

## 3 Affected Environment and Environmental Consequences

### 3.1 Land Use, Housing and Schools

#### 3.1.1 AFFECTED ENVIRONMENT

Land use and socioeconomic (housing and school enrollment) characteristics of the Presidio and surrounding neighborhoods are described on pages 131 to 157 and pages 161 to 166 of the PTMP EIS. This description is incorporated here by reference, and portions relevant to the PHSB district are summarized below and expanded upon as necessary.

##### 3.1.1.1 Existing Land Uses at the PHSB District and in Surrounding Areas

The PHSB district lies entirely within the Presidio of San Francisco, a national park site within the GGNRA. The PHSB district is divided between the lower plateau to the south, which contains the majority of the district's buildings including the PHSB and supporting structures, and the upper plateau to the north, which contains significant natural areas, several historic buildings, and paved areas such as the former Nike Missile Site at Battery Caulfield.

Before 1980, the PHSB was a full-service medical facility, providing acute medical and surgical services as well as dental services to patients and employing people who both lived and commuted to the site. The PHSB also provided the following programs: alcoholism program, cobalt therapy, diabetes program, family planning, geriatric day treatment center, geriatric screening, health education, mental health clinics, nutrition program, optometry services, psychiatric day hospital services, and speech therapy. The PHSB had an operating bed capacity of 260 and employed the second largest number of staff (810) of any Public Health Service hospital (Bailey et. al. 1981). Accessory uses included housing, research laboratories, gardens and recreational uses, a steam generation facility, and a laundry. After reverting to the U.S. Army, the PHSB complex was used for a time as a satellite branch of the Army's Defense Language Institute. Today, most of the buildings in the PHSB district are vacant. Existing building uses include the following:

- Building 1802 contains Arion Press, a cultural/educational use that includes manufacturing and printing activities;
- The bottom half of Building 1806 contains Lone Mountain Children's Center, an educational use;
- The top half of Building 1806 was rehabilitated for short-term office use, and is now partially used for offices and partially vacant;

- Building 1808 was rehabilitated for short-term use by the Jewish Community Center, a cultural/educational use, and is now vacant;
- Buildings 1818, 1819, 1449, 1450, and 1451 have recently been or are currently occupied by Trust or NPS maintenance activities.

The Trust and NPS also use paved areas within the PHSB district for maintenance activities as follows:

- An area immediately behind Building 1801 is used as a waste transfer station where waste collected from containers throughout the park is consolidated within dumpsters for removal off-site;
- The parking area at the southern end of the upper plateau is currently used to manufacture compost from green waste collected throughout the park;
- The paved area at Battery Caulfield is used as a maintenance yard, with heavy equipment and materials storage by the NPS (lower portion) and materials storage by the Trust (upper portion).

Other land uses within the PHSB district include surface parking, natural areas, and recreational trails. A tennis court located behind the PHSB is currently closed. Surrounding land uses include natural areas (Lobos Valley and Lobos Creek) to the west, the Presidio Golf Course and a regional transportation facility (Park Presidio Boulevard/Highway 1) to the east, residential neighborhoods of the Presidio to the north and northwest, and residential neighborhoods of the City to the south. Mountain Lake lies to the east of the PHSB district, across Highway 1 from the district, and is bordered on its south by parkland under the jurisdiction of the City’s Recreation and Park Department.

### 3.1.1.2 Projected Future Land Uses

The PTMP (page 93) calls for revitalization of the PHSB district as a residential and educational community, and identifies these as preferred uses for buildings in the district. Specifically, the Plan (page 94) identifies residential use as the preferred use for the PHSB (or Building 1801), sets a district limit of 200 to 210 dwelling units (page 45), and also identifies the potential for up to 190,000 square feet of educational uses (page 37).

There is an inherent contradiction in these Plan statements, since the district contains about 100,000 square feet of building space outside Building 1801 and thus cannot accommodate 190,000 square feet of educational space *and* devote the building to residential use. In recognition of this contradiction, the Record of Decision (Trust 2003c) adopted by the Trust Board of Directors in August 2002 reiterates “the Trust’s preference for residential use of the PHSB building” and notes the potential educational use of auxiliary structures.<sup>1</sup>

<sup>1</sup> PTMP ROD, Attachment 3, page 2 (Presidio Trust 2002c). Also see PTMP EIS Volume II, page 4-194, which describes the land use preference for the PHSB and notes “the actual number of units that could be provided will take further site-specific analysis, including a detailed assessment of the historic building and rehabilitation requirements.”

