 feet, with some development allowable up to 90 feet high and 160 feet high, respectively, including: 10% at 90 feet in height and 15% at 160 feet high of the developable area along the Channel; 13% at 90 feet high and 7% at 160
feet high of the developable area north of The Common and, generally, west of Third Street; and
13% at 90 feet high and 7% at 160 feet high of the developable area east of Third Street. Buildings
would also be restricted to a maximum average of 50 feet high within 20 feet of the Channel, and to
90 feet high fronting the linear park on Terry A. François Boulevard (see hatched area in Figure
III.B.5). Access to the existing neighborhood-serving retail uses of Townsend Street and the
proposed project entertainment-oriented uses on Fourth Street would be available via the existing
Fourth Street Bridge and, if built, the pedestrian bridge at Fifth Street.

West of Fourth Street, the residential uses in the Central Subarea would be directly across China
Basin Channel from proposed residential uses on the north side of the Channel. Immediately north
would be the existing houseboat community and the existing and proposed public access and park
areas adjacent to the houseboats. The central portion of the residential uses would be arranged
around a triangular park area. Along the south edge of the subarea, The Common and other open
space would buffer residential uses from the UCSF Subarea and the research and development, light
manufacturing, and office uses in the East and West Subareas.

East of Third Street, residential buildings with ground-floor neighborhood-serving retail would be
north of The Common, west of a waterfront linear park, south of Port property and adjacent to the
new police and fire facilities on the Fire Station No. 30 site. South of The Common would be
research and development, light manufacturing, and office uses with neighborhood-serving and city-
serving retail. Some residential use would face existing and potential future maritime and industrial
uses along the waterfront and to the north on port property. To the east of the Project Area, Pier 50
is designated a Port Priority Area (as is Pier 48) and currently houses the Port of San Francisco’s
Maintenance Operations Facilities (MOF), which supports the maritime-industrial uses of the Port.
The Port’s Public Boat Launch Ramp is located between Piers 52 and 54. The Port of San
Francisco’s long-term plans for the use of port property directly across Third and Mission Rock
Streets are uncertain at this time. Interim parking for the Giants Ballpark is planned for the area
for about the first 10 years of ballpark operation to accommodate about 2,500 vehicles on about 14
acres, including the port property.

Disposition of the port property, outside of the Project Area (including new operations or remediation
activities for petroleum free product contamination), could affect the residential uses of the Central
Subarea directly facing the site on two sides. H&H Ship Service, a tank cleaning facility that handled
identified hazardous wastes, discontinued operations on that site in early 1997. While there is no
current proposal to expand maritime or industrial uses on the piers (Pier 48 or 50), these uses could
expand in accordance with existing zoning and plans. Effects on the proposed project’s residences
east of Third Street could potentially include light and glare and increased noise from an expansion of maritime or industrial uses on Pier 48 and 50.

At the north end of the Central Subarea would be a 500-room hotel with associated uses such as banquet and conference facilities and up to 56,000 gross sq. ft. of associated retail uses. The hotel would be directly across the Channel from the China Basin Landing buildings, which provide patio seating and public access on the Channel, and the Giants Ballpark. The Giants Ballpark site will be developed with a Pacific Bell Learning Center and other retail uses intended to draw a regional audience. The hotel would face the existing industrial uses and proposed Giants Ballpark interim parking on the port property directly across Third Street.

**East Subarea**

The East Subarea would be developed with up to 2,952,000 gross sq. ft. of research and development, light manufacturing, and office use; about 340,000 gross sq. ft. of retail use; about seven acres of open space; and associated parking for about 4,600 vehicles. The retail uses would include about 273,000 gross sq. ft. of city-serving retail and about 67,000 gross sq. ft. of ground-floor neighborhood-serving retail. The neighborhood-serving retail uses would be dispersed throughout the subarea, and the city-serving retail uses primarily would be concentrated at or near the existing Esprit site, with a smaller portion dispersed throughout the center portion of the subarea. The 7 acres of open space would be developed primarily along Terry A. Francois Boulevard. Development in the subarea would be allowable up to 90 feet in height, with 7% of the developable area allowable up to 160 feet high (along Third Street). Buildings along the Bayside linear park would be restricted to 90 feet in height, with development adjacent to a portion of the park frontage limited to 55 feet in height. Buildings in the subarea would be about six stories high.31/

The research and development, light manufacturing, office, and retail uses of the northern portion of the East Subarea would be across The Common from residential units and across Third Street from UCSF instruction, research, and support uses. Across Terry A. Francois Boulevard are maritime-related industrial and commercial uses and public access to the Bay. Maritime uses include tug services, seasonal fishing operations, yacht and boat clubs, and a small-boat yard. The Port of San Francisco's Public Boat Launch Ramp is between Piers 52 and 54, and Agua Vista Park is just south of Pier 64, opposite the Esprit site. Access to existing recreational uses is discussed in "Changes to Circulation Pattern in Mission Bay" under "Year 2015 Transportation System Assumptions" in Section V.E, Transportation: Impacts; the height and scale of new development are discussed in "Views" in Section V.D, Visual Quality and Urban Design: Impacts.
The research and development, light manufacturing, office, and city-serving retail uses in the southern portion of the East Subarea would be within one block of the existing small-scale retail and light industrial uses of the Lower Potrero/Central Bayfront area. Across Terry A. François Boulevard and to the south are the maritime-industrial shipyards of Piers 68 and 70.

**West Subarea**

The West Subarea would be developed with up to 2,605,000 gross sq. ft. of research and development, light manufacturing, and office use; up to 343,000 gross sq. ft. of retail use; about five acres of open space; and associated parking for about 4,100 vehicles. The retail uses would include about 310,000 gross sq. ft. of city-serving retail and 23,000 gross sq. ft. of ground-floor neighborhood-serving retail. The retail uses would be interspersed throughout the subarea. The city-serving retail would be located predominantly on the Castle Metals site. The open space areas primarily would be located at the northern and southern ends of the subarea. Development in the subarea would be allowable up to 90 feet in height, with 15% of the developable area west of Owens Street allowable up to 160 feet high, and 10% of the developable area between Owens Street and Third Street allowable up to 160 feet high. Building height on the Castle Metals site would be restricted to 90 feet high. Building height would be restricted to the freeway height along a minimum of each development block of 60% of the I-280 frontage for a depth of 100 feet from the edge of the freeway. Buildings in the subarea would be about eight stories high.

The new research and development, light manufacturing, office, and retail uses in the northwestern portion of the West Subarea would be south of the Channel and the houseboats, and existing and proposed open space areas of China Basin Channel. These uses would be adjacent to the I-280 structure, which is approximately 75 feet high along the length of Seventh Street. Across I-280 and Seventh Street from the Project Area are light industrial uses including, from north to south, mini-storage facilities, a bus maintenance yard, wholesale trade warehouses, and a vacant warehouse at the intersection of Seventh Street and 16th Street.

South of 16th Street, the research and development, light manufacturing, and office uses would be adjacent to UCSF instruction, research, and support uses on the north, and other research and development, light industrial, and office uses on the west and east. Existing warehouses, auto body shops, and retail and office buildings would face the open space and retail uses of the Project Area along Mariposa Street. Existing residential uses would be within one block of the open space and retail uses. Older residential buildings and newer apartment complexes, part of the Potrero Hill neighborhood, extend to the west and south. Jackson Playground is five blocks from the Project Area, as are churches and other neighborhood-serving retail uses.
New retail and open space uses would be directly north of existing small-scale retail, residential, office, light manufacturing, and live/work uses of Lower Potrero. Residential buildings, predominantly two- to three-stories high, are clustered at the intersection of 18th Street and Tennessee Street. Retail uses include auto body shops, photography labs, graphics services, and restaurants.

**UCSF Subarea**

The UCSF Subarea would be developed with a major new site for UCSF, with about 160,000 gross sq. ft. of instruction space; about 1,220,000 gross sq. ft. of research space; about 265,000 gross sq. ft. of academic support space; about 475,000 gross sq. ft. of academic/campus administration space; about 160,000 gross sq. ft. of campus community space (including retail and other service uses); about 370,000 gross sq. ft. of logistics space, a central utilities plant, about 8 acres of open space, and associated parking for up to 5,300 vehicles. The research space would include laboratories; there would not be any large clinical space, i.e., areas used for seeing patients. Once sufficient UCSF development occurred, a central utilities plant could be constructed to supply UCSF facilities with steam and electric power, and would also serve as the location for chillers, primary electrical service, emergency generators, and other centralized systems. The central utilities plant could also include a cogeneration unit. The UCSF site would "stand alone," i.e., the administration and support functions necessary for the site to interact as a part of the UC campus system would be available on-site. Those functions would include administrative support, logistics, food service, and retail uses. Open space areas would be dispersed throughout the subarea. Buildings within the subarea would range from about 4 to 10 stories high. UCSF classroom and research uses would require about a 15-foot floor-to-ceiling height. For purposes of SEIR analysis, buildings are conservatively assumed to be up to 160 feet high with the majority of buildings at a height of 110 feet or less. The UCSF Subarea would contain a site for a public school, most likely near The Common. The UCSF Subarea would be completely surrounded by other Mission Bay South project development.

The proposed new alignment of Fourth Street would cross the UCSF Subarea; remaining internal streets would be private and would be defined as part of UCSF's design process. UCSF uses would be bordered by South Common Street on the north, Third Street on the east, 16th Street on the south, and Owens Street on the west. No housing is proposed in the UCSF Subarea.

Immediately to the west, south, and east, research and development, light manufacturing, office, and retail uses would abut the UCSF Subarea. The proposed development west, south, and east of the UCSF Subarea would be compatible with the medical research and instructional uses of the campus. To the north would be The Common, providing a buffer for the residential development on the other side. To the south across 16th Street and southeast across Third Street are proposed city-serving retail
uses. The proposed recreational areas of China Basin Channel and the existing recreational uses of the waterfront would be located a few blocks from the UCSF Subarea.

Research and adjacent light manufacturing activities could potentially be incompatible with the development of a public school or child care facilities depending on the type of proposed use and proximity to the school or child care facility, as discussed in “Toxic Air Contaminants” in Section V.F, Air Quality: Impacts. It is anticipated that the site for a public school would be located along the northern border of the UCSF Subarea. The development of the school at this location, along The Common, would reduce potential incompatibility with laboratory, research, and other similar activities. Issues associated with the location of child care facilities are addressed in “Toxic Air Contaminants” in Section V.F, Air Quality: Impacts; “Land Use and Planning Issues” under “Other Issues” in Section V.I, Health and Safety: Impacts; and “Process for Selecting and Approving a Child Care Center and/or School Location,” under “Post-Development Impacts” in Section V.J, Contaminated Soils and Groundwater: Impacts.

Development of the Project Area with residential, retail, institutional medical research, research and development, light manufacturing, office, and open space uses would generally be compatible with the land uses of the adjacent properties as described above for each subarea. As described under “Existing Land Uses in the Project Area,” above, an established community does not exist in the Project Area. Consequently, the project would not disrupt or divide an existing established community.

Nearby Areas

Effects on the Nearby Areas are discussed below. In general, effects on Nearby Areas related to transportation, air quality, noise, and community services are addressed in those sections of the SEIR. Development of Mission Bay would gradually but substantially change the character of this part of the City. Some of the resulting effects of the change in character and intensification of use are relatively predictable and are discussed below. Without knowing the precise location of uses, some other effects could occur, but it would be speculative to attempt to predict them at this time.

Adjacent Port Property

Mission Creek Houseboat Community

Development of the North and Central Subareas with residential, retail, hotel, and open space uses would create a new neighborhood adjacent to the Mission Creek houseboat community. As discussed
earlier, the houseboat community would be surrounded on two sides by residential buildings. The open space amenities proposed along the Channel, including moving Channel Street away from the Channel and developing public access along most of the channel edges, would draw residents and visitors along the north, and primarily south, sides of the Channel. The houseboat community would no longer exist in relative isolation. There would be the same amount of on-street parking for residents and visitors since the houseboat community’s 50 parking spaces would be retained in the project’s public open space along the Channel. Project Area development of ground-floor retail within residential buildings would increase the type and amount of personal services available to the houseboat residents.

Port Priority Areas

Piers 48 and 50 are currently identified in the San Francisco Bay Area Seaport Plan as Port Priority Areas./33/ This designation includes the use of the piers for marine terminals and directly-related ancillary activities such as container freight stations, storage, ship repair and support transportation uses. Though there is no current proposal to expand maritime or industrial uses on Piers 48 or 50, these uses could expand in accordance with existing zoning and plans. Effects on the project’s residences east of Third Street could potentially include light and glare and increased noise from an expansion of maritime or industrial uses on Piers 48 and 50.

Recreational Uses and Public Open Space Along the Waterfront

Development of the Project Area would include improvements to Terry A. François Boulevard and creation of a Bayside linear park west of Terry A. François Boulevard. Existing angle/perpendicular parking would be removed along Terry A. François Boulevard from Pier 54 south to Mariposa Street. Users of the yacht and small boat clubs, the Port of San Francisco’s Public Boat Launch Ramp, Agua Vista Park, and other small boat facilities would compete for access and on-street parking to these facilities with the residents, employees, and visitors, of the Project Area. The Project Area development also would increase the amount of patrons to existing commercial uses, including waterfront restaurants. The lack of available parking would make use of existing facilities inconvenient for those arriving by private vehicles. As demand for the waterfront recreational uses grows, it would be expected that there would be a consequent demand for parking to accommodate these uses.

With the development of the Project Area, the Port may be able to reserve boat trailer parking within 600 feet of the Public Boat Launch Ramp between Piers 52 and 54. The parking, required for a minimum of 20 years under the terms of a grant from the California Department of Boating and
Waterways, had been planned directly across the street on the west side of Terry A. François Boulevard. The Port is considering a location just south of The Common. The location of the boat trailer parking is subject to change if Terry A. François Boulevard is realigned along a new route inland of the existing roadway (see Section VII.A, Variant 1, Terry A. François Boulevard).

South of Market

South Beach and South Park

Development of the retail uses in Mission Bay on Third Street, in conjunction with the construction of the Giants Ballpark, would create a regional destination center in this part of the City. Unlike the Giants Ballpark, these commercial entertainment uses would create a year-round destination center. Currently, the South Beach and South Park portions of the South of Market are active, vibrant communities. In the tradition of most of San Francisco, these neighborhoods derive most of their pedestrian and auto traffic from nearby neighbors. The development of the area as a regional entertainment center would increase the use of the area by tourists visiting San Francisco as well as visitors from other parts of the City and region.

South Beach and South Park residents would likely find that their day-to-day travel patterns would be altered. For example, increased traffic would be encountered as many more people would use The Embarcadero, Third Street and the reconfigured Fourth Street as major thoroughfares. The redevelopment of South Beach, which has replaced low-density maritime and industrial use with taller, denser residential with ground-floor retail uses, would be extended west into the Project Area. That is, taller and denser residential and retail development would replace low-density uses and vacant land. Increased pedestrian and auto traffic would occur in tandem with buildout of the Project Area.

Of particular interest to harbor users is access to South Beach Harbor, which is the largest waterfront recreational use south of the Bay Bridge. Build-out of the Project Area would increase the number of residents, daytime employees, and vehicle traffic, which would increase use of the area and could spur further development. Additional recreational uses and associated parking may be developed in the future to meet the new demand. However, in the short term, existing recreational facilities may be impacted by the increased number of pedestrians, and thus pedestrian and vehicle congestion, in the area. The lack of available parking could make use of existing facilities inconvenient for those arriving by private vehicles.
Potrero Hill/North Potrero

The research and development, light manufacturing, office, and retail uses proposed for the East and West Subareas and the instruction, research, and support uses of the UCSF Subarea would represent a change in the type and intensity of industrial uses currently operating in the Project Area and Nearby Areas. It is anticipated that the UCSF site would attract research and development uses that would benefit from proximity to a medical university. The development of the East, West, and UCSF Subareas would increase the intensity of individual business operations as well as the density throughout the Project Area. The UCSF site would operate as a stand-alone site, independent of the existing UCSF Parnassus Heights site and other UCSF sites, with a population present throughout the day and evening. The business park operations of the East and West Subareas would similarly employ a worker population present throughout the day. The new workers would remain in the Project Area throughout the day, and possibly evening, and would increase demand for restaurants and personal service retail. Some of this demand would be met by the ground-floor neighborhood-serving retail developed throughout the East and West Subareas. However, the commercial areas of Potrero Hill and North Potrero would likely experience increases in demand for restaurants and personal services. Some Project Area employees might choose to park on nearby streets if they were unable to find long-term parking in the Project Area. Most of the adjoining and nearby blocks below 17th Street contain industrial and commercial uses with high daytime use. Project workers could find parking in these areas and cause spillover demand from existing industrial and commercial users who may then seek parking in adjoining and more-distant residential areas where daytime parking is more plentiful. Thus, those residential blocks south of 17th Street would likely experience increased use of existing on-street parking. However, the project's daytime worker demand likely would not coincide with the usual evening/night demand of residential areas. See additional discussion in “Parking Impacts” in Section V.E, Transportation: Impacts.

Other effects would likely be experienced by the residential neighborhoods of Potrero Hill and North Potrero. Development of the Project Area would extend dense urban development from the Downtown area toward these residential communities to the south. Thus, residents of Potrero Hill and North Potrero would have available a wider range of commercial and retail options.

Showplace Square

Unlike the close-in residential and neighborhood-serving retail neighborhoods of South Beach and South Park, the city-serving retail areas of Showplace Square and the more distant retail and commercial areas of the South of Market generally would not be affected by development of the Project Area. However, pedestrian traffic from the city-serving retail proposed on Berry Street
between Seventh and Sixth Streets may increase the amount of activity at the large interior design showrooms and retail outlet stores of Showplace Square. Some Project Area employees (primarily from expected office uses) might choose to park on nearby streets if they were unable to find long-term parking in the Project Area. Most of the nearby blocks north of Channel Street contain city-serving retail and wholesale uses with available parking. Project demand for parking likely would not affect this area since parking is more plentiful and since Showplace Square is farther away from the project’s potential office uses. See additional discussion in “Parking Impacts” in Section V.E, Transportation: Impacts.

**Lower Potrero/Central Bayfront**

As noted above for the Potrero Hill and North Potrero neighborhoods, new workers in the East, West, and UCSF Subareas would remain in the Project Area throughout the day and would increase demand for restaurants and personal service retail. Some of the Project Area employees might choose to park in the Lower Potrero area on streets where no time limits are imposed. Development of city-serving retail south of Mariposa Street on both sides of Third Street would increase the amount of retail activity in the area. The Lower Potrero area would experience an increase in commercial activity, creating pressure to convert existing light industrial uses to pedestrian-serving uses. The live/work uses currently under construction in the Lower Potrero would not be affected.

Some Project Area employees (primarily from expected office uses) might choose to park on nearby streets if they were unable to find long-term parking in the Project Area. Most of the adjoining and nearby blocks south of Mariposa Street contain industrial and commercial uses with high existing daytime use and consequent lack of available parking. However, if project workers could not find parking in these areas they may seek parking in adjoining and more-distant residential areas (for example, west of Pennsylvania Street) where daytime parking is more plentiful. Thus, the residential areas west of Pennsylvania Street could experience increased use of existing on-street parking since the project’s daytime worker demand likely would not coincide with usual evening/night demand of those residential areas. See additional discussion in “Parking Impacts” in Section V.E, Transportation: Impacts.

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**NOTES: Land Use**

V. Environmental Setting and Impacts

B. Land Use

2. 1990 FEIR, Volume Two, pp. IV.4-IV.7.* The Mission Creek houseboat community was in the 1990 FEIR project area. The Project Area in this SEIR does not include the houseboat community. It is discussed in this SEIR as part of the “Adjacent Port Property.”


4. A survey of existing land uses for the Project Area and for the adjoining areas was conducted in July 1997. The land use survey was conducted by EIP Associates. The survey included the area bounded by Bryant and Second Streets to the north, the waterfront piers from Pier 40 to Central Basin on the east, 19th Street to the south, and Eighth Street and Kansas Street to the west.*

5. 1990 FEIR, Volume Two, pp. VI.B.2-VI.B.6, and Table VI.B.1, p. VI.B.4.*

6. “Interim uses” in this context, as defined under Article 9 of the San Francisco Planning Code, refers to the conditional development of land uses in Mission Bay for a duration of up to 10 years; interim uses may not be consistent with existing zoning. The Redevelopment Plans permit interim uses for periods of up to 15 years, with additional extensions granted at the discretion of the Redevelopment Agency.

7. No change is proposed in this area, although the area is included in the project boundaries and Catellus holds the underlying title.

8. City and County of San Francisco, San Francisco General Plan, Transportation Element, Table 1: Classification of Elements in Vehicular Circulation Plan, p. 1.4.35.*


10. The properties on the Castle Metals site, located on Third Street at Mariposa Street, are not owned by Catellus. (Note: The large warehouse on the Castle Metals site belongs to 1900 Third Street L.L.C.)

11. 1990 FEIR, Volume Two, pp. VI.B.29-VI.B.38.*


13. South of China Basin Channel and east of Third Street are seawall lots occupied by industrial uses such as recycling facilities; this is also the site of the former H&H Ship Service Company. Port property is primarily made up of “finger piers,” pile-supported extensions into the water, and “marginal wharves,” which are constructed parallel to the shoreline or seawall and are generally located between finger piers. These wharves are customarily designated with a “½,” as in Pier 40⅓. Port of San Francisco, Waterfront Land Use Plan, 1996, p. 110.*


15. Under the 1990 Mission Bay Plan, a 10.8-acre area (470,000 sq. ft.) was to be developed as open space/public access uses and was to be called the Mission Bay Wetlands Park. Port of San Francisco, Waterfront Land Use Plan, 1996, p. 144.*
V. Environmental Setting and Impacts

B. Land Use


17. San Francisco Planning Code, Appendix I to Article 10.

18. On July 29, 1987, the State legislature adopted legislation freeing Port Seawall Lots 331, 332, and 333 from public trust use restrictions for 66 years and enabling the construction of almost 300 housing units on port property, the South Beach subarea of the Rincon Point - South Beach Redevelopment Project Area. Seawall Lots 328 and 330 are used for parking. Seawall Lot 329 is open space adjacent to the Portside apartment complex. Port of San Francisco, Waterfront Land Use Plan, 1996, p. 144.*

19. A Planning Department report on live/work projects within San Francisco identified over 40 such projects within the area bounded by the Bay Bridge, I-280, and Cesar Chavez Street.

20. Pier 80, at Cesar Chavez Street, and Piers 94 and 96, south of Islais Creek Channel, contain two modern, deep-water cargo terminals complete with on-dock rail facilities for intermodal cargo, the only Northern California facility of its kind. With the departure of the Port's larger shipping lines, the container terminals operate at about 2% to 5% of capacity. The Port has reserved backlands adjacent to Piers 70, 94, and 96 and some seawall lots for the future regional expansion of maritime operations, including cargo shipping, cargo support services, and ship repair; the facilities remain vacant, unimproved, or underutilized. Pacific Gas & Electric operates a power plant adjacent to port jurisdiction at Pier 72 (22nd Street). Port of San Francisco, Waterfront Land Use Plan, 1996, p. 153.*

21. Mission Bay North consists of Lots 2, 3, and 4 of Assessor's Block (AB) 3795; Lot 3 of AB 3796; Lot 2 of AB 3797; Lots 1 and 2 of AB 3798; Lots 2, 4, and 5 of AB 3804; Lot 1 of 3805; Lots 6, 7, 9, and 10 of AB 3806; and the I-280 right-of-way bounded by King/Third/Berry/Sixth Streets. Information obtained from the Planning Department, Planning and Zoning Information counter, July 29, 1997.

22. Mission Bay South consists of Lots 2, 4, 6, and 7 of AB 3809; Lots 6 and 7 of AB 3810; Lot 1 of AB 3813; Lots 2 and 3 of AB 3819; Lots 2 and 3 of AB 3822; Lots 2 and 3 of AB 3832; Lots 2 and 3 of AB 3835; Lots 1, 2, 4, 6, and 7 of AB 3837; Lots 1, 2, and 3 of AB 3838; Lots 1 and 2 of AB 3839; Lots 1, 2, and 3 of AB 3840; Lots 1, 2, and 3 of AB 3841; Lots 1 and 2 of 3849; Lots 1, 1A, 1B and 2 of AB 3850; Lot 1 of AB 3851; Lots 1 and 2 of AB 3852; Lot 1 of AB 3853; Lot 1 of AB 3892; Lot 1 and 2 of AB 3940; Lot 1 of AB 3941; Lots 2, 3, and 4 of AB 3942; Lot 1, 3, 6, and 7 of AB 3943; Lot 4 of AB 3944; and Lot 1 of AB 3948. Information obtained from the Planning Department, Planning and Zoning Information counter, July 29, 1997.


24. Fully enclosed warehouse buildings located east of Third Street would be allowed to continue in use for a somewhat longer period, consistent with the period currently allowed under Planning Code Section 983.

25. The Caltrain rail right-of-way includes the Amtrak police station and two other structures, both abandoned, in the northwest corner of the Project Area. These buildings are owned by Caltrain. The abandoned buildings include a warehouse and a restaurant.
V. Environmental Setting and Impacts
   B. Land Use


27. City and County of San Francisco, Planning Department, San Francisco Giants Ballpark at China Basin Final Environmental Impact Report, Planning Department File No. 96.176E, State Clearinghouse No. 96102056, certified June 26, 1997, Volume One, p. IV.24.* For analysis purposes, the Giants Ballpark FEIR assumes that by 2015 a parking structure or structures will have been constructed for up to 5,000 vehicles in an undetermined location south of the Channel. The Giants Ballpark FEIR also analyzed the effects of providing no parking south of the Channel in Variant B, concluding that traffic effects in the area near the ballpark would be less, because: 1) fewer vehicles would be attracted to that location, 2) a portion of the parking demand would be met in parking facilities and on streets farther than a 20-minute walk from the ballpark, and 3) there could be considerable additional demand for transit services in the Third Street light rail corridor, as patrons found parking south of the Mission Bay Project Area close to the new light rail line.

28. In order to present a conservative SEIR analysis, particularly for traffic impacts, a 25-screen cinema and other intensive land use assumptions were made.


30. The Waterfront Land Use Plan acknowledges the planning underway for Mission Bay and states that the Port will re-evaluate long-term land uses for the area as more information becomes available.*

31. Research and development uses typically require a floor-to-floor height of 15 to 18 feet, rather than the 10 feet associated with residential or 13 feet associated with office space.

32. The UCSF LRDP assumed a parking supply of two spaces per 1,000 gross square feet for planning purposes. It is anticipated by UCSF that the total number of parking spaces at full build-out will be fewer than 5,300 and will approximate the estimated demand, owing to proposed enhanced transit service and future development of alternate forms of transportation. University of California San Francisco, 1996 Long Range Development Plan, adopted January 1997, p. 211.


34. Alec Bash, Waterfront Planner, Special Projects, Port of San Francisco, memorandum to Paul Deutsch, Senior Environmental Planner, Mission Bay EIR Coordinator, San Francisco Planning Department, January 20, 1998.

* A copy of this report is on file for public review at the Office of Environmental Review, Planning Department, 1660 Mission Street, San Francisco.
C. BUSINESS ACTIVITY, EMPLOYMENT, HOUSING, AND POPULATION

This section describes the existing conditions relevant to the analysis of changes in business activity, employment, housing, and population, including a description of current conditions and trends that form the cumulative context through year 2015. Conditions are described for the Project Area, the citywide and regional context, and for nearby, neighborhood areas adjacent to or close to the Project Area. These Nearby Areas include Adjacent Port Property; South of Market, both east and west of Third Street; Potrero Hill, North Potrero, and Showplace Square; Lower Potrero and Central Bayfront; Inner Mission; and South Bayshore. The impact analysis addresses changes in business activity, employment, housing, and population within the Project Area and San Francisco, in San Francisco's jobs/housing balance, and in citywide housing market conditions.

Information from the 1990 FEIR that is still relevant has been summarized; that information is incorporated in the following discussion by reference. New and updated information on the Project Area and on citywide employment, population, and housing is also presented. The endnotes for this section begin on p. V.C.40.

SETTING

PROJECT AREA

This section describes existing activity (businesses, employment, trends in level of activity) in the Project Area, based on field work (including a survey of Project Area businesses) conducted in June, July, and August 1997 and lease records from Catellus and the Port of San Francisco. There are no permanent residents in the Project Area. The project area analyzed in the 1990 FEIR included China Basin Channel, the houseboat community, and the pleasure-boat marina. Those port tenants located along China Basin Channel are not a part of the current Project Area. They are discussed as part of a Nearby Area for the analysis in this SEIR (see "Adjacent Port Property" later in this Setting subsection).

Existing Business Activity and Employment

There were about 95 establishments doing business in the Mission Bay Project Area in 1997. Those establishments provide jobs for about 1,670 workers (see Table V.C.1). Total employment in the Project Area represents less than 1% (about 0.3%) of total employment in San Francisco. Most of the establishments (60%) and employment (70%) are south of China Basin Channel and west of Third
V. Environmental Setting and Impacts
C. Business Activity, Employment, Housing, and Population Setting

### TABLE V.C.1
MISSION BAY PROJECT AREA ESTABLISHMENTS AND EMPLOYMENT
BY BUSINESS ACTIVITY, 1997

<table>
<thead>
<tr>
<th>Business Activity</th>
<th>Establishments</th>
<th>Percent of Total</th>
<th>Employment</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale/Distribution/Warehouse</td>
<td>31</td>
<td>33%</td>
<td>610</td>
<td>37%</td>
</tr>
<tr>
<td>Transportation &amp; Related Services</td>
<td>13</td>
<td>14%</td>
<td>480</td>
<td>29%</td>
</tr>
<tr>
<td>Office</td>
<td>16</td>
<td>17%</td>
<td>200</td>
<td>12%</td>
</tr>
<tr>
<td>Manufacturing/Construction/Repair</td>
<td>9</td>
<td>10%</td>
<td>174</td>
<td>10%</td>
</tr>
<tr>
<td>Retail/Restaurant</td>
<td>6</td>
<td>6%</td>
<td>122</td>
<td>7%</td>
</tr>
<tr>
<td>Recreation</td>
<td>3</td>
<td>3%</td>
<td>46</td>
<td>3%</td>
</tr>
<tr>
<td>Design/Multimedia</td>
<td>5</td>
<td>5%</td>
<td>33</td>
<td>2%</td>
</tr>
<tr>
<td>Vehicle/Equipment Storage</td>
<td>10</td>
<td>11%</td>
<td>6</td>
<td>0%</td>
</tr>
<tr>
<td>Community Facility</td>
<td>1</td>
<td>1%</td>
<td>—</td>
<td>0%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>94</strong></td>
<td><strong>100%</strong></td>
<td><strong>1,671</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Note:* Employment data are approximate.


Street. The highest levels of business activity in the Project Area are concentrated in several locations along Third Street, Sixth Street, 16th Street, and east of Third Street along Illinois and the Fourth Street extension.

There are many different types of business activities and jobs in the Project Area, although certain categories predominate. Currently, the largest numbers of both establishments and employees are in the Wholesale/Distribution/Warehouse business activity (see Table V.C.1). That group represents one-third of all Project Area establishments and almost 40% of Project Area employment. Warehouse space is also the predominant building space type in the Project Area, representing about 60% of all building space in use by businesses (see Table V.C.2). Transportation and Related Services is the next largest business activity ranked by both number of jobs and building space in use.

The types of business operations classified in these two categories are very similar in terms of the types of space used (warehouses, truck/van terminals, large open areas for vehicle parking). In the Transportation business activity particularly, a large share of the employees spend most of their day away from the base of operations in the Project Area. The two categories are distinguished by the
V. Environmental Setting and Impacts
C. Business Activity, Employment, Housing, and Population Setting

TABLE V.C.2
MISSION BAY PROJECT AREA - BUILDING SPACE AND LAND AREA USED BY BUSINESSES - BY BUSINESS ACTIVITY, 1997

<table>
<thead>
<tr>
<th>Business Activity</th>
<th>Building Space (gsf)</th>
<th>Percent of Total</th>
<th>Land Area (gsf)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale/Distribution/Warehouse</td>
<td>875,870</td>
<td>58 %</td>
<td>147,800</td>
<td>7 %</td>
</tr>
<tr>
<td>Transportation &amp; Related Services</td>
<td>276,850</td>
<td>18 %</td>
<td>185,300</td>
<td>9 %</td>
</tr>
<tr>
<td>Office</td>
<td>71,907</td>
<td>5 %</td>
<td>--</td>
<td>0 %</td>
</tr>
<tr>
<td>Manufacturing/Construction/Repair</td>
<td>71,800</td>
<td>5 %</td>
<td>301,662</td>
<td>15 %</td>
</tr>
<tr>
<td>Retail/Restaurant</td>
<td>54,621</td>
<td>4 %</td>
<td>166,996</td>
<td>8 %</td>
</tr>
<tr>
<td>Recreation</td>
<td>27,400</td>
<td>2 %</td>
<td>448,378</td>
<td>23 %</td>
</tr>
<tr>
<td>Design/Multimedia</td>
<td>29,432</td>
<td>2 %</td>
<td>--</td>
<td>0 %</td>
</tr>
<tr>
<td>Vehicle/Equipment Storage</td>
<td>97,400</td>
<td>6 %</td>
<td>682,412</td>
<td>34 %</td>
</tr>
<tr>
<td>Community Facility</td>
<td>12,000</td>
<td>1 %</td>
<td>50,000</td>
<td>3 %</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,517,280</strong></td>
<td><strong>100 %</strong></td>
<td><strong>1,982,548</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Notes: gsf = gross square feet.
Data are approximate.


fact that the Wholesale/Distribution/Warehouse establishments operate primarily for their own account, while the Transportation and Related Services establishments provide trucking and other transportation services to a variety of customers.

Office establishments are the next largest group in terms of employment, accounting for about 200 Project Area jobs. As expected, this business activity uses relatively small amounts of space and no open land area. The offices located in the Project Area range from very small (five or fewer employees) to as many as 40 employees. The smaller offices are professional service establishments, construction management offices, manufacturers’ representatives, and shipping agents. The larger offices include headquarters and administrative support functions for small manufacturers and business service establishments.

Businesses engaged in Manufacturing/Construction/Repair activities are also a substantial presence in the Project Area (10% of Project Area establishments and employment). This business activity includes construction materials suppliers, special trades contractors and suppliers, and vehicle and equipment rental and repair operations. The large amount of land area used by these activities (15%
of the total land area used by businesses) includes the two ready-mix concrete plants. Many of the workers in this business activity work away from the Project Area most of the time.

Retail/Restaurant and Recreation business activities together account for about 10% of Project Area establishments and employment. The Retail/Restaurant group includes the largest single employer in the Project Area: the Esprit Outlet (retail clothing and accessories) employs about 90 people; 75% are part-time workers. These activities do not use much building space in the Project Area; they do use open land for parking. In addition, taking advantage of relatively undeveloped but close-in locations and excellent freeway access, the large recreation facilities in the Project Area use almost one-quarter of the open land area used by businesses.

The Retail/Restaurant and Recreation categories combine businesses long-established in the Project Area with relatively recent additions. One small coffee shop located along the Third Street corridor has served southern waterfront customers for almost 50 years. After operating for 20 years near the Caltrain terminal north of China Basin Channel, the San Francisco Recreational Vehicle (SFRV) Park ceased doing business on the site at the beginning of 1998.

The Esprit Outlet opened about 13 years ago and was a precursor to the newer types of large-scale recreation and retail activities that have followed it to this location. The Mission Bay Golf Center opened in 1992, using almost 300,000 square feet of land area (over 6 acres) for a driving range. A restaurant and retail shop have opened as sub-tenants of the center. An in-line hockey sports facility (Bladium) opened in 1995 west of Third Street just south of the Lefty O’Doul Bridge. Similar to the Esprit Outlet and the Golf Center, Bladium also offers retail and eating and drinking operations.

Design/Multimedia is a relatively small category for the Project Area in terms of both employment and building space use. These establishments do not use traditional office space and are attracted to the Project Area by the relatively low cost and flexibility of the existing building space, availability of parking, and the location (proximity to downtown and freeways). Design/Multimedia establishments include specialized professional services and production functions in the graphics, video, and arts and entertainment sectors.

There are a relatively large number of establishments in the Vehicle and Equipment Storage category (10% of all Project Area establishments). Most of these operations are storage functions only; there are no employees on-site. They include open air construction storage and parking lots north of the Channel and a 7-acre swath of open land used for the occasional storage of containers and truck trailers in the middle of the Project Area south of the Channel west of Third Street. Open air storage accounts for over one-third of the Project Area land used by businesses. Much of this space is only
in use on an interim basis, e.g., when a downtown construction project is underway or when excess containers and truck trailers need accommodation.

Finally, there is one active public facility in the Project Area. The pump station north of the Channel is operated by the City and County of San Francisco. No workers are based at this location; up to 20 may work there in an emergency.

Characteristics of Jobs in the Project Area

In general, there is a considerable mix of occupations in the Project Area. The largest single occupational category is the “operative” category. Most of those jobs are in the traditionally “industrial” business activities: transportation and related services, wholesale/distribution/warehouse, manufacturing/construction/repair, and vehicle/equipment storage. Operatives are truck drivers and delivery workers. The next largest occupational group is the “sales” category. One large establishment (the Esprit Outlet) accounts for most of those jobs. There are about equal proportions of jobs in managerial and clerical occupations, and they are found throughout the many different types of establishments in the Project Area. The jobs in the “other” occupational category represent workers in warehouses, movers, and inventory/stock clerks. The occupational categories representing the smallest numbers of Project Area workers are: professional/technical, service, and skilled crafts. Appendix Table C.1 presents the estimates of Project Area jobs by occupation, based on detailed information collected during the project area business survey undertaken for the 1990 FEIR.3/

Rail Freight Users and Maritime-related Activity

Rail freight use and maritime-related activity in the Project Area have declined over time. See “Rail Freight Users” and “Maritime-related Activity” in Appendix C for detail on the results of the 1997 business survey and comparison to conditions described in the 1990 FEIR.

Trends in Activity in the Project Area

Types of Business Activities

Overall, the level and type of business activity in the Project Area have not changed much compared to conditions in 1985 described in the 1990 FEIR.4/ With the addition of two new categories and some modifications to the types of businesses included in other categories, the same classification of business activities used in the 1990 FEIR describes current activity in the Project Area. The two new categories are Design/Multimedia and Recreation. The Design/Multimedia category recognizes a
cluster of establishments in those industries new to the Project Area since 1985. Similarly, the Recreation category acknowledges the former San Francisco Recreational Vehicle Park and two more recent additions (the Mission Bay Golf Center and Bladium).

One type of activity not observed in the Project Area in 1997 is Arts/Design. The survey conducted for the 1990 FEIR identified several small artist studios and design workshops in the Project Area. The Design/Multimedia category now includes similar types of activities (graphic design and video production studios).

Generally, the Project Area continues to function as it did in the mid-1980's: a central distribution location with good access to downtown, other parts of San Francisco, as well as East Bay and South Bay locations; a central location for construction staging and other material and equipment storage; a location offering flexible, lower-rent space suitable for a variety of functions (production, distribution, administration, and storage), in addition to ample parking.

The somewhat subtle changes to these functions have mostly to do with transportation factors; reliance on trucks for shipping and receiving is more prevalent than in the past. While the types of business activities in the Project Area have not changed much, relationships to the local and regional transportation system have evolved. Truck transport has replaced rail freight and water-borne goods movement. Virtually all businesses in the Project Area rely on some degree of regular truck access to their facility. For many establishments in the Project Area, shipping and receiving are the very nature of their business; for others, truck transport is an ancillary element of doing business.

Tenure of Businesses in the Project Area

Not only are the same types of activities in the Project Area, but many (at least 25%) are the same establishments. Some establishments have relocated within the Project Area. The responses to the 1997 business survey indicate that about half of Project Area establishments have been located there for five or more years. Although there are longer-term occupants in every business activity except Design/Multimedia, a disproportionate share of the longer-term Project Area establishments are in the Wholesale/Distribution/Warehouse and Transportation business activities. As they have for many years, these types of operations continue to take advantage of suitable space and open land area in a central and highly accessible location.

Although there continues to be evidence of businesses moving out of the Project Area and some establishments identified on lease records do not appear to be active in the Project Area, there is less turn-over of businesses than was the case in the mid-1980's. Loss of Project Area business activity
attributable to the decrease in the maritime, industrial, and distribution activity in San Francisco that had supported many earlier tenants was largely complete by the late-1980's. The level of distribution, transportation, and industrial support operations in the Project area appears to have stabilized over the last 10 years. Small offices and Manufacturing/Construction/Repair operations appear to be more well-established in the Project Area, and the newer uses (Recreation and Design/Multimedia) are evidence of the Project Area’s ability to capitalize on the growth of emerging sectors in the City’s economy.

**Lease Terms**

A few tenants hold leases of 20 years or more. These are land leases negotiated in the 1970's; one dates from 1951. Most of the land leases expire in 1997, exclusive of renewal options; one extends to 2001 and another to 2013. In 1985, most of the establishments in the Project Area operated under month-to-month leases, accepting lack of long-term location security in return for below-market-rate rents (at that time in the range of $0.20 - $0.30 per square foot). Since that time, it appears that more longer-term leases have been negotiated; for example, most of the tenants in the Wholesale/Distribution/Warehouse and Transportation categories have three- to five-year leases; some terms extend to eight or nine years. Among the other business activities, month-to-month leases are more prevalent. Many of the longer-term leases expire in the next three to five years. Many tenants whose leases have expired hold over in the Project Area on a month-to-month tenancy.

Consistent with the change in lease terms, rental rates are higher than they were in 1985. The base rent for warehouse space averages about $0.40 per square foot. The same average holds true for Retail/Restaurant, Recreation, and Design/Multimedia uses. The base rental rate for office space averages about $0.66 per square foot, and the rate for storage space is lower at about $0.20 per square foot. Many tenants cite affordable space costs as a prime reason for their choice to locate in the Project Area.

Sub-leases are not as common in the Project Area as they were in 1985. Most of the current sub-tenant arrangements are among Office activities and the cluster of Design/Multimedia establishments. There appear to be fewer instances of trucking and warehousing establishments sub-leasing space to related operations.

**CITYWIDE AND REGIONAL CONTEXT**

This following discussion provides information describing the cumulative context for employment, population, and commute patterns (where people live and work) in San Francisco and the rest of the
Bay Area region. The tables present the setting year and (for the rest of the region outside San Francisco) year 2015 population and employment estimates that are used in the cumulative analyses in this SEIR. The text discusses trends and patterns that the numbers illustrate. (The year 2015 cumulative context scenario for San Francisco employment and population is described later in the Impacts subsection under “Project Area and Cumulative Citywide Growth.”) The citywide and regional context also includes information on housing market conditions and the factors influencing those conditions, as background to the housing market analysis.

**San Francisco Business Activity and Employment**

Table V.C.3 presents data from San Francisco’s 1996 Commerce and Industry Inventory describing the overall composition of employment in San Francisco. In 1995, there were 524,000 wage and salary jobs in San Francisco. Self-employed workers are estimated to represent another 10% of total employment in the City./5/ About one-third (32%) of wage and salary jobs in San Francisco are office jobs; the next largest categories are industrial business activities and cultural/institutional activities, each claiming just over 20% of total employment in the City. Retail business activities account for about 15% of total employment; government accounts for 6%; and hotels account for just over 3% of total employment.

Total employment in San Francisco peaked in 1990 at about 559,000 jobs. From this high point, San Francisco lost almost 50,000 jobs during the first years of the decade. The City has recovered from the recession; the most recent employment estimates for 1996 indicate total San Francisco wage and salary employment of 535,600./6/ This is lower than the 1985 setting estimate of San Francisco wage and salary employment presented in the 1990 FEIR (565,800 jobs)./7/

The mix of types of jobs in San Francisco has changed somewhat over the last 15 years. While office employment has held steady at about 32% of the total, industrial employment has declined from 27% to 22% of the total. The share of San Francisco employment in the cultural and institutional sectors has increased, offsetting that decline. (The cultural/institutional land use activity includes health services, private educational services, private museums, theaters, nightclubs, and social services.) The retail and hotel sectors also have increased as a share of total jobs in San Francisco.