The PTMP (page 95) also envisions compatible outdoor recreational uses in the PHSB district, reduced parking (page 51), and enhanced natural areas (page 95). The Nike Missile Site at Battery Caulfield is identified as a “generalized area of development” (page 94) with no specific land use preference.<sup>2</sup>

### **3.1.1.3 Existing Presidio Housing Supply and Occupancy**

There are no residential tenants in the PHSB district today, although historically some hospital personnel lived on-site, occupying single-family homes, duplexes, and larger dormitory buildings. In total, the PHSB district contains a total of 12 vacant dwelling units and 86 vacant dormitory-type accommodations in Buildings 1806 through 1815.

The Presidio as a whole contains a total of 1,116 conventional dwelling units and an estimated 538 dormitory-style accommodations. Of this total supply, approximately 950 conventional units have been rehabilitated and are leased, mostly on a year-to-year basis. Additional units are in the process of being rehabilitated. About 60 single resident occupied (SRO) or dormitory-style accommodations are currently in use or are intermittently occupied. Currently, approximately 2,225 people reside at the Presidio.

Of the occupied units at the Presidio, an estimated 24 percent are currently leased to employees who work at the Presidio, whether for the Trust, the NPS, or one of the many non-residential tenants that lease space. Some of these Presidio-based employees participate in a “preferred renter” program, which currently makes about 87 units available to households with annual combined household incomes of up to 100 percent of the area median at rents equal to 30 percent of income. Current programs accommodate other employees with lower incomes, as well as Presidio public safety personnel and “on call” employees of the Trust.

### **3.1.1.4 Housing Policies and Projected Future Demand for Housing**

With adoption of the PTMP, the Trust established housing policies giving preference to Presidio-based employees and accommodating a diverse tenant mix through housing affordability programs. Although many residences in the park are currently leased to the general public, the Plan anticipates that Presidio-based employees and their families will eventually occupy a significant portion of Presidio housing. This estimate was based on an assessment of existing and future employment and a 1999-2001 survey of employee housing demand (see Table 3).

As stated in the PTMP and PTMP EIS, the Trust expects housing demand by Presidio-based employees to increase as employment increases and as unit diversity (i.e., the number of smaller units) increases. The Trust has agreed to monitor employee housing demand over time as employment and unit diversity at the Presidio increases.

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<sup>2</sup> Elsewhere in the Plan (pages viii and 16), Battery Caulfield is identified as within the native plant zone established by the Presidio VMP, which was adopted by the NPS and the Trust in 2001. This designation was superseded with adoption of the PTMP as described and analyzed in the PTMP EIS (Volume I, page 223).

Table 3. Existing and Projected Housing Demand at the Presidio

	2002-2003	PTMP 2020
Presidio Based Employees (PBE)	2,250 employees	6,886 employees
Total Housing Demand <sup>a</sup>	1,440 units	4,406 units
Occupancy / Demand for Presidio Housing by PBE <sup>b</sup>	245 units	1,486 units

Source: PTMP EIS 2002 and Trust 2003 residency data.

<sup>a</sup> Total Housing Demand = employees ÷ 1.563 employed residents per household

<sup>b</sup> 2020 demand assumes 1.25 Presidio employees per household

The Plan establishes a maximum housing supply of 1,400 to 1,654 residences park-wide, despite fluctuations expected as a result of housing removal and other activities. The PTMP EIS projects that the Plan would result in approximately 1,295 conventional dwelling units and 352 dormitory style units in the year 2020 after planned housing removal and replacement. A maximum of 200 to 210 overall units was established for the PHS district.

The conversion of non-residential buildings to residential use was identified as an important strategy for replacing housing that will be removed over time to achieve natural resources goals of the Plan. This type of conversion was also identified as an historic preservation strategy:

*Rehabilitating and converting historic non-residential buildings to residential use may prove to be an excellent historic preservation strategy regardless of the demand for housing by Presidio-based employees. For example, residential use may be the best way to ensure that historic portions of the Public Health Service Hospital are sensitively rehabilitated. For that reason, senior housing or other residential uses are preferred for the hospital building (PTMP, page 43).*

### 3.1.1.5 Existing and Projected Future School Enrollment

In 2000, there were 128 school-age children residing at the Presidio. Because the Presidio is under exclusive federal jurisdiction, it does not provide property tax revenue for the San Francisco Unified School District (SFUSD), which serves the area. In order to offset the absence of tax revenue, the federal government established the School Impact Aid Program, administered by the U.S. Department of Education. Under this program, school districts can receive compensation for non-military students living on federal property. In fiscal year 2000, the SFUSD received approximately \$67,000 from the School Impact Aid Program for all federal facilities in San Francisco.

School enrollment by Presidio residents is expected to increase over time, based on the projected increase in residential population. In 2020, this population is projected to reach 3,240, with 125 elementary school pupils, 63 middle school pupils, and 86 high school pupils, for a total school enrollment of 274.