San Francisco is expected to continue to recover the job losses of the early 1990’s and return to a period of economic expansion, provided land and facilities are available to accommodate the space demands of expected growth. Although not anticipated to be the source of substantial employment growth, corporate headquarters and state and federal government offices will maintain a presence in San Francisco. The City will continue to be a regional and national center for the finance sector.
V. Environmental Setting and Impacts
C. Business Activity, Employment, Housing, and Population Setting

TABLE V.C.3
SAN FRANCISCO EMPLOYMENT BY LAND USE ACTIVITY, 1995

<table>
<thead>
<tr>
<th>Land Use Activity</th>
<th>Jobs in 1995</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>167,379</td>
<td>31.9%</td>
</tr>
<tr>
<td>Retail</td>
<td>81,878</td>
<td>15.6%</td>
</tr>
<tr>
<td>Industrial</td>
<td>114,007</td>
<td>21.8%</td>
</tr>
<tr>
<td>Hotel</td>
<td>18,287</td>
<td>3.5%</td>
</tr>
<tr>
<td>Cultural/Institutional</td>
<td>109,546</td>
<td>20.9%</td>
</tr>
<tr>
<td>Government</td>
<td>31,624</td>
<td>6.0%</td>
</tr>
<tr>
<td>Other</td>
<td>1,383</td>
<td>0.3%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>524,104</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: California Employment Development Department, as presented in San Francisco Planning Department, Commerce and Industry Inventory, August 1996.

printing and publishing, advertising, design, other business and professional services, and the multimedia sector, as well as some components of the arts and entertainment sectors. The health care industry and related sectors—including, potentially, biotechnology—as well as educational services will be sources of economic expansion and job growth in San Francisco in the future. Tourism and convention activity will continue to be important elements of the City’s economic base, supporting retail, restaurant, entertainment, and services sectors. Population growth in the City and the region will support expansion of city-serving and more regionally-oriented retail activity. Continuing a long-term trend, employment in general industry, warehousing and distribution, cargo shipping, and ship repair is expected to decline or remain at relatively low levels for the foreseeable future.

San Francisco Households, Population, and Employed Residents

San Francisco’s population totaled 778,068 in 1997, an increase of 54,109 people—7.5% —over the count in the 1990 Census (see Table V.C.4)./8/ There are about 310,000 households in San Francisco in 1997;/9/the average household size is estimated to be 2.44 persons/10/, and there are, on average, about 1.24 workers per household.

The 1985 population estimate used for the setting in the 1990 FEIR was 741,570. That FEIR also included an estimate of population in San Francisco for the year 2000./11/ The updated 1997 setting
V. Environmental Setting and Impacts  
C. Business Activity, Employment, Housing, and Population Setting  

TABLE V.C.4  

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Total Population/a/</td>
<td>678,974</td>
<td></td>
<td>723,959</td>
<td></td>
<td>778,068</td>
</tr>
<tr>
<td></td>
<td>44,985</td>
<td>6.6%</td>
<td>54,109</td>
<td>7.5%</td>
<td>56,522</td>
</tr>
<tr>
<td>Household Population</td>
<td>654,511</td>
<td></td>
<td>699,330</td>
<td></td>
<td>755,852</td>
</tr>
<tr>
<td></td>
<td>44,819</td>
<td>6.8%</td>
<td>(1,580)</td>
<td>-0.4%</td>
<td>56,522</td>
</tr>
<tr>
<td>Employed Residents/b/</td>
<td>342,044</td>
<td></td>
<td>386,380</td>
<td></td>
<td>384,800</td>
</tr>
<tr>
<td></td>
<td>44,336</td>
<td>13.0%</td>
<td>(1,580)</td>
<td>-0.4%</td>
<td>56,522</td>
</tr>
<tr>
<td>Households/c/</td>
<td>298,956</td>
<td></td>
<td>305,584</td>
<td></td>
<td>309,661</td>
</tr>
<tr>
<td></td>
<td>6,628</td>
<td>2.2%</td>
<td>(1,580)</td>
<td>-0.4%</td>
<td>4,077</td>
</tr>
<tr>
<td>Persons-per-household/d/</td>
<td>2.19</td>
<td>2.29</td>
<td>2.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workers-per-household/e/</td>
<td>1.15</td>
<td>1.26</td>
<td>1.24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:  

a. Includes both household population and population living in group quarters.  

b. Residents of San Francisco who are employed, regardless of place of work. 1980 and 1990 data from the Census; 1997 estimate calculated based on a straight-line interpolation between estimates for 1995 and 2000 from ABAG Projections '96.  
c. Households are equivalent to occupied housing units.  
d. Household population divided by number of households.  
e. Employed residents divided by number of households.  


population estimates used in this SEIR are consistent with the 1985 through 2000 citywide scenario for population presented in the 1990 FEIR. A population estimate for 1997, based on the growth rate implicit in the 1990 FEIR (years 1985 through 2000 scenario), would be 777,000 (almost exactly the current population estimate for the City used in this SEIR). On the other hand, the 1985 setting estimate for households in San Francisco presented in the 1990 FEIR (based on a California Department of Finance estimate current at that time) was substantially higher than both the 1990 Census household count for San Francisco and the current 1997 California Department of Finance household estimates for the City used in this SEIR. One implication of these differences is that average household size in San Francisco has increased more than anticipated when the 1990 FEIR analysis was completed.

Following two decades of decline in the 1960's and 1970's, San Francisco's population has increased steadily since 1980. The increase is attributable to additions to the housing stock and occupancy of vacant units, both of which accommodate more households in San Francisco, as well as to increases
in household size, measured by the average number of people in a household. The 1980 Census measured persons per household at 2.19 for San Francisco. The increase to 2.44 persons per household in 1997 (according to the California Department of Finance) means that about 75,000 of the almost 100,000-person population growth from 1980 to 1997 has been accommodated in the existing housing stock by increases in household size. The increases in household size are attributable to a number of factors, including economics (especially the high cost of housing in San Francisco), as well as ethnic traditions or cultural preferences, and how those demographic characteristics are represented in the total population.

The number of employed residents of San Francisco grew through the 1970's and 1980's. The increasing labor force participation of women, the dominance of the baby-boom generation in the labor market, and steady increases in employment opportunities contributed to the increase in employed residents. There was an increase in workers per household, and the employed population grew at a faster rate than the population overall.

Between 1990 and 1997, the number of employed residents has stayed about constant or declined slightly. This reflects the effects of the recession (job loss and slower growth in job opportunities) and the leveling-off of both increases in labor force participation and increases in the percentage of the population in the prime labor force age group (those 16-64 years of age).

**Employment in the Rest of the Region**

There were about 2.5 million jobs in the eight Bay Area counties outside San Francisco in 1995, and 3 million jobs in the entire Bay Area including San Francisco. San Francisco employment represents about 17% of the total.

The eight Bay Area counties outside San Francisco are expected to add about 890,000 jobs from 1995 through 2015, growing at a rate of 1.5% per year over those 20 years. In *Projections '96*, the Association of Bay Area Governments' (ABAG's) expectations are that the region will continue the long-term growth pattern of the preceding 15-year period (a growth rate of 1.5% per year from 1980 through 1995, inclusive of the severe recession in the early 1990's). By comparison to the period of moderate expansion in the 1980's (a growth rate of 2.4% for the rest of the region outside San Francisco), the future long-term growth rate is expected to be slower. See Appendix Table C.2.13/

The decentralization of economic activity within the region is expected to continue as the more outlying East Bay and North Bay counties capture an increasing share of total jobs in the region. Projected to grow at a rate of almost 2% per year, the four East Bay counties combined (Alameda,
Contra Costa, Napa, and Solano) claim over half of the job growth in the rest of the region. While employment growth rates among the rest-of-region counties are slowest in the South Bay (Santa Clara and San Mateo Counties), and the share of regional employment in that area is expected to decline, the job base is large, as is the absolute magnitude of job growth. The South Bay is expected to generate over one-third of all job growth in the region outside San Francisco.

Population in the Rest of the Region

About 5.7 million people lived in the Bay Area outside San Francisco in 1995. San Francisco’s population represents about 12% of the nine-county regional total. Considering the rest of the region outside San Francisco, East Bay counties house about one-half of the region’s residents. Forty percent of the population live in the South Bay, and 12% live in the North Bay (Marin and Sonoma Counties).

Between 1995 and 2015, the eight Bay Area counties outside San Francisco are expected to grow by almost 1.2 million residents. The growth rate (1% per year on average) is substantially slower than in the past; regional population increased at a rate of 2.4% per year between 1980 and 1995. Housing supply constraints and a leveling off of the trends that have resulted in increases in average household size are the reasons behind the slower rate of growth for the long-term future. Within the region outside San Francisco, East Bay counties are expected to capture the most population growth—60% of the increase, as the re-distribution of population to the more suburban parts of the region where most of the region’s housing will be added is expected to continue. See Appendix Table C.3./14/

Jobs/Housing Relationship

This section presents information on the place of residence for people working in San Francisco and the place of work for employed residents of San Francisco. The information is useful to the analysis of the relationship between the contribution of Project Area job growth to housing demand and the contribution of Project Area housing to supply. The information is also used to understand the labor market and housing market implications of future development in the Project Area.

Where People Working in San Francisco Live

Regional Estimates and Projections

San Francisco is an important job center in the regional economy; job growth in the City is supplied by the labor force of the regional labor market. In 1990, considering only those San Francisco jobs held by people living in the Bay Area, San Francisco residents held 55% and people living in other
parts of the Bay Area held the balance (45%). (The 1990 Census also identified about 12,000 people working in San Francisco who lived outside the nine-county region. They represented about 2% of all people working in the City.) Most commuters to San Francisco jobs lived in the East Bay (22%), 16% lived in the South Bay, and 8% lived in the North Bay.\footnote{15}

While business activity in San Francisco is an important source of job opportunities for residents of the region, most of the region’s employed residents work elsewhere. In 1990, about 10% of the employed residents of the Bay Area outside San Francisco worked in the City; the other 90% worked at jobs elsewhere in the Bay Area.\footnote{16}

Over the decades of the 1960’s and 1970’s the percentage of San Francisco jobs held by people living outside San Francisco increased. That trend, a consequence of rapid job growth in the City, slower growth of population and labor force in San Francisco than in the rest of the region, and the opening of the BART system enhancing the transbay commute, is expected to stabilize at 1990 ratios. In the future, residents of the City will hold about 55% of San Francisco jobs, and residents of other Bay Area counties will hold about 45% of San Francisco jobs.\footnote{17} See Appendix Table C.4.

Survey Results

Two other sources of information describing where people working in San Francisco live are relevant to the analysis of the proposed project. The first is the Citywide Travel Behavior Survey (CTBS), conducted by the San Francisco Department of City Planning in 1992. The results of the survey indicate that 50% of those working in San Francisco also live in the City. The percentage is somewhat lower than that indicated by the results of the 1990 Census. The CTBS share of commuters from the East Bay (26%) is higher than that indicated by the Census, while the shares from the South Bay and North Bay are about the same.\footnote{18}

UCSF Employees

About 56% of UCSF employees reside in San Francisco, according to information from a 1993 employee database.\footnote{19} This is about the same percentage indicated by the Census for all people working in San Francisco and somewhat higher than indicated by the CTBS.

Where San Francisco Residents Work

San Francisco jobs in 1990 provided employment for 81% of all residents of the City who worked in the Bay Area region. Just over 10% of San Francisco employed residents commuted to jobs in the
South Bay, 7% commuted to jobs in the East Bay, and less than 2% commuted to the North Bay. The proportion of San Francisco employed residents working in the City has declined gradually over time. Since 1960, job opportunities have increased in other parts of the region, particularly in the South Bay, increasing the probability that some San Francisco residents find jobs outside the City. ABAG and the Metropolitan Transportation Commission (MTC) project that the percentage of San Francisco employed residents working in San Francisco will stay at about the 1990 level, showing only a small decline to 79% by 2010. See Appendix Table C.5.

Housing Market Context

Overview of Demand and Supply Factors

San Francisco consistently ranks as one of the most expensive housing markets in the United States. The 1990 FEIR identified the following factors contributing to strong housing demand in San Francisco:

- San Francisco is the central city (and most urban place) in an attractive region known for its agreeable climate, open space and recreational opportunities, cultural amenities, strong and diverse economy, and prominent educational institutions.

- As a regional employment center, San Francisco attracts people who want to live close to where they work.

These factors continue to support strong housing demand in the City. At the same time, as described in the 1990 FEIR, new housing to relieve the market pressure created by strong demand is particularly difficult to provide in San Francisco because of high costs of production. The amount of land available is limited and land and development costs are relatively high. Higher density housing construction is generally more expensive and more difficult to finance. Because the resultant prices/rents associated with new construction are beyond what many households can afford, the private development community does not produce new housing in San Francisco to satisfy the demand of large segments of the market.

Housing Market Indicators

San Francisco's housing supply totaled about 334,400 units at the end of 1995. According to City of San Francisco data, the City gained just over 4,500 units from the 1990 Census through the end of 1995. The pace of housing construction in the City in the early 1990's has lagged behind the pace set in the 1980's when annual net additions to the City's housing stock averaged about 1,300 units per year. The annual net addition since 1990 has averaged about 865 units per year. Large multi-
unit projects of 20 or more units account for two-thirds of total housing unit production in San Francisco over the last 10 years./24/

Affordable housing construction (units affordable to very low, low and moderate income households) accounted for about one-third of total housing production in San Francisco over this period. In contrast to housing production generally, the pace of affordable housing production was somewhat faster than it was during the 1980's./25/

While the net addition to the housing stock was relatively low in 1995, there are signs that a relatively strong pace of growth prevails. The Department of Building Inspection authorized 410 units for construction in 1995, and the Planning Department approved 31 major projects totaling about 1,200 units. In addition, the Planning Department had 11 major projects (projects with 10 or more units) under review in 1996./26/ According to more recent building permit data for San Francisco, almost 1,500 units were authorized by permits in 1996—the highest annual level of permits since 1989./27/ All of these project and unit counts include both affordable and market rate development, including development in redevelopment project areas. They also include mixed use and live-work projects.

The 1990 Census and the California Department of Finance cite residential vacancy rates of around 7% for San Francisco./28/ Recent surveys of San Francisco apartment vacancy indicate vacancy rates of 3.2%, 2.6%, and 1.8%, respectively, in 1994, 1995, and 1996./29/

NEARBY AREAS

This section describes the existing development pattern and characteristics of economic activity, employment, and population in areas near the Project Area. See Figure IV.B.2 for depiction of Nearby Area boundaries. This setting discussion provides the background for the impact analysis presented in “Spillover Effects - Implications for Nearby Areas” in Section V.N, Growth Inducement.

Adjacent Port Property Nearby Area

The Port of San Francisco owns property immediately adjacent to the Project Area, including part of the southern shoreline of China Basin Channel between Mission Bay North and Mission Bay South. Most of the immediately adjacent port property borders the Project Area to the east and includes seawall lots as well as piers and associated shoreline areas. Some of this port property (the Channel area and the land area west of Terry A. Francois Boulevard) was included in the project area analyzed in the 1990 FEIR.
Business Activity and Employment

The level of economic activity on port property east of the Project Area has continued to decline over the last 10 years. Maritime activity in particular is less evident. Ship repair has consolidated south of the Project Area at Pier 70. Cargo operations have all but disappeared. Some of the larger piers adjacent to the Project Area are used for lay berthing (interim berths for visiting vessels), ferry layover berthing, and tug and tow berthing and maintenance. The Port has relocated maintenance operations and storage from Pier 46B (part of the San Francisco Giants Ballpark site) to Pier 50, increasing the level of activity in the area. Much of the Port’s land west of Terry A. François Boulevard is vacant or used for open air storage or materials processing (e.g., recycling). Bayfront restaurants, small boat repair yards, active boat clubs, and a small amount of office activity are responsible for most of the on-going economic vitality in the area. There are probably no more than 100 to 150 people employed in businesses located along this stretch of San Francisco’s waterfront.\(^{30}\)

Housing and Population

China Basin Channel is home to a resident houseboat community and a pleasure-boat marina. Both houseboat and pleasure craft berths are located on the southern shore of the Channel at Wharf 60, property of the Port of San Francisco. The Mission Creek Harbor Association represents the boating community (both resident and nonresident). There are 20 houseboats (“live-aboards”) berthed in the Channel and 35 pleasure boat berths.\(^{31}\) The houseboat and pleasure boat communities were part of the project area analyzed in the 1990 FEIR. In 1985, there were 34 residents of the houseboat community.\(^{32}\) A more current count indicates that between 45 and 50 people now live in the houseboat community.\(^{33}\)

South of Market Nearby Area, East of Third Street

The portion of the South of Market Nearby Area east of Third Street includes the Rincon Point - South Beach Redevelopment Area, the site of the San Francisco Giants Ballpark, Port of San Francisco property including both seawall lots and piers between the Bay Bridge and China Basin Channel, as well as South Park and the Second Street corridor of converted warehouse and industrial buildings. For the purposes of this analysis, the northern border extends to Market Street, to encompass the Rincon Hill and Transbay areas. This Nearby Area also includes the China Basin office complex adjacent to the Project Area, even though the buildings are west of Third Street.
Business Activity and Employment

In the South of Market area east of Third Street, older manufacturing and distribution activities have been replaced by a variety of new activities. Office, housing, retail, and the multimedia sector now set the prevailing tone for economic activity. Although the increase in office occupancies expected in the Second Street corridor in the 1980's did not occur, other users have filled once vacant industrial and warehouse buildings. Live-work development and expansion of the variety of enterprises engaged in the multimedia sector are particularly responsible for the demand for rehabilitated and converted existing space. Of the more traditional economic activities in the eastern South of Market area, printing and publishing and apparel manufacturing remain. The latter has become more visible with the increase in outlet stores. That type of retailing for many different types of goods has been another boon for both ground-floor and upper-floor warehouse space in the area. Downtown "Class A" and "Class B" office and ground-floor retail uses characterize the blocks immediately south of Market Street. The Transbay area includes numerous vacant sites that have the potential to accommodate large new buildings. The Transbay area has been designated a redevelopment survey area and is under study for a plan that may include office, residential, and mixed-use development.

Housing and Population

The eastern South of Market area has only in the last 10 years experienced revival as a substantial residential neighborhood. This is attributable to new construction in the Rincon Point - South Beach Redevelopment Area (where about 2,000 housing units have been built between 1989 and 1996), and new residential development and residential conversions including live-work condominium development on Rincon Hill and in the Transbay area. With the exception of some older housing in the vicinity of South Park, most housing units and residents in the eastern South of Market area are new to the area since the late 1980's. The 1990 Census counted about 2,800 residents in 1,600 households in the eastern South of Market. Many South Beach residents are not included in 1990 Census counts because the units were not occupied until the early 1990's. Indeed, the 1990 Census counts almost 500 vacant units (23% of the total) in the eastern South of Market area. The Redevelopment Agency estimates a population of about 7,500 people in the Rincon Point/South Beach area after completion of all projects over the next few years.

South of Market Nearby Area, West of Third Street

The portion of the South of Market Nearby Area west of Third Street includes the Caltrain terminal immediately adjacent to the Project Area and the mixed commercial, industrial, and residential...
districts north to Market Street. The area includes the Yerba Buena Center Redevelopment Area and most of the area covered by the *South of Market Plan*.

**Business Activity and Employment**

The South of Market area west of Third Street has not experienced the same degree of transformation as the area east of Third Street. The western South of Market continues to be the location of choice for many smaller service, sales, and light industrial businesses. Most buildings are small and can serve the variety of activities that find the area attractive: auto repair, restaurant and food service supply, equipment and general contracting, printing, machine repair, graphic design, film and video production, restaurants and bars—all seeking a close-in, relatively low-cost location. New economic activity in the area in the last 10 years has been accommodated in new construction of large-scale retail outlets and a large number of smaller, in-fill live-work developments. Increasing retail and residential activity in the western South of Market area has focused attention on conditions that may affect the mix of uses in this area. Strong demand from higher-rent-paying uses (residential and retail) makes it harder for rent-sensitive businesses to find space, and land use conflicts make it difficult for some businesses to continue operating as they have traditionally.

**Housing and Population**

Much of the older housing in this area is small-scale, clustered on mid-block alleyways and above ground-floor commercial uses. Other older, higher-density housing units are found in apartments and residential hotels along Sixth Street. New high-density apartments and condominiums have been developed as part of the Yerba Buena Center Redevelopment Plan. In the last few years, conversion of industrial buildings to residential lofts and studios along South of Market alleyways has been followed by a marked increase in new construction of multi-unit live-work condominium developments in the western South of Market. According to the 1990 Census, there were about 9,000 people and about 4,370 housing units in the western South of Market in 1990.  

**Potrero Hill, North Potrero, and Showplace Square Nearby Areas**

The Potrero Hill and North Potrero Nearby Areas are located south and west of the Project Area; the I-280 freeway and the Caltrain railroad tracks separate the two areas. The Potrero Hill and North Potrero Nearby Areas consist of the older industrial and commercial district between I-280 and U.S. 101 and, to the south, the residential neighborhood between the freeways, south to Caesar Chavez Street. The Showplace Square Nearby Area is located west of the Project Area and includes part of the older industrial and commercial district on both sides of the I-280 from Brannan Street south to 17th Street.
Business Activity and Employment

At the foot of Potrero Hill, the North Potrero and Showplace Square Nearby Areas were once part of a thriving heavy industrial and warehouse district. After a period of dormancy in the 1960’s and 1970’s, the areas have evolved and the level of activity and employment has increased. Showplace Square is a major regional center for interior design and furnishings industries, for wholesale trade generally, and for furniture and home improvements retail outlets. The level of this type of business activity has remained fairly stable over the last 10 years. Some large “mart” projects developed in the late 1980’s and early 1990’s have yet to be occupied. More recent interest in these large facilities has come from the office and multimedia sectors.

Since 1990, the transition from industrial and transportation-related operations has expanded to the North Potrero area. North Potrero, Potrero Hill, and Showplace Square have attracted furniture and home improvement retailers, architects, designers, artisans, artists and others involved in creative or crafts oriented sectors of San Francisco’s economy, looking for low-cost, centrally located commercial space. Although it is more densely developed than the Project Area and lacks the large open land area for vehicle parking and storage, this district at the foot of Potrero Hill has many of the same space and location characteristics that are important to businesses currently located in the Project Area.

Housing and Population

The northern slope of Potrero Hill, overlooking the Project Area, consists predominantly of older, single-family houses and flats interspersed with larger, more modern apartments and condominium complexes. Two public housing projects totaling over 600 units are located on the southeastern slope of Potrero Hill. On the southern slope, single-family houses and flats are the typical housing stock. There are a total of about 4,600 housing units in the area, according to 1990 Census data. The population in 1990 totaled about 9,200.

Lower Potrero and Central Bayfront Nearby Areas

The Lower Potrero and Central Bayfront Nearby Areas border the Project Area south of Mariposa Street. This area includes older industrial areas on either side of Third Street south to Islais Creek and a residential area at the base of Potrero Hill east of I-280. Much of the land in the Central Bayfront is owned by the Port of San Francisco or is under Port jurisdiction.
Business Activity and Employment

Once dominated by industrial maritime and other heavy industrial activity, the bayfront district south of the Project Area on either side of Third Street has undergone changes similar to those in the North Potrero and Potrero Hill Nearby Areas. While the ship repair activity remains at Pier 70, although at lower levels of output than in the past, other older industrial and warehouse facilities now house a variety of smaller businesses. The Esprit headquarters complex brings office, design, showroom, and distribution activity to the district. Many of the businesses in the Lower Potrero and Central Bayfront Nearby Areas are similar to those currently located in the Project Area: contractors, construction suppliers, small manufacturers, storage uses, and small offices. There are also a number of production, transportation, and distribution activities, particularly towards the southern end of the district. Since the early 1990’s, the Port’s container facility at Pier 80 has been inoperative.

Overall trends in employment and levels of activity in Lower Potrero/Central Bayfront are similar to those in South of Market, Potrero Hill/North Potrero, and Inner Mission Nearby Areas. Employment in large manufacturing and maritime facilities has declined. The continued presence of transportation, distribution, service, and repair establishments, in addition to the growth of small manufacturers, artisans, and new business sectors (e.g., multimedia and communications) has offset some of the decline.

Housing and Population

Adjoining the Project Area to the south, this neighborhood is the smallest of the nearby residential areas. In 1990, about 470 residents lived in about 230 households. After a substantial population decline in the 1970’s, the population has leveled off since 1980. Residents are a mix of old-timers and newcomers. Since the late 1980’s there has been substantial live-work development in the Lower Potrero area. Initially, the development activity involved conversion of large industrial and warehouse buildings to lofts and residential units. In the last couple of years, as in the western South of Market, Potrero Hill, and Inner Mission Nearby Areas, new live-work construction is much in evidence.

Inner Mission Nearby Area

The Inner Mission Nearby Area is bounded roughly by U.S. 101 on the east, Dolores Street on the west, 16th Street on the north, and Cesar Chavez Street on the south. The area includes the district sometimes referred to as the Northeast Mission Industrial Zone.
Business Activity and Employment

Most of the traditional large-scale manufacturing activities that operated in Northeast Mission Industrial Zone at the time of the 1990 FEIR are no longer in operation. These included food and beverage processing, apparel manufacturing, and building materials production. Warehousing, distribution, vehicle maintenance, and storage uses continue, and there is a substantial amount of vacant and underutilized space and land area. Expansion of Showplace Square-related businesses west of Potrero Avenue has not materialized as a major factor in Inner Mission economic activity. Nevertheless, use of space by small manufacturing, sales, and service businesses has continued to increase, and multimedia businesses and other communications activities are a sizable presence here as in the South of Market area.

Housing and Population

Inner Mission residential neighborhoods are separated from the Project Area by development patterns and physical barriers. Potrero Hill and U.S. 101 form a distinct boundary as does the industrial and commercial district in the northeast corner of the area.

The Inner Mission is the largest residential neighborhood near the Project Area. In 1990, there were about 21,300 housing units in the Inner Mission (over twice as many as in any other nearby residential area). There has been relatively little new development in the area. Recently, several new live-work projects have been constructed in the Inner Mission near Project Artaud, a pioneering conversion of an old industrial building to artist live-work space. In 1990, there were about 57,000 people living in the Inner Mission.39/

South Bayshore Nearby Area

The South Bayshore Nearby Area, about 1 mile south of the southern boundary of the Project Area, extends from Islais Creek to the county line, from U.S. 101 to the Bay. South Bayshore includes the India Basin Industrial Park, the Produce Market, Port facilities at Piers 90 – 96, the Third Street commercial area, Hunters Point Naval Shipyards, and surrounding residential areas.

Business Activity and Employment

Concentrations of San Francisco’s traditional industrial, warehousing, and distribution activities remain in the South Bayshore industrial areas. This is also the district that accommodates most of the City’s auto wrecking, salvage, and other open air uses, such as construction materials storage. The
Produce Market remains an active distribution center. A variety of production, distribution, showroom, and office activities occupy the relatively new space at the India Basin Industrial Park developed by the San Francisco Redevelopment Agency. Further south along Third Street and west towards Bayshore Boulevard smaller manufacturers, distributors, outlet stores, artisans, and transportation services continue to fill in existing and some new space. Much space and land area remains underutilized and deteriorated. Maritime-related activity at Port of San Francisco facilities in this area is limited. Since the mid-1990's there has been minimal container traffic through Piers 94 and 96. City of San Francisco institutional uses and vehicle repair and storage operations are important elements of economic activity.

Three distinct areas important to future economic activity in the South Bayshore are located at the southern end of the district. They include the Hunters Point Naval Shipyard and the Executive Park Office Complex, as well as 3Com Park and the site of proposed major retail development.

**Housing and Population**

South Bayshore residential areas are quite distant from the Project Area. Planned light rail service along Third Street will create a stronger connection between these parts of the City.

South Bayshore includes public housing projects, subsidized and market-rate residential development sponsored by the San Francisco Redevelopment Agency (about 1,700 units completed as of 1995), and extensive single-family residential neighborhoods on either side of Third Street as it nears Candlestick Point and 3Com Park. There were about 28,000 residents of the South Bayshore area in 1990. The Census counted about 9,700 housing units in the area in 1990, and a vacancy rate lower than the citywide average. The most striking characteristic of South Bayshore housing is the high proportion of owner-occupied housing. In 1990, over half of the units (52%) were owner occupied; citywide, only 35% of units were owner occupied, and the home-ownership rate is substantially lower in other residential areas near the Project Area.\(^{40}\)

**IMPACTS**

The impact analysis describes future business activity and employment and future housing and population in the Project Area, assuming build-out of the proposed project. The text describes the number and types of jobs expected in the Project Area in the future and the amount and type of housing development and associated residential population expected in the Project Area under the proposed Redevelopment Plans. Impacts discussed include those for job opportunities in San Francisco, for existing Project Area business activity and employment, for the jobs-housing balance in
the City, for citywide housing market conditions, and for total employment and population growth in San Francisco. This section also presents the cumulative scenario of employment and population growth in San Francisco (including the proposed project) that is used for cumulative impact analysis in this SEIR.

STANDARDS OF SIGNIFICANCE

The City has no formally adopted significance standards for potential impacts related to employment, housing, and population. A project that induces substantial growth or concentration of population generally is not viewed as having a significant impact on the environment, per se. Rather, the effects and significance of this growth are examined under other environmental topics such as transportation, air quality, noise, community services, and growth inducement. The impacts are also considered in the context of local and regional plans and projections dealing with population and employment.

CHANGES IN THE CHARACTERISTICS OF THE PROJECT AREA

This section describes changes in business activity, employment, and population arising directly from Project Area development under the proposed Redevelopment Plans. Changes include businesses and employment that would locate in new development in the Project Area over time, construction jobs generated by that new development, likely outcomes for existing Project Area businesses, and the addition of substantial residential development and a resident population in the Project Area. (See “Land Use Changes by Subarea” under “Summary of Project Area Impacts” in Section V.B, Land Use: Impacts, for further discussion.)

Project Area Employment and Job Opportunities

Business Activity and Jobs

A substantial increase in business activity and jobs in the Project Area would accompany build-out and occupancy of the proposed project. Total employment in the Project Area would increase from about 1,670 jobs in 1997 to about 30,000 jobs at build-out—an 18-fold increase (see Table V.C.5). This is about 20% more Project Area jobs than the 25,100 jobs analyzed for the Development Agreement Application variant (Variant 12) in the 1990 FEIR. Commercial Industrial development in Mission Bay South, east and west of Third Street, would accommodate half of the 30,000 jobs in the Project Area at build-out (15,300 jobs). Office and research and development (R&D) business activities would be the primary occupants of this new development. Examples of the types of businesses that might locate in those subareas are: drug manufacturers,
### TABLE V.C.5
MISSION BAY PROJECT AREA EMPLOYMENT BY LAND USE AND SUBAREA AT BUILD-OUT (2015)

<table>
<thead>
<tr>
<th>Land Use/Business Activity</th>
<th>Mission Bay North</th>
<th>Central Subarea</th>
<th>East Subarea</th>
<th>West Subarea</th>
<th>UCSF Subarea</th>
<th>Mission Bay South Subtotal</th>
<th>GRAND TOTAL</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office/a/</td>
<td>—</td>
<td>—</td>
<td>4,670</td>
<td>4,120</td>
<td>—</td>
<td>8,790</td>
<td>8,790</td>
<td>29%</td>
</tr>
<tr>
<td>Research &amp; Development/a/</td>
<td>—</td>
<td>—</td>
<td>3,460</td>
<td>3,060</td>
<td>—</td>
<td>6,520</td>
<td>6,520</td>
<td>22%</td>
</tr>
<tr>
<td>UCSF Site/b/</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>9,100</td>
<td>9,100</td>
<td>9,100</td>
<td>30%</td>
</tr>
<tr>
<td>City-serving Retail</td>
<td>630</td>
<td>—</td>
<td>780</td>
<td>890</td>
<td>—</td>
<td>1,670</td>
<td>2,300</td>
<td>8%</td>
</tr>
<tr>
<td>Entertainment-oriented Retail</td>
<td>1,110</td>
<td>160</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>160</td>
<td>1,270</td>
<td>4%</td>
</tr>
<tr>
<td>Neighborhood-serving Retail</td>
<td>160</td>
<td>320</td>
<td>190</td>
<td>70</td>
<td>—</td>
<td>580</td>
<td>740</td>
<td>2%</td>
</tr>
<tr>
<td>Hotel</td>
<td>—</td>
<td>370</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>370</td>
<td>370</td>
<td>1%</td>
</tr>
<tr>
<td>Public Facilities/Open Space</td>
<td>1</td>
<td>102</td>
<td>1</td>
<td>—</td>
<td>150</td>
<td>253</td>
<td>254</td>
<td>1%</td>
</tr>
<tr>
<td>Building Maintenance/Security/Parking</td>
<td>50</td>
<td>10</td>
<td>170</td>
<td>150</td>
<td>30</td>
<td>360</td>
<td>410</td>
<td>1%</td>
</tr>
<tr>
<td>Housing-related</td>
<td>120</td>
<td>120</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>120</td>
<td>240</td>
<td>1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,071</strong></td>
<td><strong>1,082</strong></td>
<td><strong>9,271</strong></td>
<td><strong>8,290</strong></td>
<td><strong>9,280</strong></td>
<td><strong>27,923</strong></td>
<td><strong>29,994</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

Percent of Total

- Office/a/ 7%
- Research & Development/a/ 4%
- UCSF Site/b/ 31%
- City-serving Retail 28%
- Entertainment-oriented Retail 31%
- Neighborhood-serving Retail 93%
- Hotel 100%

**Notes:**
Employment estimates from final Project Area land use profile as presented in the table prepared by EIP Associates: *Land Use Statistics for EIR Project Description*, July 21, 1997. The estimating factors are those used in the 1990 FEIR; see 1990 FEIR, Appendix A: The EIR Alternatives, pp. XIV.A.10 - XIV.A.12. A stabilized average vacancy rate of 5% to account for on-going tenant turnover is assumed for office and research and development space.

a. Commercial Industrial space assumed to be 50% occupied by office activities and 50% occupied by research & development and light manufacturing activities.

**Source:** Hausrath Economics Group.
medical equipment and supplies manufacturers, research and testing services, computer and data processing services, and engineering companies, as well as professional service, business and personal service, and equipment repair and supply operations that would support the larger companies. Biotechnology enterprises occupying this new development in the Project Area would be attracted to Mission Bay because of the UCSF site planned for the central portion of the Project Area west of Third Street. Total employment of 9,100 is expected at the UCSF site/43/, accounting for 30% of Project Area jobs. Overall, Mission Bay South would accommodate over 90% of the total future employment in the Project Area.

About 14% of total Project Area employment (4,300 jobs) would be in retail business activities. Three primary types of retail/entertainment activities are proposed: neighborhood-serving retail shops and restaurants oriented primarily to the convenience needs of Mission Bay residents, workers, and businesses; larger retail stores and restaurants serving the Project Area as well as a broader citywide market area; and entertainment-oriented retail stores, restaurants, and theaters designed to attract both city residents and visitors. Most of the retail activity and employment would be located in the North Subarea, accounting for all but a small amount of the total business activity and jobs expected in that subarea. There would also be city-serving retail development in the East and West Subareas in Mission Bay South. Neighborhood-serving retail business activity and jobs would be located throughout the Project Area and concentrated in the Central Subarea south of the Channel. Most of the retail jobs in the Project Area would be in the city-serving retail establishments; this type of development would account for 8% of total jobs in the Project Area.

The hotel proposed for the Central Subarea would be another source of jobs. That operation would account for about 1% of total Project Area jobs (about 400 jobs).

There would also be jobs in public facilities located in the Project Area (school, fire/police station). Building maintenance and security, attended parking, and maintenance, management, and security associated with Project Area residential development would support additional Project Area employment. Together, those business activities would account for about 3% of total Project Area employment at build-out (about 900 jobs).

Appendix Table C.6 presents the assumptions and factors used to estimate Project Area employment.

Types of Job Opportunities

Expanding employment opportunities in Mission Bay for San Francisco residents is among the planning objectives and policies for the proposed Redevelopment Plans. In addition to attracting new
business activity to the Project Area, the Redevelopment Agency intends to both “promote the creation of jobs for a highly skilled and professional work force” and “promote efforts to attract, retain, and expand employment improvement opportunities for unskilled and semi-skilled workers.”/44/

In addition to the sizable increase in the number of jobs in the Project Area, the types of jobs associated with business activity in the Project Area would change substantially under the proposed project. The mix of types of jobs would be more heavily weighted towards professional and specialized technical and production occupations. The medical research, instruction, academic support, and administrative functions at the UCSF site would employ professional, technical, managerial, and clerical workers. Those occupations, which generally require high levels of education and, in some cases, specialized skills, would also predominate in the office and R&D business activities. In addition, sales and marketing occupations are a growing component of the workforce in R&D-intensive industries./45/

Although large-scale routine production is not likely to be a significant component of the R&D activity in the Project Area, some research and development companies, office operations, and business support services that might locate in the East and West Subareas would employ relatively unskilled workers in some production occupations and entry-level operative occupations. Some R&D-intensive industries rely increasingly on workers who have no specialized skills or education but who possess an aptitude and interest in undertaking multiple and changing work tasks./46/ Given the potential magnitude of economic activity that could be accommodated in these subareas, the Project Area would offer more job opportunities in the future for relatively unskilled production workers than is currently the case with the more traditional production and distribution businesses located there.

Other types of job opportunities would be associated with the proposed hotel and retail development and with public facilities and other support activities. Service, sales, administrative, and management labor would be employed, as would, to a lesser extent, skilled and unskilled craft workers.

Construction Period Employment

Development in the Project Area would be an on-going source of construction jobs in San Francisco for many years. Over the build-out period, demolition, site preparation, and infrastructure improvements would require construction labor, as would the various types of residential and nonresidential building development. In addition, the construction process would require project management and supervisory personnel.
The various building types proposed for development would involve different levels of construction activity (see Table V.C.6). By way of example, there would be about 100 construction workers on site per day during the construction period for a prototypical five-story residential building. A concrete-frame residential tower would require more labor: about 140 workers per day, on average. Construction of a prototypical Commercial Industrial building would employ about 120 workers per day. Hotel construction would employ about 170 workers per day. Overall, the prototypical building types would each support from 130 to 180 person-years of construction labor.\(^{47}\)

Over the course of build-out of the Project Area, depending on the final design and phasing of construction, total construction labor supported would be in the range of 15,000 person-years. Assuming a build-out period of 15 years, this would mean an average of 1,000 full-time construction jobs per year.\(^{48}\)

Construction employment generated by development in the Project Area would offer a wide range of job opportunities for workers in various skill levels. Workers with skills in management, technical professions, personnel, and other administration would fill supervisory, support, and clerical positions in construction and related design and engineering firms that would be involved in various stages of the planning and development process. Actual construction work for the large-scale development proposed for the Project Area would span a range of activities requiring both skilled and unskilled workers. The long-term, phased nature of the construction work would provide an opportunity for apprenticeship and training programs in a variety of aspects of construction. Entry-level workers could be trained and move up within their craft while moving from one construction project to another within the Project Area.

**Employment Benefits to the Labor Force**

Not all Project Area employment would represent job openings initially because many businesses would move there from other locations, bringing existing employees with them. Employment opportunities would occur as Project Area businesses expand and as job turnover (the result of employees being fired, quitting their jobs for other employment, or leaving the labor force) creates openings for new workers. The employment benefits to the labor force would continue after build-out as on-going job turnover, as well as on-going maintenance and building renovation and upgrading, would introduce some openings on a continual basis.

Jobs in the Project Area would employ San Francisco residents as well as residents of other parts of the region. Assuming that the citywide average projection for the place of residence of people working in San Francisco applies to people working in Mission Bay, about 55% of Project Area jobs
TABLE V.C.6
PROJECT AREA CONSTRUCTION EMPLOYMENT BY BUILDING TYPE

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Residential (5-story): metal frame with garage</th>
<th>Residential tower: Concrete frame</th>
<th>Commercial-Industrial</th>
<th>Hotel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Number of Workers on-site per day/a/</td>
<td>100</td>
<td>140</td>
<td>120</td>
<td>170</td>
</tr>
<tr>
<td>Average Person Years of Construction Labor/b/</td>
<td>130</td>
<td>180</td>
<td>160</td>
<td>170</td>
</tr>
</tbody>
</table>

Notes:
a. Average over all phases of construction including demolition, excavation, foundation, super structure, parking structure, and interior finish.
b. A person-year of construction labor is equivalent to one construction worker's labor, full-time, for one year. Construction worker-days converted to estimates of person-years of construction labor assuming 260 days of work per person-year of construction labor (52 weeks per year multiplied by 5 days per week). The formula assumes vacation days and holidays are offset by working weekends.


would be held by San Francisco residents in 2015. Although the percentage may fluctuate in the future, this is a reasonable assumption given the large number and wide range of types of jobs in the Project Area. (See “Where People Working in San Francisco Live” in the Setting subsection.) Those 16,500 employed San Francisco residents working in the Project Area (the estimate at build-out) would represent about 4% of total employed residents of San Francisco in 2015.

Implications for Existing Project Area Business Activity

Transition of land use and business activity in the Project Area has been underway for decades. The changes in the types of operations in the Project Area have followed a long-term pattern of decline in distribution, warehousing, and associated transportation activities in and near downtown San Francisco as access has deteriorated and other locations have become more convenient to markets served. The warehousing, distribution, and repair activities that remain in the Project Area serve downtown and other close-in markets. The Mission Bay location remains convenient and accessible for this specialized group. Similarly, the Project Area has offered a convenient, close-in storage and materials-processing location for downtown construction projects.
Major new development on a scale even larger than that currently proposed for the Project Area has been publicly described and debated in San Francisco since the early 1980's. Moreover, many of the current tenants in the Project Area located there after the development agreement for the prior project analyzed in the 1990 FEIR was negotiated in 1990. Therefore, eventual relocation has been an underlying assumption of operating in the Project Area; most tenants are leasing on a month-to-month basis or have leases that expire before the year 2000. Nevertheless, the Mission Bay location has made good economic sense for most of these businesses. Most do not have substantial investments in buildings or equipment; rental rates have been favorable; and many have probably assumed that the potential development process would take a long time to complete.

Among those few establishments holding long-term leases negotiated before the onset of new development planning, all but one have leases that, exclusive of options, will expire in the near future, within the early years of potential Project Area development. Development of the Project Area would occur gradually over the build-out period as market demand warrants. There would be no need to have complete clearance of the Project Area prior to development. In fact, it is generally in the interest of landowners to maintain existing rent-paying tenants in the Project Area as long as feasible and to not have tenants leave at the first signs of eventual development. As long as existing buildings remained in the Project Area, some existing businesses or similar operations might decide to remain. At some time short of clearance and demolition of existing facilities, however, nearby construction activity would be likely to make the Project Area a less desirable business location for many of the activities currently located there.

Project-related development could displace any businesses and their employees only to the extent they are existing businesses at the time property where they are located is needed for development. Their relocation would be assisted to the extent required by applicable law. The goal of relocation assistance is to find a new location of comparable rent and required business characteristics so that loss from the relocation is minimized. (See also “Businesses to Be Relocated” under “Summary of Project Impacts” in Section V.B, Land Use: Impacts, for further discussion.)

Eventually, relatively few of the businesses currently operating in the Project Area would be likely to remain under the development program proposed in the Redevelopment Plans. Many require the large areas of open land and/or warehouse and loading dock facilities that would no longer be available in the Project Area; most would need to find lower cost space than that likely to be offered in the new development. While some existing retail and recreation activities could be accommodated in new development in the Project Area, those that required large amounts of open land area would not be easily accommodated (beyond continuing on an interim basis pending market demand for more intensive development).
A few specialized activities in the Project Area, such as the golf driving range and the ready-mix concrete plants, have unique location requirements that may be difficult to satisfy elsewhere in San Francisco, although large amounts of open land may be found in the southern parts of the City.

While a few may have difficulty finding an alternative location, most current Project Area businesses would not, although they may have to pay more for space than they do now. Many would remain in San Francisco. Businesses likely to stay in San Francisco would be those serving specialized markets (such as downtown customers) or those that have important links to other City business activity. Within San Francisco, areas west and south of the Project Area (in the Inner Mission, Potrero Hill, Lower Potrero, Central Bayfront, and South Bayshore Nearby Areas) would offer features attractive to Project Area businesses.

Other Project Area businesses not as dependent on a San Francisco market would find better opportunities outside the City. Both newer and older light industrial/distribution centers and business parks in San Mateo County and Alameda County offer space, cost, access, and other features that compare favorably to options in San Francisco.

**Characteristics of Project Area Housing and Households**

New residential development in the Project Area would be an important addition to the City's housing supply, providing both large numbers of new units and housing opportunities for a variety of households. There would be a mix of types and sizes of units to satisfy both the demands of the market and planning goals encouraging neighborhood diversity and development of new housing to fill the range of housing needs in San Francisco. A total of approximately 6,090 housing units are proposed to be added in the Project Area, of which approximately 1,700 units (28%) would be affordable to very low-, low-, and moderate-income households. There is no housing in the Project Area now.

In Mission Bay North, approximately 3,000 units are proposed. Of those units, 20% (600 units) would be affordable to very low-, low-, and moderate-income households. Catellus would be responsible for developing up to 255 of the affordable units. The affordable units to be developed by Catellus would likely be primarily rental units, integrated into Catellus' market-rate development within Mission Bay North. The balance of the affordable units (345 units) would be developed by non-profit housing developers sponsored by the Redevelopment Agency on land donated by Catellus.49/
In Mission Bay South, up to 3,090 units are proposed for the Central Subarea. Of the 3,000 units on Catellus-owned property, 37% (1,100 units) would be affordable to very low-, low-, and moderate-income households. Catellus would donate approximately 12.2 acres of land for the affordable units; non-profit housing developers sponsored by the Redevelopment Agency would develop the units. Catellus would develop approximately 1,900 market-rate units in the Central Subarea. In addition, 90 units are proposed in that subarea on land in private ownership, but not owned by Catellus.

The new housing in the Project Area would consist of studio units, one-bedroom, two-bedroom, and three-bedroom units. Of the Catellus-developed units, smaller units are expected to predominate among the rental units—approximately 50% to 60% of the rental units would be studio and one-bedroom units. More of the market-rate units developed by Catellus would be larger units—approximately 60% of the market rate units would be two- and three-bedroom units. Catellus’ current working assumption is that initially approximately 65% of the market rate units would be rental units and approximately 35% would be for-sale units. All of the Catellus-developed affordable units (255 units in Mission Bay North) would likely be rental units. A higher percentage of the Redevelopment Agency-sponsored affordable units (in both Mission Bay North and the Central Subarea) would be larger two-, three-, and four-bedroom units. Based on the experience of recent affordable housing development in San Francisco, as much as 70% of the Redevelopment Agency-sponsored affordable units would be larger units. Most of the rest of the affordable units would be one-bedroom units; it is unlikely that many studio units would be developed because the emphasis of the development program is expected to be housing for families.

Compared to the unit mix of the Mission Bay residential development analyzed in the 1990 FEIR, the current assumptions for housing in the Project Area result in a higher percentage of smaller units. Considering affordable and market rate units together, about 47% of the units would be studio and one-bedroom units. In the alternatives analyzed in the 1990 FEIR, 40% of the units were studio and one-bedroom units.

The 1990 FEIR described the characteristics of the households and population in the Mission Bay. That characterization holds true for the current proposal and is summarized below.

- At build-out, Mission Bay would include a residential neighborhood large enough to accommodate a mix of different households and people. The housing would appeal to a range of types of households: singles, students, working couples, families, and single parents with children.

- The Mission Bay residential neighborhood would not be homogenous in terms of household income. Overall, about 25% to 30% of the households would be of low and moderate
income, accommodated in the affordable units. The ranges of prices and rents for the rest of the housing would vary depending on unit size, location, and other characteristics. The households attracted to those units would span a range of income groups, depending on the number of workers in the household, the occupations of those workers, and the age of the householder, among other things.

- Because the Mission Bay residential neighborhood would consist entirely of new housing, households would be smaller than average San Francisco households. The individual housing units in new, higher-density housing development are smaller than the overall average for San Francisco’s older housing stock.

- A relatively high percentage of Project Area residents would be workers. Housing in the Project Area would have a strong appeal to workers because of its proximity to job opportunities in the Project Area, South of Market area, and the rest of the downtown. There would also be relatively easy access, via reverse-commute, to employment centers in the South Bay and close-in East Bay cities.

**Project Area Population and Employed Residents**

Table V.C.7 presents estimates of Project Area housing units, households, population, and employed residents at build-out. The approximately 6,090 housing units proposed for the Project Area would accommodate about 5,900 households, assuming an average stabilized vacancy rate (3.5%) to account for turnover of units as households move in and out of the neighborhood. There would be about 10,850 people living in those households; most (60%) would be workers. Many of the employed residents of the Project Area would work in San Francisco. Assuming the citywide average pattern for the future place of work of employed residents of San Francisco, about 79% of the employed residents of the Project Area (5,180 people) would also work in San Francisco. (See “Where San Francisco Residents Work” in the Setting subsection.) Some of these employed residents of the Project Area would also work in the Project Area.

The Mission Bay residential neighborhood would be split between Mission Bay North (3,000 housing units and 4,980 residents) and the Central Subarea in Mission Bay South (3,090 housing units and 5,880 residents). There would be more people living in the Central Subarea because the housing units and thus the household sizes are assumed to be somewhat larger, on average, than would be the case in Mission Bay North. In Mission Bay North, the average household size is estimated to be 1.72 persons per household. In the Central Subarea, the average household size is estimated to be 1.97 persons per household.

Appendix Table C.7 presents the assumptions about the demographic factors used to estimate population and employed residents for the Project Area.
### Mission Bay Project Area Housing Units, Population, and Employed Residents by Subarea at Buildout (2015)

<table>
<thead>
<tr>
<th></th>
<th>Mission Bay North</th>
<th>Central Subarea</th>
<th>East Subarea</th>
<th>Mission Bay South</th>
<th>South Subtotal</th>
<th>Grand TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Units/a/</td>
<td>3,000</td>
<td>2,895</td>
<td>4,980</td>
<td>3,010</td>
<td>10,855</td>
<td>10,855</td>
</tr>
<tr>
<td>Households/b/</td>
<td>3,090</td>
<td>2,982</td>
<td>5,875</td>
<td>3,550</td>
<td>10,412</td>
<td>10,412</td>
</tr>
<tr>
<td>Population/c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed Residents/c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- A housing vacancy rate of 5.5% is assumed, resulting in an estimate of households (occupied housing units) that is less than the total.
- Number of housing units is based on the 1990 Census.
- Number of people living in housing units is estimated using the 1990 SFIR factors for persons per household by unit size, after determining the mix of units by size based on information provided by Eric Harrison, Project Manager, Catellus Development Corporation, in a memorandum to EIP Associates, March 7, 1997, and on analysis of affordable housing produced in San Francisco.
- Residents of the Project Area who are also employed, regardless of place of work. Estimated using 1990 SFIR factors for age distribution of population and percentage of the population in each age group that would be working. Confirmed by review of ABAG projections. 96% population and labor force projections by age for San Francisco.

**Source:** Hausrath Economics Group
RELATIONSHIP BETWEEN PROJECT AREA EMPLOYMENT GROWTH AND HOUSING DEVELOPMENT AND IMPLICATIONS FOR CITYWIDE HOUSING MARKET CONDITIONS

This section evaluates the jobs/housing balance of the proposed project. Housing demand associated with Project Area employment growth, with and without employment at the UCSF site, is compared to housing supply in the Project Area. The housing market implications of the jobs/housing balance evaluation, and of other aspects of the housing supply proposed for the Project Area, are also discussed.

Jobs/Housing Balance

Employment growth adds to housing demand, and housing development adds to housing supply. Comparing the number of jobs that could be accommodated by development in the Project Area to the housing added in the Project Area is a useful means of evaluating the consequences of different land use options for the Project Area. Ultimately, the capacity of the City’s land supply to accommodate either jobs, or housing, or both has long-term consequences for the housing market, and potential environmental impacts (e.g., transportation and air quality impacts) because of effects on commute patterns. See “Relationship Between Project Area Employment Growth and Housing Development and Implications for Citywide Housing Market Conditions” under “Business Activity, Employment, Housing, and Population” for each alternative in Chapter VIII, Alternatives to the Proposed Project, for the comparative conclusions about these land use options for the Project Area.

Appendix Table C.8 presents the comparison of San Francisco housing demand and housing supply calculations for the Project Area, with and without the UCSF site. The table also shows all of the factors used in the calculation steps. The main points are summarized below. The approach and methodology represent an evolution of the jobs/housing analysis in the 1990 FEIR/57/ and are based on the recent consultant’s report updating the formula for the City’s Office-Affordable Housing Production Program (OAHPP)./58/

The estimate of demand begins with Project Area employment growth through build-out. According to ABAG and MTC projections of commute patterns, 55% of the people working in San Francisco are expected to live in the City in 2015. The other 45% will find housing outside of San Francisco. This is essentially the pattern in existence today, and represents a stabilization of the decrease experienced through 1980 in the percentage of San Francisco workers who live in San Francisco. (See “Where People Working in San Francisco Live” in the Setting subsection.)/59/ The estimate of workers living in San Francisco is translated to an estimate of households in San Francisco based on an assumption about the average number of workers per worker-household.
Combining these factors, Project Area employment growth (including that associated with the UCSF site) translates to about 9,700 San Francisco households. This is the estimate of housing demand in San Francisco associated with all projected Project Area employment growth through build-out. Housing supply in the Project Area consists of approximately 6,090 units of housing proposed for Mission Bay North and Mission Bay South combined. The number of housing units needed to accommodate all projected demand for housing in San Francisco associated with Project Area employment growth exceeds the housing supply that would be provided in the Project Area by about 3,700 units. In short, proposed development of the Project Area (including the UCSF site) would add more to housing demand in San Francisco than it would to supply.\( /60/\)

UCSF addressed the issues of housing supply for its students, faculty, and staff in the LRDP. The LRDP Goals and Objectives provide that UCSF would work closely with the community to develop housing in the Bay Area for between 20% and 25% of UCSF’s total net new employees in categories that are eligible for affordable housing. The LRDP FEIR found that housing effects of UCSF development would be less than significant and could be met by projected housing supply in the region.

If the employment associated with the UCSF site in Mission Bay South is excluded from the calculations, housing demand would be approximately equal to the housing supply proposed in the Project Area (see Appendix Table C.8). Housing demand associated with all other employment growth in the Project Area, other than UCSF, totals about 6,600 households, which would just about balance with the 6,090 units that would be supplied in the Project Area.

Implications of the Jobs/Housing Balance Conclusions

This analysis is not meant to imply that there would be a precise match between housing supply and demand for any specific project area. Any given project would normally develop residential or nonresidential space, with the resulting excess demand for housing or jobs accommodated within the City and regional labor and housing markets. Also, an imbalance of housing to jobs is not a physical environmental effect, but rather an economic and social issue that warrants attention by San Francisco policymakers and other jurisdictions in the Bay Area. Certain indirect project and cumulative effects caused by the imbalances in local employment and housing opportunities would be environmental impacts, primarily transportation and related air quality impacts, and are described in those sections of this SEIR. The geographic distribution of employment and housing is taken into account in the SEIR analysis. For example, commute patterns are considered in the trip distribution factors underlying the transportation and air quality impact analyses. The secondary physical impacts of the Project Area housing supply shortfall (i.e., significant traffic, transit, and air quality effects from both...
the project and project-plus-cumulative impacts), can be best mitigated through measures directly addressing those effects, such as those that encourage increases in transit use and reduce traffic congestion. The economic and social ramifications are briefly identified here and in Business Activity, Employment, Housing, and Population, under “Environmental Assessment” in Chapter VIII, Alternatives to the Proposed Project, where the jobs/housing balance outcomes for other Project Area land use options are evaluated.

San Francisco housing market conditions overall in the future are not expected to be much different from those that characterize the market today (see “Housing Market Context,” above, under “Citywide and Regional Context” in the Setting subsection, as well as the 1990 FEIR/61/). A shortfall of housing supply compared to demand such as that identified above for the proposed project overall including the UCSF site would, nevertheless, result in some housing market impacts for some segments of the housing market compared to a situation in which there were no shortfall. All other things being equal, the supply shortfall would mean more demand than would otherwise be the case for other new units near downtown and the Project Area, since most people prefer housing near their jobs. There would also be greater demand for existing housing, and, generally, for market-rate housing at the lower end of the price/rent range. In the context of the citywide housing market, price impacts would probably be small, and the impacts on housing choice would also be small. Types of housing market impacts could include: more people doubling up to share housing expenses; others remaining in existing housing rather than moving up to better options; and still others choosing housing they could better afford outside San Francisco.

Offsetting these potential impacts, the proposed project would increase the supply of affordable units and market-rate housing at the lower end of the price/rent range, and this would benefit low and moderate income households. For very-low, low-, and moderate income households (typically those that have the fewest options and sacrifice the most when supply is constrained and prices and rents rise), the increased supply of affordable units would ease housing market pressures such as those described above.

It is not known exactly where in the region additional housing supply to satisfy some of the Project Area demand would be provided. Therefore, it is not possible to identify location-specific impacts. Outside of San Francisco, it is safe to conclude that the impacts would be dispersed over the regional housing market and would not be concentrated in any particular location. Moreover, a future context of citywide and regional housing supply and demand that accommodates the supply and demand associated with the proposed project is part of the SEIR cumulative future context and is analyzed in the SEIR (see “Relationship Between Employment Growth and Population” in Section V.N, Growth Inducement).
PROJECT AREA AND CUMULATIVE CITYWIDE GROWTH

This section describes the cumulative context for employment and population growth in San Francisco. After an introduction to the cumulative growth scenario of employment and population for the City through 2015, the section describes the proposed project's contributions to that growth. Growth-inducing implications of the proposed project are described in Section V.N, Growth Inducement.

San Francisco Cumulative Growth Scenario

For the purposes of this SEIR, total development proposed for the Project Area is assumed to be built and occupied by the year 2015. (As explained above, a stabilized average vacancy rate is assumed for the purposes of estimating employment and population associated with a given amount of development.) Table V.C.8 (employment) and Table V.C.9 (households, population, and employed population) present estimates and projections for the Project Area and the rest of San Francisco in 1995 and 2015. The tables indicate the relative magnitude of the growth projected for the Project Area in the context of citywide growth. The total San Francisco projections for 2015 presented in the tables are the result of adding the Project Area build-out estimates (see Table V.C.5 and Table V.C.7) to estimates of total employment, households, population, or employed residents in the rest of the City by the year 2015. The estimates for the rest of the City reflect results of the San Francisco cumulative growth study prepared to provide a common basis for cumulative impact analyses in current San Francisco environmental review documents./62/

The projections including the proposed project indicate total San Francisco employment of about 673,000 in 2015—an increase of about 138,000 over 1995 estimated employment. This represents a 25% increase in employment in the City. For comparison, the 2020 cumulative employment scenario in the 1990 FEIR projected about 795,000 jobs in San Francisco—an increase of 35% over the 1985 setting estimate used in that document./63/ (The 1990 FEIR scenario did not anticipate the depth of the economic recession in the early 1990's and its effect on employment levels in San Francisco.)

The cumulative projections of population growth for San Francisco used in this SEIR indicate population totaling about 819,000 in 2015, including the proposed project. Projected growth of 59,000 people from 1995 through 2015 represents an 8% increase for the period. Over the same period, total households in the City are projected to increase 10%, from 311,000 to 344,000. Again, for comparison, the 1990 FEIR projected total population of 830,500 for San Francisco in 2020—an increase of 12% over estimated 1985 totals. The 1990 FEIR household projection of 344,000 for 2020 is the same as the 2015 projection used for cumulative analysis in this SEIR./64/
TABLE V.C.8
MISSION BAY PROJECT AREA AND REST OF CITY EMPLOYMENT
1995 AND 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Mission Bay Project Area/a/</th>
<th>Rest of City/b/</th>
<th>Total San Francisco/c/</th>
<th>Project Area as Percent of Total City</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995/d/</td>
<td>1,670</td>
<td>533,310</td>
<td>534,980</td>
<td>0.3%</td>
</tr>
<tr>
<td>2015</td>
<td>29,995</td>
<td>643,500</td>
<td>673,495</td>
<td>4.5%</td>
</tr>
<tr>
<td>Change: 1995-2015</td>
<td>28,325</td>
<td>110,190</td>
<td>138,515</td>
<td>20.4%</td>
</tr>
</tbody>
</table>

Notes:


d. 1997 estimates of existing conditions for the Project Area are presented here. Any differences between 1995 and 1997 for the Project Area are not significant when measured against citywide totals.

Source: Hausrath Economics Group.

Appendix C presents a comparison of the SEIR cumulative growth scenario to San Francisco growth through the year 2020 as recently published by ABAG in *Projections '98*. The employment projections for the cumulative growth scenario used in the SEIR are almost the same as the most recent ABAG projections (and are greater when full build-out of the proposed Mission Bay project is included). The cumulative population projections used in the SEIR are greater than ABAG's population projections for San Francisco. See Appendix Table C.9 and "SEIR Cumulative Growth Scenario Compared to Projections '98" in Appendix C.

**Implications for Employment and Job Opportunities in San Francisco**

After subtracting existing Project Area employment of 1,670 jobs, there would be about 28,300 more jobs in the Project Area at build-out of the proposed amount of nonresidential development (see Table V.C.8). That increase would represent a 5% increase over total employment in San Francisco in 1995. By the year 2015, assuming build-out and occupancy of the UCSF site and all other components of the proposed project, Project Area jobs would represent just over 4% of total
TABLE V.C.9
MISSION BAY PROJECT AREA AND REST OF CITY HOUSEHOLDS, POPULATION, AND EMPLOYED RESIDENTS: 1995 AND 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Mission Bay Project Area/a/</th>
<th>Rest of City/b/</th>
<th>Total San Francisco/c/</th>
<th>Project Area as Percent of Total City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mission Bay Project Area/a/</td>
<td>Rest of City/b/</td>
<td>Total San Francisco/c/</td>
<td>Project Area as Percent of Total City</td>
</tr>
<tr>
<td><strong>Households</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>0</td>
<td>311,430</td>
<td>311,430</td>
<td>0.0%</td>
</tr>
<tr>
<td>2015</td>
<td>5,877</td>
<td>337,862</td>
<td>343,739</td>
<td>1.7%</td>
</tr>
<tr>
<td>Change: 1995-2015</td>
<td>5,877</td>
<td>26,432</td>
<td>32,309</td>
<td>18.2%</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>0</td>
<td>759,900</td>
<td>759,900</td>
<td>0.0%</td>
</tr>
<tr>
<td>2015</td>
<td>10,855</td>
<td>808,556</td>
<td>819,411</td>
<td>1.3%</td>
</tr>
<tr>
<td>Change: 1995-2015</td>
<td>10,855</td>
<td>48,656</td>
<td>59,511</td>
<td>18.2%</td>
</tr>
<tr>
<td><strong>Employed Residents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>0</td>
<td>376,800</td>
<td>376,800</td>
<td>0.0%</td>
</tr>
<tr>
<td>2015</td>
<td>6,560</td>
<td>420,657</td>
<td>427,217</td>
<td>1.5%</td>
</tr>
<tr>
<td>Change: 1995-2015</td>
<td>6,560</td>
<td>43,857</td>
<td>50,417</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

Notes:


Source: Hausrath Economics Group.

employment projected for San Francisco. The increase in employment in the Project Area would account for about 20% of total expected employment growth in San Francisco from 1995 through 2015.

Implications for Households, Population, and Employed Residents in San Francisco

Table V.C.9 presents Project Area and Rest of City estimates of households, population, and employed residents for 1995 and 2015. The increase in households, population, and employed
residents in the Project Area would represent less than 2% of total households, population, and employed residents in San Francisco in 1995. By 2015, the Project Area would represent a similarly small share of citywide totals. The increase in households and population in the Project Area would be an important component of the growth of households, population, and employed residents in San Francisco, however. The growth in the Project Area would account for 18% of projected household and population growth in San Francisco and 13% of projected growth of employed residents.65/

NOTES: Business Activity, Employment, Housing, and Population


2. The restaurant on the pier off of Fourth Street that extends into China Basin Channel is not included in the current Project Area boundary. There has been a restaurant at this location for almost 40 years.

3. The earlier project area business survey included more in-depth questions about the characteristics of project area workers than did the survey update completed in 1997. Given the limited changes in the mix of types of businesses in the Project Area, the earlier survey results provide a valid indication of the types of jobs still offered by Project Area businesses.*


5. City and County of San Francisco, Planning Department, Commerce and Industry Inventory, August 1996, Table 3.1.1 and p. 19. The Commerce and Industry Inventory presents employment data by "land use activity," matching the type of economic activity (as indicated by Standard Industrial Classification) with a corresponding type of building space and the prevailing land use pattern. See 1996 Commerce and Industry Inventory, pp. 2-5, for more information.*

6. The most recent employment estimates from the California Employment Development Department (EDD) (benchmark March 1996) show employment at 535,600 for the City in 1996. That same series indicates 1995 wage and salary employment of 513,700. That estimate is different from the 1995 employment data published in the Planning Department's Commerce and Industry Inventory. At the time they were preparing the inventory, Department staff used preliminary employment data available from EDD.

7. 1990 FEIR, Volume Two, Table VI.B.11, p. VI.B.21. Other Setting tables in the 1990 FEIR include the self-employed in estimates of total San Francisco employment, for a total of 584,900 jobs. (See, for example, Table VI.B10 on p. VI.B.20 of the 1990 FEIR.) The self-employed are not included in the 1996 estimate presented in the SEIR text, so the appropriate comparison is to the 1985 estimate without the self-employed.*


9. There are more housing units than households because not all housing units are occupied. The difference between total housing units and total households represents vacant units.
The total population of the City consists of people living in households (the household population) and people living in group quarters, e.g., nursing homes, dormitories, rooming houses, jails, and military facilities. The group quarters population totals about 22,200 in 1997.

11. 1990 FEIR. Volume Two, Table VI.C.1 on p. VI.C.8 and Table VI.C.9 on p. VI.C.39.*

12. 1990 FEIR, Volume Two, Table VI.C.1 on p. VI.C.8.*

13. ABAG published Projections '98 in December 1997, after the analyses and most of the writing for this SEIR were complete. A brief discussion of Projections '98 for San Francisco appears in “SEIR Cumulative Growth Scenario Compared to Projections '98” in Appendix C. The overview comparison indicates that there is not much difference between the cumulative growth scenario and updated ABAG projections.

14. ABAG published Projections '98 in December 1997, after the analyses and most of the writing for this SEIR were complete. A brief discussion of Projections '98 for San Francisco appears in “SEIR Cumulative Growth Scenario Compared to Projections '98” in Appendix C. The overview comparison indicates that there is not much difference between the cumulative growth scenario and updated ABAG projections.

15. Metropolitan Transportation Commission, “County-to-County Commuters in the San Francisco Bay Area: 1960-2010.” Table based on U.S. Decennial Census and ABAG’s Projections '96. Commuter forecasts prepared by MTC.

16. Metropolitan Transportation Commission, “County-to-County Commuters in the San Francisco Bay Area: 1960-2010.” Table based on U.S. Decennial Census and ABAG’s Projections '96. Commuter forecasts prepared by MTC.

17. Metropolitan Transportation Commission, “County-to-County Commuters in the San Francisco Bay Area: 1960-2010.” Table based on U.S. Decennial Census and ABAG’s Projections '96. Commuter forecasts prepared by MTC.

There is some uncertainty about this projection of the percentage of future San Francisco jobs held by people who are also residents of San Francisco. The percentage may fluctuate over time. Factors influencing this pattern include housing production in the City and the region, housing costs, characteristics of the work force, travel times on major freeways, and improvements proposed in regional and local transit.

18. San Francisco Planning Department, San Francisco Public Utilities Commission, and the San Francisco County Transportation Authority, Citywide Travel Behavior Survey: Employees and Employers, May 1993, Table II.A1, p. 11.*


22. 1990 FEIR, Volume Two, especially p. VI.C.4.*


32. 1990 FEIR, Volume Two, p. VI.B.13.*


41. The Project Area employment estimates are calculated assuming an average, stabilized vacancy rate of 5% for office, research and development, and light industrial space, to account for on-going tenant turnover.

42. 1990 FEIR, Volume Two, p. VII.89.*
V. Environmental Setting and Impacts
C. Business Activity, Employment, Housing, and Population


47. Construction employment is also measured in terms of person-years of construction labor. A person-year is equivalent to one construction worker’s labor, full-time, for one year.

48. The estimate accounts for all on-site construction labor, including workers to complete infrastructure development projects. On-site project management and supervisory personnel are included in the labor estimate. Off-site management, design, engineering, sales, and administrative jobs are not included.


51. Eric Harrison, Project Manager, Catellus Development Corporation, memorandum to EIP Associates, March 7, 1997. The mix of units by size reflects current working assumptions for purposes of analysis; the mix may change due to variations in building design, changes in the market and other factors.


53. The mix of sizes of units for the Redevelopment Agency-sponsored affordable units reflects the record of affordable housing development in San Francisco from 1990 through 1995. The source of the data describing major new affordable housing construction in the City is: City and County of San Francisco, Planning Department, *Housing Information Series: Changes in the Housing Inventory for 1995*, May 1996, List 1B, pp. 49-51. To develop a distribution of unit sizes representative of the types of affordable housing envisioned for the Project Area, live/work projects, single-room occupancy projects, elderly-only projects, and projects for special populations were excluded from the sample. Family projects and some mixed family/elderly projects were included in the sample.

54. 1990 FEIR, Volume Two, p. V.5.*

55. 1990 FEIR, Volume Two, pp. VI.C.64-VI.C.67.*

56. Based on factors originally developed for the 1990 FEIR describing the age distribution of the population and the percentage of the population in various age categories that would be working. (See the 1990 FEIR, Volume Three, p. XIV.A.13.) Review of those factors in light of ABAG’s updated projections of population and labor force by age for San Francisco through 2015 indicated that the original factors remained valid.
Compared to the population of the City overall, a higher percentage of the Project Area population is expected to be in their prime working years (ages 15–64). Sixty-nine percent of the Project Area population would be in this age group, compared to 65% for the citywide average projected by ABAG. Among the population in the Project Area, 71.8% of the population 15 years of age and older would be employed. According to ABAG’s projections, in 2015, employed residents are expected to represent 62.5% of the citywide population 15 years of age and older.


Office development projects located on property under the jurisdiction of the San Francisco Redevelopment Agency and property owned by the State of California (e.g., the UCSF site, eventually) are exempt from the current Office Affordable Housing Production Program (OAHPP Planning Code Section 313.3). The OAHPP approach is used here only as an evaluation tool; a similar approach was used in the 1990 FEIR. See “Background on the Jobs/Housing Analysis” in Appendix C for more discussion. The OAHPP update analysis is evaluating continued exemption of office development on property under the jurisdiction of the Redevelopment Agency and the Port of San Francisco as well as expansion of the OAHPP ordinance to apply to other nonresidential land uses. Retail and entertainment, hotel, medical-related, cultural and institutional, and research and development are the additional building types or land use activities under study. See Keyser Marston Associates, Inc. and Gabriel Roche, Inc., Jobs Housing Nexus Analysis, City of San Francisco, July 1997.*

The 1990 FEIR provides extensive discussion of the rationale behind this factor in the jobs/housing calculation. See the 1990 FEIR, Volume Four, pp. XV.C.6-XV.C.7.*

The jobs/housing analysis in the 1990 FEIR included another factor that is not included in the updated jobs/housing calculations used here. The 1990 FEIR and the original OAHPP analysis on which it was based included a factor that discounted demand for additional housing units in San Francisco associated with employment growth because the number of workers-per-household was expected to continue to increase. That increase meant that some of the additional employment growth would be accommodated by changes in the characteristics of households living in existing housing. Those changes have already happened: workers-per-household increased from 1.14 in 1980 to 1.26 in 1990. After a recession-induced decline to 1.21 in 1995, ABAG projects the ratio will stabilize through the forecast period at about 1.25. (This is essentially the same scenario behind the 1990 FEIR factors. Workers-per-household was estimated at 1.20 for 1985 and forecast to increase to 1.25 by 2000 and be stable after that.) Looking at a jobs/housing analysis from this point forward, i.e., almost at the year 2000, the scenario does not indicate much room for accommodating housing demand through changes in the characteristics of the households in the existing housing stock. This is the scenario incorporated in the July 1997 update to the OAHPP (see Keyser Marston Associates, Inc., and Gabriel Roche, Inc., Jobs Housing Nexus Analysis, City of San Francisco, July 1997).*

Concurrent environmental review of several major planning and transportation projects in San Francisco (Mission Bay North and South Redevelopment Plans, Bayview/Hunters Point Redevelopment Plan Amendment, MUNI Third Street Light Rail Project, and the Candlestick Point Stadium-Mall) required a consistent forecast of population and employment growth in San Francisco reflecting the development that could be accommodated in the various project areas. As a result of efforts of the Redevelopment Agency, the San Francisco Planning Department, and various consultants, all of these environmental analyses use the same cumulative growth forecast of San Francisco population and employment in 2015 as the basis for cumulative transportation analysis, as well as for growth inducement and related analyses of housing, business activity, and land use impacts.
Not all of the major planning and redevelopment project areas assumed for cumulative analysis purposes may actually be adopted or built out to the extent assumed. The assumptions are conservatively high for CEQA analysis purposes, and to the extent actual development falls short of projections, cumulative impacts proportional to population and employment (e.g., transportation, air quality, traffic noise) would be overstated.

Keyser Marston Associates (KMA) completed the San Francisco Cumulative Growth Scenario, Draft Technical Memorandum in August 1997. The KMA 2015 cumulative growth scenario includes household, population, employed residents, and employment estimates for the total City and for the various project areas as well. The KMA projection assumes substantial development by 2015 largely as proposed for several areas under consideration as redevelopment project areas and for the Presidio. Overall, the cumulative growth scenario projects more employment and population growth for San Francisco by 2015 than does ABAG's Projections '96. Compared to the ABAG projections for 2015, the cumulative growth scenario assumes that more aggressive development efforts on the part of the City, including redevelopment planning, capital improvement funding, housing and business assistance, and catalyst projects result in more demand for new development and re-use of existing space than would otherwise be the case. See Keyser Marston Associates, Inc., San Francisco Cumulative Growth Scenario, Final Technical Memorandum, prepared for the San Francisco Redevelopment Agency, March 30, 1998.

The KMA Cumulative Growth Scenario includes estimated projections for the Mission Bay North and South Redevelopment Plan Areas. Those estimates did not, in fact, assume full build-out by 2015 of all of the R&D/office development proposed for Mission Bay South. (For analysis in this SEIR, more detailed Project Area projections of employment and population were developed, as described in “Project Area Employment and Job Opportunities” and “Project Area Population and Employed Residents” earlier in this Impacts subsection.) The “Rest of the City” estimates used in this SEIR from the KMA San Francisco Cumulative Growth Scenario reflect the totals for all other parts of the City after subtracting the KMA estimates for Mission Bay North and Mission Bay South.

See “SEIR Cumulative Growth Scenario Compared to Projections ’98” in Appendix C for a brief discussion of ABAG's new projections series, published in December 1997, after the analyses for this SEIR were complete. The overview comparison indicates no substantial difference between the population and employment projections in the cumulative growth scenario and ABAG’s updated projection.

63. 1990 FEIR, Volume Two, Table VI.B.27 on p. VI.B.77.*
64. 1990 FEIR, Volume Two, Table VI.C.11 on p. VI.C.47.*
65. The Project Area represents a smaller share of the growth of employed residents than it does of households or population because of the smaller average household size assumed for the Project Area, compared to the average for the rest of the City. As a result, there are fewer workers per household, on average, in the Project Area than expected in the larger households in the rest of the City. The percentage of the total population that is also employed remains higher for the Project Area (at 60%) than projected for the rest of the City (52%). Generally, the rest of the City would include a more diverse group of households than expected for the new housing in the Project Area. Compared to areas of predominantly new multi-family housing such as that proposed for the Mission Bay Project Area, the rest of the City, in generally larger housing units, would house a larger share of family households, including younger children; a larger share of households with elderly, non-working members; and a larger share of two-worker households.

* A copy of this report is on file for public review at the Office of Environmental Review, Planning Department, 1660 Mission Street, San Francisco.
D. VISUAL QUALITY AND URBAN DESIGN

This section addresses the Mission Bay project’s effects relative to the built environment and its urban visual quality. The visual quality of an area is based on its aesthetic character, defined by the physical character (i.e., landform, vegetation, water, color, and diversity) and perceptual quality (i.e., harmony, vividness, adjacent scenery, urban design, and cultural modifications). Architectural resources within the Project Area are also considered. The following analysis is based on field visits, photographs, aerial photo interpretation, and review of visual simulations developed for the proposed redevelopment of the Project Area. This section also provides a comparison of the proposed urban design features with those in the adopted 1990 Mission Bay Plan, as well as a description of the street-level experience expected to occur at build-out for the proposed Mission Bay project, compared with current conditions. The endnotes for this section begin on p. V.D.46.

Potential shadow and wind effects created by the redevelopment of the Mission Bay Project Area are discussed under “Air Quality/Climate” in Section IV.B, Environmental Evaluation Checklist, in the Initial Study (Appendix A).

SETTING

The Visual Quality section of the 1990 FEIR/1/ describes the visual setting of the Project Area as of 1987-1990. However, since the 1990 analysis was conducted, some of the visual characteristics of the Project Area and surroundings have changed. This section provides an updated description of the existing physical appearance of the Mission Bay Project Area and its environs in relation to views of, and views from, the existing Project Area setting.

EXISTING VISUAL CHARACTER

Regional Setting

The Mission Bay Project Area lies near the eastern shoreline of the City and County of San Francisco, at the north end of the San Francisco Peninsula. The peninsula faces the Pacific Ocean to the west and defines the western edge of San Francisco Bay to the east. The cities of Oakland and Alameda are located about 4 miles east of and opposite San Francisco and, along with other municipalities, form the eastern edge of San Francisco Bay. The San Francisco-Oakland Bay Bridge is a prominent man-made feature in this regional setting, connecting the west and east sides of the Bay. The San Francisco anchorage of the Bay Bridge is located approximately 1 mile north of the Mission Bay Project Area on the waterfront.
The most intensely developed portion of San Francisco, including the downtown area and Financial District, is located within the flatter portions of the City about 1.5 miles north of the Mission Bay Project Area. San Francisco’s Financial District is about 1 mile north of the Project Area and consists of high-rise buildings, with heights of up to approximately 50 stories. Financial District buildings visible in a longer-range skyline include office towers developed in the 1920’s and 1930’s, and more recent and generally larger and taller structures developed from the 1960’s to the 1980’s.

The San Francisco waterfront defines the urban edge of the eastern and northern portions of the City. The overall character of the waterfront varies by land uses and geographic location.

The future San Francisco Giants Ballpark site (Giants Ballpark), immediately adjacent to the Mission Bay Project Area to the northeast, is located at the southernmost portion of The Embarcadero where it terminates at King Street.

Nearby Areas

As discussed in “Perspectives for Impact Assessment,” under Section IV.B, SEIR Study Approach, portions of the City that could be affected by the project were grouped and defined as nine Nearby Areas to provide a background and setting context for the Mission Bay Project Area. Locations of the Nearby Areas are shown in Figure IV.C.2. For purposes of this visual quality analysis, only seven of the nine Nearby Areas are discussed below since these are necessary to describe the visual setting. Land uses in all Nearby Areas (including Inner Mission and South Bayshore) are described in “Existing Land Uses in the Nearby Areas” in Section V.B, Land Use: Setting.

Adjacent Port Property

The area immediately adjacent to the Project Area to the east is mostly Port of San Francisco property. Port property also includes the China Basin Channel and part of the southern shoreline of the Channel. The Mission Creek Marina houseboat community is located near the west end of the Channel. A variety of architectural styles and sizes are exhibited by the approximately 20 resident houseboats in the Channel.2/

Port property also includes certain seawall (landside) lots, as well as Piers 40 through 68 and associated shoreline areas, east of Terry A. Fraunçois Boulevard and south to 19th Street. As discussed in “Adjacent Port Property” under “Existing Land Uses in the Nearby Areas” in Section V.B, Land Use: Setting, the shoreline area contains maritime, recreational, industrial, office, restaurant, and night club uses. There are yacht and boat clubs and larger mooring facilities for
commercial vessels near the shoreline area. Piers 48 and 64 are currently vacant and appear dilapidated. Much of the port property west of Terry A. François Boulevard is vacant or used for open air storage or materials processing. A fence separates the open storage areas from Terry A. François Boulevard.

Potrero Hill, North Potrero, and Showplace Square

The Potrero Hill Nearby Area is located immediately to the south and west of the Mission Bay Project Area and is separated from the Project Area by the Caltrain terminal tracks and the elevated I-280 freeway along Seventh Street. Industrial uses such as service shops and manufacturing warehouses occur in the freeway area and rail right-of-way. The North Potrero Nearby Area includes the commercial district between I-280 and U.S. 101 and consists of some commercial/retail, older light industrial land uses, and Showplace Square area. Showplace Square includes industrial buildings with brick facades ranging from three to six stories in height that have also been converted to wholesale and retail interior design showrooms and related uses. These uses provide a buffer for the predominantly multi-family residential uses located adjacent to the south of 17th Street and neighborhood-serving commercial uses concentrated along 18th and 20th Streets.

The Potrero Hill area rises in a southerly direction from about Mariposa Street, reaching a maximum elevation of about 200 feet above mean sea level (MSL). The upper portion of the Potrero Hill area is predominantly residential, including multi-family uses ranging from 2- to 4-unit buildings to 12- to 16-unit buildings. Residential buildings in this area are generally two to five stories high.

Lower Potrero/Central Bayfront

The Lower Potrero/Central Bayfront area borders the Project Area south of Mariposa Street. This area includes older industrial areas on either side of Third Street south to Islais Creek and a residential area at the base of Potrero Hill east of I-280. The residential units in this area, primarily clustered on Tennessee Street, include older Victorian buildings and are generally two to three stories in height. Some of the older large industrial warehouse buildings located in the Lower Potrero area have been converted to lofts and residential units. New live/work buildings have also been constructed in the area.

South of Market

The northern border of the South of Market Nearby Area extends to Market Street, San Francisco’s main street, about a mile north of the Project Area. Much of the South of Market area is
differentiated from the downtown area and Financial District north of Market Street by virtue of the scale, age, architectural style, and uses of the buildings.

The South of Market area near Mission Bay includes the China Basin Landing Buildings (an office complex adjacent to the Project Area), The Embarcadero, the Rincon Point-South Beach Redevelopment Area which includes the San Francisco Giants Ballpark site, the Yerba Buena Redevelopment Area, the Caltrain terminal, the China Basin area, the South End Historic District, and the port property between the Bay Bridge and China Basin Channel.

New buildings have been constructed in recent years, particularly the Moscone Convention Center, the Yerba Buena Center area, and new live/work residential units, but much of the South of Market area retains its predominantly manufacturing, light-industrial, and warehousing appearance. Most building heights range from about one to eight stories, especially south of Folsom Street. Although various portions of the South of Market area have undergone redevelopment, the overall appearance of the area remains utilitarian.

Along the waterfront, The Embarcadero extends from Fisherman's Wharf on the north until it reaches King Street on the south, a distance of 3.5 miles. The Embarcadero contains pedestrian pathways and a MUNI Metro right-of-way in the median. Existing streetscape features along The Embarcadero include specialty lamp posts, bollards/3/, benches, tree planters, railings, decorative cobblestone pavers, and concrete sidewalks with colorful signage. Along the length of The Embarcadero, street trees consisting of sycamores and palms, together with the pedestrian amenities, are intended to create a sense of visual continuity. These design features generally carry through along King Street into the Mission Bay Project Area. The future Giants Ballpark site, immediately adjacent to the Mission Bay Project Area, is located at the southernmost portion of The Embarcadero, at King Street, between Second and Third Streets.

The South Beach subarea of the Rincon Point-South Beach Redevelopment Area, which includes the future Giants Ballpark, is to the northeast of the Project Area. The character of this redevelopment area contrasts in architectural form and style with the mix of pier structures and accessory buildings along the east side of The Embarcadero, and the north side of King Street. Several 4-story to 12-story residential buildings are located along the west side of The Embarcadero. The bulk of these buildings appears to fill their roughly triangular-shaped lots, and provide visual continuity along the west side of The Embarcadero through common design themes and similar height and bulk.

The China Basin area currently consists of low-rise structures that tend to contrast visually with surrounding elements in the vicinity, such as Potrero Hill, the elevated structure of I-280 and I-80 to
the southwest and north, the Mission Bay Golf Center and other industrial buildings in the Mission Bay Project Area, and the more distant high-rise buildings in the Financial District and the San Francisco Bay Bridge towers.

The South End Historic District, located north and northwest of the Project Area at King Street, is bounded by Brannan Street, Second Street, Bryant Street, Delancey Street, Townsend Street, and King Street. This historic district is a visual landmark, representative of the development of warehouses and industrial buildings over a 120-year period. The buildings in the district are of typical warehouse design, large in bulk, often with large arches and openings originally designed for easy rail or truck access. Most of the buildings have brick facades.

At Townsend Street and immediately adjacent to and north of the Project Area is the Caltrain terminal, which provides train service to the Peninsula and the South Bay. The rail lines extend west from the terminal to between Townsend and King Streets and then turn south along Seventh Street, generally under the elevated I-280 structure.

The two China Basin Buildings (bounded by Berry Street to the north, Third Street to the east, Fourth Street to the west, and China Basin Channel to the south) are rectangular and together occupy the entire block between Third and Fourth Streets. The China Basin Building is a six-story (approximately 90-foot-high) former warehouse fronting China Basin Channel from Third Street to Fourth Street. Originally constructed in 1921, this building was recently renovated. The three-story (about 50-foot-high) China Basin Landing Building adjacent to the China Basin Building (fronting Berry Street) was constructed within the last five years.

**Mission Bay Project Area**

The 303-acre proposed Mission Bay Project Area includes 65 acres located north of China Basin Channel and 238 acres located south of the Channel. Visually, the Project Area contrasts with surrounding areas that contain taller elements, such as Potrero Hill, high-rises in the Financial District and downtown, the China Basin Buildings and the I-280 structure, because existing buildings in the Project Area are lower and much of the land area is vacant. The Project Area is a relatively flat area and is industrial in appearance, containing a mixture of industrial and light industrial buildings, block-long warehousing/storage structures (i.e., truck terminals and shipping and distribution facilities) and warehouses, converted office buildings ranging in height from one to two stories, and vacant land. Pedestrian-oriented areas in the Project Area are limited to the area around the Channel, with its floating pier, docked houseboats and public access pier of the China Basin Building, and a portion of the western side of Third Street, which includes a sidewalk or walkway. Most of the buildings are
similar in architectural details, size, scale and age. Large tracts of open area that were used in the past for rail lines are also located in the north and eastern/central portions of the Project Area. There are no major trees or landscape features within the Project Area. Prominent features in the Project Area include the 110-foot-high netted fence of the Mission Bay Golf Center, in the western portion of the Project Area; the conveyor towers of two concrete and gravel processing facilities on the eastern side of the Project Area, which reach a height of about three stories; and the five-peaked, low-rise roof of the Castle Metals building located on Mariposa Street at Third Street.

China Basin Channel, located between Channel Street to the south and King Street to the north, is a semi-natural aesthetic feature within the Project Area. It also serves as a physical divider between the north and south areas of the overall Project Area. The Channel varies in width from about 180 to 280 feet over its 4,000-foot length./4/ It contains 20 houseboats and 25 pleasure craft in the Mission Creek Marina.

The I-280 freeway structure visually defines the southwesterly boundary of the Project Area. Currently, there are two ramp structures of I-280 that are adjacent to the Project Area on the north side. The recently completed I-280 ramp structure leading to King Street is approximately 70 feet high. The other abandoned I-280 structure is about 100 feet high and parallels the north side of the Channel, terminating as a “stub” before Fifth Street. This I-280 stub is currently being demolished and will be completely removed by the year 2000.

Land uses in the Project Area are discussed in Section V.B, Land Use: Setting.

ARCHITECTURAL RESOURCES

The 1990 FEIR identified three existing structures within or adjacent to the Project Area that have been noted by historic or architectural surveys as important architectural resources. These structures are Fire Station No. 30, which is no longer in use, and the Lefty O’Doul Bridge and the Peter Maloney Bridge, both of which cross China Basin Channel. Fire Station No. 30, while not listed on either the 1974-1976 citywide Planning Department Architectural Inventory or the Foundation for San Francisco’s Architectural Heritage survey, has been identified as potentially eligible for the National Register./5/ The station, located at Third, Fourth, and Mission Rock Streets, is constructed of red brick masonry in the Mission style. The building is two stories, with a Spanish tile roof surmounted by a low tower. The brick and masonry materials are sensitively designed and detailed. The building has a rear yard with an intricately detailed metal entrance gate flanked by two brick piers./6/
The two China Basin Channel bridges, the Lefty O'Doul drawbridge at Third Street and the Peter J. Maloney drawbridge at Fourth Street, located adjacent to the Project Area, are unique engineering structures. Both bridges have steel truss work and counterbalance structures. The Lefty O'Doul Bridge is a heel-trunnion bascule iron drawbridge and was built in 1933 by the Straus Engineering Company. The Peter Maloney Bridge was also built in the 1930's. Evaluations of the historic significance of the bridges have concluded that both are eligible for listing on the National Register of Historic Places. The Lefty O'Doul Bridge is a designated City Landmark (No. 194).

**URBAN DESIGN**

The 1990 FEIR provides a description of the urban design features within the Mission Bay Project Area at that time. This description still applies to the Mission Bay Project Area today. The existing urban design characteristics of the Project Area reflect the railroading, shipping, and warehousing industries that developed in the 19th century and early 20th century. Street patterns, waterways, and building forms are indicative of the utilitarian nature of those industrial land uses. Large blocks and, therefore, fewer streets were developed to allow room for large one- and two-story warehousing and manufacturing buildings. The buildings in the area have no particular style of architecture and do not include special window, facade, or other decorative elements. No large trees or landscape features are present. As with most industrial areas, very little exists in the Project Area that would attract or encourage pedestrian use. The area around the Channel, with its floating pier, docked houseboats, and the public access pier of the China Basin Building (adjacent to the Project Area), offers some visual interest at the pedestrian level. Other areas, such as Berry Street, which is partially paved with no sidewalks, and Third and Fourth Streets with numerous warehouses and parking lots, the cement plant, and drawbridges, are not designed to promote pedestrian movement, but to facilitate the current industrial uses on site.

Although many on-site views are limited to buildings and structures associated with the industrial use of the area, it is because of these low-scale buildings and largely undeveloped land that long distance and panoramic views from many portions of the site are available of the downtown, Bay, Bay Bridge, and East Bay hills, as discussed in detail in the following subsection, "Existing Views."

**EXISTING VIEWS**

View corridors are defined by physical elements such as buildings and structures that guide lines of sight and control view directions available to pedestrians and motorists. Visual quality is also assessed through the consideration of: 1) building height, bulk, and architectural style as urban design elements; 2) pedestrian areas and amenities; and 3) open spaces and view corridors.
In general, because of the low elevation and relatively flat terrain, most of the Project Area is visible from surrounding areas. Similarly, existing views from the Project Area are primarily open and unobstructed, offering panoramic views of the Financial District and Potrero Hill because of the low-scale buildings and largely undeveloped land within the Project Area. The Project Area has few public open spaces and is not known as a place from which to enjoy views.

Thirteen viewpoints were selected for use in this analysis to provide a representative range of viewsheds of the Project Area, from the Project Area, and of the Project Area and the surrounding environment. Figure V.D.1 identifies the 13 viewpoint locations for existing conditions. (The rest of the figures referenced in this Setting section are located under “Views” in the Impacts subsection for easier comparison of existing conditions with potential project effects. For that reason, some of the figures referenced in the Setting subsection are not sequential.)

Views of the Project Area

Panoramic View From Potrero Hill: Viewpoint 1

Figure V.D.3 shows a panoramic view of the Project Area from Vermont Street between 18th and 19th Streets on Potrero Hill from the roof of the International Studies Academy (formally Patrick Henry School). This viewshed was selected in order to provide an unobstructed, panoramic view of the Project Area. Prominent features in the panoramic view include the downtown skyline, the I-280 freeway ramps, the Mission Bay Golf Center, the China Basin Buildings, and the more distant Bay Bridge. Farther away, Yerba Buena Island can be seen to the northeast. Beyond it, the East Bay hills can be seen. Short-range views include some residential units on Potrero Hill. These homes are in typical ranges of residential architectural styles found in San Francisco. Electrical and phone utility lines servicing the residential area are also visible.

View From I-280 Overcrossing at 18th Street: Viewpoint 2

Motorists traveling on I-280 in the northerly direction have direct views of the Project Area. Figure V.D.5(a) presents an existing view taken from the 18th Street overcrossing of I-280 looking north. As can be seen in the figure, this portion of the I-280 structure contains four lanes in each direction and has a width of approximately 200 feet. From this portion of I-280, motorists have a gateway view of the more distant, yet dominant, features of the area including the downtown high-rise structures to the north; the China Basin Buildings to the northeast; the Bay Bridge; the East Bay hills; the Bay; and Yerba Buena Island. Short-range views include the overall Project Area to the east, particularly the five-peaked (only four peaks shown in Figure V.D.5[a]) Castle Metals Building on Mariposa Street.
just west of Third Street and the cement plant east of Third Street. An area containing trees and vegetation can also be seen adjacent and to the west of the I-280 freeway.

View From I-280 North of 16th Street: Viewpoint 3

Figure V.D.6(a) illustrates the view from I-280 just north of 16th Street, looking northeast. As with Viewpoint 2 at I-280 and 18th Street, motorists traveling north on I-280 also have direct views to the east of the Project Area. In this view, short-range features that can be seen include various warehouses throughout the Project Area, the truck terminal facility at Owens Street, and the Mission Bay Golf Center along Sixth Street. More distant features of downtown high-rises, the China Basin Buildings, Peter Maloney Bridge, and the Giants Ballpark site can also be viewed. The Bay Bridge and Yerba Buena Island are prominent in the background.

Views From or Near the Project Area

Northeast View Along King Street Near Fifth Street: Viewpoint 4

Figure V.D.7(a) illustrates the northeasterly view along King Street near the intersection of Fifth Street. Views along King Street show the recently completed King Street improvements, which included a wider four-lane street plus a center median (approximately 200 feet wide). The improvements include a wider sidewalk system on both sides of King Street, trees and other landscaping, ornamental street lighting, and MUNI E-line light rail vehicle tracks in the median. There are partial views of the I-280 stub to the south. Beyond the fence along the north side of King Street, there are partial views of the Caltrain terminal and Caltrain tracks. More distant features include the western end of the upper portions of the China Basin Building and partial views of the upper portions of the Bay Bridge.

Southwest View Across China Basin Channel: Viewpoint 5

As illustrated in Figure V.D.8(a) (at Fourth Street), the existing southwesterly view along China Basin Channel from the Peter Maloney Bridge includes both the recently reinforced I-280 structure to the west and the abandoned I-280 stub to the north. The I-280 structure is approximately 80 feet above the water line. Beneath the I-280 stub, there is unimproved land currently occupied by large trucks, soil stockpiles, and construction equipment.

Towards the south side of the Channel, Blanche’s Pier is directly visible from the Peter Maloney Bridge. Blanche’s Pier is just south of the bridge at Fourth Street and includes a restaurant and a
public garden area. The south side of the Channel currently contains a small open space area at the westerly end, containing benches and trees. Although not visible in Figure V.D.8(a), Channel Street runs parallel to China Basin Channel. Parked trucks and cars can be seen along Channel Street. An office building is at Channel and Sixth Streets, as shown in the view in Figure V.D.8(a).

The northern and southern shorelines of the Channel are visible and are currently overlain with rubble, rocks, and sparse vegetation, as described in Section V.L, China Basin Channel Vegetation and Wildlife: Setting. At the westerly end of the Channel, houseboats and other watercraft are visible. There are partial views of the 110-foot-high netted fence of the Mission Bay Golf Center toward the southwest (on the left in this figure). Just beyond the fence are views of residential buildings on Potrero Hill. In the distance toward the west, there are partial views of Mt. Davidson (on the right in this figure).

**South View From Lefty O’Doul Bridge: Viewpoint 6**

From the western walkway of the Lefty O’Doul Bridge, there are direct views of the south bank of China Basin Channel. At the intersection of Third and Channel Streets, there are a few trees and shrubs. Figure V.D.9(a) shows the direct view from the bridge to Third Street. In the foreground, nearby warehouse structures can be seen to the south and various utility and light posts can be seen along Third Street, but the view from this point is primarily of vacant land south of the Channel. Potrero Hill and the Mission Bay Golf Center are also visible in the distance toward the southwest.

**Northerly View of China Basin Channel: Viewpoint 7**

Figure V.D.10(a) illustrates the view looking north over China Basin Channel from the western end of the Channel near Sixth Street. This view includes portions of the Mission Creek Marina, including the floating pier, houseboats, and other craft. The Channel’s unimproved north shoreline is directly visible and contains rubble, rocks, and scattered vegetation. An overflow structure associated with the City’s combined sewer system is directly visible on the north bank of the Channel. The I-280 Sixth Street off-ramp, the abandoned I-280 stub, which currently stands approximately 80 feet above the waterline, and the new King Street off-ramp are visible from this viewpoint.

More distant views across the Channel to the north include the South of Market area and downtown high-rises. The tower of the San Francisco Hilton Hotel and the Hyatt Union Square Hotel are both directly visible in this view. There are partial views of the Bank of America headquarters building above the I-280 stub.
Northeast View From Channel Street Area: Viewpoint 8

Figure V.D.11(a) shows the paved area immediately adjacent to the south side of Channel Street that is used for truck parking and loading/unloading. A truck terminal warehouse building is adjacent to the south side of the street (to the right in the figure). The China Basin Building is visible north of the Channel. The Peter Maloney Bridge and Lefty O'Doul Bridge are partially visible. Channel Street lacks sidewalks, and the sides of the roadway are currently used for parking. Further east along Channel Street is a fenced, vacant area containing stockpiled soils. There are a few trees along Channel Street; however, most of the area around the Channel lacks vegetation and is covered mostly with rubble and rocks. Channel Street contains uneven, cracked asphalt along the entire length of the roadway.

Views of the East Bay hills are partially visible to the east.

East View of Central Subarea: Viewpoint 9

Figure V.D.12(a) shows the undeveloped, dirt-paved truck parking/storage area looking east, just south of Channel Street. The parked truck trailers obstruct all direct easterly views, including views of the Bay and of buildings along Third Street. Overhead utility lines and lights can be seen traversing this view.

View From Terry A. François Boulevard Near Pier 54: Viewpoint 10

Figure V.D.13(a) illustrates the northwest view along Terry A. François Boulevard near Pier 54. Northwesterly views along the west side of Terry A. François Boulevard include one-story warehouses and vacant land with scattered vegetation formerly occupied by railroad tracks. On the west side of Terry A. François Boulevard (the left side of the figure) there is a chain-link fence. Along the eastern side of Terry A. François Boulevard (the right side of the figure), a fenced utility-storage area and warehouse on port property can be seen. There are no defined sidewalks on this portion of Terry A. François Boulevard. The China Basin Building and Peter Maloney Bridge are visible further north. The downtown high-rises and more distant Bay Bridge are also visible. Although not shown in the figure, visible from this location are views of maritime activities, such as tug-and-tow services, public boat launching facilities, and boat storage areas to the east of Terry A. François Boulevard.
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View North From 16th Street Near Sixth Street: Viewpoint 11

Figure V.D.14(a) shows the view to the north near the intersection of 16th and Sixth Streets. The high-rises in the Financial District can be seen in the background. Near the corner of Sixth Street, the upper levels of the China Basin Building and warehouses that are located beyond the fence and along the roadway are partially visible (on the right in the figure). Overhead utility lines and street light posts are also visible.

Northerly View From Third Street Near 16th Street: Viewpoint 12

Views along Third Street are generally representative of the full range of land uses within the Project Area. As shown in Figure V.D.15(a), the northerly view along Third Street near 16th Street includes the Bode Gravel plant on the east side of Third street (to the right in the figure). The plant is currently in use and has an industrial appearance; it covers much of the area from 16th Street to Mission Rock Street. An old railway crossing system, a feature illustrating the past use of the Project Area, is directly visible. The row of light and utility poles that align the center median and western side of Third Street are within the view. Other utility lines are also seen crossing the area.

As shown in Figure V.D.15(a), the most prominent feature on the western side of Third Street is the large billboard situated above the existing structures (on the left side of the figure). The Triangle Sandwich Cafe is situated on the western corner of Third and 16th Streets. Further north along Third Street, there are views of various other light industries, such as a U-Haul Truck Rental Company.

More distant views include the China Basin Building and the high-rises in the Financial District to the northwest. The Bay Bridge can be seen to the northeast.

View of North Side of China Basin Channel Near Sixth Street: Viewpoint 13

Figure V.D.16(a), a northeasterly view from the north side of China Basin Channel, shows the I-280 elevated freeway stub, under demolition, the open area north of the Channel, the Channel, and the houseboat community. Portions of the China Basin Building and the Peter Maloney and Lefty O'Doul Bridges are visible east of Fourth Street; the East Bay Hills appear in the background.

Buildings north of the Caltrain tracks and Townsend Street are partially visible beneath the I-280 structure.
IMPROVEMENTS

This section discusses the potential effects of the project on the scale and intensity of development of the site, and on light and glare. The section also reviews proposed urban design standards and guidelines, and project effects on architectural resources. Changes in visual quality and lighting would result from three aspects of the Mission Bay project: 1) demolition of the existing buildings in the Project Area; 2) construction and build-out of the Project Area; and 3) lighting changes associated with the new development in the Project Area.

The degree of viewer sensitivity often depends on the length and frequency of the exposure to a view. Residents and recreational users are considered to have a higher concern over the visual quality of an area than shoppers and motorists who are transient users. Transient users are considered to have a medium to low concern over the visual quality of an area since they experience views for a shorter duration of time.

For purposes of this analysis, viewer groups who would have views of the Project Area include residents within Potrero Hill and the Project Area, recreational users, motorists traveling on elevated I-280 and surrounding roadways, employees and customers of surrounding retail businesses, employees of Project Area businesses, persons associated with UCSF, patrons of the Giants Ballpark, and MUNI patrons.

Also, for the purposes of this analysis, public views are scenic views from existing parks, plazas, major roadway or other public areas, and gateway and panoramic views from areas generally available to the public. Views from private property, such as residences, are not considered public views since they are not available to the general public.

STANDARDS OF SIGNIFICANCE

The existing visual character of the site is determined by the attributes of specific site features and by patterns that the features have assumed as a result of natural and/or cultural processes. Evaluation of potential project impacts on the existing visual character of the site requires analysis of each element of the project that would be introduced and how these changes (separately or collectively) would affect the character of the site and views of it from off-site locations. Significant impacts to the visual quality or character of a site may occur as a result of substantial, demonstrable, negative aesthetic effects; substantially degraded or obstructed important scenic views from public areas; or the production of new substantial light or glare.
DEMOLITION OF EXISTING PROJECT AREA BUILDINGS

Most of the buildings within the Project Area would be removed over time as construction occurs. There would be construction staging areas at various locations throughout the Project Area. Construction activities would occur at various locations within the Project Area through build-out, assumed for purposes of this SEIR to be through 2015. The demolished buildings would be replaced with the land uses and infrastructure proposed as part of the Redevelopment Plans (discussed in "Buildings to Be Demolished" in Section V.B, Land Use: Impacts). Additionally, demolition would remove stored materials, machinery, and equipment related to existing industrial, recreational, and maritime activities in the Project Area. The only existing structures that would remain within the Project Area at build-out would be the Channel Pump Station, the Peter Maloney and Lefty O'Doul Bridges, the I-280 structure and recently constructed ramps onto King Street, and possibly Fire Station No. 30.

INTERIM USES

During the build-out period, potential interim uses, including surface parking lots proposed at the north and south ends of the Mission Bay Project Area, would be visible, in part, from surrounding areas, including residential areas on Potrero Hill (see Figure III.B.4). While the interim surface lots could include some landscaping, interim parking lots would be visible from large areas within Mission Bay, if buffer features were not provided.

Lighting associated with the interim surface parking lots could potentially cause obtrusive glare when viewed from residential areas on the northern and eastern slopes of Potrero Hill. This would be a significant effect. The project would include a mitigation measure (Mitigation Measure D.1 in Section VI.D, Mitigation Measures: Visual Quality and Urban Design) to minimize spill lighting or glare in off-site areas while providing adequate lighting in the parking areas for patron visibility and safety.

As development of Mission Bay proceeds, views would change from an older industrial area to construction staging area, including interim structures, surface parking lots, increased vehicle traffic (associated with the parking lots and with construction activities), construction equipment, and a mix of old and new development. The visual contrast of new and old development would extend through the build-out period of Mission Bay.
URBAN DESIGN

This subsection presents a brief comparison between the currently proposed urban design features of the Redevelopment Plans (North and South) with the urban design features of the adopted 1990 Mission Bay Plan. Some of these features will be incorporated into the Design for Development documents; others will be included in Owner Participation Agreements (referred to collectively in this discussion as Redevelopment Plan documents). In addition, this subsection describes the proposed conceptual urban design features of the proposed redevelopment plan documents and how the existing character of the Mission Bay Area would be expected to change from a low-scale industrial area to a more intensely developed area with a greater scale, height, and bulk, and a variety of building types.

Adopted 1990 Mission Bay Plan

The 1990 FEIR discusses the Urban Design Element of the San Francisco Master Plan. At that time, general urban design goals and policies that were part of the Element applied to the Mission Bay Area. However, upon adoption of the Mission Bay Plan (1990), the City’s Urban Design Element was amended to be consistent with the adopted Plan. The amended Urban Design Element currently applies to the Mission Bay Area and thus provides specific design guidelines for building height, bulk, plan dimension, and diagonal dimension.

The 1990 Mission Bay Plan contains a number of objectives and policies that serve as design guidelines for future development. These guidelines address the creation of an urban pattern of streets, parks, and buildings that blend into the surrounding urban context, which aim to preserve and maximize views to and from the area. “Mission Bay Plan,” in Section V.A, Plans, Policies, and Permits: Setting, lists the Plan’s objectives. In general, the 1990 Mission Bay Plan intended for new development to recognize the physical transition from the higher elevations of Potrero Hill to the lower elevations of the shoreline. The 1990 plan calls for the taller buildings (typically, 85 to 95 feet, up to 110 feet north of Berry Street) nearer to Potrero Hill, stepping down to lower buildings (45 to 55 feet) closer to the shoreline, and thus providing for a planned general transition from higher to lower building heights from the north and west toward the east across the flat Mission Bay Project Area.

As part of the project, the 1990 Mission Bay Plan would be amended. The primary difference between the 1990 Mission Bay Plan and the proposed Redevelopment Plan documents is the higher height limits, up to 160 feet, compared to the 1990 Plan maximum height limit of 110 feet. The proposed Redevelopment Plan documents for Mission Bay North would allow certain buildings north of the Channel to reach a maximum of 160 feet (Height Zones HZ-1b and HZ-1a; see Figure III.B.5...
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and Table III.B.2, illustrating proposed height zones in Mission Bay). Additionally, the proposed Redevelopment Plan documents for Mission Bay South would allow certain buildings south of the Channel to reach a maximum height of 160 feet (Height Zones HZ-2, HZ-3, HZ-4, HZ-5, HZ-6, and HZ-7; see Figure III.B.5). As with the 1990 Mission Bay Plan, the proposed Redevelopment Plan for Mission Bay South would have lower height limits toward the Bay. The Redevelopment Plan would limit building heights to 65 feet and 90 feet near Terry A. François Boulevard (refer to Figure III.B.5). The proposed height and bulk standards of the Redevelopment Plans would limit the overall amount of developable area, other building dimensions such as maximum plan length and diagonal length, and the number of towers that could be at the maximum height limit of 160 feet (see Table V.A.1).

Overall, the 1990 Mission Bay Plan calls for about 8,270 new housing units concentrated in the central portion of the Project Area, while the proposed Redevelopment Plans call for approximately 6,090 new housing units primarily in the northern portion of the Project Area. The 1990 Mission Bay Plan calls for moderate density, as typical San Francisco three-story units over a garage, while the proposed Mission Bay Redevelopment Plan documents envision a smaller but more dense residential area, generally consisting of five- and six-story buildings, and residential towers up to 16 stories (160 feet), as shown in Figure III.B.5.

Other types of land uses as part of the 1990 Mission Bay Plan are similar to the proposed land uses within the proposed Redevelopment Plans. (Refer to “Land Use Designations” in Section V.A, Plans, Policies, and Permits: Comparison with Existing Plans and Policies.)

The UCSF site proposed within the Project Area would be a new feature not considered in the 1990 Mission Bay Plan. While the University of California is generally exempt from local planning, zoning, and redevelopment regulations when using its property for educational purposes, UCSF site design concepts are assumed in the analysis in this section.

Proposed Redevelopment Plans

Overall, the proposed Redevelopment Plans for Mission Bay North and Mission Bay South would establish major public open space corridors along China Basin Channel, the waterfront, and a new east-west corridor park (The Common); establish a continuous building edge along the residential part of the Fourth Street Corridor; limit building heights adjacent to open space areas and near the Bay; limit heights at the edge of the Project Area in the areas flanking the Channel to blend with the smaller scale adjacent areas; have higher height limits near the Giants Ballpark; and allow for a group of taller buildings along Third Street. This overall design approach would yield a high-density, urban streetscape.
In order to assess the changes in visual quality that would result from the construction of the proposed project, it is necessary to describe the physical components and appearance of the project. The proposed Redevelopment Plan documents set forth specific standards, which are design requirements that would govern the development and build-out of the Mission Bay project. They serve to regulate land use, height, bulk, density, maximum development, setbacks, coverage, streetwalls, view corridors, open areas, and parking/loading access. Those design standards are discussed in “Proposed Land Uses” in Section III.B, Project Description. Based upon the design standards, future development can be conceptually described. In addition, the Redevelopment Plan documents include guidelines, recommendations intended to be applied in project review of individual redevelopment proposals in a manner that is consistent with the densities, intensities, land uses and infrastructure standards of the Redevelopment Plans. In contrast to the standards, the guidelines would not be absolute requirements. The discussion below summarizes the key design standards and guidelines proposed for the Project Area. The Redevelopment Plans for Mission Bay North and Mission Bay South set forth the allowable land uses for: Mission Bay Residential, Mission Bay North Retail, Hotel, Commercial Industrial, Commercial Industrial/Retail, Mission Bay South Retail, and Mission Bay Open Space. The Redevelopment Plan documents provide general design criteria as well as criteria specific to those use designations.

Mission Bay Residential

The Redevelopment Plan design standards would have a dominant height for the Mission Bay Residential areas of 65 feet (about four to five stories high; approximately 75% to 80% of the developable area for Height Zones HZ-2, HZ-3, and HZ-4 could be constructed up to this height). Mid-rise buildings up to 90 feet high and towers up to 160 feet high may be constructed within a percentage of the developable area of each height zone for the residential areas. Towers would not be permitted within 100 feet of the north side of the Channel (within HZ-1b), and on the areas fronting Terry François Boulevard within Height Zone 4 (HZ-4).

This proposed residential land use is intended to create a pedestrian-oriented environment with continuous street frontages, frequent entrances, ground floor, neighborhood-serving retail uses, mid-block and other walkways, and a network of private and public open space areas.

Mission Bay North Retail

The Mission Bay North Retail land use designation includes entertainment-oriented commercial uses across Third Street from the under-construction San Francisco Giants Ballpark (refer to Figure III.B.5). These retail/entertainment uses are intended to complement the ballpark activities. The
design standards would allow mid-rise buildings up to 120 feet high and towers up to 160 feet within a percentage of the developable area of Height Zone 1a (HZ-1a). The guidelines call for tower locations at major intersection and transit stops along King and Third Streets in a manner that would preserve designated view corridors. Guidelines would also encourage continuous street-level uses, and open space for pedestrian scale.

**Mission Bay Hotel**

The Mission Bay Hotel use is designated in Mission Bay South, at Third Street and the extended Owens Street. The design guidelines for this use would encourage public functions, such as restaurants, retail and lobby areas, to be oriented towards Owens and Third Streets and for hotel development to relate to proposed open space and the nearby Channel. Portions of the hotel could be up to 160 feet.

**Commercial Industrial**

The Commercial Industrial uses would be within the Mission Bay South Redevelopment Plan. The primary land uses within this land use designation would include light manufacturing, research laboratories, wholesale, including warehousing, and office. These uses are within Height Zones HZ-5, HZ-6 and HZ-7 (refer to Figure III.B.5). The base height in these zones would be generally 90 feet. Tower structures up to 160 feet would be allowed in each of these height zones. To help preserve views from I-280, only 60% of the buildings within 100 feet from the I-280 freeway within HZ-7 would be permitted above the height of the freeway. Guidelines would encourage tower structures within HZ-7 to be separated by a minimum distance of 100 feet when located on the same block and to be separated by 200 feet near the I-280 freeway. The guidelines also would encourage a variety of building heights with buildings at the property line and a continuous streetwall along major streets.

**Mission Bay South Retail**

The Mission Bay South Retail designation would include a broad range of neighborhood-serving and city-serving retail, as shown in Figure III.B.3. Height and bulk limits would be governed by design standards in their respective height zones, with heights ranging up to 90 feet.

Guidelines for retail developments would encourage active street-level frontages, appropriate design treatments for windowless walls, and orienting parking areas away from Third and Mariposa Streets.
Mission Bay Open Space

The Mission Bay Open Space system is intended to create a variety of public amenities and spaces for passive and active recreation. About 47 total acres of public open space would be provided as part of the proposed Redevelopment Plans, including 8 acres within the UCSF site. (Figure V.M.3 shows the main locations for the proposed open space system.) Parks would be located along the northern and southern edges of China Basin Channel, along Terry A. François Boulevard near the Bay shore; and as part of The Common, which would run east-west.

Design guidelines would encourage continuous bicycle and pedestrian pathways, active uses in open space areas (athletic playing fields, court games, children’s play areas, informal lawn recreation and paths for skating, walking, jogging, and bicycling), and passive recreation (strolling and walking, and places for sitting and viewing).

ARCHITECTURAL RESOURCES

The Cultural Resources Evaluation prepared for the 1990 FEIR concluded that Fire Station No. 30, located at the southeast corner of the intersection of Third and Mission Rock Streets, is considered potentially eligible for the National Register based on criterion “c” described below. Department of Interior regulations describe National Register criteria for listing as follows:

The quality of significance in American History, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that (a) are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or (d) that have yielded or may be likely to yield information important in history or prehistory. /11/, /12/

The closed fire station is located on a 0.26-acre parcel of city-owned land. The surrounding 1.26 acres of land is owned by Catellus. Under the proposed Mission Bay South Redevelopment Plan, Catellus would transfer that surrounding 1.26 acres to the City for the purpose of building new police and fire stations. No decision has been made regarding the existing building. The City might retain and rehabilitate Fire Station No. 30, or it could choose to demolish the building. Retention of the building to incorporate it into new fire or police facilities might destroy architectural characteristics contributing to the building’s eligibility for the National Register. Because Fire Station No. 30 is considered potentially eligible for the National Register, and therefore a significant cultural resource,
demolition of the building or alterations that would preclude its eligibility would constitute a significant impact. This potentially significant impact would be mitigated by Measures D2.a and D2.b in Section VI.D, Mitigation Measures: Visual Quality and Urban Design.

The Lefty O'Doul Bridge and the Peter Maloney Bridge are outside the Project Area and are not proposed to be modified as part of the project. The project would not significantly affect the setting or function of the bridges. Although not part of this project, the Department of Public Works has undertaken planning and design for seismic upgrade of both bridges. The visual quality of the bridges will be unaffected by the seismic upgrade projects.

**VIEWS**

A three-dimensional model was prepared by Johnson Fain Partners, architects for Catellus, to represent the conceptual massing, lot coverage, heights, and vertical setbacks associated with the proposed project. Square One Productions, under the supervision of EIP Associates, developed visual simulations from 13 selected viewpoints based upon this three-dimensional model. At this time, specific building locations, size, and design are unknown. Therefore, the simulations depict basic sizes and massings based on proposed redevelopment plan documents height and bulk limits and are not intended to represent specific uses or architectural design for buildings that will ultimately be proposed if the project is approved. There are numerous building configurations that could ultimately occur at the project site under the proposed redevelopment plan documents. The simulations depict representative height and massing within each height zone and include structures at maximum proposed height limits. The simulations also lack streetscape furniture and amenities and detailed architectural treatments, such as windows, entries, cornices or canopies, and other features and thus tend to appear more stark and box-like than the likely actual buildings. Some of the simulations include limited landscaping and street lighting features; those features are intended to help illustrate the size and scale of buildings in the views. However, actual landscaping and streetscape features would be designed as part of implementation of the Redevelopment Plan documents.

Figure V.D.2 shows locations of the viewpoints of the simulations on a map of the proposed Project Area land uses.
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FIGURE V.D.3 EXISTING PANORAMIC VIEW FROM POTRERO HILL

1. DOWNTOWN SAN FRANCISCO
2. BAKER-HAMILTON DESIGN CENTER
3. CLOCKTOWER-SECOND STREET AT BRYANT
4. BANK OF AMERICA SIGN-FIRST STREET AT HARRISON
5. SIXTH STREET ON-OFF-RAMPS TO/FROM I-280
6. CHANNEL PUMP STATION
7. SAN FRANCISCO-OAKLAND BAY BRIDGE
8. YERBA BUENA ISLAND
9. CHINA BASIN BUILDING
10. LEFTY O'DOUL BRIDGE AT THIRD STREET
11. CHINA BASIN CHANNEL
12. I-280
13. OAKLAND HILLS
14. PIER 50
15. KAISER SAND AND GRAVEL
16. DOWNTOWN OAKLAND
17. PIER 64
18. MT. DIABLO
19. SAND AND GRAVEL CONVEYOR
20. POTRERO HILL

SOURCE: Square One Productions
NOTE: The photograph was taken from the roof of The International Studies Academy, 639 Vermont Street near 18th Street, to provide an undisturbed view of the Project Area. Although the viewpoint is not publicly accessible, it is similar to views partially available from streets and residences on Potrero Hill.
Views of the Project Area

Panoramic View on Potrero Hill: Viewpoint 1

As illustrated in Figures V.D.3 and V.D.4, panoramic views of the Project Area as seen from Potrero Hill would change from a largely undeveloped and low-scale industrial area to a densely built urban environment with building heights ranging from below 65 feet up to 160 feet. The project would result in a change in the overall visual character and scale of the Project Area. Development in the Project Area would create a visual environment more consistent with existing urbanized environment that surrounds the Project Area, such as the South of Market and downtown areas to the north; it would be more intensive than industrial and residential uses to the west and the residential areas to the south. The project would include towers at certain locations that could reach as high as 160 feet, as shown in Figure V.D.4; proposed design standards would limit the numbers and locations of these towers. Views of existing features from certain locations on Potrero Hill, such as from area roadways or Jackson Playground, would be reduced, but not eliminated. Building massing would obscure views of lower buildings and structures beyond Mission Bay, but views of the downtown skyline from most of Potrero Hill would remain. Views of the Bay Bridge, Bay, and East Bay hills from streets and private residences on the lower portions of Potrero Hill would be partially or fully obstructed. These visual changes would not be significant because important scenic views from public areas would not be substantially degraded or obstructed. However, views of the Project Area and beyond from lower portions of the hill are more likely to be already obstructed by existing buildings.

View From I-280 Overcrossing at 18th Street: Viewpoint 2

As shown in Figure V.D.5(b), from I-280 at 18th Street, development within the Project Area would be highly visible. Motorists traveling along this portion of I-280 would have views of numerous mid-rise and high-rise structures (up to 160 feet) throughout the Project Area. Short-range views of development within Mission Bay would be primarily of commercial industrial uses located immediately east of the freeway. At least 60% of the commercial industrial development near the freeway would be set back a minimum of 100 feet from the freeway. Height Zone 7 within the Project Area runs adjacent to I-280 (see Figure III.B.5). Allowable building heights within Height Zone 7 would exceed the height of the freeway in limited locations. Four towers (160 feet high) would be allowed in Height Zone 7 with a minimum separation of 200 feet. A majority (85%) of the commercial industrial buildings near the freeway would be allowed up to 90 feet high. Long-range views to the north would include residential development, and to the east, the UCSF site. While
NOTE. The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.

MISSION BAY SUBSEQUENT EIR

FIGURE V.D.5    EXISTING AND POTENTIAL VIEWS FROM I-280 OVERCROSSING AT 18TH STREET
motorists traveling along I-280 would have a relatively short period to view the Mission Bay area, those changes would be noticeable.

More distant views of downtown from I-280 at this location would be partially changed. Long-range views north and northeast toward the Bay Bridge and the East Bay hills would also be limited by new development, intermittently blocked by the taller buildings and towers in the Project Area. The Bay Bridge would be minimally visible, and the Bay edge of the East Bay would be completely obstructed. Views of Treasure Island would likely be eliminated. Views toward the Bay edge would not be substantially altered since existing development currently hinders visual access from this location to the shoreline area; however, distant views of Bay waters would be diminished.

Overall, views of the Project Area would substantially change from a largely undeveloped but industrial visual environment to a highly urbanized visual environment, with up to 160-foot-high tower structures providing the dominant visual features of the Project Area. Long-distance, gateway views of certain regional visual resources from I-280 at this location would be substantially reduced or removed. However, the intermittent blocking of these long-range views of certain features from an urban freeway is not considered to be a significant effect.

View From I-280 North of 16th Street: Viewpoint 3

As illustrated in Figure V.D.6(b), the view from I-280 just north of 16th Street and toward the northeast would be substantially affected by the proposed project. From this viewpoint, views of new commercial/industrial development and the UCSF site would replace panoramic views of the China Basin and downtown areas. At least 60% of the commercial/industrial buildings would be set back a minimum of 100 feet from the I-280 structure, and new development would range in height from 90 to 160 feet. Up to four towers at the maximum height level could be constructed near the freeway (within Height Zone 7). There would be intermittent views of the new UCSF site, which would contain structures ranging in height from approximately 30 feet up to 160 feet high at selected locations. As shown in Figure V.D.6(b), mechanical stacks on top of the lab buildings within the UCSF site could add up to 30% additional height and would be visible from I-280. Motorists traveling on I-280 would no longer have any views at this particular point of the Bay Bridge, China Basin Building, Treasure Island, the Lefty O'Doul Bridge, and the Giants Ballpark since new development would completely obstruct these features. However, at some points along this freeway section, and on the freeway north and south of this section, such views would be intermittently observable. The Redevelopment Plan design standards would limit building heights on Block 43 east of I-280 near the Sixth Street off-ramp. Motorists near this location would continue to have views towards downtown, the Bay Bridge, and the East Bay.
Top: Existing view from I-280 north of 16th Street
Bottom: Potential view from I-280 north of 16th Street

SOURCE Square One Productions
NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.

MISSION BAY SUBSEQUENT EIR

FIGURE V.D.6 EXISTING AND POTENTIAL VIEWS FROM I-280 NORTH OF 16TH STREET
Overall, views of the Project Area would change from a largely underdeveloped industrial area to a highly urbanized, mixed-use environment, with 16-story structures providing the predominant visual features of the Project Area. These changes and intermittent loss of panoramic views from the I-280 freeway would be seen by motorists and would form part of the future urban landscape. While motorists traveling along I-280 would have a relatively short period to view the Mission Bay area, those changes would be noticeable. Intermittent blocking of these long-range views of certain features from an urban freeway is not considered to be a significant effect.

**Views From or Near the Project Area**

**Northeast View Along King Street Near Fifth Street: Viewpoint 4**

As shown in Figure V.D.7(b), northeasterly views along King Street would include direct views of approximately 65- to 160-foot-high residential structures to the south. A maximum of six towers within Height Zone 1b (see Figure III.B.5) could reach a height of 160 feet. More distant views to the north along King Street on the north side would include retail/entertainment structures and residential development, with up to six tower structures reaching up to 160 feet. Although not visible in Figure V.D.5(b), the Giants Ballpark, south of King Street at Third, would be beyond these structures, at a height of about 130 feet with light towers up to about 175 feet. The Caltrain tracks and adjacent terminal to the north beyond the fence along the north side of King Street would be unchanged.

Views of the China Basin Building to the southeast would be obstructed by intervening residential structures. The approximately 45- to 75-foot-high I-280 stub would be demolished and replaced with new residential development. Overall, northerly views along King Street would be of a more intensely developed residential and retail/commercial area.

**Southwest View Across China Basin Channel: Viewpoint 5**

As shown in Figure V.D.8(b), a feature in this viewshed would be the proposed Fifth Street pedestrian bridge that would extend across the Channel, connecting the open space areas on both sides (north and south) of the Channel. The bridge would provide pedestrian access from north of the Channel to the Mission Creek park on the south side of the Channel. Southwesterly views from the Peter Maloney Bridge would include rip-rap and vegetation on both sides of the Channel. Views of the north side of the Channel would include vegetation along the banks of the Channel, and open spaces areas including features such as a paved pedestrian pathway. Although not shown in Figure V.D.6(b), two larger recreational open space areas are proposed to link with the linear open space.
Top: Northeast view along King Street near Fifth Street
Bottom: Potential northeast view along King Street near Fifth Street

SOURCE Square One Productions
NOTE The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
Top: Southwest view across China Basin Channel
Bottom: Potential southwest view across China Basin Channel

SOURCE: Square One Productions
NOTE. The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
along the north side of the Channel, Fifth Street Square and open space areas under and adjacent to I-280 (refer to Figure V.M.3). Landscaped edges along the north side of the Channel would contain three cantilever structures providing viewing points along the Channel.

Linear open space would extend along the entire length of the south side of the Channel. Although not entirely visible in Figure V.D.8(b), proposed open space would be visible from this viewpoint, and would connect to a larger open space area at the far western end of the Channel. Those open space areas would replace the views of the parked cars along Channel Street and of the netted fence surrounding the Mission Bay Golf Center.

Beyond the open space areas along both sides of the Channel, multi-unit residential buildings fronting the channel would be directly visible. Residential buildings farther away from the Channel would be partially visible, due to the intervening homes fronting the Channel. On the north side of the Channel, residential structures ranging from approximately 65 feet to 160 feet high would replace the I-280 stub and the unimproved open space beneath it. Buildings within 100 feet of the north edge of the Channel would not exceed 65 feet in height. Seventy-five percent of the developable residential land in the area north of the Channel (within Height Zone lb; see Figure III.B.5) would be at a base height of 65 feet.

Residential buildings visible on the south side of the Channel would also range in height from 65 feet to 160 feet. As with the North of Channel area, up to 75% of the area south of the Channel (within Height Zone 2) available for residential use would be developed with heights of up to 65 feet. Only 15% of the area could be developed at building heights up to 160 feet.

At the west end of the Channel, views would include the I-280 structure and the Mission Creek houseboat community. Views of Blanche’s Pier would remain unchanged. More distant partial views of Potrero Hill to the southwest and Mt. Davidson to the west would be substantially reduced by residential development north of the Channel, but would remain partially visible from the Channel corridor area.

South View From Lefty O’Doul Bridge: Viewpoint 6

Views of the proposed project from the western walkway of the Lefty O’Doul Bridge, shown in Figure V.D.9(b), would include the hotel, the eastern portion of China Basin Channel, and residential/neighborhood-serving uses to the southwest. The hotel, containing approximately 500 rooms and related facilities, on the southwestern corner of Channel and Third Streets, would be visible from this viewpoint. The hotel could be up to 160 feet high, based on the maximum allowable
Mission Bay Subsequent EIR
Figure V.D.9 Existing and Potential South Views from Lefty O'Doul Bridge

Top: South view from Lefty O'Doul Bridge
Bottom: Potential south view from Lefty O'Doul Bridge

Source: Square One Productions

Note: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
heights in Height Zone 2. Views of the existing warehouse structure, utility and light posts to the
south and southwest would be eliminated. The existing trees on the southeastern corner of Third
Street could remain and would be incorporated at the Mission Creek park. Although not shown in
Figure V.D.9(b), views to the northeast would be of the future Giants Ballpark. Views to Potrero
Hill would be completely obstructed, and there would be no remaining panoramic views of the
southwest area available from the Lefty O'Doul Bridge. Other distant views would remain. The
visual changes would not be significant because important scenic views from public areas would not
be substantially degraded or obstructed.

Northerly View of China Basin Channel: Viewpoint 7

Potential views to the north from the south bank of China Basin Channel would include residential
buildings, with neighborhood-serving retail uses, ranging in height from up to 65 feet to up to 160
feet. Residential development within 100 feet of the north Channel edge would not exceed 65 feet in
height. Up to six tower structures could be built in the area directly north of the Channel within
Height Zone 1b, some of which would be prominently visible from this viewpoint. The new
residential and neighborhood-serving retail buildings would replace the abandoned I-280 stub, just
north of the Channel. The linear open space area would be visible along the north side of the
Channel. The open area would vary in width because of the configuration of the Channel bank, but
buildings would be set back 60 feet from the Channel right-of-way. The linear open space area
would include a pedestrian pathway that would parallel the Channel. Although not visible in Figure
V.D.10(b), a pedestrian bridge across the Channel would be located to the east at Fifth Street. The
northern Channel edge would be treated with intermittent cantilever structures providing vista points
along the Channel. The existing, unmaintained edges of the Channel would be covered with rip-rap
for slope stability and planted with salt-tolerant vegetation. The Mission Creek Marina and the I-280
King Street off-ramp would remain visible towards the western end of the Channel. More distant
partial views of the high-rise structures located in the Financial District and the South of Market area
would be substantially reduced by intervening residential structures with ground floor neighborhood-
serving retail. Overall, distant views beyond the new residential structures would be reduced due to
the size, height, and bulk of the buildings north of the Channel. The visual changes would not be
significant because important scenic views from public areas would not be substantially degraded or
obstructed.

Northeast View From Channel Street Area: Viewpoint 8

The existing China Basin alignment of Channel Street would be relocated to the south, farther away
from the Channel, as an extension of Owens Street. The area that is now Channel Street would
NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
become a linear open space area, as shown in Figure V.D.11(b). Direct views to the northeast from along the new Owens Street extension would include the linear open space, residential and neighborhood-serving retail buildings along Owens Street and the hotel at the corner of Third Street and Owens Street.

The linear open space (approximately 140 feet at a minimum, and 200 feet wide on average) would extend along the south side of the Channel. A pedestrian bridge at Fifth Street would be visible and would connect the open space areas on both sides of the channel. A paved pedestrian walkway would connect with the bridge within the open space area, as shown in Figure V.D.11(b).

The south Channel edge would be planted with salt-tolerant vegetation and would contain rip rap at various locations. The existing truck terminal warehouse and loading area along Channel Street would be replaced with new residential and neighborhood-serving retail development. Most of the residential development would be up to approximately 65 feet high (six stories); however, buildings (about 15% of the developable area within Height Zone 2) along Owens Street could reach a maximum height of 160 feet (see Figure III.B.5).

Residential development fronting the north side of the Channel would be directly visible. Buildings fronting the Channel would not exceed 65 feet in height. Residential buildings with up to 160-foot towers north of Berry Street would also be partially visible from this viewpoint. Views to the north would include the open space areas near the Channel.

Views of the China Basin Building and the Lefty O'Doul Bridge would remain unchanged. As shown in Figure V.D.11(b), the Giants Ballpark, which is currently under construction, would also be partially visible from this viewpoint. More distant views of the East Bay would be partially obstructed by new development, but would not be eliminated.

**East View of Central Subarea: Viewpoint 9**

Views from within the central portion of the Project Area to the Bay would replace truck terminals and truck parking. Figure V.D.12(b) shows a view from The Common linear open space area, looking east toward San Francisco Bay. The Common would extend through the central portion of the Project Area from the Owens Street circle to Terry A. François Boulevard (see Figure V.M.3). The Common would be about 130 feet wide throughout its entire length and would have outdoor furniture and decorative landscaping. Buildings along the edges of The Common would be set back 30 feet at the 55-foot height level, or a similar design approach to reduce shadow effects on public open space would be incorporated.
Top: View from Channel Street looking northeast
Bottom: Potential view from Channel Street looking northeast

SOURCE: Square One Productions

NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
Top: View east from vacant land south of Channel

Bottom: Future location of The Common looking east

SOURCE: Square One Productions
NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
Other views from The Common, not shown in Figure V.D.12(b), would include residential and neighborhood-serving retail development to the north, the UCSF site to the south, a circular open space area to the west, and the San Francisco Bay and East Bay to the far east. Most (80%) of the residential and neighborhood-serving buildings to the north of The Common would be up to 65 feet in height; however, certain buildings could reach maximum heights of 160 feet. The UCSF site adjacent to the south side of The Common edge would likely range from about 30 feet to 110 feet in height. As shown in Figure V.D.12(b), neighborhood streets would extend along both sides of The Common. Pedestrian walkways would also be located at various points within The Common.

Views from The Common would be an east-west corridor with defined edges the length of The Common in the east and west directions. The corridor would have distant views of the East Bay.

View From Terry A. François Boulevard Near Pier 54: Viewpoint 10

Proposed land uses along the western side of Terry A. François Boulevard would be open space, retail, and commercial industrial. Existing land uses along the waterfront and eastern side of Terry A. François Boulevard would not be changed; thus views of the port property and maritime activities associated with the waterfront area are assumed to remain. As shown in Figure V.D.13(b), the commercial industrial buildings proposed to the west would be visible beyond the proposed open space area on the western side of Terry A. François Boulevard. The open space area would extend along a major portion of Terry A. François Boulevard. Some of the commercial industrial buildings fronting the open space would be limited to a height of about 55 feet. Directly west of those buildings, other commercial industrial buildings would have heights no higher than 90 feet. Other areas (7%) farther to the west of Terry A. François Boulevard, primarily near Third Street, would potentially have maximum heights of up to 160 feet. Views of new commercial industrial buildings to the west would replace the views of the one-story warehouses and vacant land. The utility lines would be placed underground and would no longer be visible.

More distant views of the downtown high-rises would be partially obstructed; however, views of the Bay Bridge would remain. Overall, northwest views along Terry A. François Boulevard would consist of a more intensely developed area and more limited views of downtown structures.

View North From 16th Street Near Sixth Street: Viewpoint 11

Viewpoint 11 schematically illustrates Project Area development down the new Fourth Street corridor. As shown in Figure V.D.14(b), foreground street-level views would be dominated by mid- to high-rise buildings (generally from 90 feet to 160 feet) associated with the UCSF site. The buildings
Top: View from Terry A. Francois Boulevard near Pier 54
Bottom: Potential view from Terry A. Francois Boulevard near Pier 54

SOURCE Square One Productions

NOTE The visual illustration illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
Top: View north from 16th Street near Sixth Street
Bottom: Potential view north from 16th Street near Sixth Street

SOURCE: Square One Productions
NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.

MISSION BAY SUBSEQUENT EIR

FIGURE V.D.14 EXISTING AND POTENTIAL VIEWS NORTH FROM 16TH STREET NEAR SIXTH STREET
would visually enclose the realigned Fourth Street. It should be noted, however, the images in the figure do not assume any additional setbacks, variations in height or architecture, street-side features, or landscaping that would be incorporated into the final design, which would diminish the wall effect. Although the view of the downtown skyline would be obstructed by new development, 16th Street is not a public open space.

Northerly View From Third Street Near 16th Street: Viewpoint 12

Viewpoint 12 schematically illustrates Project Area development northerly along the Third Street corridor from the perspective of a motorist or pedestrian. Pedestrian walkways would be available along both sides of Third Street. As shown in Figure V.D.15(b), foreground and street-level views would be dominated by mid- to high-rise buildings (generally up to 160 feet) associated with the UCSF site to the west and commercial industrial uses to the east. A maximum of three towers up to 160 feet high could be built on 7% east of Third Street (refer to Figure III.B.5). Directly to the north, partial views of the Giants Ballpark would be available. The most affected view from this viewpoint would be of the downtown area. Currently, views of the downtown are available, but are partially obstructed by overhead lines and billboards. New development would block views of the downtown because of the visually continuous massing of buildings. This would create a sense of enclosure at the street level. It should be noted, however, the images in the figure do not assume any additional setbacks, variations in height or architecture, street-side features, or landscaping that would be incorporated into the final design, which would diminish the wall effect.

The view also does not illustrate the proposed extension of MUNI Metro light rail vehicle service in the median of Third Street. The existing visual environment includes many vertical elements in this view corridor, such as telephone poles, billboards, and the cement plant, that block clear views of the downtown. Although new development would alter the scale and character of the area, a significant viewshed would not be affected.

View From North Side of China Basin Channel Near Sixth Street: Viewpoint 13

From the north side of China Basin Channel near Sixth Street, views of the I-280 structure (and buildings to the north) and open area would be replaced by those of residential and neighborhood-serving retail buildings, and linear open space, as shown in Figure V.D.16(b). Buildings fronting the Channel would not exceed 65 feet in height. The approximately 50-foot-wide linear open space would extend along the north side of the Channel; a pedestrian bridge at Fifth Street would be visible and would connect the open space areas on both sides of the channel. A paved pedestrian walkway would connect with the bridge within the open space area.
Top: Northerly view from Third Street near 16th Street

Bottom: Potential northerly view from Third Street near 16th Street

SOURCE: Square One Productions

NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
Top: Existing view of north side of China Basin Channel
Bottom: Potential view of north side of China Basin Channel

NOTE: The visual simulation illustrates general height and massing permitted under the proposed redevelopment plan documents, but does not necessarily represent maximum development at any particular location nor specific architecture or urban design.
Views of the China Basin Building and the Lefty O'Doul Bridge would remain unchanged. As shown in Figure V.D.16(b), the Giants Ballpark, which is currently under construction, would also be partially visible from this viewpoint.

Views to the south of Channel would include the existing houseboats, linear open space, residential and neighborhood-serving retail buildings along Owens Street and a hotel at the corner of Third Street and Owens Street. Most of the residential development would be up to approximately 65 feet high (six stories); however, buildings (about 15% of the developable area within Height Zone 2) along Owens Street could reach a maximum height of 160 feet (see Figure III.B.5). More distant views of the East Bay would be partially obstructed by new development.

Conclusion

The viewpoint locations in the Project Area considered above illustrate the range of visual conditions that would be affected by the project. Overall, the project would alter certain views and certain features now visible would be partially or wholly blocked from various locations. However those effects would not be considered significant as the changes would not substantially degrade or obstruct important scenic views from public areas.

LIGHTING

Development of the Mission Bay Project Area could increase the amount of light and glare in the surrounding area. Glare can be caused by reflections from pavement, vehicles and reflective building materials. Since specific features of the new buildings are unknown at this time, it is assumed for purposes of this SEIR that buildings within Mission Bay could contain reflective surfaces, such as metal and glass. The resultant glare could affect nearby residential areas, pedestrians, and motorists. Additionally, new buildings, parking structures, and walkways would introduce new light sources in the Mission Bay Project Area. Increased lighting and glare would be visible but not substantial and would not be expected to create adverse effects, such as impairment of drivers. Glare effects could be reduced through building orientation, building material selection, and landscaping.

Lighting associated with uses such as parking structures in the Project Area, including roofs of parking structures, if proposed, could potentially cause obtrusive glare when viewed from residential areas on the north and east slopes of Potrero Hill. This would be a significant effect. Mitigation Measure D.1, in Section VI.D, Mitigation Measures: Visual Quality and Urban Design, would minimize spill lighting or glare in off-site areas, while providing adequate lighting in the parking areas for patron visibility and safety.
NOTES: Visual Quality and Urban Design


2. EIP Associates Land Use Survey, 1997.*

3. Approximately 3.5-foot-high posts that are typically used as a vehicle barrier onto walkways/internal roadways, etc.


* A copy of this report is on file for public review at the Office of Environmental Review, Planning Department, 1660 Mission Street, San Francisco.
E. TRANSPORTATION

The endnotes for this section begin on p. V.E.120.

SETTING

This section describes the facilities and systems that currently comprise the local and regional transportation network serving the proposed Mission Bay Project Area. The network is a system of local streets, ramps and freeways; local and regional bus and rail transit lines; ferry service; parking areas; bicycle and pedestrian facilities; and truck loading areas. Figure V.E.1 shows the regional transportation facilities in relation to the Project Area. This Setting section describes: 1) the transportation study areas; 2) the existing regional and local transportation facilities and services that directly serve the Project Area; and 3) the existing transportation conditions.

The transportation setting has changed considerably since 1987, when data was gathered for the 1990 FEIR's transportation setting section. Circulation patterns have changed because freeways have changed due to the 1989 Loma Prieta earthquake. For example, two options noted in the 1990 FEIR for the Embarcadero Freeway after the earthquake were to demolish it or to retain it with seismic upgrade/1/, as a decision about the fate of the freeway had not been made at the time the 1990 FEIR was completed. The freeway was demolished in 1991, and traffic at approaches to Interstate 80, the Bay Bridge, and U.S. 101 has changed as a result. In addition, the 1996-97 traffic volumes obtained at local intersections in and near the Project Area are different from those obtained 10 years ago and reported in the 1990 FEIR. Therefore, little of the setting data from the 1990 FEIR has been summarized below, in favor of presenting current information.

TRANSPORTATION STUDY AREA

The transportation study area and intersections at relevant freeway ramps shown in Figure V.E.2 were established in order to determine the extent of the San Francisco transportation network that may be measurably affected by project traffic. The transportation study area is defined by travel corridors as well as by facilities such as transit stations or parking areas. The area includes freeway segments, freeway ramps, street segments, and street intersections that would be on the routes that project traffic would use. In addition, the area encompasses the various public transit modes—rail, light rail, and bus services—that would potentially serve Mission Bay, bicycle routes to and through the Project Area, and crosswalks in the Project Area serving large numbers of pedestrians.
MISSION BAY SUBSEQUENT EIR

FIGURE V.E.1 REGIONAL TRANSPORTATION SETTING
EIP

- Existing Study Intersections
- This portion of King Street is not paved

**SOURCE** Wilbur Smith Associates

**MISSION BAY SUBSEQUENT EIR**

**FIGURE V.E.2 TRANSPORTATION STUDY AREA: EXISTING**
Traffic Study Area

Figure V.E.2 shows the Project Area and indicates the existing intersections that have been included in the traffic study. The selected intersections are parts of the primary and the secondary access routes to and from the Mission Bay Project Area.

Transit Study Area

All regional and local transit services that have stops or stations in or near the local study area were evaluated. These include rail services such as BART, Caltrain, and MUNI Metro; bus services such as MUNI, AC Transit, SamTrans, and Golden Gate Transit; and ferry services provided by Golden Gate Ferry, Blue & Gold Fleet, and Red & White Fleet.

Parking Study Area

Existing parking conditions were qualitatively reviewed in and near the Project Area, including the adjacent Nearby Areas of Lower Potrero, Potrero Hill, and portions of South of Market including South Beach. Parking supply and demand were calculated for the Project Area in the Impacts section. Possible parking impacts on areas outside the study area are discussed qualitatively.

Pedestrian and Bicycle Study Area

The pedestrian study area north of China Basin Channel concentrates on the intersection crosswalks of King Street at Third, Fourth, and Fifth Streets, in addition to Berry Street. South of the Channel, the pedestrian analysis includes existing and potential pedestrian routes leading from the Project Area toward the nearby transit stations and the San Francisco downtown area. Bicycle travel conditions were also evaluated within the Project Area.

EXISTING REGIONAL TRANSPORTATION FACILITIES

Travel to and from the Project Area involves the use of regional transportation facilities, highways, and transit systems that connect the San Francisco neighborhoods to each other, and with other parts of the Bay Area and northern California.

Regional Freeways

As shown in Figure V.E.2, the transportation study area is served by three freeways: 1) U.S. Highway 101 (U.S. 101) to and from the Peninsula and South Bay, and the North Bay via the Golden...
Gate Bridge, 2) Interstate 80 (I-80) to and from the East Bay via the Bay Bridge, and 3) Interstate 280 (I-280) to and from the Peninsula and South Bay areas ending at Sixth and Brannan Streets and at Fifth and King Streets. Regional access to the transportation study area from each travel direction via the freeway network is summarized below. Freeway operating conditions are described in terms of speed and level of service. Level of service (LOS) is ranked from A to F, with A representing very good conditions, and F representing the worst, or most congested, conditions. A detailed definition of the freeway level of service is included in Appendix Table D.11.

U.S. Highway 101

U.S. Highway 101 (U.S. 101) north of the transportation study area serves travelers to/from North Bay areas via the Golden Gate Bridge. There is no direct freeway connection to the Golden Gate Bridge; therefore regional access is provided by surface streets (Van Ness Avenue, Gough, and Franklin Streets to either Lombard Street or Bay Street and Marina Boulevard) in the northern part of San Francisco.

U.S. 101 south of the transportation study area provides access to/from the San Francisco Peninsula and the South Bay areas. Access to and from U.S. 101 south of the transportation study area is provided at Third Street, Silver Avenue, I-280, César Chavez Street, and Vermont/Mariposa Streets (northbound off-ramp only), as well as from I-80. The number of through lanes on U.S. 101 north of the I-280 interchange is primarily four lanes in each direction, but varies from two (near the I-80 interchange) to five (between César Chavez Street and I-280.) The primary bottleneck on northbound U.S. 101 is at the César Chavez Street interchange where the number of freeway lanes is reduced by one at the off-ramp. This occurs just north of the merge of traffic from northbound I-280 into northbound U.S. 101, causing traffic congestion south of the I-280 interchange. The U.S. 101/I-80 interchange is also a bottleneck in both directions.

During the peak hour of the evening commute period (4:00 p.m. to 6:00 p.m.), northbound U.S. 101 typically operates at 30 to 35 miles per hour (mph) (LOS E) south of Third Street, improving to 50 mph (LOS C) from Third Street to César Chavez Street, then worsening to 20 mph (LOS F) from there to the I-80 interchange. During the same period, southbound U.S. 101 typically operates at 35 mph (LOS E) from the I-80 split to the San Francisco County line at the Harney Way/3Com Park freeway ramps. (Freeway ramp locations are generally described by the nearest streets or features, such as the Harney Way/3Com Park ramps or the Fifth/King ramps to and from I-280.) The on-ramps for this section of U.S. 101 currently experience traffic back-ups at times due to mainline congestion. This effect is more pronounced in the northbound direction due to traffic congestion on the Bay Bridge.
Interstate 280

Located south of I-80 and east of U.S. 101, Interstate 280 provides access from the South Beach and China Basin areas and the transportation study area to locations south of San Francisco, and is closer to these areas than U.S. 101 and I-80. I-280 runs parallel to U.S. 101 for approximately 3 miles until crossing it, after which I-280 follows a southwest direction through the City to points south on the Peninsula.

On- and off-ramps to I-280 from the transportation study area include Sixth/Brannan Streets, Fifth/King Streets, Mariposa Street, and César Chavez Street. The basic number of through lanes on I-280 varies from two lanes on the ramps near the transportation study area to three and four lanes south toward U.S. 101.

Both directions of I-280, south of the King Street/Sixth Street split, operate at 50 mph (LOS D)/5/ or better during the 4:00 to 6:00 p.m. period. The on- and off-ramps for this section of I-280 currently operate below their maximum capacity. However, queuing sometimes occurs on the off-ramp at King Street and the on- and off-ramps at Sixth Street due to congestion at the intersections of the ramps with the local streets.

Interstate 80

Interstate 80 provides access to the transportation study area from the East Bay via the Bay Bridge. While I-80 technically ends at the Central Freeway and becomes U.S. Highway 101, the motorist perceives this as one continuous route. The basic number of through lanes on I-80 is five lanes on the Bay Bridge and three lanes between the west side of the Bay Bridge and the U.S. 101 junction. Auxiliary merge lanes are provided at some critical sections of I-80 west of the Bay Bridge.

Two off-ramps would serve westbound project traffic from the I-80/Bay Bridge into San Francisco: Fremont/Harrison Streets, and Fifth/Harrison Streets. A westbound on-ramp that would serve project traffic is located at Seventh/Harrison Streets.

The I-80/Bay Bridge eastbound on-ramps that would serve project traffic are located at Fifth/Bryant Streets, Sterling Street near Second Street, Essex/Harrison Streets, and First/Harrison Streets. Use of the Sterling Street on-ramp is restricted to trucks and vehicles with three or more occupants between the hours of 3:30 p.m. and 7:00 p.m. on weekdays. Eastbound off-ramps serving project traffic are located at Seventh/Bryant Streets and Fourth/Bryant Streets.
Eastbound I-80 during the evening commute period (4 p.m. to 6 p.m.) typically operates at 30 to 35 mph (LOS E)/6/ between the U.S. 101 merge and Treasure Island. The State of California Department of Transportation (Caltrans) reports that average travel speeds in this section of eastbound I-80 during the evening commute period drop under 35 mph. At the 5:30 peak, speeds drop to 10 mph (LOS F)/7/ in the eastbound direction up to Sterling Street, gradually increasing to 25 mph on the Bay Bridge. Westbound I-80 during the evening commute period typically operates at 45 mph (LOS D)/8/ from Treasure Island to Fifth Street, worsening to 20 mph (LOS F)/9/ from Fifth Street to the U.S. 101 split./10/ For the section of westbound I-80 from Fifth Street to U.S. 101, average speeds during the evening commute period remain below 35 mph (LOS E)/11/

The I-80 ramps that are typically congested during the 3:00 p.m. to 7:00 p.m. time period are those connecting downtown San Francisco with eastbound I-80/Bay Bridge. Shorter periods of congestion are experienced at ramps connecting downtown with westbound I-80 and southbound I-280. While traffic on the Sterling Street high occupancy vehicle (HOV) ramp is slow due to congestion on the Bay Bridge, the ramp is lightly used and has capacity for more high occupancy vehicles (i.e., carpools and vanpools with three or more persons per vehicle).

Regional Transit Systems

San Francisco is served by a variety of regional transit systems and operators including bus, rail, and light rail. Figure V.E.3 shows the services provided by regional transit operators to the transportation study area. Following is a discussion of the transit operators and the services that are currently provided.

Caltrain

Passenger rail service between San Francisco and the Peninsula is provided by Caltrain, operated by the Peninsula Corridor Joint Powers Board. The Caltrain terminal is outside the Project Area immediately to the north, at the southwest corner of Fourth and Townsend Streets. Weekday operating hours at the Caltrain terminal are from 5:00 a.m. to 10:00 p.m. The last train leaves the terminal at 10:00 p.m. on weekdays, with an additional train leaving San Francisco at midnight on Fridays. Caltrain currently operates 66 trains each weekday between San Jose and San Francisco; of these, four trains in the morning and four trains in the evening provide peak hour peak direction service to and from Gilroy./12/ Frequencies in the weekday peak periods vary between 5 and 30 minutes; in the off-peak, trains operate every 30 to 60 minutes. Peak period trains generally consist of four to five 140-seat cars; in the off-peak, trains generally consist of four 140-seat cars.
Ridership was most recently estimated to be nearly 24,800 passengers per day. Caltrain has registered at least 6% increases in annual ridership in recent years, and a total increase of 8% in the fiscal year 1995/96 to fiscal year 1996/97 period.

SamTrans

Bus transit service between San Francisco and San Mateo County is provided by the San Mateo County Transit District (SamTrans). SamTrans operates the trunk of its basic San Francisco service along Mission Street from Ninth Street to Spear Street. At present, uncongested operation of Mission Street and the Ninth/Tenth Streets one-way couplet are critical to SamTrans' San Francisco operation. The stops nearest Mission Bay are on Mission Street, about six blocks from the northernmost parts of the Project Area, approximately 1 mile, or about a 20-minute walk.

Twelve routes serve San Francisco, including nine commute express routes (1F, 16F, 17F, 18F, 19F, 41F, 47F, 48F, and 49F), two local routes (5M and 7B), and one express route (7F). The commute express routes offer limited commute service to and from various cities on the Peninsula during morning and afternoon peak periods only. Commute express routes 1F, 47F, 48F, and 49F operate on Sixth Street to I-280. The remainder of the commute express routes, the local routes, and the express route use Ninth and Tenth Streets as a corridor to U.S. 101. Route 1F offers service to Pacifica, while routes 47F, 48F, and 49F provide service to San Mateo and Foster City.

Routes 5M, 7B, and 7F offer 20- to 30-minute headways during the p.m. peak, 10- to 30-minute headways during the a.m. peak, and 20- to 30-minute midday headways. The commute express routes provide service at various frequencies to and from San Francisco, with many route alignments overlapping near the City. Appendix Table D.15 describes the headways of all SamTrans lines serving San Francisco.

Total average weekday ridership of the routes to and from downtown San Francisco is about 11,300. The portion of this ridership that is shared by each individual line is also presented in Appendix Table D.15. The average ridership is 35 passengers per bus.

BART

The Bay Area Rapid Transit District (BART) operates heavy rail passenger service between the East Bay (from Pittsburg/Bay Point, Richmond, Dublin/Pleasanton, and Fremont) and San Francisco, and between northern San Mateo County (Daly City and Colma) and San Francisco. In downtown San Francisco and the Mission District, trains run in tunnels under Market and Mission Streets.
This portion of King Street is not paved

SOURCE: Wilbur Smith Associates

MISSION BAY SUBSEQUENT EIR
FIGURE V.E.3 EXISTING REGIONAL TRANSIT SERVICE
BART’s Montgomery and Embarcadero Stations on Market Street are located within about 1 mile of the northernmost boundary of the Project Area (about a 20-minute walk). The BART station nearest to the portion of Mission Bay south of the Channel is the 16th Street/Mission Street station, which is located approximately 1.25 miles (about a 25-minute walk) west of Seventh Street. The Market Street stations can be reached from Mission Bay on foot, by various MUNI bus lines, and, since January 1998, by the MUNI Metro Extension, called the “E” line.

The MUNI Metro E-line connection from the Project Area to BART at the Civic Center, Powell, Montgomery, and Embarcadero Stations involves a station platform level change for connecting patrons. Passengers transferring between MUNI Metro and BART go up a level to the mezzanine and then go down two levels to the BART platform, since no direct connection exists between the MUNI and BART platforms. Passengers can also access BART at the 16th Street/Mission Street Station from MUNI line 22-Fillmore, which travels along 18th Street.

BART operates service from about 4:00 a.m. until past midnight on weekdays. During weekday peak periods, service between San Francisco and the East Bay origins/destinations varies between 5 minutes and 15 minutes, depending on the origin/destination./18/ These transbay lines combine to provide 2.5-minute headways for service between San Francisco and downtown Oakland, and between San Francisco and Daly City.

BART reported an average weekday ridership of approximately 248,700 trips for fiscal year 1996. The existing p.m. peak hour peak direction load factors (number of passengers per seat) for BART at the Transbay tunnel and south of the Civic Center Station are 1.23 (eastbound) and 0.88 (westbound), respectively./19/ BART’s existing load factor during the three-hour peak commute period (approximately 3:30 to 6:30 p.m.) at the same two locations are 1.12 and 0.67, respectively.

BART’s performance standard is to carry no more than 1.15 passengers per seat during the three-hour morning and afternoon peak commute periods./20/

AC Transit

The Alameda-Contra Costa Transit District (AC Transit) provides direct bus service to the East Bay from San Francisco’s Transbay Transit Terminal, which is located about 1 mile (about a 20-minute walk) from the northernmost boundary of the Project Area. Direct access is provided to the Bay Bridge from the Transbay Terminal, and AC Transit buses do not use local city streets in San Francisco. Transbay service provides transit to various parts of western Alameda and western Contra Costa counties.
Most transbay service is commute-period and commute-direction oriented with only four routes providing midday/evening/weekend services (Routes F, NL, N, and O). Weekday afternoon commute services generally operate from 4:00 p.m. to 7:00 p.m. AC Transit headways during commute hours are 15 to 30 minutes on almost all routes, with two (SW and U) operating on 30- to 60-minute headways. Midday headways on routes providing midday services are 30 to 45 minutes./21/

AC Transit’s total average daily transbay ridership is approximately 13,000 passengers. Average ridership during the p.m. peak period (4:00 p.m. to 6:00 p.m.) is about 5,080 passengers, which represents approximately 32 passengers per bus./22/

Golden Gate Transit

Golden Gate Transit (GGT), operated by the Golden Gate Bridge, Highway, and Transportation District (GGBHTD), provides transit service between Marin and Sonoma Counties and San Francisco. GGT service closest to the Project Area includes regularly scheduled bus services which are based at the Transbay Transit Terminal and the regular ferry services based at the Ferry Building, both of which are approximately 1 mile (about a 20-minute walk) from the northernmost boundary of the Project Area.

GGT operates three basic bus services to San Francisco: Civic Center routes, Financial District routes, and Ferry Building feeder routes. The Financial District routes travel eastward along Lombard Street, Northpoint Street, and Beach Street, and then south along Battery Street to the Transbay Transit Terminal. Civic Center routes provide service along Van Ness Avenue to the Civic Center area before traveling east along Mission Street to the Transbay Transit Terminal./23/ GGBHTD also operates a Club Bus service between the University of California San Francisco’s (UCSF) Parnassus Heights site and Marin County, between Sonoma County and downtown San Francisco, and between Napa Valley and downtown San Francisco. GGT operates a layover yard for its commute period buses in San Francisco, located at Folsom and Main Streets. The lot is leased month-to-month from Caltrans.

Commute hour GGT routes to and from downtown San Francisco operate on 30-minute or less headways in the primary commute direction. GGT buses that travel north during the a.m. peak and south during the p.m. peak have either 30-minute or 60-minute headways./24/ Midday service headways are 30 minutes on all lines between Marin and Sonoma Counties and San Francisco. The UCSF Club Bus service includes six routes, each with one daily round trip, originating in Ignacio, Santa Rosa, San Rafael, Fairfax, Tiburon, and Rohnert Park. The Valley of the Moon commute
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service for Sonoma County includes three routes, each with one daily round trip. The Napa Valley Commute Club operates two routes, each with one daily round trip.

• The total average weekday ridership on GGT bus service to and from San Francisco (excluding Club Bus service) is approximately 21,000 passengers per day, with about 6,705 of those trips being made during the p.m. peak hour. Currently, 113 outbound and 18 inbound buses serve the Transbay Transit Terminal during the p.m. peak hour, with an average ridership of 30 passengers per bus (70% of capacity).

The UCSF Club Bus service has a total average daily p.m. peak ridership of 160 passengers, with the least average share of riders, 11, going to San Rafael, and the largest average portion, 39, going to Rohnert Park. Total average daily p.m. peak riderships for the Valley of the Moon Commute Bus and Napa Valley Commute Club are 99 passengers and 61 passengers, respectively.

GGT operates ferry service during peak periods between Larkspur and San Francisco and Sausalito and San Francisco. The Larkspur Ferry currently provides three ferry arrivals to San Francisco and four ferry departures from San Francisco during the p.m. peak period. The ferry ridership to San Francisco during the p.m. peak hour averages about 61 passengers per boat, while ferries traveling in the commute (outbound) direction have an average ridership of 360 passengers per boat. Each ferry boat serving Larkspur has a capacity of 725 passengers, yielding average riderships to and from San Francisco during the p.m. peak period that are 8% and 50% of capacity, respectively.

The Sausalito Ferry provides two arrivals and two departures to San Francisco during the p.m. peak period. The average p.m. peak hour ridership from Sausalito to San Francisco is about 100 passengers per boat, and the average ridership in the commute direction is approximately 170 passengers per boat. The capacity of the Sausalito vessels is 575 passengers, yielding average p.m. peak period load factors of 17% to San Francisco and 29% to Sausalito.

• Other Ferry Services

• The Blue & Gold fleet, Vallejo Baylink, Oakland/Alameda and Harbor Bay ferries operate ferry service between San Francisco and Alameda/Oakland, Vallejo, Sausalito, Tiburon, and Angel Island. They supplement Golden Gate Transit ferry service to and from the North Bay, as well as BART and AC Transit service to and from the East Bay. Service to and from Vallejo includes ten round trips each weekday to and from the Ferry Building, and three daily round trips to and from Fisherman’s Wharf at Pier 39. Weekday service from Oakland/Alameda includes ten trips to the Ferry Building and seven trips to Fisherman’s Wharf, while service to Oakland includes eleven departures from the Ferry Building and six departures from Pier 39. Service between Sausalito and Fisherman’s Wharf is provided by six daily trips, and there are seven daily trips between Fisherman’s Wharf and Tiburon.
Tiburon commute ferry service operates seven daily trips to the Ferry Building and six daily trips in the reverse direction to Tiburon. All Blue & Gold, Vallejo Baylink, Oakland/Alameda, and Harbor Bay ferry services have adequate capacity to accommodate their current passengers during the p.m. peak hour./26/

EXISTING PROJECT AREA TRANSPORTATION FACILITIES

Local Streets and Intersections

Although the street grid between Market Street and the Project Area does not follow an exact north-south or east-west orientation, conventional use in San Francisco is to refer to local roadways that are parallel to Market Street as east-west and the numbered streets perpendicular to Market Street as north-south, a convention that is used in this report. The transportation study area is served by a grid street network with most major arterials spaced approximately 700 to 900 feet apart. Designated major arterials/27/ serving east-west traffic in and near the transportation study area include King, Townsend, Bryant, and Harrison Streets. Designated major arterials serving north-south traffic include The Embarcadero, Third, and Fourth Streets. Seventh and 16th Streets are designated as secondary arterials./28/ The key physical characteristics for the local roadways, such as number of lanes and accessibility to pedestrians, bicycles, and transit users, are summarized in Table V.E.1, and described in detail in the “Roadway System” section of Appendix D, Transportation.

Intersection Analysis Methodology

Existing traffic conditions were determined for the key local intersections in the transportation study area and at freeway ramps. Traffic operations were analyzed in terms of the quality of traffic movement at intersections, which are usually the controlling factors in traffic flow. Average stopped delays and associated levels of service (LOS) are computed by assigning traffic volumes on each intersection approach to available travel lanes to determine the average stopped delay per vehicle. Delay is in turn a measure of driver discomfort, fuel consumption, and lost travel time.

Traffic operations at the signalized study intersections were evaluated using the 1985 Highway Capacity Manual operations methodology updated in 1994 by the Transportation Research Board (TRB). Intersection Levels of Service range from LOS A (very low delay, i.e., up to five seconds per vehicle) to LOS F (poor progression, i.e., delays in excess of 60 seconds per vehicle). An LOS of D (with delay in the range of 25 to 40 seconds per vehicle) is the minimum acceptable operating condition for most urban San Francisco streets./29/ Appendix Table D.12 provides more detailed descriptions of the six levels of service, A through F, for signalized intersections.
<table>
<thead>
<tr>
<th>Street</th>
<th>Transit/b/</th>
<th>Vehicular/e/</th>
<th>No. of Lanes</th>
<th>Pedestrian/d/</th>
<th>Bicycle/e/</th>
<th>Freight /f/</th>
<th>CMP/g/</th>
<th>MTS/h/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison</td>
<td>Transit Important: 4th St. to 7th St. Secondary Transit: 7th St. to 11th St.</td>
<td>Major Arterial</td>
<td>Four: primarily one-way</td>
<td>Neighborhood Commercial: 4th St. to Division</td>
<td>---</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bryant</td>
<td>Transit Important: 3rd St. to 7th St. Secondary Transit: 7th St. to 11th St.</td>
<td>Major Arterial</td>
<td>Five: primarily one-way</td>
<td>Neighborhood Commercial: 4th St. to 11th St.</td>
<td>---</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Brannan</td>
<td>---</td>
<td>Major Arterial: 5th St. to 6th St.</td>
<td>Two to Four: two-way</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Townsend</td>
<td>Transit Oriented: 3rd St. to 4th St.</td>
<td>---</td>
<td>Two: two-way</td>
<td>Neighborhood Network Connection Street</td>
<td>Citywide Bicycle Route: West of 3rd St.</td>
<td>---</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>King</td>
<td>Transit Important: East of 6th St. Secondary Arterial: 4th St. to Embarcadero</td>
<td>Major Arterial: 4th St. to Embarcadero</td>
<td>Four: two-way</td>
<td>Neighborhood Commercial Bay Trail: 4th St. to Embarcadero</td>
<td>Citywide Bicycle Route: East of 3rd St.</td>
<td>Substantial truck traffic east of 4th St.</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sixteenth</td>
<td>Transit Oriented: West of Kansas Secondary Arterial: West of 3rd St.</td>
<td>Two to Four: two-way</td>
<td>Neighborhood Commercial: West of Harrison</td>
<td>Citywide Bicycle Route: East of Kansas</td>
<td>---</td>
<td>---</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Mariposa</td>
<td>---</td>
<td>---</td>
<td>Two to Four: two-way</td>
<td>---</td>
<td>Citywide Bicycle Route: East of Mississippi</td>
<td>---</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Embarcadero</td>
<td>Primary Transit: Transit Important</td>
<td>Major Arterial</td>
<td>Four to Six: two-way</td>
<td>Neighborhood Commercial: Bay Trail</td>
<td>Citywide Bicycle Route</td>
<td>Substantial truck traffic</td>
<td>Yes</td>
<td>King to N. Point</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Street</th>
<th>Transit/b/ Setting</th>
<th>Vehicular/c/</th>
<th>No. of Lanes</th>
<th>Pedestrian/d/</th>
<th>Bicycle/e/</th>
<th>Freight /f/</th>
<th>CMP/g/</th>
<th>MTS/h/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second St.</td>
<td>Secondary Transit: Howard to Harrison</td>
<td>---</td>
<td>Four: two-way</td>
<td>Neighborhood Commercial</td>
<td>Citywide Bicycle Route</td>
<td>---</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Third St.</td>
<td>Primary Transit: North of King &amp; South of Mission Rock</td>
<td>Major Arterial</td>
<td>Four to Five: one-way north of King</td>
<td>Citywide Pedestrian Network: North of Folsom</td>
<td>Citywide Bicycle Route: South of Townsend</td>
<td>Substantial truck traffic south of Mission Rock</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fourth St.</td>
<td>Primary Transit: Transit Important</td>
<td>Major Arterial</td>
<td>Four: one-way</td>
<td>Bay Trail: South of King</td>
<td>Citywide Bicycle Route: Townsend St. to Third St.</td>
<td>Substantial truck traffic south of King</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fifth St.</td>
<td>Major Arterial: Market to Brannan</td>
<td>Four: two-way</td>
<td>Neighborhood Commercial: Market to Mission</td>
<td>Citywide Bicycle Route: North of Townsend</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Seventh St.</td>
<td>Major Arterial: Market to Bryant</td>
<td>Six: two-way</td>
<td>Neighborhood Commercial: 24th St. to 25th St.</td>
<td>Citywide Bicycle Route: North of Pennsylvania Ave.</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
a. See Appendix Table D.1 for a definition of the functional street classification categories.
b. City and County of San Francisco General Plan, Transportation Element (Transportation Element), July 1995, Map 9, p. I.4.42
c. Transportation Element, Map 6, p. I.4.32
d. Transportation Element, Map 11, p. I.4.55
e. Transportation Element, Map 13 p. I.4.59
f. Transportation Element, Map 15 p. I.4.75
g. Transportation Element, Map 7, p. I.4.33 [CMP = Congestion Management Network]
h. Transportation Element, Map 8, p. I.4.34 [MTS = Metropolitan Transportation System]
A different methodology is used to analyze operations at unsignalized intersections with minor street control (two-way stop). For two-way stop controlled intersections, stop signs are designed to assign the right-of-way to the major street traffic. Drivers on the minor street and those making left turns from the major street use judgment when selecting gaps in the major street traffic flow in order to cross or execute their turning movements. Therefore, the minor street traffic and left turns from the major street may be subjected to delays, while no delay is experienced by the through traffic on the major street.

Traffic operations at unsignalized study intersections with some (but not all) stop controlled approaches were evaluated using the *1985 Highway Capacity Manual* operations methodology for two-way stop controlled intersections, as outlined in *1985 Highway Capacity Manual* Chapter 10 (Unsignalized Intersections). This method determines the capacity of the stop controlled (minor street) intersection approaches by estimating the availability and usefulness of gaps in the uncontrolled traffic on the major street (so that vehicles on the minor street can cross or cross/merge with traffic on the major street). Intersection LOS is then based on average total delay per vehicle (in seconds per vehicle) at the intersection. LOS ranges from A (with generally free flow conditions and easily made turns and crossing maneuvers by the minor street traffic) to F (with very long delays for minor street traffic and major street left turns across the opposing direction traffic stream). Appendix Table D.12 provides more detailed descriptions of the six levels of service, A through F, for two-way stop controlled intersections.

Another type of unsignalized intersection is an all-way stop controlled intersection, in which stop signs are installed on all approaches to the intersection. Traffic operations at unsignalized study intersections with all-way stop controlled approaches were evaluated using the operations methodology for all-way stop controlled intersections, as outlined in the *1985 Highway Capacity Manual*, Chapter 10 (Unsignalized Intersections). This method determines the intersection capacity by estimating, for the approach, the traffic distribution on all other approaches. Intersection LOS is then based on the average total delay per vehicle (in seconds per vehicle) at the intersection.

**Intersection Operating Conditions**

To analyze existing intersection levels of service, turning movement volumes were collected at 31 existing study intersections on a typical weekday from 4:00 p.m. to 6:00 p.m. Intersections deemed critical or representative of traffic volumes and congestion were selected by the San Francisco Planning Department staff. This information was used to determine average traffic conditions for the weekday p.m. peak hour of the evening commute period (4:00 p.m. to 6:00 p.m.).
Table V.E.2 and Figure V.E.4 summarize the resulting average vehicle delays and levels of service for each study intersection during the p.m. peak hour. The most congested locations are near the I-80 ramps. Eight of the 31 existing study intersections currently operate at LOS F, and one intersection is currently operating at LOS E. Two of the intersections operating at LOS F (Mariposa St./I-280 southbound on-ramp, and 16th and Vermont Streets) are unsignalized. The existing LOS at the intersections of Mariposa Street at the I-280 on-ramp and Brannan Street at Sixth Street are based on traffic counts taken in 1996; the LOS has improved somewhat since the new I-280 southbound on-ramp at King Street opened in November 1997. Because new counts have not been taken since the November opening, “existing” LOS at these locations is based on the earlier data. As described below under “Local Streets” in “Traffic Impacts” under the Impacts subsection, the impacts analysis for “existing-plus-project” conditions reassigns travel from existing traffic counts to account for new freeway ramps.

China Basin Channel Bascule Bridge Operations

The Lefty O’Doul (Third Street) and Peter Maloney (Fourth Street) Bridges over China Basin Channel are bascule, or lift, type bridges operated by the San Francisco Department of Public Works. The bridges are raised to permit boats to pass from boat docks located west of the Peter Maloney Bridge out to the San Francisco Bay. The frequency of bridge openings averages 40 to 75 per month during the winter and increases in the spring and summer months. The highest observed number of openings was 180 in April 1994. The average number of openings per month in 1993 was 120.

Effects of Train Movement on Intersection Level of Service

The Project Area is located immediately east of Caltrain’s rail corridor. Caltrain currently operates 66 passenger trains per day through this corridor. Rail service in the vicinity of the Project Area is discussed further in “Regional Transit Systems” under “Existing Regional Transportation Systems” in “Setting,” above. The intersection average delays and associated LOS presented in Table V.E.2 consider the additional delay to vehicles due to train movements through immediately adjacent rail crossings. Of the 31 existing study intersections, the intersection of 16th Street at Seventh/Mississippi Streets has certain through and turning movements blocked when a train passes through (a railroad preemption). Typically, during the p.m. peak commute period, Caltrain trains block specific traffic movements at that intersection for a duration of 80 to 120 seconds. Approximately eight to nine trains operate through the intersection crossing during the peak hour. Appendix Table D.14 provides detailed information on the p.m. peak commute period railroad crossing data collected at the intersection of 16th and Seventh/Mississippi Streets. There is no at-grade railroad crossing at the
## TABLE V.E.2
EXISTING CONDITIONS AT PROJECT STUDY AREA INTERSECTIONS
Levels of Service, Weekday PM Peak Hour

<table>
<thead>
<tr>
<th>Study Intersection</th>
<th>Traffic Control Device</th>
<th>Average Delay (sec/veh)</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berry Street at:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>7.7</td>
<td>B</td>
</tr>
<tr>
<td>Fourth Street</td>
<td>Traffic Signal</td>
<td>5.2</td>
<td>B</td>
</tr>
<tr>
<td>Brannan Street at:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sixth Street/I-280 ramps</td>
<td>Traffic Signal</td>
<td>49.9</td>
<td>E</td>
</tr>
<tr>
<td>Seventh Street</td>
<td>Traffic Signal</td>
<td>11.4</td>
<td>B</td>
</tr>
<tr>
<td>Bryant Street at:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Street</td>
<td>Traffic Signal</td>
<td>153.1</td>
<td>F</td>
</tr>
<tr>
<td>Fourth/EB I-80 Off-Ramp</td>
<td>Traffic Signal</td>
<td>16.4</td>
<td>C</td>
</tr>
<tr>
<td>Fifth Street</td>
<td>Traffic Signal</td>
<td>77.2</td>
<td>F</td>
</tr>
<tr>
<td>Seventh/EB I-80 Off-Ramp</td>
<td>Traffic Signal</td>
<td>14.0</td>
<td>B</td>
</tr>
<tr>
<td>Harrison Street at:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Street</td>
<td>Traffic Signal</td>
<td>161.7</td>
<td>F</td>
</tr>
<tr>
<td>Second Street</td>
<td>Traffic Signal</td>
<td>185.7</td>
<td>F</td>
</tr>
<tr>
<td>Fifth Street</td>
<td>Traffic Signal</td>
<td>8.9</td>
<td>B</td>
</tr>
<tr>
<td>Seventh Street</td>
<td>Traffic Signal</td>
<td>14.8</td>
<td>B</td>
</tr>
<tr>
<td>Fremont/WB Off-Ramp</td>
<td>Traffic Signal</td>
<td>71.3</td>
<td>F</td>
</tr>
<tr>
<td>Essex Street</td>
<td>Traffic Signal</td>
<td>67.7</td>
<td>F</td>
</tr>
<tr>
<td>King Street at:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Street</td>
<td>Traffic Signal</td>
<td>33.3</td>
<td>D</td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>20.9</td>
<td>C</td>
</tr>
<tr>
<td>Fourth Street</td>
<td>Traffic Signal</td>
<td>16.6</td>
<td>C</td>
</tr>
<tr>
<td>Fifth Street/I-280</td>
<td>Traffic Signal</td>
<td>N.A. /a/</td>
<td>N.A. /a/</td>
</tr>
<tr>
<td>Mariposa Street at:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>8.4</td>
<td>B</td>
</tr>
<tr>
<td>De Haro Street</td>
<td>All-way Stop</td>
<td>2.5</td>
<td>A</td>
</tr>
<tr>
<td>SB I-280 On-Ramp</td>
<td>Unsignalized</td>
<td>30.3</td>
<td>F</td>
</tr>
<tr>
<td>NB I-280 Off-Ramp</td>
<td>Traffic Signal</td>
<td>19.7</td>
<td>C</td>
</tr>
</tbody>
</table>

(Continued)
TABLE V.E.2 (Continued)

<table>
<thead>
<tr>
<th>Study Intersection</th>
<th>Traffic Control Device</th>
<th>Average Delay (sec/veh)</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Townsend Street at:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>20.9</td>
<td>C</td>
</tr>
<tr>
<td>Fourth Street</td>
<td>Traffic Signal</td>
<td>6.4</td>
<td>B</td>
</tr>
<tr>
<td>Seventh Street</td>
<td>Traffic Signal</td>
<td>10.4</td>
<td>B</td>
</tr>
<tr>
<td>Eighth Street</td>
<td>All-way Stop</td>
<td>5.9</td>
<td>B</td>
</tr>
<tr>
<td><strong>Third Street at:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>César Chavez</td>
<td>Traffic Signal</td>
<td>21.3</td>
<td>C</td>
</tr>
<tr>
<td>16th Street</td>
<td>Traffic Signal</td>
<td>9.9</td>
<td>B</td>
</tr>
<tr>
<td>Fourth/Mission Rock Streets</td>
<td>Traffic Signal</td>
<td>9.6</td>
<td>B</td>
</tr>
<tr>
<td><strong>Sixteenth Street at:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seventh/Mississippi Streets</td>
<td>All-way Stop</td>
<td>16.6</td>
<td>C</td>
</tr>
<tr>
<td>Potrero Avenue</td>
<td>Traffic Signal</td>
<td>23.1</td>
<td>C</td>
</tr>
<tr>
<td>Vermont Street</td>
<td>All-way Stop</td>
<td>77.9</td>
<td>F</td>
</tr>
</tbody>
</table>

**Notes:**
- SB = southbound; NB = northbound; EB = eastbound; WB = westbound
- a. Intersection at Fifth and King Streets was under construction at the time traffic counts were taken.

**Source:** Wilbur Smith Associates.

Intersection of Mariposa and Mississippi Streets, and the crossing at Berry Street is not currently used. The existing crossing at King Street is currently open and passable, but not reflective of typical improvements for traffic use.

**Local Transit Facilities and Services**

**San Francisco Municipal Railway (MUNI)**

San Francisco MUNI provides local transit service within the City and County of San Francisco. MUNI operates two types of transit service in and near the Mission Bay Project Area: diesel bus and electric trolley bus. Starting in January 1998, MUNI also began light rail service to the Mission Bay
Figure V.E.4  Weekday P.M. Peak Hour Levels of Service: Existing

Mission Bay Subsequent EIR

This portion of King Street is not paved.
Project Area with the MUNI Metro E-line along The Embarcadero and King Street. Figure V.E.5 shows the locations of existing MUNI service near the Project Area.

The Project Area is served by three cross-town routes, six radial routes, and one secondary route. Most of the routes that serve the Project Area directly (15, 30, 32, 42, 45, and the Caltrain express routes) converge at the Fourth and Townsend Caltrain terminal which serves as a hub for these routes./32/

Route 15-Third, a radial diesel bus route, is the only regular transit service that crosses China Basin Channel to directly serve the Mission Bay Project Area south of the Channel. It operates at a target frequency of six minutes between 4:00 p.m. and 6:00 p.m.

Route 22-Fillmore, a cross-town electric trolleybus route, travels along 18th Street, one block south of the southern boundary of the Mission Bay Project Area, and extends west using 17th and 16th Streets. It operates at target seven-minute headways in the afternoon peak period.

Routes 30-Stockton and 45-Union-Stockton are both radial electric trolley bus routes and have the same alignment near the Project Area. They both travel south on Fourth Street from Market Street, travel east for one block on Townsend, and continue back to Market Street, traveling north on Third Street. Route 30 operates at a target of four-minute headways during the afternoon peak, and route 45 operates at a target eight-minute headways during this time.

Route 32-Embarcadero is a secondary diesel bus route that serves the Project Area north of the Channel, traveling one block on Fourth, Berry, and Third Streets, as well as two blocks on Townsend Street. It operates at a target of 12-minute headways in the afternoon peak period.

Route 42-Downtown Loop is a cross-town diesel bus route operating at a target frequency of ten minutes in the afternoon peak period. It travels on Townsend Street for three blocks and extends north to the Transbay Transit Terminal and west along Harrison and Bryant Streets.

Route 48-Quintara-24th is a cross-town diesel bus route that travels along 22nd Street, five blocks south of the Mission Bay boundary. It operates at a target frequency of 12 minutes during the evening peak period.

The 80X-Gateway Express, 81X-Caltrain Express, and 82X-Levi Plaza Express have coverage in the Mission Bay Project Area similar to that of Route 32. These three radial diesel bus routes provide service in the a.m. and p.m. weekday peak commute times, approximately 7:00 a.m. to 9:00 a.m.,
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FIGURE V.E.5 EXISTING MUNI TRANSIT SERVICE
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and 4:00 p.m. to 6:00 p.m. The 80X and 81X each operate at a frequency of 10 minutes, and the 82X operates at a 20-minute frequency. Route 80X travels south on Beale Street and The Embarcadero, west on Townsend Street to the Caltrain terminal, and returns north via Townsend Street, Second Street, Bryant Street, and finally Main Street. Route 81X buses travel south by the same path as route 80X to the Caltrain terminal, and then travel north on Third Street. Route 82X buses travel from downtown to the Caltrain terminal in a similar manner, but uses The Embarcadero to travel north again.

MUNI Metro light rail service operates in tunnels underneath Market Street. Five routes (J-Church, K-Ingleside, L-Taraval, M-Ocean View, and N-Judah) operate through these tunnels before diverging west of Church Street to various parts of the City. E-line light rail service began in January 1998 along the southern portion of The Embarcadero and King Street. It operates on a semi-exclusive right-of-way in the median of The Embarcadero and King Street, as a shuttle between Embarcadero Station and the Caltrain terminal, at a frequency of six minutes in the afternoon peak period. When the Advanced Train Control System is implemented, the E-line shuttle will be replaced by an extension of the J-Church light rail line. Eventually, this service is proposed to operate as a continuous extension of the L-Taraval line instead of the J-Church, when the J-Church line is extended as part of the new Third Street light rail service. Therefore, the Metro extension to the Caltrain terminal is called the "L-line" in the Impacts discussion, as the impacts are analyzed for the year 2015. The possibility of also extending the M-Ocean View line to the Caltrain terminal during the peak periods to provide additional capacity is currently being evaluated by MUNI staff. Center platform stations for the E-line are located on The Embarcadero at Folsom Street, and at Brannan Street, as well as on King Street between Second and Third Streets, and between Fourth and Fifth Streets, next to the Caltrain terminal.

Table V.E.3 shows the combined average hourly capacities and loads at the peak load points in the p.m. peak hour of MUNI transit routes crossing one of four screenlines/34/, shown in Figure V.E.6. MUNI screenlines are hypothetical lines delineating corridors in order to measure, for impact analysis and planning purposes, conditions on combined MUNI transit lines from the greater downtown (including the Project Area) to other parts of San Francisco. These screenlines consist of aggregates of individual MUNI lines, as shown in Table V.E.3. It should be noted that the points of measurement for the screenlines do not actually follow the alignments shown schematically on Figure V.E.6, but instead are measured at the actual maximum load point for each MUNI line crossing a screenline. The greatest utilization now occurs on the lines crossing the northwest and southwest screenlines, where 73% of the available capacity is now used during the p.m. peak hour. Appendix Table D.16 describes the headways (frequency of service) and average daily ridership of the specific MUNI routes serving the Project Area.
### TABLE V.E.3

**EXISTING MUNI RIDERSHIP SUMMARY BY SCREENLINE**

**P.M. Peak Hour - Peak Direction**

<table>
<thead>
<tr>
<th>Screenline</th>
<th>MUNI Routes</th>
<th>Hourly Capacity</th>
<th>Average Hourly Load</th>
<th>Percent Capacity Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>15, 30, 30X, 45</td>
<td>3,400</td>
<td>2,250</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>32, 41, 42, 82X</td>
<td>1,950</td>
<td>1,050</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>5,150</strong></td>
<td><strong>3,300</strong></td>
<td><strong>64%</strong></td>
</tr>
<tr>
<td>Northwest</td>
<td>38, 38L, 38AX, 38BX</td>
<td>2,800</td>
<td>2,000</td>
<td>71%</td>
</tr>
<tr>
<td></td>
<td>1, 1AX, 1BX, 2, 3, 4, 5, 21, 22, 31, 31AX, 31BX</td>
<td>6,200</td>
<td>4,600</td>
<td>74%</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>9,000</strong></td>
<td><strong>6,600</strong></td>
<td><strong>73%</strong></td>
</tr>
<tr>
<td>Southwest</td>
<td>K, L, M, N</td>
<td>6,800</td>
<td>4,900</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td>6, 7, 71, F</td>
<td>1,400</td>
<td>1,100</td>
<td>79%</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>8,200</strong></td>
<td><strong>6,000</strong></td>
<td><strong>73%</strong></td>
</tr>
<tr>
<td>Southeast</td>
<td>J, 9</td>
<td>1,700</td>
<td>1,250</td>
<td>74%</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>850</td>
<td>350</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>14, 14X</td>
<td>1,500</td>
<td>950</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>4,050</strong></td>
<td><strong>2,550</strong></td>
<td><strong>63%</strong></td>
</tr>
</tbody>
</table>

**Notes:**

a. See Figure V.E.6 for screenline locations.
b. Capacity based on "San Francisco Municipal Railway, Ridership Projections to the Year 2015," April 25, 1997; revised May 5, 1997. It assumes an appreciable number of standees per vehicle (somewhere between 60% and 80% of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.

**Source:** Wilbur Smith Associates.

MUNI's ability to provide transit is directly related to the availability of vehicles. On weekdays, MUNI is unable with its present fleet to meet its scheduled service needs during peak periods. MUNI's peak fleet deployment begins to build at about 3:30 p.m. and relaxes after 6:00 p.m.

**Parking Characteristics**

Several parking surveys have been performed that inventoried the parking supply and occupancy in the area north of the Project Area. These studies were reviewed and confirmed through further field
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FIGURE V.E.6  MUNI TRANSIT SCREENLINES (SCHEMATIC)
In the Project Area north of China Basin Channel, there are approximately 12,800 spaces, of which 3,550 spaces are on-street parking and 9,240 are off-street. Off-street parking includes approximately 6,200 spaces that are available to the general public, and about 3,050 private spaces that are restricted to customers and employees of private businesses, companies, or public agencies. Informal Caltrain commuter parking occurs in the vicinity of the terminal, on Townsend, Seventh, and Berry Streets, where parking is not restricted to time limits.

In the Project Area south of China Basin Channel, on-street parking is permitted at practically all curbs. There is limited off-street parking. Most of the on-street parking spaces are restricted between 2:00 a.m. and 6:00 a.m. to deter overnight parking. Parking on Seventh Street is restricted between 12:00 a.m. and 6:00 a.m., on Monday, Wednesday, and Friday on the east side, and on Tuesday and Thursday on the west side. Parking on 16th Street is similarly restricted between 12:00 a.m. and 6:00 a.m. on Monday, Wednesday, and Friday on the north side, and on Tuesday and Thursday on the south side. The spaces on the north side of Channel Street, which are owned by the Port of San Francisco, have a two-hour parking limit to discourage commuter parking; no other on-street parking in the parking study area south of the Channel is subject to time limits.

South of the Project Area on-street parking serves mainly commercial and industrial uses. There are no parking restrictions on commercial or residential streets for several blocks south of Mariposa Street. Illinois, Minnesota, and similar industrial streets are heavily used by trucks loading and unloading; trucks occasionally double park awaiting loading docks. Parking on Third Street in this area is currently allowed but is proposed to be prohibited after construction of the Third Street light rail project.

West of the Project Area, the area on and north of 16th Street is primarily industrial, with truck loading and employee parking similar to the area south of Mariposa Street. South of 16th Street, Potrero Hill is primarily residential with no controls on on-street parking.

**Pedestrian and Bicycle Access**

**Existing Pedestrian System Characteristics**

North of the Channel, King Street, Third Street, and Fourth Street are important pedestrian streets and are designated neighborhood commercial streets in the citywide pedestrian network of the
Transportation Element of the *San Francisco General Plan*. In addition, parts of King Street (east of Fourth Street) and Fourth Street (south of King Street) are designated as part of the Bay Trail.

Pedestrian facilities in the Project Area north of the Channel are generally adequate. The streets have sidewalks (usually 9 to 12 feet wide) on both sides, with crosswalks on all approaches. Sidewalks are generally lacking on both sides of Townsend Street between Fourth and Seventh Streets.

Pedestrian access to the northern part of Mission Bay from the east and north is generally convenient, as there are sidewalks on one or both sides of most South of Market streets. Access from the west north of the Channel is less convenient, as there is no pedestrian-oriented gate or crossing at the Caltrain tracks parallel to Seventh Street, and sidewalks on Seventh Street are lacking or inadequate.

South of the Channel, pedestrian facilities are sufficient for the existing conditions, but not adequate to support increases in land use intensity; there are sidewalks on many streets, but because of the industrial character of the area, sidewalks are discontinuous or non-existent in many places in order to accommodate entrances and exits to loading areas. Terry A. François Boulevard and Third Street each have a sidewalk on the east side only; Sixth Street has a sidewalk on the west side and for part of the eastern length. Mariposa Street has a sidewalk on both sides, except in the vicinity of the I-280 on- and off-ramps, where a sidewalk exists on the north side only. There are no sidewalks on Pennsylvania Avenue or on 17th Street within the Project Area.

Pedestrian access from south of Mariposa to the Project Area is adequate, as there are sidewalks on both sides of Third Street and on Illinois, Minnesota and most other north-south streets nearby. Access from the west, including Potrero Hill, requires crossing under the I-280 freeway structure and crossing over the Caltrain tracks. Appropriate pedestrian safety features for crossing the tracks are available to access the Project Area south of the Channel only at 16th Street, where there is a gated crossing, and at Mariposa Street, where the street and sidewalk cross the tracks on an overpass that is under the freeway structure.

Based on field observations, pedestrian activity in the immediate vicinity of the Project Area is relatively light during the evening commute peak period. However, the number of pedestrians is very high near the Caltrain terminal during weekday afternoon commute periods, especially on Townsend Street.

Pedestrian capacity analyses for existing conditions were conducted for all crosswalks at two intersections: King and Third Streets, and King and Fourth Streets. Pedestrian counts were taken on June 25, 1997, at the four crosswalks at each intersection. Each crosswalk is 20 feet wide except for the westside crosswalk at King and Fourth Streets (closest to the Caltrain terminal), which is 30 feet wide.
Pedestrian Analysis Methodology

Levels of service for walkways and crosswalks, as defined in Appendix Table D.17, provide a pedestrian measurement of 1) the amount of space for each pedestrian (more space results generally in more comfort) and 2) convenience (in that crowded walkways result in delay for some pedestrians). The method used to determine pedestrian level of service is described in Urban Space for Pedestrians. At crosswalk locations, the signal timing affects the flow rate calculation as do the pedestrian volume and crosswalk width. The walk time available varies depending on the time of day. Thus, a lower volume in a particular crosswalk could have a worse level of service if it also has less green signal time available.

As shown in Table V.E.4, seven of the eight crosswalks at the two pedestrian study intersections are operating under a flow regime of Open, the least congested condition. The eastside crosswalk at Third and King Streets is operating at a flow regime of Unimpeded, the second best condition. Both are considered very acceptable pedestrian levels of service.

Bicycle Access System Characteristics

The level of bicycle activity varies widely in and near the Project Area, as do the types of facilities available. On-street bike lanes are currently provided on King Street east of Third Street, and on 16th Street from Third Street to Henry Adams Street crossing the Caltrain tracks at Seventh Street. The San Francisco Bicycle Plan, recently adopted by the San Francisco Parking and Traffic Commission and Board of Supervisors proposes bike lanes (Class II) on Townsend Street (between Fourth and Eighth Streets), Third Street (between Channel Street and Le Conte Avenue near Bayview Hill), and Fifth Street (between Market and Townsend Streets). Mariposa Street is designated as a Class III “bicycle route” (signs but no bike lanes), as is Seventh Street between Market and Mariposa Streets, Third Street from Townsend Street to Channel Street, and Indiana Street south of Mariposa Street to César Chavez Street.

Goods Movement

Freight Loading and Service

Roadways in and near the Project Area that carry substantial truck traffic include all freeways, Townsend Street, and Third Street. The movement of trucks is directed by specific signs to and from the Bay Bridge (I-80), I-280, and U.S. 101. Signed freeway access routes include Third, Townsend, Bryant, Harrison, Folsom, and Fremont Streets. Third Street has through-truck restrictions south of
TABLE V.E.4
CROSSWALK OPERATIONS ANALYSIS - EXISTING VOLUMES

<table>
<thead>
<tr>
<th>Crosswalk Location</th>
<th>Time Period</th>
<th>Width (feet)</th>
<th>Walk Time/a/</th>
<th>Volume (pph)/b/</th>
<th>Flow Rate (ppmpf)/c/</th>
<th>Flow Regime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third St./King St.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>20.5%</td>
<td>45</td>
<td>0.18</td>
<td>Open</td>
</tr>
<tr>
<td>Southside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>20.5%</td>
<td>4</td>
<td>0.02</td>
<td>Open</td>
</tr>
<tr>
<td>Eastside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>14.5%</td>
<td>127</td>
<td>0.73</td>
<td>Unimpeded</td>
</tr>
<tr>
<td>Westside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>14.5%</td>
<td>47</td>
<td>0.27</td>
<td>Open</td>
</tr>
<tr>
<td>Fourth St./King St.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>45.5%</td>
<td>20</td>
<td>0.04</td>
<td>Open</td>
</tr>
<tr>
<td>Southside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>45.5%</td>
<td>20</td>
<td>0.04</td>
<td>Open</td>
</tr>
<tr>
<td>Eastside</td>
<td>4:30 - 5:30 p.m.</td>
<td>20</td>
<td>15.0%</td>
<td>72</td>
<td>0.40</td>
<td>Open</td>
</tr>
<tr>
<td>Westside</td>
<td>4:30 - 5:30 p.m.</td>
<td>30</td>
<td>15.0%</td>
<td>97</td>
<td>0.36</td>
<td>Open</td>
</tr>
</tbody>
</table>

Notes:
a. Walk time for eastside and westside crosswalks assumed to be 50% of green time.
b. pph = Pedestrians per hour.
c. ppmpf = Pedestrians per minute per foot of width.


Jerrold Avenue in the South Bayshore neighborhood, requiring most through trucks to use César Chavez Street for freeway access. In addition to Third Street, Mariposa, 16th, and Illinois Streets provide access to the waterfront and also experience heavy truck traffic. South of Mission Bay, trucks typically use César Chavez Street from U.S. 101 and I-280 to access industrial areas and the container shipping terminals at Piers 80 - 96.

Streets located in the vicinity of I-80 (Howard, Harrison, Bryant, First, Second, Third, Fourth, and Sixth Streets) present substantial congestion problems for goods and service movements during the weekday p.m. peak period, due to congestion on I-80 and U.S. 101. Those streets and the on- and off-ramps represent constraints, particularly for truck movements to and from the East Bay. Although trucks bound for the East Bay can use the high occupancy vehicle lanes on Bryant and Sterling Streets to bypass some of the traffic congestion, they often have difficulty accessing those lanes due to congested traffic conditions in the adjacent streets.
The north side of King Street between Second and Third Streets serves numerous truck bays. Commercial businesses along both sides of Third and Fourth Streets between King and Bryant Streets require periodic truck unloading activities. Alleys connecting Townsend Street with Brannan Street provide some off-street truck unloading/pickup facilities.

Numerous loading zones and roll-up doors are also located on the north side of Townsend Street, between Third and Seventh Streets, where extensive truck activity occurs. In many instances, delivery trucks block the sidewalk area and in some cases may partially block the westbound curb travel lane.

The south side of Channel Street offers commercial parking and loading bays for warehouses on Channel Street east of Sixth Street. On the east side of Sixth Street there is 90-degree commercial parking and several large loading docks occupying the majority of the space, and some parallel on-street parking is available on the southern portion of the street. On the west side of Sixth Street, approximately 50% of the street’s length is allotted to commercial parking and loading areas. Illinois Street serves existing warehouses, and there are typically considerable numbers of trucks parked on both sides of Illinois Street from Mission Rock Street (near the intersection of Third and Fourth Streets) to south of Mariposa Street. The northern portion of Terry A. François Boulevard also has commercial parking and loading areas.

**Rail Freight**

Existing rail access to Mission Bay and adjacent areas is presented in Figure V.E.7. It includes a "Y" connection to the east, off the north-south Caltrain passenger line near 16th Street. The rail line crosses 16th Street diagonally, to a point north of it, where it connects to track that runs north-south on Illinois Street. Portions of rail track extending beyond Illinois Street to Terry A. François Boulevard were recently removed. Freight train operations on the rail connections in Mission Bay are generally restricted to those times when passenger service is not occurring on the Caltrain tracks, approximately 1 a.m. to 4 a.m. This restriction is part of the Shippers Agreement established between Catellus and Union Pacific Railroad/Caltrain. The crossing at Third Street is protected by an automatic gate and flashing signal devices.

The existing usage data received from Union Pacific Railroad shows one train delivery to Pier 54 two years ago; however, the tracks have been removed since, and there is no track connection for this movement at this time. The only other reported usage is about 15 cars per year to Pier 80, using the "Y" connection to Illinois Street, and thence southerly on Illinois to Pier 80, to deliver materials for assembling new MUNI Metro light rail vehicles (Breda cars) and occasional oversized cargo that
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FIGURE V.E.7 EXISTING RAILROAD TRACK LOCATIONS
cannot be carried to the Pier on trucks./40/ In January 1998, the Port reopened Pier 80 for container shipping (closing the Pier 94 container facilities); it is expected that rail freight traffic will increase as a result of this change./41/

EXISTING TRANSPORTATION PLANS, POLICIES, AND PROGRAMS

Regional Transportation Plan

Since certification of the 1990 FEIR, the Regional Transportation Plan for the San Francisco Bay Area (RTP) prepared and adopted by the Metropolitan Transportation Commission (MTC) has changed considerably. The 1994 RTP approaches regional transportation planning based on the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Clean Air Act amendments of 1990. These federal laws require that transportation plans demonstrate how projects included in the plan can be constructed during the 20-year timeframe of the plan, and demonstrate that all projects included will help attain and maintain federal air quality standards in the region. A separate long-range transportation planning document is being developed by MTC that will advocate for new funding and new transportation strategies beyond projects that can be implemented in the RTP planning timeframe.

The basic regional goals that govern the RTP include: improve mobility for people and freight; make the regional transportation systems accessible to all; enhance sensitivity to the environment; and support economic and community vitality in the region. To implement these goals, the RTP uses three investment strategies in establishing the list of transportation projects to be funded over the 20-year planning period. They are: to expand transportation facilities using existing regional and local transportation plans; to maintain the region's existing facilities and services before funding major expansions in the system; and to establish a stronger connection between transportation and land-use decisions in the region. A basic assumption in this program is that no new additional revenue sources will become available during the 20-year planning period. The ISTEA (Intermodal Surface Transportation Efficiency Act) legislation adopted in 1991 also redirected federal funding policies away from building more freeways and toward a focus on transportation systems users and more local control that will reduce congestion and provide an integrated regional transportation system.

Based on these goals, strategies, and policies, the majority of the funding allocated by MTC in the RTP supports maintenance of existing transit systems, state highways, local streets and roads and eight major bridges. The funding provides for ongoing operation and maintenance of these systems, and provides for enhanced transit access through rail extensions and paratransit for elderly and disabled riders, expansion of bicycle access, and additional high occupancy vehicle (HOV) lanes on
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regional freeways. Therefore, relatively little of the region’s estimated $74 billion in transportation funding over the next 20 years is available for major new programs. The 1994 RTP acknowledges that sufficient funding will not be available to cover all transit operating shortfalls in the region and that only those portions of streets and roads falling within the Metropolitan Transportation System/42/ can be funded for pavement maintenance. About one-third of the regional “discretionary” funding is allocated to reducing part of these shortfalls; about one-third is allocated to transit system expansions and upgrades; and the remainder is allocated to highway improvements such as new HOV lanes, to operational improvements such as traffic management tools to smooth traffic flows, and to improvement of bicycle and pedestrian facilities in the region.

In San Francisco, RTP investments include maintenance and operating funds for MUNI, rehabilitation and signal timing improvements of Metropolitan Transportation System streets, additional MUNI maintenance facilities and new trolleybuses, partial funding of bicycle and pedestrian improvements, and partial funding of the Caltrain extension to downtown./43/

The 1996 update of the RTP proposed only minor changes in the funding program established in the 1994 RTP. Most of these changes were the result of the recent court invalidation of Santa Clara County’s sales tax measure, which calls into question the availability of funding for many transportation projects in that county, as well as some projects listed in the 1994 RTP for other counties that are coordinated with Santa Clara County. For San Francisco, electrification of the Caltrain extension to downtown was deleted as a result of the loss of this sales tax funding in Santa Clara County. Other revisions update projects based on more detailed information, such as adjusting the definition of the BART extension to San Francisco Airport to reflect the approved route alignment, or changing the designation of projects that are under construction or completed and therefore need no further funding.

County Congestion Management Plan

State legislation adopted in 1988 requires each county to adopt a county-wide congestion management plan containing levels of service standards for major arterials, establish transit service standards, develop trip-reduction and travel demand programs if they do not already exist, and formulate capital improvement programs. The San Francisco Board of Supervisors has designated the San Francisco Transportation Authority as the San Francisco Congestion Management Agency. The Congestion Management Agency adopts and updates the San Francisco Congestion Management Plan (CMP). The CMP designates a network of all freeways, state highways and the principal arterials within the City. Level of Service E has been established as an acceptable LOS for all designated arterials and highways in this network in San Francisco for purposes of congestion management planning, based in
part on existing conditions when the CMP was adopted. Note that levels of service for arterials are analyzed somewhat differently from those at intersections; various City agencies have agreed that for local intersections, LOS D is the lowest acceptable service level and degradation from LOS D or better to LOS E is considered to be a significant environmental impact for CEQA analysis purposes. This SEIR provides analysis of local intersections and intersections at freeway ramps, consistent with the analysis in the 1990 FEIR.

Regional Transit Plans

Regional transit carriers prepare Short Range Transit Plans detailing proposals for changes in and expansion of transit service in their service areas. These plans are updated regularly. Provisions in these plans relevant to future service capacities are described for the various carriers in “Regional Carriers, 2015 Scenario,” in the “Transit Impacts” discussion below.

Bay Conservation and Development Commission Policies

The San Francisco Bay Plan, adopted by the San Francisco Bay Conservation and Development Commission (BCDC), includes policies for water transportation in the region. The Bay Plan discourages additional freeways and bridges across the Bay and encourages use of ferries for regional transit. As part of the San Francisco Bay Plan, BCDC and MTC jointly prepare and adopt the San Francisco Bay Area Seaport Plan. In the past, both the Bay Plan and the Seaport Plan called for continued shipping activities along the waterfront adjacent to Mission Bay, at Piers 48 through 64, including a new container terminal; these policies were described in the 1990 FEIR. In 1996 BCDC and MTC amended the Bay Plan and the Seaport Plan to remove the “port priority” designations for much of this area adjacent to the Project Area, retaining only Piers 48 and 50 and the land immediately west of those piers as a priority area to be retained for major shipping activity adjacent to Mission Bay. This port priority area west of Piers 48 and 50 is no longer part of the Project Area.

- San Francisco Bay Trail Plan

- The San Francisco Bay Trail is a 400-mile regional hiking and bicycling trail that is intended to permit users to circle San Francisco and San Pablo Bays. The San Francisco Bay Trail Plan was adopted by the Association of Bay Area Governments in 1989. The Plan is one component of the region’s transportation and recreational facilities.
About one-half of the planned 400 miles has been developed. The San Francisco Planning Commission adopted a proposed route for the Bay Trail in 1992. The route of the Bay Trail in the Mission Bay Project Area is along Third Street from King Street to Mission Rock Street, and along Terry A. François Boulevard from Mission Rock Street to Mariposa Street.

Local Plans and Policies

A number of objectives and policies in the San Francisco General Plan's Transportation Element/47/ are relevant to the proposed project. They are provided in detail in Appendix B and are summarized here. The Transportation Element was substantially revised and reorganized in 1995, after completion of the 1990 FEIR. However, the "transit first" approach to transportation management remains a guiding principle; revisions primarily relate to changes in the transit and traffic facilities that had occurred over the years since the Element was prepared, such as removal of the Embarcadero Freeway after the 1989 earthquake, extension of the MUNI Metro light rail system and the BART system, and initiation of construction for King Street on- and off-ramps to I-280.
The main emphasis in the City’s Transportation Element is to support use of transit rather than the automobile as a means of travel within the City and as a means of commuting between San Francisco and other Bay Area locations. Therefore, objectives in the General Plan call for maintaining San Francisco as a hub of a regional, city-centered transit system with no increases in the capacity of major highways and bridges except for high-occupancy vehicles, and maintaining transit as the primary means of travel within the City. Transportation brokerage programs and parking supply management are encouraged, among other means to manage congestion and reduce air emissions from automobiles. As noted in the 1990 FEIR, the Transportation Element supports extension of Caltrain to a downtown terminal at or near Market Street.\(^{48}\) The 1995 revisions to the Element continue to support such an extension, although current support for the extension is limited, as noted below under the discussion of Caltrain in the Impacts subsection “Changes to Regional Transit System” under “Year 2015 Transportation System Assumptions.”

Objectives and policies in the Transportation Element call for improving pedestrian and bicycle circulation within the City to further discourage automobile use, and call for implementing the regional Bay Trail. The Bay Trail route in the Recreation and Open Space Element of the General Plan would need to be amended to reflect the new proposed route in and near the Mission Bay Project Area. A San Francisco Bicycle Plan has been adopted since certification of the 1990 FEIR; relevant provisions are summarized in “Bicycle Access System Characteristics,” above, and in the Impacts subsection “Bicycle Circulation” under “Year 2015 Transportation System Assumptions.”\(^{49}\)

Specific designations from the Transportation Element for streets as transit preferential, major thoroughfares, and transit conflict streets in and near the Project Area are provided in Table V.E.1, above. This table and the description of existing streets in the Project Area in Appendix D also note streets that are part of the Citywide Pedestrian Network, are Neighborhood Pedestrian Streets, or are part of freight traffic routes, as provided in the Transportation Element. Existing or proposed bicycle routes based on the San Francisco Bicycle Plan are noted in Appendix D under “Roadway System” and are discussed in “Impacts” under “Bike Routes in the Street Network” in “Bicycle Impacts.”

Convenient and accessible off-street freight loading is encouraged in the Transportation Element to reduce congestion on streets while meeting the demand for loading space in new buildings. The Waterfront Land Use Plan, adopted by the San Francisco Port Commission in 1997, calls for protecting vital truck routes and freeway and freight rail access necessary to serve the Port’s cargo shipping industry, located to the south of Mission Bay at Piers 80 and 92-96. The Waterfront Land
*Use Plan* suggests that major developments encourage ticket sales for transit services and provide inviting passenger waiting areas.\(^{50}\)

Maps 6, 7, 8, and 9 in the Transportation Element, related to vehicle circulation, and Map 12, showing Neighborhood Pedestrian Streets, show Fourth Street in its existing configuration. The project's circulation plan, described in “Year 2015 Transportation Systems Assumptions” under “Impacts,” below, and shown in Figure III.B.3, would reroute Fourth Street from its current orientation, from south of the Channel to 16th Street. These maps in the Transportation Element would need to be revised. Map 13, showing bicycle routes, could be amended to show bicycle routes planned in the Mission Bay Project Area.

**IMPACTS**

This section describes the methods used to evaluate project and cumulative transportation impacts of the proposed Mission Bay development and presents the results of the analyses. Analysis of the transportation impacts of Mission Bay development includes consideration of vehicular traffic on freeways and local intersections; transit facilities, both local and regional; project-related parking issues; local pedestrian and bicycle systems; goods movement, including freight loading and rail freight; and project construction.

The transportation analysis approach and results from the 1990 FEIR have not been summarized and incorporated by reference because basic assumptions and approach have changed; because the Project Area circulation pattern now proposed is different from those of the alternatives analyzed in the 1990 FEIR; and because some future conditions assumed in that EIR are now expected to be different. Examples include: substantial changes in assumptions about downtown, citywide, and regional growth in building space, employment and population, due to the recession of the early 1990’s that was not anticipated in the 1990 FEIR; and the completion of several new BART stations in the East Bay that have expanded the capacity of the regional transit system. Despite all the differences in assumptions and methodology that produce different results in the transportation impacts analysis, some of the basic conclusions from the 1990 FEIR remain: cumulative employment and population growth, including that from the Mission Bay project, would cause the afternoon peak commute traffic period to expand on regional freeways and bridges leading into and out of San Francisco; the Mission Bay project would contribute measurably to the expansion of the peak traffic period; regional transit facilities would need to expand service beyond that already planned if it is desired to limit the expansion of the p.m. peak traffic period; and that Project Area travel during the p.m. peak would contribute to cumulative overcrowding in some MUNI corridors.
STANDARDS OF SIGNIFICANCE

Freeways and Ramps

The City has no adopted significance criteria for potential traffic impacts along freeways and on- and off-ramps. Generally, a volume-to-capacity ratio greater than 0.9 along freeway mainlines means that freeways are at or near capacity. The project would be considered to have a significant effect on the environment if it would cause intersections at freeway ramps to deteriorate to unacceptable levels (i.e., deteriorate from LOS D or better to LOS E or LOS F). The project would also have a significant effect on the environment if, when considering the proposed project together with other closely related past, present, and reasonably foreseeable probable future development in the area, it would contribute substantially to cumulative traffic increases along freeways, or along ramps, that would otherwise operate at acceptable levels. Finally, a project would have a significant effect if it would contribute substantially to ramp congestion already at unacceptable levels such that the period of peak congestion would be substantially lengthened.

Local Intersections

In San Francisco, a project is typically considered to have a significant effect on the environment if it would cause an intersection to deteriorate to an unacceptable level (from LOS D or better to LOS E or LOS F); interfere with existing transportation systems causing substantial alteration to circulation patterns or causing major traffic hazards; or contribute substantially to cumulative traffic increases at intersections that would result in deterioration of traffic conditions to unacceptable levels.

Transit

The City has no formally adopted significance criteria for potential impacts related to transit. In San Francisco, a project is typically considered to have a significant effect on the environment if it would cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity, resulting in unacceptable levels of transit service; or cause a substantial increase in operating costs such that significant adverse impacts in transit service levels could result. The project would also have a significant effect on the environment if, when considering cumulative development in the area, it would contribute substantially to the deterioration of transit service to unacceptable levels.

Parking

San Francisco's General Plan policies emphasize the importance of public transit use and discourage the provision of facilities which encourage automobile use. Therefore, the creation of parking
demand which cannot be met by existing or proposed parking facilities would not be considered a significant environmental effect. However, the City would generally consider whether the unmet parking demand would result in other significant physical effects or creation of hazardous conditions caused by substantial numbers of illegally parked automobiles.

**Pedestrian/Bicycle**

The City has no adopted significance criteria or policy for impacts related to pedestrian or bicycle access and safety. For purposes of this analysis, the project would be considered to have a significant effect on the environment if it were to result in substantial pedestrian overcrowding on public sidewalks; create particularly hazardous conditions for pedestrians or bicyclists; or otherwise substantially interfere with pedestrian and bicycle accessibility to the site and to adjoining areas.

**ANALYSIS APPROACH**

To establish the transportation impacts of project-related traffic on the regional and local street system, it is first necessary to establish the background transportation conditions for the horizon year. The development of future year (2015) background conditions for this project was based on the Metropolitan Transportation Commission (MTC) regional travel demand model.

The MTC regional travel demand model is typically used to obtain estimates of future growth in San Francisco and the nine-county Bay Area and prepare future cumulative transportation impacts on regional traffic and transit facilities. The most recent MTC travel demand estimates, prepared in early 1996, incorporate the Association of Bay Area Governments (ABAG) land use and socio-economic database and growth forecasts for the years 1995, 2000, 2010 and 2015 (ABAG's *Projections '96*). *Projections '96* provides forecasts of economic and population growth for the nine-county Bay Area region in the context of national and international economic trends. *Projections '96* estimates that population in San Francisco would increase from approximately 760,000 residents in 1995 to about 796,000 residents in the year 2015 (a 4.7% increase). Similarly, San Francisco employment would grow from about 534,600 to approximately 638,700 jobs (a 19.5% increase). These projections, however, do not specifically include the most recent proposed development plans for a number of areas within the City and County of San Francisco, such as Hunters Point Shipyard Reuse Plan, Mid-Market Redevelopment Plan, Presidio Reuse Plan, Transbay Redevelopment Plan, Bayview Hunters Point Redevelopment Plan, the Treasure Island Naval Station Reuse Plan, the voter-approved Candlestick Point football stadium and retail/entertainment mall, and the Mission Bay North and Mission Bay South Redevelopment Plans (the project).
In September 1996, the San Francisco Redevelopment Agency, in coordination with the San Francisco Planning Department, initiated a process to prepare updated future year 2015 cumulative employment and housing growth estimates and travel demand estimates for San Francisco, incorporating the most recent development plans for those major planning areas. The updated travel demand forecasts are intended to be used in transportation analyses for EIRs on some of the proposed plans.\textsuperscript{51} These revisions to ABAG's \textit{Projections '96} data were discussed with ABAG and MTC staff by the Redevelopment Agency and its consultant staff.\textsuperscript{52} Appendix D presents a more detailed description of the steps followed to develop future year (2015) background transportation conditions for this project in its "Methodology" section.

The year 2015 cumulative projections prepared for the Redevelopment Agency and the Planning Department assume that about 70\% of the total Commercial Industrial component of the Mission Bay project would be built and occupied by the year 2015 and that housing on sites not owned by Catellus will not have been developed. Since the analysis for this Mission Bay SEIR conservatively assumes that the Mission Bay project would be fully built and occupied by the year 2015 and includes a more detailed analysis of likely employment and population in the Project Area appropriate to the SEIR for the project, the land use/socio-economic data for the project were accordingly revised and analyzed in the MTC model runs for the Mission Bay project.\textsuperscript{53}

The transportation analysis uses assumptions of specific amounts and types of land uses in the Mission Bay Project Area in order to calculate numbers of person trips on various transit systems and numbers of vehicle trips that could result from buildout of the Project Area. These land use assumptions are based on likely development in the Project Area as currently envisioned in the Mission Bay North and Mission Bay South Redevelopment Plans, including development projected for UCSF at this location in the UCSF Long Range Development Plan. The Redevelopment Plans permit a variety of uses within each land use designation. The transportation analysis has generally assumed more intense uses permitted in the Redevelopment Plans rather than less intense uses under each land use designation in order to provide a conservative analysis for this SEIR. For example, the analysis assumes 50\% of the space in the Mission Bay Commercial Industrial areas would be developed as office space rather than research and development space because office uses generate a greater amount of travel during the p.m. peak hour than do most other commercial and industrial uses; the particular development program currently proposed by Catellus and the Redevelopment Agency anticipates less office and more research and development use in these areas. As another example, the analysis assumes a 25-screen multiplex cinema in the retail/entertainment area in Mission Bay North to provide analysis of a major land use permitted in the Redevelopment Plan that generates relatively large numbers of person trips.
The analysis includes uses of standard trip generation factors from all proposed land uses in the Project Area, including residential uses, and distributes that travel to four quadrants of the City and to the rest of the region based on the MTC regional model (see "Methodology" in Appendix D for a more detailed explanation of trip generation and distribution, and a summary of that information in "Project Analysis Methodology," below.) Therefore, the transportation analysis accounts for Project Area employees commuting within the northeast quadrant, where the Project Area is located, and for employees commuting to other areas in the City and region. It is assumed that most employed residents living in Mission Bay would work outside of the Project Area, although many would be likely to work in downtown San Francisco, also located in the northeast quadrant.

YEAR 2015 TRANSPORTATION SYSTEM ASSUMPTIONS

The travel demand forecasts used in the analysis are based in part on assumptions regarding planned transportation facilities and services that will affect the Project Area’s transportation system by year 2015, as well as on the revised population and employment growth estimates described in “Analysis Approach,” above. This section outlines the future (year 2015) improvements to the roadway system and transit services that would affect analyses of the proposed Mission Bay project.

The first two subsections describe changes to the local street and regional freeway networks, while the following subsections list planned transit projects and services.

Changes to Circulation Pattern in Mission Bay

Plans for Mission Bay North and Mission Bay South propose to change the street circulation pattern and add pedestrian paths and bicycle paths and lanes. These changes to the circulation system are described below. The precise dimensions of components of the transportation network, such as travel and bicycle lane widths and presence or absence of turn lanes, are subject to change during the ongoing project planning process, including after action on the Redevelopment Plans.

Traffic Circulation

The proposed circulation plan for Mission Bay is shown in Figure V.E.8, which indicates the location and characteristics of existing and proposed streets in the Mission Bay Project Area. Basic characteristics of street rights-of-way, such as number and direction of lanes, and turning movements are shown. The proposed project includes a grid system of local neighborhood and collector streets, new major streets, plus improvement to existing major streets. The roadway improvements proposed as part of the Mission Bay project are described in detail in “Proposed Streets in Project Area,”
Appendix D; the proposed street cross sections are included. (Street names shown in Figure V.E.8 and other transportation figures are for reference only, and are not intended to reflect future street names, which are unknown at this time.) They are also listed as project features in Measures E.1 through E.26 in Section VI.E, Mitigation Measures: Transportation.

The existing street pattern would be substantially changed. In Mission Bay North, Berry Street would be closed between Fourth and Fifth Streets, except for driveway access to residential buildings. Berry Street would be developed as a linkage between Seventh Street and King Street by reconstructing the at-grade crossing of the Caltrain tracks. It would also connect with the planned westbound King Street frontage road to be built by Catellus on the north side of the I-280 ramps structure. The I-280 off-ramp touch-down at King Street would be restriped to accommodate an additional eastbound through lane without modifications to the ramps structure. A new westbound left-turn only lane would be provided at the intersection of King and Fifth Streets. An additional northbound lane would be provided at the intersection of King and Third Streets, and Fourth Street would be widened between King and Berry Streets.

In Mission Bay South, Third Street, 16th Street, Mariposa Street, and Owens Street would remain in substantially the same alignment as today. Exclusive left-turn lanes would be provided at intersections on 16th Street within the existing right-of-way. Mariposa Street would be widened on the north side within the Project Area to provide two lanes in each direction with left-turn lanes at major intersections, and the existing on-street parking would be eliminated. Owens Street would be extended to a roundabout and then east along the southern Channel edge to Third Street, replacing Channel Street.

Fourth Street would be realigned. Fourth Street would no longer intersect with Third Street, but would run south parallel to Third Street, ending at Mariposa Street opposite Minnesota Street. Fourth Street between the Channel and Mariposa Streets would be configured along most of its length as a two-way street with parking on each side and one wide (17-foot) lane in each direction, able to accommodate automobiles and bicycles. During the morning and afternoon peak commute periods, parking on Fourth Street would be prohibited on one side of the street to accommodate one additional 15-foot-wide travel lane on the side of the street where parking is removed. Exclusive left-turn lanes would be provided on Fourth Street at major intersections.

A series of new east-west streets would also be created or extended into Mission Bay South. These would include local residential streets such as South, Rincon, and Mission Rock Streets, and a major multi-purpose one-way couplet, North Common Street and South Common Street, connecting the Owens Street roundabout with the waterfront. The Common would be about 200 feet wide to
accommodate one wide (15-foot) traffic lane (able to accommodate automobiles and bicycles),
parking, and a sidewalk in each direction, and a 130-foot-wide open space median. The project
proposes an at-grade automatic-gated crossing of the Caltrain tracks to connect North Common and
South Common Streets and Owens Street with Seventh Street west of the roundabout./54/
Only MUNI vehicles would be permitted to travel northbound on Fourth Street between King and Townsend Streets.

SOURCE: Wilbur Smith Associates
Catellus and the City would exchange various properties to create the new public street pattern. Portions of certain existing public streets would be abandoned, and this land would be transferred to Catellus. Catellus would build and dedicate new public streets on portions of its private property.

Within the UCSF site, it is anticipated that there would be local private streets. Most of these streets would be accessible to and usable by the public. Within certain other large areas, including the housing area east of Third Street and the R&D/office area east of Third Street south of Mission Rock Street, there would also be local private streets and rights-of-way, most of which would be accessible to and usable by the public. In these areas, land would be set aside for three principal purposes: local vehicular and/or pedestrian access, utility corridors, and/or view corridors.

Third Street would be reconfigured consistent with the MUNI Third Street Light Rail Project, within the existing street right-of-way, to accommodate two traffic lanes each way and a median, with exclusive left-turn lanes at major intersections such as at the extension of Owens Street, North Common and South Common Streets, 16th Street, and Mariposa Street. The typical median width would be about 24 feet, necessary to accommodate a double track for the MUNI Metro Third Street light rail extension. A wider median (approximately 30 feet) would be provided on both sides of Mission Rock, South, and Mariposa Streets, where light rail station platforms would be located. The existing street right-of-way would be widened on the east side of Third Street, south of 16th Street, for approximately 200 feet, in order to provide a second northbound exclusive left-turn lane from Third Street onto 16th Street. The existing on-street parking on Third Street between the Channel and Mariposa Street would be eliminated.

Bicycle Circulation

The San Francisco Bicycle Plan, recently adopted by the Parking and Traffic Commission and the Board of Supervisors/55/, includes bicycle routes on several streets in or near the Project Area. Routes included in this network are designed to accommodate hierarchical levels of bicycle traffic, similar to a network designed for vehicular traffic. Mission Bay and locations nearby have two types of bicycle routes recommended by the San Francisco Bicycle Plan: Class II and Class III. Class II bike lanes are defined by striped lanes 4 feet in width for streets with vehicular flow of less than 500 vehicles per hour per lane (5 feet for streets with parking), and striped lanes 6 to 8 feet wide for vehicular flow greater than 500 vehicles per hour per lane or with vehicular speeds greater than 35 mph. On Class III routes, bicycles and vehicles share the curb lane. Signs and pavement markings are proposed to inform drivers of the policy. Table V.E.5 describes the hierarchical status of portions of roadway in or near the Mission Bay Project Area.
### TABLE V.E.5
**MISSION BAY AREA BICYCLE ROUTES IN SAN FRANCISCO BICYCLE PLAN**

<table>
<thead>
<tr>
<th>Street Description</th>
<th>Hierarchical Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Street, south of Channel Street</td>
<td>Class II</td>
</tr>
<tr>
<td>Sixteenth Street, between Third and Kansas Street</td>
<td>Class II</td>
</tr>
<tr>
<td>Townsend Street, between Fourth and Eighth Streets</td>
<td>Class II</td>
</tr>
<tr>
<td>Third Street between Channel and Townsend Streets</td>
<td>Class III</td>
</tr>
<tr>
<td>Fourth Street, between Townsend and Third Streets</td>
<td>Class III</td>
</tr>
<tr>
<td>Seventh Street, north of Mariposa Street</td>
<td>Class III</td>
</tr>
<tr>
<td>Mariposa Street, between Third and Seventh Streets</td>
<td>Class III</td>
</tr>
<tr>
<td>Townsend Street, between Fourth and Second Streets</td>
<td>Class III</td>
</tr>
</tbody>
</table>

**Notes:**

Class II bicycle lane: a striped lane adjacent to vehicle travel lanes in the street right-of-way, 4 to 5 feet wide for streets with 500 vehicles per hour, and 6 to 8 feet wide for streets with more than 500 vehicles per hour.

Class III bicycle lane: a signed bicycle route with no separately striped lane, where vehicles and bicycles share the curb lane.

*Source: San Francisco Bicycle Plan, March 10, 1997.*

Some portions of streets in the vicinity of the Mission Bay Project Area are designated as Scenic Bike Routes. These routes include Townsend Street between Kansas and Third Street, and King Street between Third Street and The Embarcadero. The *San Francisco Bicycle Plan* also includes a route for the San Francisco Bay Trail. This trail runs through the Mission Bay Project Area from The Embarcadero to Berry Street to Third Street; it continues from Third Street to Mission Rock Street to Terry A. François Boulevard and then to Illinois Street. The San Francisco Bay Conservation and Development Commission (BCDC), requires that by the year 1998 the section of the Bay Trail on Terry François Boulevard between the Lefty O'Doul Bridge and Mission Rock Street be implemented by the Port of San Francisco as a Class II bicycle facility, and that the section on Terry A. François between Mission Rock and Illinois Streets be implemented as a Class III bicycle facility. By the year
2000, the BCDC requires that the entire length of Terry A. François become a Class II bicycle facility./56/

The bicycle routes proposed for the Mission Bay project are intended to complement and extend the established bicycle routes in San Francisco. These include Class I, Class II, and Class III bicycle routes. Class I bicycle facilities provide a completely separated right-of-way for the exclusive use of bicycles, with the number of crossings minimized. Minimum recommended widths in the San Francisco Bicycle Plan are 8 feet where no pedestrian use exists, to between 12 and 16 feet where moderate pedestrian volumes are expected. Where heavy pedestrian volumes are expected (more than 400 per peak hour), two separate parallel facilities are recommended. The proposed bicycle routes and their classifications are shown in Figure V.E.9. The Bay Trail alignment shown in Figure V.E.9 between the Lefty O'Doul Bridge and Mission Rock Street does not reflect the alignment currently approved by the Board of Directors of the Bay Trail Project. However, because the San Francisco BCDC requires that a Class II bicycle facility be implemented by the Port of San Francisco in this section of Terry A. François Boulevard by the year 1998, it is possible that the Bay Trail will be realigned to this route shortly thereafter. This route would be closer to the waterfront and Mission Bay waterfront open space than the current adopted route.

Two major routes would cross the Project Area in the east-west direction, one on North Common and South Common Streets and one on 16th Street. The proposed bicycle route for North Common and South Common Streets would extend from the waterfront to Seventh Street. It would accommodate bicycles in traffic lanes (Class III) between Terry A. François Boulevard and Seventh Street. Fifteen-foot lanes (wider than standard) would be provided between the boulevard and Mission Bay Street, just east of the new roundabout, to better accommodate bicycle and automobile traffic. The bicycle route proposed for 16th Street would be an extension of the existing route on 16th Street. To improve bicycle safety, rubberized surfaces are proposed to be installed as part of the project improvements at all existing and new rail crossings in the Project Area, including 16th Street at Seventh Street, North Common and South Common Streets at Seventh Street, and Berry Street at Seventh Street. These rubberized surfaces around the tracks help to prevent bicycle wheels from falling into the narrow gap between tracks and the road surface.

The proposed Fourth Street route would extend from the Peter Maloney Bridge in the north to Mariposa Street in the south. This route would connect the existing Fourth Street route in the South of Market area to the existing Indiana Street route at the southern boundary of the Project Area. South of China Basin Channel, Fourth Street would have 8-foot-wide on-street parking lanes plus a traffic lane 17 feet in width in each direction, which would accommodate a 6-foot bicycle lane during off-peak periods (Class III). During the peak commute periods, parking would be prohibited on one
side of Fourth Street, and a 15-foot-wide curb lane would act as a shared lane for automobiles and bicycles (Class III). North of China Basin Channel, bicycles would share the 11-foot-wide travel lanes with automobiles at all times (Class III). Light rail operation planned to be in the center lanes of Fourth Street between Owens and King Streets prevents wider lanes in that section of Fourth Street.
In addition, an east-west recreational bicycle route in the planned public open space along the south edge of the Channel would likely be combined with a meandering pedestrian pathway. The paths themselves would not be shared; rather, pedestrians and bicycle movements would be separated and delineated. This Class I route primarily would serve recreational bicycling, starting at the Lefty O'Doul Bridge and extending west to Seventh Street. A second recreational route would extend from the Lefty O'Doul Bridge at Third Street along Terry A. Françoise Boulevard to Mariposa and Third Streets; the portion south of Mission Rock Street would be part of the Mission Bay project. It would provide 6-foot-wide dedicated bicycle lanes (Class II) and would serve as part of the San Francisco Bay Trail. This bicycle facility would be in compliance with the requirements of BCDC discussed above. These recreational routes would connect to the existing routes at Third Street (north and south), at Fourth Street, at Seventh Street, at 16th Street, and at Mariposa Street and to the other routes proposed as part of the project.

Pedestrian Circulation

The proposed pedestrian access routes are shown in Figure V.E.9. Preliminary plans showing cross-sections of Project Area streets indicate typical sidewalk widths of 10 to 12 feet on both sides of the roads (see Appendix Figures D.2-D.8). A sidewalk width of 10 feet between curb and building results in an “effective sidewalk width” of 5 to 6 feet. (Effective width is the term used for the portion of the sidewalk that is actually usable for walking.) If a sidewalk abuts a building, there is a “shy” distance of 1 to 1.5 feet next to the building. If the sidewalk is directly adjacent to the curb, the street side of the sidewalk is filled with parking meters, light standards, street trees, litter containers, and other street furniture which consume 1.5 to 2 feet, sometimes more, further reducing the effective width. In the situation where a buffer strip is not provided and the sidewalk extends to the curb, the sidewalk width will also encompass driveway aprons, which are difficult for wheelchairs to negotiate. Thus a minimum of 8 feet must be provided in order to maintain a minimum of 5 feet of effective sidewalk width to accommodate wheelchairs. Five feet is also the minimum width for two people to comfortably walk side by side, and 7 feet is needed for one person to pass two persons walking together. Thus, 10 feet is the minimum width recommended for a sidewalk between the curb and building face, and 12 feet is recommended where large amounts of street furniture or bus shelters are proposed to be provided.

A pedestrian bridge over the China Basin Channel is proposed to be constructed along the hypothetical extension of Fifth Street, subject to obtaining the required approvals. The pedestrian bridge would be a “swing” bridge to accommodate the maritime use of the Channel, to be operated by the Department of Public Works at existing facilities that control the two automobile bridges over the Channel. This bridge would provide a convenient and more pedestrian-oriented alternative to the
MISSION BAY SUBSEQUENT EIR

FIGURE V.E.9  PROPOSED PEDESTRIAN AND BICYCLE CIRCULATION
Lefty O'Doul and Peter Maloney Bridges, which have narrow 6- and 7-foot-wide sidewalks, respectively, and short sections of even less width. Pedestrian circulation between the residential areas north of the Channel and the employment centers, neighborhood-serving retail, and open space uses located in Mission Bay South would be enhanced by the pedestrian bridge. If built, the bridge would provide convenient access for residents and workers south of the Channel, thereby encouraging more residents and workers in the western part of the Project Area to walk to Caltrain, the MMX light rail line, and for some, to downtown San Francisco. Because this bridge is a possible project component, the pedestrian analysis discusses effects both with and without it.

**Freight Rail Operation Changes**

The proposed Mission Bay project would relocate the existing freight railroad tracks located in the vicinity of 16th and Mariposa Streets that provide access to Pier 80. The existing railroad alignment, which currently crosses 16th and Third Streets at a 45-degree angle (see Figure V.E.7) would be relocated to coincide with the 16th Street alignment. The new trackage on 16th Street would be flush with the pavement, similar to the track configuration used by streetcars, and would be located in one of the center lanes, separated from the bicycle lanes by an automobile travel lane.

After leaving the mainline tracks immediately north of 16th Street, trains heading for Pier 80 would travel east along 16th Street to reach Terry A. François Boulevard. Trains would then turn north on Terry A. François Boulevard for approximately 300 yards, also traveling on the street’s right-of-way. After the last car of the train had cleared 16th Street, the train would then reverse direction traveling south on Terry A. François Boulevard to reach Illinois Street, and then continue south on Illinois Street toward Pier 80 using the existing trackage.

If freight railroad access is required to be provided to Piers 48 and 50 (Mission Rock Terminal) at some point in the future, the railroad tracks located on Terry A. François Boulevard could be extended north, toward Piers 48 and 50, beyond the minimum track length requirements necessary to perform the turn onto Illinois Street. Trains would then travel north in a center lane within the Terry A. François Boulevard right-of-way to reach Piers 48 and 50.

**Changes to Regional Freeway System**

**I-280 Ramps at King Street**

The new I-280 southbound two-lane on- and off-ramps at the intersection of King and Fifth Streets were fully completed and opened for service in November 1997. The previous I-280 “touch-down”
off-ramp was relocated at the end of June 1997 from the intersection of Fourth and Berry Streets to the intersection of King and Fifth Streets, and the old off-ramp which is currently out of service is scheduled to be removed at the beginning of 1998./57/

U.S. 101 (Central Freeway)

The Central Freeway is an elevated viaduct that runs parallel to 13th Street between I-80 and Mission Street and, until recently, provided a double-deck structure between Mission Street and the U.S. 101 freeway terminus at Oak and Fell Streets. The double-deck structure was removed in 1996. A number of Central Freeway replacement alternatives have been developed and promoted by citizen groups, consultants, and Caltrans. Caltrans is currently conducting an Environmental Assessment of a possible replacement alternative./58/ The following alternative was recommended in a public vote in November 1997, and is proposed by Caltrans as a possible solution to the replacement of the freeway:

**Alternative 1A/B:** This alternative would construct a new single-deck, four-lane structure from Mission Street to Oak and Fell Streets. The four-lane deck would be 80 feet wide and would include new on- and off-ramps at Oak and Fell Streets. The proposed freeway would follow the existing right-of-way and be expected to carry 100% of the daily traffic handled by the Central Freeway prior to closure in August 1996.

The following alternative was recently dismissed as a viable option, and is no longer being considered by Caltrans.

**Alternative 8B:** This alternative would consist of a single-deck, four-lane facility from Mission Street over Duboce and Valencia Streets to the south side of Market Street, near the intersection of McCoppin Street and Elgin Park. The freeway would come to grade at a signalized intersection on Market Street, serving as the northernmost entrance and exit to the Central Freeway.

The traffic analysis for the Mission Bay project assumes that one of the two alternatives discussed above would be built by the year 2015. Although there could be changes in the area directly served by the Central Freeway (Van Ness Avenue, Ninth Street north of Bryant, and Oak and Fell Streets, for example) depending on which alternative is ultimately chosen, this analysis assumes that there would be no differences in traffic conditions in the year 2015 between the two alternatives in the Mission Bay project transportation study area./59/

**Embarcadero Freeway/Terminal Separator Structure Replacement**

The Embarcadero Freeway and Terminal Separator Structure connecting the freeway to I-80 and the Bay Bridge were demolished after the 1989 Loma Prieta earthquake. Replacement plans for those
facilities were studied, and in 1996 a preferred alternative was chosen. The following roadway
improvements are expected to be in place by the year 2015 in downtown San Francisco, called for in
the “Department of Parking and Traffic (DPT) Variant” alternative, selected by the San Francisco
Board of Supervisors as the Locally Preferred Alternative for the replacement of the Embarcadero
Freeway and the Terminal Separator Structure:

The existing I-80 Fremont Street off-ramp would be modified so that a portion of the ramp
would touch down at the intersection of Fremont and Folsom Streets. There would be four
lanes on the off-ramp approach; two lanes would direct traffic toward the waterfront via
Folsom Street, and two other lanes would direct traffic toward downtown via Fremont
Street.

Folsom, Fremont, and First Streets would be re-striped to provide additional lanes in the
vicinity of the I-80 on- and off-ramps.

When warranted by congestion levels in the future (expected to be sometime before the year
2015), the existing p.m. peak period car pool operation on the Bryant Street approaches to
the Sterling Street on-ramp may be changed to mixed-flow operation, and the current mixed-
flow operation on the Essex Street approach to the Bay Bridge may be restricted to car pool
(HOV) operation during the p.m. peak period.

Changes to San Francisco Municipal Railway (MUNI) System

Light Rail Extensions

MUNI recently completed a 2-mile extension of its Metro Light Rail track system to the Project Area
(MUNI Metro Extension or MMX) along The Embarcadero and King Street, terminating at King and
Berry Streets beyond the Caltrain terminal. Two stations are located on King Street in the vicinity of
the project, one between Second and Third Streets opposite the Giants Ballpark, and the other
between Fourth and Fifth Streets opposite the Caltrain terminal. Service on the MMX began in
January 1998, as the E-line shuttle, operating between Embarcadero Station and the Caltrain terminal.
One-car trains operate at six-minute headways during the p.m. peak period and at ten-minute
headways midday. When the Advanced Train Control System (ATCS) is implemented, service will
be provided as an extension of the J-Church line and will no longer be the E-line shuttle. MUNI is
evaluating the possibility of also extending the M-Ocean View line to the Caltrain terminal during the
peak periods.

MUNI is in the process of completing an environmental impact report/environmental impact statement
(EIR/EIS) for the MUNI Third Street Light Rail Project. This project, as defined for the DEIR/EIS,
calls for light rail to be extended south from downtown to Caltrain's Bayshore station near the San
Francisco/San Mateo County line, replacing the 15-Third bus line. Three alternatives for the Third
Street corridor are under environmental review at this time: the No Project Alternative, the No Build/Transportation Systems Management (TSM) Alternative, and the Light Rail Build Alternative. The first alternative would provide current service with no increase to meet future demand. The TSM Alternative is defined to include an increase to the existing transit service operated by MUNI that meets 2015 travel demand, namely the 15-Third and the 9X/9AX/9BX San Bruno Express diesel buses. The Light Rail Build Alternative assumes the construction of a 7-mile light rail line along Third Street linking Chinatown with the Caltrain Bayshore Station, near the San Francisco/San Mateo County line.

The Light Rail Build Alternative would be built in two phases: an Initial Operating Segment (IOS) in the first phase of the light rail project, and a Central Subway as the “ultimate project” (second phase). Both phases have a common route between King Street near the Caltrain terminal, and the Bayshore station southern terminus. Both phases also consider two track alignment options across the China Basin Channel: the Peter Maloney Bridge bi-directional option and the Third/Fourth Streets one-way couplet option.

North of King Street, the Initial Operating Segment phase would involve light rail vehicles (LRVs) operating on the existing MMX tracks, via King Street, The Embarcadero, and the Market Street Subway, while the Central Subway phase proposes that LRVs travel along Third (northbound) and Fourth (southbound) Streets, entering into a tunnel between Brannan and Bryant Streets, and continuing underground to a northern terminus in Chinatown under Stockton and Clay Streets.

Under the IOS phase, planned to begin operation in 2003, service on Third Street would be provided by extending the J-Church line one-car trains from the Caltrain terminal to the southern terminus at the Caltrain Bayshore station, operating on six-minute peak period and ten-minute midday headways. The service to the Caltrain terminal that was being provided by the J-Church line would be replaced by extending the L-Taraval line from the Embarcadero station at six-minute headways during the p.m peak period and ten-minute headways midday. For the Central Subway phase, one-car trains would operate as an independent line between Caltrain Bayshore southern terminus and the northern terminus in Chinatown, at six-minute headways in the peak period, and ten-minute headways during the midday.

Although the Central Subway is MUNI’s desired “ultimate project” and might be built before the year 2015, it would require a substantial amount of federal funds that the City does not yet have. Therefore, in consultation with MUNI staff, the IOS light rail operating plan (Peter Maloney Bridge bi-directional track alignment option) has been assumed to represent the future 2015 transit system along the Third Street corridor for the purposes of the Mission Bay project analysis. Therefore, in
the IOS phase, LRVs would operate along The Embarcadero, King Street, Fourth Street, the new extension of Owens Street, Third Street and Bayshore Boulevard on a semi-exclusive alignment (except on the Peter Maloney Bridge) as an extension of the J-Church line via the MMX track from King Street north, providing a base service of a one-car train every ten minutes each way, to be increased to one train every six minutes during the p.m. peak period./60/

Bus Service

MUNI is planning to implement service changes for other lines as a result of the recent implementation of Metro E-line service on the MMX in January 1998. MUNI will first modify the route of the 32-Embarcadero bus line to terminate near Folsom Street. When Metro service begins operating as an extension of the existing J-line rather than the current E-line shuttle operation, MUNI plans to consolidate three express bus lines that now carry passengers to/from the Caltrain terminal—the 80X, 81X, and 82X lines—into two lines. The 81X would be eliminated, and the routes and schedules of the 80X and 82X would be restructured to provide approximately half of the combined service currently provided by all three lines. Finally, when the J-Church line evening service becomes equivalent to the evening service provided on the 42-Downtown Loop line, the 42 line would be rerouted to serve Second Street between Howard and Brannan Streets, while still ending at the Caltrain terminal./61/

After service to the Third Street light rail corridor is implemented, further extending the J-Church line, sometime in the year 2003, MUNI plans to eliminate the 15-Third bus route and modify the 9X, 9AX, and 9BX San Bruno express bus routes. Service changes would also be made on the 9-San Bruno Local and 43-Masonic lines. The L-Taraval Metro line would be extended to the Caltrain terminal to replace the extended J-Church Metro line./62/

In response to expected increases in Mission Bay transit demand and in accordance with the prior Mission Bay development plan, MUNI would extend either the 30-Stockton or 45-Union/Stockton trolley coach route south from its current terminus at the Caltrain terminal, via Fourth Street, and Mission Bay Street in Mission Bay South, continuing on Hooper/Irwin, 16th, Connecticut, and 18th Streets, and ending somewhere in the vicinity of Third and 19th or 20th Streets (see Figure V.E.10). A second option, not preferred by MUNI, calls for buses to travel along Townsend and Seventh Streets instead of Fourth and Mission Bay Streets. The 30-Stockton or 45-Union/Stockton service is proposed to replace a portion of the 22-Fillmore route on Potrero Hill, joining with the current route at or near 17th and Connecticut Streets. MUNI anticipates extending only about 50% of the present 30-Stockton or 45-Union/Stockton peak service, approximately matching the current 22-Fillmore service to Potrero Hill.
The 22-Fillmore would be re-routed to access the Mission Bay South area via 16th and Third Streets, to terminate at The Common near the intersection of Third Street. (Parking on South Common Street would be precluded east of Third Street in order to provide curb space for trolley bus layover.) If the 22-Fillmore were rerouted to Mission Bay substantially before the 30 or 45-line was extended, the area east of Connecticut Street between 16th and about 18th Streets would be temporarily underserviced. MUNI estimates the total cost of these trolley bus route modifications to be approximately $30 million, but the program is currently not funded through 2005. Applications are being made to MTC by the San Francisco Transportation Authority to fund replacement trolley buses and to expand the trolley bus fleet in part to meet the Mission Bay demand. These MUNI service changes are consistent with the assumptions contained in the Third Street Light Rail Project DEIS/DEIR.

Figure V.E.10 shows the MUNI service changes assumed to be implemented by the year 2015, as described above. See also Measure E.27 and E.28 in Section VI.E, Mitigation Measures: Transportation.

Changes to Regional Transit System

Caltrain San Francisco Downtown Extension Project

Caltrain has considered a 1.5-mile extension from its terminus at Fourth and Townsend Streets to downtown San Francisco, at Mission Street. A Draft EIS/EIR was completed in March 1997; the public review period on this EIS/EIR ended in 1997. The study assumed that the extension would be built and operational by the year 2010, with weekday service being increased to 86 daily trains, compared to 66 daily trains currently. However, recent developments in the project's review process, coupled with the relatively high cost of the project and lack of funding, indicate that it is highly unlikely that the downtown extension project would be built before the year 2015. Therefore, the future (year 2015) analysis conducted for the Mission Bay project assumes that the terminus for Caltrain service will remain at its current location, at Fourth and Townsend Streets. This assumption is consistent with the transit system assumed by MTC in developing their regional travel demand forecasting model.

BART San Francisco Airport Extension

In June 1996, BART and SamTrans adopted a project to extend BART from the existing end of the line at the Colma Station, through the cities of South San Francisco and San Bruno, to the City of Millbrae and the San Francisco International Airport (SFIA). Stations are proposed to be constructed in each of those cities and the airport. The adopted BART-to-SFIA project is known as the "Aerial-Y Stub." The project will extend BART to both SFIA and Millbrae. Airport access would be achieved...
Mission Bay Subsequent EIR

Figure V.E.10 Year 2015 Assumed Changes to Muni's Existing Service in the Vicinity of Mission Bay

Note:
The precise route of the 30/45 between Mission Bay and the intersection of 17th and Connecticut Streets has not yet been finalized by Muni.

Source: Wilbur Smith Associates
using a narrow “Y” configuration that would operate as two branches of the BART line. One BART line would run from the proposed Tanforan station directly to SFIA, the end of the line, while another line would serve the Millbrae station, bypassing SFIA. There would also be a third BART line operating as a shuttle between the Millbrae station and SFIA. The BART extension to the Airport is scheduled to open in 2000.

The extension of BART to SFIA would increase the BART ridership to and from San Francisco, including Mission Bay. Changes to the regional transit system that are associated with the BART extension, such as SamTrans provision of a feeder bus service, may also prompt changes in the local transit system serving the Project Area.

San Mateo County Transit District (SamTrans)

SamTrans’ FY 1995/96-FY 2004/05 Short Range Transit Plan indicates that with the planned BART-to-SFIA extension, SamTrans plans to revise its bus route system to provide new feeder bus routes to serve the new BART stations at South San Francisco, San Bruno, and Millbrae, with a corresponding reduction in express bus service from San Mateo County to San Francisco. The specific changes to the existing bus service have not been identified at this time. It is expected that these bus service changes would affect existing Samtrans riders’ travel patterns between the Peninsula and the Mission Bay Project Area.

Transbay Transit Terminal Replacement and Possible Relocation

Upon establishing the need for substantial seismic upgrading of the Transbay Transit Terminal currently located on the block bounded by First and Fremont Streets, and Mission and Natoma Streets, the San Francisco Planning Department and the Redevelopment Agency have evaluated several replacement options during the past few years. Funding sources for construction of a new Transbay Transit Terminal have not been identified, and no time line has been established.

Construction of a new Transbay Transit Terminal facility could influence the service provided by various regional transit agencies, and consequently affect transit travel to and from Mission Bay. However, the relative distance between the Mission Bay Project Area and the existing terminal site is nearly the same distance to the potential sites for a relocated terminal. The transportation analysis assumed that replacement and/or relocation of the Transbay Transit Terminal would not change existing transit travel characteristics.
UCSF Transportation Services

UCSF has a Transportation Demand Management program in place at its existing sites, and would continue to expand the program to include the new UCSF site. Existing club bus service between Marin County and UCSF Parnassus Heights is expected to be modified to travel to the new UCSF site in Mission Bay if demand warrants. In addition to the club buses, UCSF facilitates an in-house carpool rider-matching service, and operates about 30 vanpools with 10 to 14 commuters per van. Monthly transit passes are sold at a variety of UCSF locations, and during peak hours, shuttle vans run to major MUNI lines and/or BART stations from all major UCSF sites, except Parnassus Heights (which is served by MUNI's N-Judah line).

UCSF also operates a shuttle service between Parnassus Heights and UCSF satellite sites via the San Francisco General—Mount Zion Shuttle. Jitney services are provided from Parnassus Heights to the Veterans Affairs Medical Center, as well as from Parnassus Heights to U.C. Berkeley. The shuttle system is designed to accommodate work-related travel during the day to reduce private vehicle trips between sites, and is not intended to be used as commuter transportation.

Pacific Bell Park

A new ballpark for the San Francisco Giants baseball team has been approved for and is under construction at a site at King and Third Streets, directly adjacent to the Project Area. The ballpark will host baseball games, concerts, and other activities. The ballpark and its environmental impacts are described in the San Francisco Giants Ballpark at China Basin Final Environmental Impact Report. 

The traffic analysis in the Giants Ballpark EIR assumed the impacts of sellout games or events at the ballpark, when all 42,000 seats are sold. Forecasts of attendance prepared for the Giants estimate approximately 37% of the games would be sellouts. A 6% “no-show” factor was also assumed in the impact analysis, resulting in an actual attendance of 39,500 for a sellout game. The Ballpark EIR analyzed the traffic impact for the hour prior to and following a game. The analysis assumed that most of the weekday afternoon games would end at about 3:30 p.m. and would not coincide with the afternoon commute period. Using this assumption, there would be approximately four games in an average season when a weekday afternoon game would end during the commute peak period and impact the already congested intersections. Other events at the ballpark are proposed to be programmed to end before or after the afternoon peak commute.

Because ballpark ballgame and special event travel would not normally contribute to the daily p.m. peak hour commute analyzed for the Mission Bay project, it has not been included in the overall
量化累积交通影响分析为这个Mission Bay项目SEIR。体育场活动交通一般讨论，特别是工作日下午活动后可能重叠的交通与通勤交通。定期日常就业在体育场已被预计在未来的累积交通假设为这个SEIR。

项目分析方法论

项目区域被分为子区域以促进交通和其他问题的分析。这些子区域在图V.E.11中显示，连同交通研究区域和在影响分析中评估的交叉口。Mission Bay North复兴区域是一个单一的子区域。Mission Bay South复兴区域已被进一步分为四个子区域：“Central”为住宅/混用功能区在China Basin Channel以北，由North Common和South Common Streets（一条拟议的新东-西街道与交通线分开由130英尺宽的开放空间）和Terry A. François Boulevard；“East”为研究和发展/办公室区域在Third Street东侧和South Common Street南侧；“UCSF”为South Common Street，Third Street，16th Street，和Owens Street的区域，包括拟议的公立学校地点；和“West”为在UCSF地点和16th Street南侧的区域。土地使用总和在第III章，项目描述，已被子区域除以运输计算。

交通效果的Mission Bay发展被确定通过计算在项目区域的不同土地使用类型产生的每日个人行程，和在项目中这些日行程中在p.m.高峰时段的比例。在确定项目产生的行程后，行程分布在八个不同的地理来源/目的地区域，包括四个旧金山地区，三个其他区域在海湾区域，和一个包括所有位置在海湾区域外的区域。交通分配分析基于行程的目的，旅行的用途，和各种运输方式的可用性确定了这些行程的汽车，交通，或其他任何其他类型的交通的份额。最后，汽车占用率被确定，以产生平均在一个车辆中有多少人，从而确定从Mission Bay出发和到达的车辆数量。

Table V.E.6总结了基于上述假设的每个子区域和项目区域的每日和高峰小时个人行程。
## TABLE V.E.6
### DAILY AND P.M. PEAK HOUR PERSON TRIPS BY LAND USE TYPE

<table>
<thead>
<tr>
<th>Project Areas</th>
<th>Land Use Type</th>
<th>Land Use Intensity</th>
<th>Land Use Unit /a/</th>
<th>Daily Trips</th>
<th>P.M. Peak Hour Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Bay North</td>
<td>Retail</td>
<td>423</td>
<td>ksq. ft.</td>
<td>60,112</td>
<td>2,404</td>
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<tr>
<td></td>
<td>Restaurant</td>
<td>100</td>
<td>ksq. ft.</td>
<td>19,272</td>
<td>2,602</td>
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<tr>
<td></td>
<td>Residential</td>
<td>3,000</td>
<td>d.u.</td>
<td>25,200</td>
<td>4,360</td>
</tr>
<tr>
<td></td>
<td>Movie Theater</td>
<td>25</td>
<td>screens</td>
<td>22,089</td>
<td>1,664</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>126,673</strong></td>
<td><strong>11,029</strong></td>
</tr>
<tr>
<td>Mission Bay South</td>
<td>Central Subarea</td>
<td>Retail</td>
<td>167</td>
<td>ksq. ft.</td>
<td>21,787</td>
</tr>
<tr>
<td></td>
<td>Hotel</td>
<td>500</td>
<td>rooms</td>
<td>3,325</td>
<td>316</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>3,090</td>
<td>d.u.</td>
<td>26,141</td>
<td>4,522</td>
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<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>51,253</strong></td>
<td><strong>5,710</strong></td>
</tr>
<tr>
<td>East Subarea</td>
<td>Office</td>
<td>1,476</td>
<td>ksq. ft.</td>
<td>24,868</td>
<td>2,760</td>
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<tr>
<td></td>
<td>Retail</td>
<td>67</td>
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<td>350</td>
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<td>R &amp; D</td>
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<td>Large Retail</td>
<td>273</td>
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<td></td>
<td><strong>Subtotal</strong></td>
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<td></td>
<td><strong>70,503</strong></td>
<td><strong>7,185</strong></td>
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<tr>
<td>West Subarea</td>
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<td>1,302</td>
<td>ksq. ft.</td>
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<tr>
<td></td>
<td>Retail</td>
<td>23</td>
<td>ksq. ft.</td>
<td>3,001</td>
<td>120</td>
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<tr>
<td></td>
<td>R &amp; D</td>
<td>1,305</td>
<td>ksq. ft.</td>
<td>9,509</td>
<td>1,521</td>
</tr>
<tr>
<td></td>
<td>Large Retail</td>
<td>310</td>
<td>ksq. ft.</td>
<td>29,658</td>
<td>2,669</td>
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<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>64,112</strong></td>
<td><strong>6,747</strong></td>
</tr>
<tr>
<td>UCSF Subarea</td>
<td>UCSF</td>
<td>2,650</td>
<td>ksq. ft.</td>
<td>20,180/b/</td>
<td>2,754</td>
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<tr>
<td></td>
<td>School</td>
<td>500</td>
<td>students</td>
<td>1,484</td>
<td>74</td>
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<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>21,664</strong></td>
<td><strong>2,828</strong></td>
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<tr>
<td>Total Mission Bay North</td>
<td></td>
<td></td>
<td></td>
<td><strong>126,673</strong></td>
<td><strong>11,029</strong></td>
</tr>
<tr>
<td>Total Mission Bay South</td>
<td></td>
<td></td>
<td></td>
<td><strong>207,533</strong></td>
<td><strong>22,469</strong></td>
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<tr>
<td>TOTAL PROJECT</td>
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<td></td>
<td></td>
<td><strong>334,205</strong></td>
<td><strong>33,499</strong></td>
</tr>
</tbody>
</table>

**Notes:**

a. ksq. ft. = thousand square feet; d.u. = dwelling units; rooms = hotel guest rooms

b. As noted in the *UCSF Long Range Development Plan FEIR*, about 10% of these trips would be internal trips (see Table 12-1, p. 306). This correlates with the overall assumption that about 10% of the total person trips would be internal trips as explained in “Multi-Use Development Capture Rates” under “Methodology,” in Appendix D.

**Source:** Wilbur Smith Associates.
MISSION BAY SUBSEQUENT EIR

FIGURE V.E.II  TRANSPORTATION STUDY AREA WITH PROJECT
Table V.E.7 summarizes the p.m. peak hour person trips and daily person trips made by automobile, transit, and any other mode of transportation to or from specific land use type areas. "Other" modes include taxi, limousine, tour bus, motorcycle, and bicycle. As seen in Table V.E.7, each land use type has a unique percentage of daily trips concentrated in the p.m. peak hour.

Table V.E.8 presents the p.m. peak hour vehicle trips inbound and outbound to/from the proposed project, by land use and subarea. A total of approximately 14,160 p.m. peak hour vehicle trips would be generated by the project, 60% outbound and 40% inbound. Mission Bay North would generate approximately 25% of the total p.m. peak hour vehicle trips and Mission Bay South about 75%. The East and West Subareas in Mission Bay South would generate 22% and 23% of the total vehicle trips, respectively, while the Central Subarea would generate 19% of the trips. The UCSF Subarea would generate the remaining 11% of the vehicle trips.

TRAFFIC IMPACTS

Traffic impacts are discussed below, first for regional roadways such as freeways and bridges, and second for local streets in and around the Project Area.

Regional Roadways

Vehicles traveling to and from the Project Area use regional highway facilities such as I-80, U.S. 101, and I-280. Thus, these vehicles are part of the cumulative traffic traveling through San Francisco, and between San Francisco and other counties in the Bay Area. The impact of project-generated traffic on the regional highway system in San Francisco County is typically described using the concept of screenlines. Screenlines are hypothetical lines that would be crossed by vehicles traveling in and out of San Francisco.

There are three regional highway inter-county screenlines surrounding San Francisco County, which are used to characterize travel between San Francisco and the North Bay, the East Bay, and the South Bay. These are, respectively:

- San Francisco-Marin County Border - Golden Gate Bridge
- San Francisco-Alameda County Border - San Francisco-Oakland Bay Bridge
- San Francisco-San Mateo County Border - U.S. 101, I-280, and Highway 1

The Metropolitan Transportation Commission (MTC) staff uses these same screenlines as part of their regional transportation planning process.
## TABLE V.E.7
PERSON TRIPS BY LAND USE TYPE AND BY MODE

<table>
<thead>
<tr>
<th>Project Areas</th>
<th>Land Use Type</th>
<th>Daily Person Trips</th>
<th>P.M. Peak Hour Person Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mode of Travel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auto</td>
<td>Transit</td>
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<tr>
<td>Mission Bay North</td>
<td>Retail</td>
<td>35,631</td>
<td>13,873</td>
</tr>
<tr>
<td></td>
<td>Restaurant</td>
<td>13,052</td>
<td>4,376</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>12,948</td>
<td>5,682</td>
</tr>
<tr>
<td></td>
<td>Movie Theater</td>
<td>12,079</td>
<td>6,955</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>73,710</td>
<td>30,886</td>
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<tr>
<td>Mission Bay South</td>
<td>Central Subarea</td>
<td>Retail</td>
<td>14,425</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hotel</td>
<td>2,661</td>
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<tr>
<td></td>
<td></td>
<td>Residential</td>
<td>14,535</td>
</tr>
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<td>East Subarea</td>
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<td>Retail</td>
<td>5,787</td>
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<td></td>
<td>R &amp; D</td>
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</tr>
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<td></td>
<td>Large Retail</td>
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<td>West Subarea</td>
<td>Office</td>
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<td>Retail</td>
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<td></td>
<td>R &amp; D</td>
<td>6,041</td>
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<td></td>
<td></td>
<td>Large Retail</td>
<td>26,262</td>
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<td>Subtotal</td>
<td>48,230</td>
</tr>
<tr>
<td></td>
<td>UCSF Subarea</td>
<td>UCSF</td>
<td>12,464</td>
</tr>
<tr>
<td></td>
<td></td>
<td>School</td>
<td>968</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subtotal</td>
<td>13,432</td>
</tr>
<tr>
<td></td>
<td>Total Mission Bay North</td>
<td>73,710</td>
<td>30,886</td>
</tr>
<tr>
<td></td>
<td>Total Mission Bay South</td>
<td>144,839</td>
<td>36,550</td>
</tr>
<tr>
<td></td>
<td>TOTAL PROJECT</td>
<td>218,549</td>
<td>67,436</td>
</tr>
</tbody>
</table>

**Notes:**

a. As noted in the *UCSF Long Range Development Plan FEIR*, about 10% of these trips would be internal trips (see Table 12-1, p. 306). This correlates with the overall assumption that about 10% of the total person trips would be internal trips as explained in "Multi-Use Development Capture Rates" under "Methodology," in Appendix D.

**Source:** Wilbur Smith Associates.
### Table V.E.8

<table>
<thead>
<tr>
<th>Project Areas</th>
<th>Land Use Type</th>
<th>Land Use Intensity</th>
<th>Land Use Units /a/</th>
<th>In</th>
<th>Out</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Bay North</td>
<td>Retail</td>
<td>423</td>
<td>ksq. ft.</td>
<td>257</td>
<td>302</td>
<td>559</td>
</tr>
<tr>
<td></td>
<td>Restaurant</td>
<td>100</td>
<td>ksq. ft.</td>
<td>273</td>
<td>320</td>
<td>593</td>
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<tr>
<td></td>
<td>Residential</td>
<td>3,000</td>
<td>d.u.</td>
<td>1,277</td>
<td>643</td>
<td>1,920</td>
</tr>
<tr>
<td></td>
<td>Movie Theater</td>
<td>25</td>
<td>screens</td>
<td>300</td>
<td>97</td>
<td>397</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>2,107</strong></td>
<td><strong>1,362</strong></td>
<td><strong>3,469</strong></td>
</tr>
<tr>
<td>Mission Bay South</td>
<td>Retail</td>
<td>167</td>
<td>ksq. ft.</td>
<td>136</td>
<td>160</td>
<td>296</td>
</tr>
<tr>
<td>Central Subarea</td>
<td>Hotel</td>
<td>500</td>
<td>rooms</td>
<td>36</td>
<td>95</td>
<td>131</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>3,090</td>
<td>d.u.</td>
<td>1,436</td>
<td>724</td>
<td>2,160</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>1,608</strong></td>
<td><strong>979</strong></td>
<td><strong>2,587</strong></td>
</tr>
<tr>
<td>East Subarea</td>
<td>Office</td>
<td>1,476</td>
<td>ksq. ft.</td>
<td>113</td>
<td>1,219</td>
<td>1,332</td>
</tr>
<tr>
<td></td>
<td>Retail</td>
<td>90</td>
<td>ksq. ft.</td>
<td>55</td>
<td>64</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>R &amp; D</td>
<td>1,476</td>
<td>ksq. ft.</td>
<td>71</td>
<td>761</td>
<td>832</td>
</tr>
<tr>
<td></td>
<td>Large Retail</td>
<td>250</td>
<td>ksq. ft.</td>
<td>489</td>
<td>574</td>
<td>1,063</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>728</strong></td>
<td><strong>2,618</strong></td>
<td><strong>3,346</strong></td>
</tr>
<tr>
<td>West Subarea</td>
<td>Office</td>
<td>1,302</td>
<td>ksq. ft.</td>
<td>100</td>
<td>1,075</td>
<td>1,175</td>
</tr>
<tr>
<td></td>
<td>Retail</td>
<td>23</td>
<td>ksq. ft.</td>
<td>19</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>R &amp; D</td>
<td>1,305</td>
<td>ksq. ft.</td>
<td>62</td>
<td>672</td>
<td>734</td>
</tr>
<tr>
<td></td>
<td>Large Retail</td>
<td>310</td>
<td>ksq. ft.</td>
<td>555</td>
<td>652</td>
<td>1,207</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>736</strong></td>
<td><strong>2,421</strong></td>
<td><strong>3,157</strong></td>
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<tr>
<td>UCSF Subarea</td>
<td>UCSF</td>
<td>2,650</td>
<td>ksq. ft.</td>
<td>243</td>
<td>1,379</td>
<td>1,622</td>
</tr>
<tr>
<td></td>
<td>School</td>
<td>500</td>
<td>students</td>
<td>8</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>251</strong></td>
<td><strong>1,397</strong></td>
<td><strong>1,648</strong></td>
</tr>
<tr>
<td>Total Mission Bay North</td>
<td></td>
<td></td>
<td></td>
<td><strong>2,107</strong></td>
<td><strong>1,362</strong></td>
<td><strong>3,469</strong></td>
</tr>
<tr>
<td>Total Mission Bay South</td>
<td></td>
<td></td>
<td></td>
<td><strong>3,323</strong></td>
<td><strong>7,415</strong></td>
<td><strong>10,738</strong></td>
</tr>
<tr>
<td>TOTAL PROJECT</td>
<td></td>
<td></td>
<td></td>
<td><strong>5,430</strong></td>
<td><strong>8,777</strong></td>
<td><strong>14,207</strong></td>
</tr>
</tbody>
</table>

**Notes:**

a. ksq. ft. = thousand square feet; d.u. = dwelling units; rooms = hotel guest rooms

**Source:** Wilbur Smith Associates.
Table V.E.9 presents the 1995 traffic volumes and volume-to-capacity (V/C) ratios at those screenline locations. Volume and capacity are used by traffic engineers to describe operational characteristics of a transportation facility. For this analysis, the volume-to-capacity ratio indicates how much of the capacity of the freeway is being used by the traffic volume. Values approaching 1.0 indicate near saturation conditions where the volume is near the theoretical capacity. It should be noted that capacity values used are "theoretical," as actual capacity can be affected by speed, lane widths, weaves and interchanges, and other features of the facility.

Thus, when an incident occurs, such as a stall or accident, on a facility that is carrying a volume of traffic that is near its capacity, the capacity may be lessened momentarily, creating traffic conditions that are much worse, but as soon as the incident is eliminated, the theoretical capacity returns to the previous value, and consequently, the V/C ratio returns to the previous value near (but less than) 1.0. However, the actual traffic conditions do not recover from an incident as quickly; the recovery period may last much longer than the duration of the incident. An operational V/C ratio that is near 1.0 presents the potential for a prolonged V/C ratio of 1.0 when an incident occurs.

Table V.E.9 indicates that all screenline locations are currently operating at 90% or less of their maximum theoretical capacity. The most congested location is the San Francisco/Oakland Bay Bridge, in the eastbound direction, which is operating at 90% of its capacity.

**Existing-Plus-Project Conditions**

The project would generate approximately 1,640 auto trips to and from the East Bay (35% inbound/65% outbound), 730 auto trips to and from the North Bay (35% inbound/65% outbound) and 3,860 auto trips to and from the South Bay (29% inbound/71% outbound) in the p.m. peak hour. Table V.E.9 shows the traffic volumes at the screenlines as a result of the proposed project. As shown in the table, none of the screenline locations would be over capacity; however, three would be operating above 95% of their theoretical capacity, particularly the San Francisco/Oakland Bay Bridge in the eastbound direction, at 99% capacity. This indicates the potential for jammed conditions (stop and go with very slow speeds) for prolonged periods of time if an incident were to occur.

**Year 2015 Cumulative Conditions**

Table V.E.9 shows V/C ratios at the screenlines under future year 2015 conditions based on the growth assumptions described in "Analysis Approach," above. Project Area traffic is included in these 2015 traffic volumes. As shown in the table, none of the screenline locations would be over capacity, except for the eastbound direction of the San Francisco/Oakland Bay Bridge, which would...
### TABLE V.E.9
REGIONAL TRAFFIC SCREENLINE VOLUME-TO-CAPACITY RATIOS
P.M. PEAK HOUR

<table>
<thead>
<tr>
<th>Screenline Locations</th>
<th>Direction</th>
<th>Year 1995, Existing Conditions</th>
<th>Year 1995, Existing Plus Project</th>
<th>Year 2015, Cumulative Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. 101, at San Francisco/San Mateo County Line</td>
<td>Northbound</td>
<td>6,900</td>
<td>7,620</td>
<td>8,870</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>6,800</td>
<td>8,720</td>
<td>8,900</td>
</tr>
<tr>
<td>I-280, at San Francisco/San Mateo County Line</td>
<td>Northbound</td>
<td>3,700</td>
<td>4,100</td>
<td>4,350</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>7,700</td>
<td>8,530</td>
<td>8,550</td>
</tr>
<tr>
<td>Hwy. 1, at San Francisco/San Mateo County Line</td>
<td>Northbound</td>
<td>4,700</td>
<td>4,700</td>
<td>4,820</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>3,900</td>
<td>3,900</td>
<td>3,900</td>
</tr>
<tr>
<td>S.F. Oakland Bay Bridge</td>
<td>Eastbound</td>
<td>10,300</td>
<td>11,350</td>
<td>11,450</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>9,400</td>
<td>9,980</td>
<td>10,380</td>
</tr>
<tr>
<td>Golden Gate Bridge</td>
<td>Northbound</td>
<td>6,800</td>
<td>7,280</td>
<td>7,610</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>3,300</td>
<td>3,550</td>
<td>3,790</td>
</tr>
</tbody>
</table>

**Note:**

- V/C Ratio means the ratio of the numbers of vehicles to the capacity of the roadway.

**Source:** Wilbur Smith Associates, based on Caltrans traffic volumes for 1995, and MTC's regional travel demand forecasting model, as updated with San Francisco growth forecast where appropriate.
be operating at the limit of its theoretical capacity. Furthermore, five of the remaining nine screenline locations would be operating at or above 95% capacity.

While the employment/population forecast for year 2015 shows substantial growth in population and employment in San Francisco and the region as a whole, the net increase in traffic on the Bay Bridge and other major freeways would not be proportional to this growth. First, the increase in population and employment growth in San Francisco would not necessarily translate to proportional intercity/intercounty traffic growth, as many persons both live and work in San Francisco. Further, people's travel behavior has been observed to change in the long term according to traffic conditions (e.g., they might change their work hours to avoid rush hour traffic or they would change their mode of travel if necessary). Identifying trends in such types of travel behavior changes is difficult. Although the model accounts for changes in travel mode, it does not consider shifts in times of travel (i.e., workers leaving earlier or later to avoid the peak commute period).

For example, traffic flows on the Bay Bridge began to approach the absolute capacity of the bridge during the peak hours in the early 1980's. With the exception of a brief period after the 1989 Loma Prieta earthquake, the bridge has been at capacity during the a.m. and p.m. peak hours for over ten years. Total daily traffic on the bridge continues to increase each year, however, with the growth occurring in the hours before and after the peak hours and in the reverse direction of the peak flows. While the number of vehicles crossing the bridge during the peak hour is at capacity, the number of persons per vehicle—the average vehicle occupancy—has varied over time, as has the number of people using BART, AC Transit, and ferry service across the Bay. For example, the total number of peak period commuters in cars and on transit crossing from the East Bay to San Francisco declined from 1991 to 1994, as substantial job-loss occurred during the recession; travel has increased again between 1994 and 1996 as the number of jobs in the City has grown. The number of vehicles crossing the Bay Bridge during the peak hour has not changed substantially over the same time, remaining at around 10,300, but the number of vehicles crossing during the peak period has fluctuated based in part on employment in San Francisco. Thus, regional employment and population growth causes traffic growth on the Bay Bridge even though the peak hour traffic flow leading to the East Bay remains relatively constant. The other regional travel gateways to San Francisco—the Golden Gate Bridge to the North Bay, and U.S. 101/I-280/Highway 1 leading to the South Bay—also have similar capacity constraints that limit peak hour flows.

When the MTC travel demand forecasting model is used to assign all future traffic, it employs a more practical and realistic approach by taking into account the capacity that is available on the roadway. As a result, the amount of additional traffic assigned to the freeways by the model on the regional
network is constrained by the capacity available during the p.m. peak hour (i.e., a volume-to-capacity ratio no greater than 1.0), which is very limited on some roadways like the Bay Bridge.

The result of these capacity constraints at the regional gateways to and from San Francisco is that the demand to travel by auto during the peak commute hour greatly exceeds the peak hour capacity of these regional facilities. The impact of new development generally is not to worsen peak hour conditions, but to cause a spreading or extension of the maximum capacity flow conditions over a longer time period. For example, currently, the Bay Bridge during the p.m. peak commute period experiences capacity flow conditions from approximately 4:00 p.m. to 6:30 p.m., or 2.5 hours. The impact of the Mission Bay project alone would be to lengthen this period by approximately 20 minutes, extending the peak commute period to almost 3 hours. Cumulative development to the year 2015 would cause a substantially greater lengthening of the p.m. peak commute period. With lengthening of the peak commute period, freeway on-ramps become congested and traffic backs up on streets leading to the on-ramps over an extended period of time. As described below under “Impact of the New Giants Ballpark at China Basin,” on days when sold-out events end at or after 3:30 p.m., traffic from the ballpark would further extend the p.m. peak commute.

In addition to (and in part because of) the spreading of the peak commute period, many drivers would choose to take transit or to join carpools during the peak period. This would create a spreading of the peak commute period on the transit system. Until recent capacity increases, BART was experiencing near capacity loading conditions to the East Bay from 4:30 to 6:00 p.m. on weekdays. Most peak period trains now have additional capacity, but only for patrons who are willing to stand. As a result of this type of congestion (which also would occur on other transit systems), many riders shift their time of travel earlier or later, spreading the transit peak commute period.

In simple conceptual terms, these travel characteristics result in a phenomenon where a project that generates a demand for 1,000 peak hour trips (as a hypothetical example) may actually result only in 300 to 500 of these trips appearing on the regional network during the peak hour. The remaining trips would occur before or after the peak hour or on another travel mode. Alternatively, commuters may seek other routes to avoid the most congested areas, if feasible, to reach their destination. However, this would not be possible for destinations in the East Bay or North Bay because of the access capacity limitations imposed by the Bay Bridge and the Golden Gate Bridge.

To be conservative, the transportation analysis for Mission Bay assumes that, at the local street network and transit level, the total project peak hour travel demand would actually all travel, using local streets and local transit services during the peak hour, and that no commuters would shift travel time or travel mode. This is why projected conditions at intersections and transit screenlines are often
shown as exceeding capacity. In reality, delays would occur at such locations, and these delays would result in a spreading of the peak commute period on the regional network. For example, a vehicle bound for the East Bay leaves Mission Bay at 5:15 p.m., crossing local intersections during the 4:30 to 5:30 p.m. peak traffic hour but, due to delay, does not actually cross the regional traffic screenline on the Bay Bridge until after 5:30 p.m. As a result, that trip on the Bay Bridge occurs after the 4:30 to 5:30 p.m. peak traffic hour, although it is forecast to occur during the peak hour.

This conservative approach is used for the intersection and transit analysis because it is difficult to model the complex interactions and human behavioral patterns that occur when the regional transportation system becomes congested for an extended period. In actual experience such interactions are very dynamic and can vary greatly from one day to the next and one season to another.

Cumulative travel demand, including that from the Mission Bay project, would add to traffic and transit congestion during the afternoon peak period and would cause significant expansions of the peak commute travel period on major local streets, on freeways and freeway on-ramps, and on transit systems serving San Francisco. The project alone would contribute substantially to cumulative traffic increases along freeways and freeway ramps, thereby causing measurable expansion of the p.m. peak commute period, a significant effect on the regional transportation systems near downtown San Francisco.

Local Streets

Existing-plus-Project Conditions

Project impacts at the study intersections are presented in terms of levels of service (LOS) in Figure V.E.12 and Table V.E.10. Project vehicle trips were assigned to the study roadway network based on their origins/destinations and the most likely routes that motorists would take. Under the existing-plus-project condition, the level of service analysis assumed a modified existing street network to account for the new freeway ramps, roadways, and intersections that are either planned or under construction, or that would be developed as a result of the proposed project. These improvements include the opening of a new I-280 southbound on-ramp at King and Fifth Streets and the completion of the seismic retrofit work at the I-280 ramps at Mariposa Street. The intersection level of service analysis for existing-plus-project conditions also considered the effects of the Caltrain at-grade crossings at 16th Street, at the Seventh Street Connector (North Common and South Common Streets) and at Berry Street. It was assumed that the MUNI Metro extension (MMX) would be operational along The Embarcadero and King Street medians, on a semi-exclusive right of way, between Folsom...
MISSION BAY SUBSEQUENT EIR

FIGURE V.E.12  WEEKDAY P.M. PEAK HOUR LEVELS OF SERVICE:
EXISTING WITH PROJECT
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Berry Street at:</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>7.7</td>
<td>5.4</td>
<td>B 11.7</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Third Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>5.2</td>
<td>11.5</td>
<td>B 12.4</td>
<td>61%</td>
<td></td>
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<tr>
<td>Fourth Street/a/</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>28.6</td>
<td>D 124.4</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>King Street/a/</td>
<td></td>
<td></td>
<td>Unsignalsized</td>
<td>N.A.</td>
<td>0.5</td>
<td>B 0.5</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Brannan Street at:</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>49.9</td>
<td>54.9</td>
<td>E 57.9</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Sixth Street/1-290</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>11.4</td>
<td>64.1</td>
<td>E 64.1</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Bryant Street at:</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>153.1</td>
<td>215.4</td>
<td>F 309.2</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Second Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>16.4</td>
<td>30.6</td>
<td>D 32.2</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Frisco Street/E</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>71.1</td>
<td>144.3</td>
<td>F 272.2</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Bryant Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>14.0</td>
<td>27.2</td>
<td>D 39.6</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Bryant Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>161.7</td>
<td>185.8</td>
<td>F 197.9</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>First Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>185.7</td>
<td>252.5</td>
<td>F 334.8</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>Second Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>8.9</td>
<td>9.3</td>
<td>B 11.5</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Third Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>14.8</td>
<td>28.3</td>
<td>D 28.3</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Seventh Street/Off-Ramp EB 1-80</td>
<td></td>
<td>Traffic Signal</td>
<td>71.3</td>
<td>153.4</td>
<td>F 199.2</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harrison Street at:</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>161.7</td>
<td>185.8</td>
<td>F 197.9</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Fremont/WB 1-80 Off-Ramp</td>
<td></td>
<td>Traffic Signal</td>
<td>14.8</td>
<td>153.4</td>
<td>F 199.2</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essex Street</td>
<td></td>
<td></td>
<td>Traffic Signal</td>
<td>67.7</td>
<td>120.0</td>
<td>F 219.8</td>
<td>26%</td>
<td></td>
</tr>
</tbody>
</table>

V. Environmental Setting and Impacts
E. Transportation Impacts

MISSION BAY SEPTEMBER 17, 1998

96.771E EIP 10073
### TABLE V.E.10 (Continued)

<table>
<thead>
<tr>
<th>Study Intersection</th>
<th>Traffic Control Device</th>
<th>Existing Conditions</th>
<th>Existing Plus Project</th>
<th>2015 Cumulative</th>
<th>Project Traffic Contribution (% of Total Traffic)</th>
<th>2015 Cumulative</th>
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</thead>
<tbody>
<tr>
<td>Second Street</td>
<td>Traffic Signal</td>
<td>13.9</td>
<td>3.43</td>
<td>D</td>
<td>21%</td>
<td>3.43</td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>20.9</td>
<td>9.1</td>
<td>F</td>
<td>32%</td>
<td>9.1</td>
</tr>
<tr>
<td>Fourth Street</td>
<td>Traffic Signal</td>
<td>16.6</td>
<td>29.1</td>
<td>D</td>
<td>32%</td>
<td>29.1</td>
</tr>
<tr>
<td>Fifth Street/1-280 ramps</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>23.4</td>
<td>C</td>
<td>31%</td>
<td>23.4</td>
</tr>
<tr>
<td>Mission Street at:</td>
<td>All-way Stop Unsignalized</td>
<td>N.A.</td>
<td>2.5</td>
<td>A</td>
<td>2%</td>
<td>2.5</td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>8.4</td>
<td>21.3</td>
<td>C</td>
<td>46%</td>
<td>21.3</td>
</tr>
<tr>
<td>Fourth Street</td>
<td>Traffic Signal</td>
<td>13.4</td>
<td>13.6</td>
<td>B</td>
<td>78%</td>
<td>13.6</td>
</tr>
<tr>
<td>De Haro Street</td>
<td>Traffic Signal</td>
<td>3.1</td>
<td>3.4</td>
<td>A</td>
<td>22%</td>
<td>3.4</td>
</tr>
<tr>
<td>SB 1-280 On-Ramp</td>
<td>Unsignalized</td>
<td>12.5</td>
<td>16.6</td>
<td>C</td>
<td>49%</td>
<td>16.6</td>
</tr>
<tr>
<td>Owens Street at:</td>
<td>Traffic Signal</td>
<td>19.7</td>
<td>23.9</td>
<td>C</td>
<td>68%</td>
<td>23.9</td>
</tr>
<tr>
<td>Townsend Street at:</td>
<td>Traffic Signal</td>
<td>20.9</td>
<td>29.8</td>
<td>D</td>
<td>30%</td>
<td>29.8</td>
</tr>
<tr>
<td>Third Street</td>
<td>Traffic Signal</td>
<td>6.4</td>
<td>8.0</td>
<td>B</td>
<td>32%</td>
<td>8.0</td>
</tr>
<tr>
<td>Fourth Street</td>
<td>Traffic Signal</td>
<td>10.4</td>
<td>101.9</td>
<td>F</td>
<td>34%</td>
<td>101.9</td>
</tr>
<tr>
<td>Seventh Street</td>
<td>All-way Stop</td>
<td>5.9</td>
<td>37.8</td>
<td>E</td>
<td>47%</td>
<td>37.8</td>
</tr>
<tr>
<td>Eighth Street</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>10.3</td>
<td>B</td>
<td>54%</td>
<td>10.3</td>
</tr>
<tr>
<td>Owens Street at:</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>10.3</td>
<td>B</td>
<td>54%</td>
<td>10.3</td>
</tr>
<tr>
<td>Fourth Street at:</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>7.9</td>
<td>B</td>
<td>69%</td>
<td>7.9</td>
</tr>
<tr>
<td>Common Streets at:</td>
<td>Traffic Signal</td>
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<td>8.3</td>
<td>B</td>
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<td>8.3</td>
</tr>
<tr>
<td>16th Street at:</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>38.2</td>
<td>D</td>
<td>78%</td>
<td>38.2</td>
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</table>

(Continued)
<table>
<thead>
<tr>
<th>Study Intersection</th>
<th>Traffic Control Device</th>
<th>Existing Conditions</th>
<th>Existing Plus Project</th>
<th>2015 Cumulative</th>
<th>Project Traffic Contribution (% of Total Traffic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Street/a/</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>8.5</td>
<td>15.3</td>
<td>C</td>
</tr>
<tr>
<td>Seventh Street/a/</td>
<td>Traffic Signal</td>
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<td>29.0</td>
<td>42.3</td>
<td>E</td>
</tr>
<tr>
<td>Third Street at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>César Chavez</td>
<td>Traffic Signal</td>
<td>21.3</td>
<td>22.3</td>
<td>37.0</td>
<td>D</td>
</tr>
<tr>
<td>Sixteenth Street</td>
<td>Traffic Signal</td>
<td>9.9</td>
<td>17.6</td>
<td>25.2</td>
<td>D</td>
</tr>
<tr>
<td>Sixteenth Street at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Street/a/</td>
<td>Traffic Signal</td>
<td>N.A.</td>
<td>26.5</td>
<td>29.2</td>
<td>D</td>
</tr>
<tr>
<td>Seventh Street/Mississippi Street</td>
<td>All-way Stop</td>
<td>16.6</td>
<td>24.4</td>
<td>32.2</td>
<td>D /c/</td>
</tr>
<tr>
<td>Potrero Avenue</td>
<td>Traffic Signal</td>
<td>23.1</td>
<td>38.8</td>
<td>162.7</td>
<td>F</td>
</tr>
<tr>
<td>Vermont Street</td>
<td>All-way Stop</td>
<td>77.9</td>
<td>193.3</td>
<td>200.4</td>
<td>F</td>
</tr>
</tbody>
</table>

**Notes:**

a. This intersection exists only in “With Project” networks.

b. This intersection does not exist under this scenario.

c. This intersection will be signalized under this scenario.

**Source:** Wilbur Smith Associates.
V. Environmental Setting and Impacts

E. Transportation Impacts

Street and the I-280 ramps, near the Caltrain terminal. The existing (base) traffic volumes at the study intersections were re-distributed to simulate the anticipated traffic pattern in and near the transportation study area upon opening of these new roadways and transit facilities. As explained in “Intersection Analysis Methodology” in the Setting subsection above, an LOS D is the minimum acceptable level of service for most city streets. Therefore, causing LOS to degrade to E or F would be considered a significant impact.

 Occasionally, some minor traffic delays will occur due to periodic lifting of the Peter Maloney (Fourth Street) and Lefty O’Doul (Third Street) Bridges. As mentioned in the Transportation Setting section under “China Basin Bascule Bridge Operations,” these bridges must be lifted to allow boats to enter and exit the Mission Creek Marina approximately two to six times per day, depending on the season. This number of typical daily lifts is not expected to measurably affect the transportation circulation patterns in and near the Mission Bay Project Area, although some vehicles would be delayed while the bridges operate the lifts.

A total of 41 intersections were analyzed under the existing-plus-project conditions. As Table V.E.10 indicates, three intersections would operate at LOS E and eight intersections at LOS F. Three of the existing intersections would decline from an LOS D or better to LOS E or F as a result of the proposed project, a potential significant impact. These intersections are: Brannan Street at Seventh Street (LOS B to E), Townsend Street at Seventh Street (LOS B to F) and Townsend Street at Eighth Street (LOS B to E). All three of these intersections could be mitigated to LOS D or better with Mitigation Measures E.29, E.30, E.35, and E.42 described in Section VI.E, Mitigation Measures: Transportation. The remainder of the intersections operating at unacceptable levels of service in 2015 with the assumed full build-out of the project currently operate at unacceptable LOS E or F. For the eight intersections currently operating at LOS F, the effect of the project would be to extend the length of time during which they would operate at an unacceptable level of service. The poor operation of these intersections is a direct effect of the congestion on the freeway. As volumes on the freeway reach capacity, traffic on on-ramps cannot be accommodated, and congestion backs up onto the city streets. Mitigation measures would not be expected to improve these intersections near freeway ramps to acceptable LOS D or better, as they are already operating at unacceptable levels during the p.m. peak commute period, and mitigation measures on city streets would not change the freeway backup onto those streets.

Although most intersections would deteriorate with the addition of project traffic, some would improve as a result of modifications proposed as part of the project. The level of service at the intersections of Mariposa Street at the I-280 southbound on-ramp and 16th Street at Seventh/Mississippi Streets would improve because additional travel lanes and new traffic signals would be provided at those two intersections. The intersection of Mariposa Street at the I-280
southbound on-ramp would improve from LOS F under existing conditions to LOS B under existing-plus-project conditions. Sixteenth Street at Seventh/Mississippi Streets would remain at LOS C, with a new signal, rather than deteriorating with project traffic.

Cumulative Year (2015) Scenario

The MTC regional travel demand model was used to develop the traffic forecasts for cumulative development and growth through the year 2015. The MTC model provides forecasts of traffic on regional freeways and on major streets in the study area for the year 2015 based upon assumptions of future growth in housing units and employment. As indicated in the Analysis Approach in the beginning of this Impacts subsection, the future cumulative baseline used in this project is based on a combination of revised year 2015 land use and employment estimates developed by the San Francisco Redevelopment Agency and the Planning Department for San Francisco County, plus population and employment estimates prepared by the Association of Bay Area Governments (ABAG) in Projections '96 for the rest of the nine-county San Francisco Bay Area. This model is the best available source of estimates of future traffic under year 2015 cumulative conditions because it considers not just the growth in the Project Area, but the cumulative growth in all of San Francisco, and cumulative growth in the San Francisco Bay Area region as a whole.

The MTC model is intended to be a tool to forecast future traffic volumes on major regional traffic facilities such as I-80 (Bay Bridge), U.S. 101, and I-280, and on major local streets. It is not designed to provide accurate traffic forecasts on local streets at the block-by-block level, nor to forecast turning movements at intersections which are necessary to determine future intersection traffic conditions. Therefore, the future intersection turning movements were derived by comparing the existing roadway volumes with those forecast by the MTC model and were also based on the existing turning movement patterns at the study intersections, which were adjusted to reflect the changes in the local street system.

Year 2015 Cumulative Conditions

In order to forecast year 2015 traffic volumes and ensure a conservative approach for the cumulative analysis, the MTC model was adjusted to reflect land use data under full build-out conditions of the project. Under the year 2015 cumulative scenario, the Project Area roadway network was assumed to be similar to the one described under the existing-plus-project scenario. Both the Third Street Light Rail Extension and the MMX extension were assumed to be in operation under this study scenario. (See “Changes to San Francisco Municipal Railway [MUNI] System” under “Year 2015 Transportation System Assumptions,” above, for a more complete description of the proposed service
alignment.) The cumulative intersection level of service analysis also considered the effects of the existing and proposed Caltrain at-grade crossings at Berry Street, the Seventh Street Connector (from North Common and South Common Streets) and 16th Street.

As shown in Figure V.E.13 and Table V.E.10, 3 of the 41 study intersections would operate at LOS E and 14 intersections would operate at LOS F. Comparing the levels of service under the existing-plus-project and year 2015 cumulative conditions, including project-related traffic, six intersections would further deteriorate from LOS D or better to LOS E or F by year 2015, in addition to the three intersections (Brannan/Seventh, Townsend/Seventh, Townsend/Eighth) that would deteriorate from LOS D or better to LOS E or F with the addition of project traffic alone. The additional intersections are: Berry Street at Seventh Street (D to F), King Street at Third Street (D to F), King Street at Fourth Street (C to E), Townsend Street at Third Street (D to F), North Common and South Common Streets at Seventh Street (D to E), and Potrero Avenue at 16th Street (D to F). Two intersections (Townsend Street at Eighth Street and Brannan Street at Seventh Street), which would deteriorate from LOS B to LOS E with the addition of project traffic alone, would further deteriorate to LOS F under year 2015 cumulative conditions.

Table V.E.10 also shows the percent contribution of project traffic to each study intersection. These percentages reflect the relative degree of significance of project traffic to the overall projected delay and levels of service of the intersections. As shown in Table V.E.10, the percentages range from 3% to 96%, with the highest percentages found mostly at intersections near the Project Area. The percentages gradually decrease with distance from the Project Area. For example, while project traffic would contribute to at least half of the total traffic volume at intersections on Mariposa Street between Third Street and the I-280 ramps, approximately 10 to 20% of the total traffic volume at the intersections on Harrison Street would be attributable to the project. The relatively high contribution of project traffic to cumulative traffic increases at intersections that currently operate at unacceptable LOS E or F would be a significant environmental effect of the project. Mitigation Measures E.30 through E.42 described in Section VI.E, Mitigation Measures: Transportation, may reduce but would not eliminate this significant effect. All six of the intersections that would operate at LOS D or better with the project but would decline with cumulative traffic could be mitigated to avoid deterioration to a worse LOS, although the intersection of King Street and Third Street would require widening on two approaches to accomplish this improvement. The three intersections that would deteriorate to LOS E or F from project traffic alone could also be mitigated to an acceptable LOS under cumulative conditions. The intersections that could not be mitigated are those leading to freeway ramps.

As shown in Table V.E.10, there would be substantial increases in traffic on 16th Street in the North Potrero and Showplace Square areas. The p.m. peak hour level of service at Potrero Avenue and
MISSION BAY SUBSEQUENT EIR

FIGURE V.E.13 WEEKDAY P.M. PEAK HOUR LEVELS OF SERVICE:
YEAR 2015 CUMULATIVE

SOURCE: Wilbur Smith Associates
16th Street would deteriorate from the existing LOS C to LOS F under cumulative conditions with Mission Bay traffic. Mitigation Measure E.33 in Section VI.E, Mitigation Measures: Transportation, is projected to improve the LOS to C at that intersection.

In the Potrero Hill residential area, traffic volumes would not change as substantially as they would in the North Potrero commercial/industrial area. For example, at Mariposa and De Haro Streets in 2015 the p.m. peak hour LOS would remain A and the average delay would change by 0.3 second per vehicle. Thus, traffic increases from cumulative growth including the project would not be expected to cause significant impacts in the Potrero Hill residential areas. Some new employees in Mission Bay would be expected to use commercial facilities like restaurants in the neighborhood commercial areas of Potrero Hill and along 16th Street in North Potrero, adding to lunch-time traffic in these areas.

During the peak period, general increases in traffic would occur in and around the Project Area, affecting streets and intersections that have not been studied in this analysis. The key study intersections were chosen to represent locations already operating at unacceptable levels of service or those that would be most affected by project-generated traffic during the p.m. peak hour in or near the Project Area. The operation of each study intersection is representative of the general traffic conditions that would be experienced at other nearby intersections along the streets studied, but demonstrates the most congested conditions in the local area. It should also be noted that the traffic analysis conducted for this project distributes project-generated traffic to the most probable routes to and from each land use in the Project Area. However, drivers experiencing recurrent congestion in particular areas may, where feasible and over time, seek alternate routes to their destinations. As the multiple routes possible cannot be accurately predicted at this time, it is not possible to analyze the effects of congestion-induced route changes.

Intersections along Terry A. François Boulevard were not analyzed for p.m. peak hour congestion because it is not expected that large volumes of traffic would use this street for commuting. It would have a bayfront linear park adjacent on the west side beginning at Mission Rock Street and extending the entire length south to Mariposa Street. Thus, the street would lead motorists to recreational activities in the park and on the Bay shore, rather than to residential or business uses. It would be further from freeway access points than Third, Fourth, or Owens Streets in the Project Area, and so would be less attractive to commuters than these main streets. Therefore, weekday p.m. peak hour traffic is not expected to interfere with existing recreational uses along Terry A. François Boulevard such as the proposed boat launch ramp at Pier 52. Before and after high-attendance events at the ballpark, when patrons were accessing or leaving the parking lots assumed to be south of the Channel, motorists would use this street and would cause congestion, making recreational access temporarily more difficult.
Concern has been expressed in response to the Notice That an EIR is Required and Initial Study for the SEIR that the proposed connection of Fourth Street to Minnesota Street would bring substantial increases in traffic to Minnesota Street, which would affect residential uses along Minnesota Street south of 20th Street, about three and one-half blocks south of the southern border of the Project Area, and other portions of the Lower Potrero area. Various configurations for this intersection were considered by the project sponsors before arriving at a configuration that aligns Fourth and Minnesota Streets. The alignments considered and their relative advantages and disadvantages are described in “Proposed Streets in the Project Area” in Appendix D.

The traffic analysis indicates that the potential for traffic intrusion into this area would be limited, for the following reasons: Fourth Street southbound would be designed to encourage turning movements onto the major east-west streets (16th Street and Mariposa Street) with only one through lane southbound into Minnesota Street; access to I-280 from Mariposa Street and Third Street and Third Street south to Cesar Chavez Street is predicted to operate at an acceptable level of service in the project-plus-cumulative condition, so that northbound and southbound drivers would not be induced to use Minnesota Street as an alternative to bypass congestion (the I-280 on-ramp at Mariposa that currently operates at LOS F would be signalized as part of the project and is projected to operate at LOS C with project and cumulative traffic added); and Minnesota Street dead-ends near 22nd Street about four blocks south of Mariposa Street and therefore does not provide a convenient north-south route, nor does it link to a more convenient freeway access or east-west route than streets more easily accessed from the Project Area. Therefore, while an increase in traffic on Minnesota Street would occur, it would be relatively small.

The traffic analysis in this SEIR assumes no traffic uses Minnesota Street in order to provide a worst-case scenario for Third Street, a more critical and heavily traveled thoroughfare. Under this assumption, the intersection of Fourth Street and Minnesota is projected to operate at LOS B in 2015 conditions with project-plus-cumulative p.m. peak hour traffic. The intersection was also analyzed with the assumption that approximately 650 project-generated vehicles would use Minnesota Street during the p.m. peak hour, in order to reflect a worst-case scenario for the intersection. The analysis indicated that the intersection would operate at LOS C under this assumption. The number of vehicles that may travel to/from the project on Minnesota Street is unlikely to exceed 650 vehicles per hour. Assigning any additional traffic to this street would cause the Third Street corridor and the I-280 ramps at Mariposa Street to carry volumes that would be unreasonably below capacity. In reality, the number of project-generated vehicles that would use Minnesota Street would likely be less than 650, but more than the zero assumed for the main traffic analysis, indicating that the LOS would never be worse than LOS C and may be better. LOS C is an acceptable service level but the increase in traffic if realized, would be noticeable to existing residents and businesses. If this number of
vehicles were to use Minnesota Street on a regular basis, many would return to Third Street using
18th or 19th Streets, because Minnesota Street changes from residential uses with more trucks and
loading docks to become a tree-lined street with residential driveways and parked cars south of 19th
Street, and because there is no cross street between 19th Street and 22nd Street at the south end of
Minnesota Street.

The proposed connection of Fourth Street to Minnesota Street, across from Mariposa Street, could be
designed such that any through traffic intrusion onto the Lower Potrero neighborhood that may occur
occasionally if Third Street were unusually congested and that may be annoying to residents and
businesses is minimized or eliminated. Specific designs have not been developed. Possible solutions
could include prohibiting southbound traffic on Fourth Street from entering Minnesota Street by
forcing left or right turns at Mariposa Street, converting one or more of the northernmost blocks on
Minnesota Street from two-way traffic operation to one-way northbound; widening the sidewalks
along Minnesota Street, particularly at Mariposa Street or 18th Street, either at the crosswalks or for
the entire length of the block to provide a more residential, pedestrian-oriented character to the street;
and installing additional landscaping at the edges of the roadway, or similar designs, to discourage
through traffic. Although not needed to reduce possible significant impacts, any of these measures,
or others, could be implemented as part of a traffic calming and intrusion prevention plan, to
accommodate the needs and desires of both residential and commercial owners on Minnesota Street.

TRANSIT IMPACTS

The analysis period chosen for evaluation of the effects of Mission Bay development on transit
systems in the area is the 4:00 p.m. to 6:00 p.m. afternoon peak period, the same as that for the
analysis of traffic impacts. The p.m. peak hour falls within this two-hour period, but may vary
slightly between different transit agencies. Therefore, this approach does not reflect a unique hour of
analysis, but reflects a conservative scenario by combining the individual p.m. peak hour
characteristics of each transit system.

Project Impacts on Regional Carriers

Table V.E.11 presents estimates of the additional p.m. peak hour patronage on regional transit
carriers generated by development of the Mission Bay Project Area. The resulting impacts on each of
these carriers are discussed below and their effects summarized in Table V.E.12. It should be noted
that the transportation impact analysis presented in this section identifies the effects of the entire
Mission Bay project on the regional transit carriers in isolation, as if the project were to occur all at
once within a very short time frame. Since the project would likely develop over an extended period
<table>
<thead>
<tr>
<th>Project Area</th>
<th>BART</th>
<th>AC Transit</th>
<th>Charter or Subscription Bus</th>
<th>Golden Gate Transit Buses</th>
<th>Golden Gate Transit Ferry</th>
<th>SamTrans</th>
<th>Caltrain</th>
<th>MUNI Bus/a/</th>
<th>MUNI Metro/a/</th>
<th>Total /b/</th>
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<tr>
<td>Mission Bay North</td>
<td>285</td>
<td>235</td>
<td>83</td>
<td>68</td>
<td>25</td>
<td>22</td>
<td>83</td>
<td>87</td>
<td>18</td>
<td>19</td>
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<tr>
<td>Mission Bay South</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Central Subarea</td>
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<td>1</td>
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<td>98</td>
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<td>32</td>
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<td>44</td>
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<td>West Subarea</td>
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<td>82</td>
<td>4</td>
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<td>UCSF Subarea</td>
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<td>5</td>
<td>27</td>
<td>5</td>
<td>28</td>
<td>9</td>
<td>54</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Total Mission Bay North</td>
<td>285</td>
<td>235</td>
<td>83</td>
<td>68</td>
<td>25</td>
<td>22</td>
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<tr>
<td>Total Mission Bay South</td>
<td>176</td>
<td>491</td>
<td>59</td>
<td>226</td>
<td>20</td>
<td>93</td>
<td>25</td>
<td>141</td>
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<td>TOTAL PROJECT</td>
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<td>45</td>
<td>115</td>
<td>108</td>
<td>228</td>
<td>22</td>
<td>50</td>
</tr>
</tbody>
</table>

**Note:**

a. Ridership levels represent persons using MUNI as their only transit mode, as well as those using MUNI to access regional transit carriers, such as BART, AC Transit, Golden Gate Transit, ferries, SamTrans, and Caltrain. Approximately 90% of the regional transit riders generated by Mission Bay except Caltrain riders in Mission Bay North and charter bus riders in Mission Bay North and South are also expected to use MUNI. Approximately 33% of Mission Bay South MUNI bus riders are assumed to ride MUNI Metro between the downtown area and Mission Bay, but ride a MUNI bus between the downtown area and his/her origin/destination.

b. Total ridership shown in this column is higher than p.m. peak hour transit trips shown in Table V.E.7 because it includes MUNI-only and MUNI-plus-a-regional-transit-carrier MUNI trips.

**Source:** Witbur Smith Associates.
TABLE V.E.12
EXISTING AND EXISTING-PLUS-PROJECT REGIONAL TRANSIT SUMMARY
PEAK HOUR OF P.M. PEAK PERIOD/PEAK DIRECTION

<table>
<thead>
<tr>
<th>Regional Transit Provider</th>
<th>Existing Conditions</th>
<th>Existing-Plus-Project Conditions</th>
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</thead>
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<td>Hourly Capacity</td>
<td>Average Load</td>
</tr>
<tr>
<td>Caltrain</td>
<td>3,080 /a/</td>
<td>2,190 /b/</td>
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<tr>
<td>BART (Transbay)</td>
<td>12,820 /c/</td>
<td>15,760 /c/</td>
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<td>BART (to Peninsula)</td>
<td>8,740 /c/</td>
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<td>AC Transit</td>
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<td>GGT buses</td>
<td>4,590 /f/</td>
<td>3,210 /f/</td>
</tr>
<tr>
<td>GGT ferries</td>
<td>2,020 /g/</td>
<td>890 /f/</td>
</tr>
</tbody>
</table>

Notes:

a. Caltrain Timetable, effective July 6, 1997, through January 3, 1998 (assumes 25-car trains, and 34-car trains in p.m. peak hour, with 140 seats per car).
d. BART has established a performance standards for the three-hour peak period as 115%, but has no performance standards for the peak hour. The existing three-hour load factor is 112%.
e. Paul Bignardi, Associate Planner, AC Transit, telephone conversation with WSA, December 5, 1997.
f. Fax to Jose Farran, WSA, from Maurice Palumbo, Sr. Planner, GGBHTD, June 24, 1997.
g. Maurice Palumbo, Sr. Planner, GGBHTD, telephone conversation with WSA, October 7, 1997.

Source: Wilbur Smith Associates

of time, assumed in this SEIR to be about 20 years, its effects would not occur for many years, by which time planned increases in transit service would have occurred. In this regard, the year 2015 cumulative scenario analysis presented later in this section is more meaningful for a project of this magnitude.

Caltrain

The proximity of the Caltrain terminal to the Project Area is estimated to yield an increase in ridership aboard trains to and from the Peninsula and South Bay. Caltrain is expected to provide approximately 45% of the total Peninsula/South Bay transit patronage to the Mission Bay Project Area. This would result in approximately 410 additional passengers during the weekday p.m. peak hour. Approximately 75% of these estimated trips would be to/from Mission Bay South.
Currently, there are five southbound trains departing the Caltrain terminal during the p.m. peak hour to serve the commute period. The largest passenger load on trains serving San Francisco during this period is approximately 70%. If the total outbound demand were distributed equally among the five trains departing the terminal during the p.m. peak hour, the average additional load per train would be approximately 60 passengers. As Caltrain provides four to five 140-seat cars per train in the p.m. peak hour, 60 additional passengers would increase passenger loads to about 80% or less. Thus, these five trains would be sufficient to accommodate the additional 300 outbound passenger trips generated in the Mission Bay Project Area. There are two northbound trains arriving at the Caltrain terminal during the p.m. peak hour, sufficient to serve the additional 105 p.m. peak passenger inbound trips that would be generated by the Mission Bay project.

The northern and western boundaries of Mission Bay are located approximately 1.0 to 1.25 miles from the nearest BART stations, which are estimated to serve the approximately 960 trips that would be generated by the Mission Bay project to and from the East Bay.

About 390 of these transbay passenger trips are anticipated to be inbound (westbound from the East Bay), while about 570 transbay trips are estimated to be outbound (eastbound) during the p.m. peak hour. The current eastbound transbay load factor (persons per seat) during the peak hour of the p.m. peak period is 1.23, which would increase to 1.27 as a result of the project (a load factor over 1.0 assumes some passengers stand). The three-hour peak period load factor would increase from the existing 1.12 to about 1.16, above BART's performance standard of 1.15 persons per seat. To maintain BART's target, if the project passenger increase were to occur all at once rather than over a period of 20 years or more, it would be necessary for BART to add at least four additional cars during the three-hour p.m. peak period to accommodate additional demand from the Mission Bay project. These additional cars would be added as part of BART's planned increase in transbay service capacity, expected to occur by the year 2006, 10 to 15 years ahead of the time that the maximum estimated project demand would materialize. By the time the total project demand occurs, BART's system capacity would more than meet the estimated demand. (A more complete description of BART's planned future service is provided in “Regional Carriers, 2015 Cumulative Scenario,” below.)

Approximately 650 passengers are expected to take MUNI Metro from Mission Bay to the BART stations during the p.m. peak hour. Many of these individuals would travel the shortest distance possible on MUNI Metro and transfer from MUNI to BART at the Embarcadero station, adding to existing congestion at the fare gates there. If these passengers sense that platform and fare gate...
conditions are too congested at the Embarcadero station, they could continue on MUNI to the Montgomery Street station or Powell Street station to avoid the congestion. Those individuals traveling to the Peninsula on BART would find this option considerably more convenient, because no unnecessary distance would be traveled. Passengers traveling to the East Bay on BART may choose to continue on MUNI to the Montgomery or Powell Street stations in order to transfer to an eastbound train before the maximum load point, as is now commonly done to increase the chance of getting a seat.

BART would also provide service to individuals traveling to Daly City and Colma and, in the future, to the airport and Millbrae, carrying an additional 225 p.m. peak hour passengers. Nearly 70% of these trips, or 155 passengers, are expected to be leaving the Mission Bay Project Area during the p.m. peak hour, while about 70 would be arriving in Mission Bay during this time. The existing southbound load factor during the p.m. peak hour is 0.88, which would increase to 0.90 as a result of the project. Similarly, the three-hour p.m. peak period load factor would increase from 0.67 to 0.68, well below BART’s maximum performance standard of 1.15.

**AC Transit**

The additional p.m. peak hour ridership on AC Transit is projected to be 435 passengers to and from the Mission Bay Project Area. About 140 of these passenger trips would be westbound, inbound to Mission Bay, while 295 p.m. peak trips would be outbound to the East Bay. AC Transit’s schedule indicates 87 eastbound bus trips during the p.m. peak hour. The current p.m. peak hour transbay ridership is approximately 3,255, yielding an average of about 35 passengers per trip. With each bus having approximately 45 seats, AC Transit’s eastbound transbay ridership is projected to be increased from 83% to 91% of capacity with the additional passengers generated by the Mission Bay project. AC Transit also operates approximately 11 westbound transbay bus trips during the p.m. peak hour. The additional 140 westbound transbay passengers would not require any expansion of service in this direction.

**SamTrans**

SamTrans is projected to carry 190 trips of the p.m. peak hour transit demand produced by Mission Bay development. Approximately 145 of these trips would originate in Mission Bay, while an estimated 45 passengers would ride SamTrans to Mission Bay from the Peninsula during the p.m. peak hour. SamTrans currently operates approximately 29 buses to and from San Francisco during the p.m. peak hour. The additional patronage from the project, about five passengers per outbound trip, would be minor.
Golden Gate Transit

Golden Gate Transit buses are anticipated to carry over 70% of all project North Bay transit trips, resulting in an evening peak hour patronage of 335 passengers from Mission Bay area development. About 105 riders are expected to be traveling to Mission Bay, while 230 riders would be leaving the area. During the p.m. peak hour, 113 outbound buses and 18 inbound buses serve the San Francisco downtown area. Although not all GGT bus routes have the same passenger loads during the p.m. peak hour, on average only 70% of the capacity is currently used; thus, the impact of these additional passengers would be minimal. 

Golden Gate Transit also operates ferry service from the San Francisco Ferry Building to Sausalito and Larkspur. Ferries are expected to carry approximately 16% of the Mission Bay development North Bay transit trips, making up approximately 1% of the total Mission Bay transit patronage. The approximately 25 persons traveling to Mission Bay and 50 persons leaving Mission Bay to/from the Ferry Building are not expected to affect the level of service offered by ferries. These vessels have a maximum capacity between 575 and 725 passengers, and their existing load factors are 38% or less.

Charter/Subscription Bus

Charter and subscription buses are anticipated to be used primarily by employees traveling to/from the office space and research and development facilities in Mission Bay South. Charter and subscription buses would provide service to the South Bay, East Bay, and North Bay, combining to comprise approximately 160 transit trips of the Mission Bay project p.m. peak hour transit demand. The Golden Gate Transit “club” buses discussed under “Existing Regional Transportation Facilities” in the Setting subsection, under “Golden Gate Transit,” are examples of subscription buses. Approximately 28%, or 45 passenger trips, would be inbound to Mission Bay, and 115 trips would be outbound. Assuming a bus with approximately 40 seats, the Mission Bay demand would require about one inbound bus, and approximately three outbound buses.

Regional Carriers, 2015 Cumulative Scenario

A number of sources were used to develop the transit forecasts for cumulative development and growth through the year 2015. The MTC regional travel demand model was used to develop travel forecasts for cumulative development and growth through the year 2015. The travel forecasts were based upon employment and population estimates developed by the San Francisco Redevelopment Agency and the Planning Department for San Francisco, and the Association of Bay Area Governments’ Projections ’96 estimates of population and employment for the rest of the nine-county San Francisco Bay Area. The population and employment growth rates assumed in the MTC model
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for the transit analysis are consistent with those estimates used in the traffic analysis for 2015 conditions. The projections made by the MTC model were compared with projected transit patronage growth values from the AC Transit Draft Transbay Comprehensive Service Plan, published in February 1997, as well as cumulative projected ridership estimates made by various regional transit agencies as presented in their Short Range Transit Plans. In comparison, possible substantial increases (or decreases) in transit ridership were considered, due to major changes anticipated in future service. For each particular transit agency, the most reasonable compromise among the various available cumulative growth estimates was chosen in order to reflect the most appropriate estimate of the transit environment in the year 2015, as described below under the individual transit agency discussions.

The MTC model forecasts for transit cannot be used alone to analyze effects of cumulative growth on individual transit agency services because the model does not provide accurate allocations of transit demand to individual transit modes. For example, the model does not accurately allocate transbay transit travel demand between BART and AC Transit. For that reason, the improvement plans of each transit operator were taken into account when assigning the future demand to individual transit modes. For each of the major regional travel corridors, East Bay, North Bay, and South Bay, the total transit growth rate used to project the transit growth for each operator equaled or exceeded the travel demand growth rate from the travel forecasts. Table V.E.13 summarizes the resulting effects of cumulative transit use on the regional carriers.

**Caltrain**

Caltrain ridership is expected to grow in the future based on demographic trends in the Bay Area. The MTC model estimates an annual growth in San Francisco/Peninsula travel of 1.75% between 1995 and 2015; the Caltrain San Francisco Downtown Extension Project Draft EIS/EIR/777 estimates an annual growth in Caltrain ridership of 2.7% between 1996 and 2010; and the Caltrain 20-Year Strategic Plan, FY 1997/98 to FY 2016/17, suggests an annual growth rate of 4.0%/78/ In order to conservatively estimate cumulative impacts of Mission Bay development, an annual growth of 4.0% was assumed, consistent with Caltrain 20-year plan projections.

Considering the current maximum load factor of 71% and p.m. peak period operation of five trains of 560 to 700 seats each, the cumulative growth of Caltrain ridership is not expected to reach capacity with the addition of trips generated by Mission Bay. Although a downtown extension of Caltrain was not assumed by 2015 (see “Caltrain San Francisco Downtown Extension Project,” under “Changes to Regional Transit System” above), an increase in daily trains from the current 66 trains per day to 86 trains per day was assumed to have been implemented by 2015, as presented in the Caltrain's 20-Year...
### TABLE V.E.13
CUMULATIVE REGIONAL TRANSIT SUMMARY
PEAK HOUR OF P.M. PERIOD/PEAK DIRECTION

<table>
<thead>
<tr>
<th>Regional Transit Provider</th>
<th>Existing Conditions</th>
<th>Year 2015 Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hourly Capacity</td>
<td>Average Load</td>
</tr>
<tr>
<td>Caltrain</td>
<td>3,080 /a/</td>
<td>2,190 /b/</td>
</tr>
<tr>
<td>BART (Transbay)</td>
<td>12,820 /e/</td>
<td>15,760 /e/</td>
</tr>
<tr>
<td>BART (To Peninsula)</td>
<td>8,740 /e/</td>
<td>7,680 /c/</td>
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<td>AC Transit</td>
<td>3,915 /j/</td>
<td>3,254 /j/</td>
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<td>GGT buses</td>
<td>4,590 /n/</td>
<td>3,210 /m/</td>
</tr>
<tr>
<td>GGT ferries</td>
<td>2,020 /o/</td>
<td>890 /m/</td>
</tr>
</tbody>
</table>

**Notes:**

a. Caltrain Timetable, effective July 6, 1997 through January 3, 1998 (assumes 2 5-car trains, and 3 4-car trains in p.m. peak hour, with 140 seats per car).


c. Increase from existing 66 daily trains to 86 daily trains corresponds to increase from five to eight trains during the p.m. peak hour, of which two were assumed to be 4-car trains, and 6 were assumed to be 5-car trains. Preliminary Caltrain Schedules, October 15, 1997.


f. BART has established a performance standard for the three-hour peak period as 115%, but has no performance standards for the peak hour. The existing three-hour load factor is 112%.

g. BART Short Range Transit Plan, FY 1996-2006. Increase from 18 to 27 transbay trains per hour.

h. Reflects annual ridership growth of 2.0%, Wilbur Smith Associates. Growth rate is compromise of those suggested by the MTC model, BART, and AC Transit.

i. Reflects annual ridership growth of 1.75%, MTC Model.

j. Paul Bignardi, Associate Planner, AC Transit, telephone conversation with WSA, December 5, 1997.

k. Assumed no increase in capacity. AC Transit has not yet reassessed the need for additional capacity since the BART strike of September 1997.

l. Reflects ridership growth of 80% between 1997 and 2015.

m. Fax to Jose Farran, WSA, from Maurice Palumbo, Sr. Planner, GGBHT, June 24, 1997.

n. Reflects annual ridership growth of 0.68%, Golden Gate Bridge Highway and Transportation District Short Range Transit Plan (FY 1996/1997 to 2005/2006).

o. Maurice Palumbo, Sr. Planner, GGBHTD, telephone conversation with WSA, October 7, 1997.


q. Reflects annual ridership growth of 2.28%.

**Source:** Wilbur Smith Associates.
Strategic Plan. The additional trains expected to be in operation by year 2015 would provide three more southbound trains during the p.m. peak hour. This 73% increase in capacity planned by 2010 would be adequate to accommodate the 103% cumulative increase in ridership assumed between 1997 and 2015, indicating that the maximum passenger load would increase about 19% over the current level, to 90% due to cumulative growth. The addition of Mission Bay passengers would increase the year 2015 load factor to 96%

BART

The MTC model estimates a 2.7% annual growth in transbay trips between 1995 and 2015. BART estimates a 1.25% annual growth for the core system between 1996 and 2005. AC Transit estimates an annual growth rate of 2.16% in BART ridership between 1997 and 2010. A compromise of these rates was assumed for the Mission Bay cumulative analysis; an annual growth of 2.0% in BART ridership translates to a total growth of approximately 48% between 1995 and 2015, including growth from the Mission Bay Project Area. BART expects to increase transbay service by increasing the peak capacity from a maximum number of transbay trains per hour of 18 in 1996 to 27 by 2006. This increase in capacity translates to an average increase in p.m. peak hour capacity of 50%. Even if capacity were not further increased between 2006 and 2015, the nine additional trains would be sufficient to carry the anticipated cumulative growth, including growth from Mission Bay, through 2015. The reverse commute trains (from the East Bay to downtown San Francisco) operate with smaller loads, well below capacity, and therefore were not analyzed.

The current p.m. peak hour load factor for trains traveling from San Francisco to Daly City and Colma is 0.88. The additional 130 p.m. peak hour BART trips generated by the project alone would increase the load factor to 0.89. BART is scheduled to provide service from the existing end of the line (Colma station) to the San Francisco International Airport (SFIA) and Millbrae by the year 2000. According to BART’s Short Range Transit Plan for FY 1997-2006, the Yellow (Pittsburg/Bay Point) and the Red (Richmond) lines would provide service south of the Daly City station, serving SFIA and Millbrae during weekday peak periods. The combined weekday peak period service to SFIA/Millbrae is expected to be about one train every seven minutes. By 2006, there is expected to be a 50% increase in the number of trains traveling in the San Francisco-to-Peninsula direction. This increase in capacity would be sufficient to accommodate the 48% increase in ridership forecast by 2015 due to cumulative growth.

AC Transit

The AC Transit Draft Transbay Comprehensive Service Plan estimates a 100% to 130% increase in AC Transit transbay ridership between 1997 and 2010, indicating an additional 9,000 to 12,000 daily