### 3.1.2 ENVIRONMENTAL CONSEQUENCES

The potential impacts of development within the Presidio on land use and socioeconomic conditions are assessed on pages 269 to 292 and 296 to 298 of the PTMP EIS. The sole impact identified within the PHSH district is a change in activity levels, given the district’s underutilized condition. The PTMP EIS analysis is supplemented here, by analysis of the issues specific to the alternatives being considered for the PHSH project.

#### 3.1.2.1 Alternative 1: PTMP or No Action Alternative

The rehabilitation and reuse of buildings within the PHSH district under Alternative 1 would increase activity levels as described in the PTMP EIS. The PHSH would be used primarily as residential apartments, although some educational use would also be included in the building. Educational uses such as schools would also fill the accessory buildings on the site, except for the residential buildings along Wyman Avenue, which would be rehabilitated for residential use (see Table 4 for a land use comparison of the alternatives).

Table 4. Projected Land Use, Population, and Employment at the PHSH District by Alternative

ALTERNATIVE	TOTAL DWELLING UNITS		SENIOR UNITS	POPULATION		EMPLOYMENT		
	STUDIOS & 1 BR	2+ BR		ADULT	SCHOOL-AGE	NON-RESIDENTIAL USES (SF)	JOBS	HOUSING DEMAND (DWELLING UNITS)
Alternative 1	198	12	0	480	70	190,000	140	90
Alternative 2	300	50	0	800	110	30,000	25	16
Alternative 3	218	12	0	525	75	42,000	20	13
Alternative 4	167	102	155	395	55	30,000	>20	>13

Source: Presidio Trust 2002b. Derived from PTMP EIS assumptions regarding employment density and housing demand. Household size = 2.6 persons per unit, 1 per senior unit. School-age population = 12.2%. BR = bedrooms. sf = square feet.

The addition of 210 dwelling units and 190,000 square feet of education-related uses under Alternative 1 would constitute a change from existing conditions within the PHSH district, but would be generally consistent with the PTMP. The addition of 210 dwelling units, most of them small studios or one-bedrooms, would provide for a residential population of about 550 people. Space used for education-related uses would generate an estimated 140 employees, as well as students and visitors. Housing demand created by this increase in employment would be substantially less than the proposed increase in housing supply.

Within the context of the Presidio as a whole, the number of conventional dwelling units that are currently occupied would increase to about 1,160 or more under this alternative, depending on when units currently being rehabilitated in the Fort Scott district are brought on line. When combined with the current number of dormitory units, the total of 1,220 occupied units would remain well below the total of 1,654 units allowed for in the PTMP and below the number analyzed in the PTMP EIS. For a time, however, conventional units (as opposed to dormitory-style units) would represent a larger percentage of the overall unit count than anticipated in the PTMP EIS. As described in the PTMP, the unit mix within the Presidio will fluctuate over time, and will begin to change dramatically when the planned removal of large, conventional units at Wherry Housing is initiated. The resident population of the Presidio is projected to reach a total of about 3,770.

Within the context of the adjacent City neighborhood, the addition of 210 dwelling units would represent an increase of less than one percent in the Richmond neighborhood.<sup>3</sup> In general, residential and educational uses would be compatible with surrounding neighborhood uses, which are principally residential. The scale of the PHSH would remain far greater (taller and bigger) than nearby single-family homes, but this difference in scale would not be accentuated in any way and would not alter the fundamental compatibility of residential use with the residential neighborhood.

Arion Press and Lone Mountain Children's Center, existing tenants, would remain at their current location under Alternative 1, but some interim land uses in the PHSH district would be displaced. Specifically, the waste transfer activity that currently occurs behind the PHSH would be relocated to the former U.S. Army transfer yard (across from Amatury Loop), an area within the Presidio's historic forest. Under Alternative 1, composting activities would remain in the parking lot behind the PHSH until a suitable new location is found, although a portion of the parking lot would be reused for its original function, providing up to 233 parking spaces. Battery Caulfield would remain in use as a Trust maintenance or corporation yard until its transformation into open space (natural area and/or recreation) is separately planned for and funded. NPS maintenance activities at Battery Caulfield would be displaced and consolidated or relocated elsewhere in the south district of the GGNRA.

Residents of the new housing proposed within the PHSH district under Alternative 1 could include up to approximately 70 school-age children. These students would seek enrollment at area schools, including schools operated by the SFUSD. Under mitigation agreed to during the PTMP planning process, the Trust will make all reasonable efforts to collaborate with the SFUSD to locate necessary space for students residing at the Presidio and to continue participation in the federal School Impact Aid Program.

### **3.1.2.2 Alternative 2: Infill Alternative**

The rehabilitation and reuse of buildings within the PHSH district under Alternative 2 would increase activity levels as described in the PTMP EIS. The PHSH and the majority of other buildings on the site

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<sup>3</sup> According to the Housing Element Final Draft for Public Review (September 2003) by the City and County of San Francisco Planning Department, there are about 36,700 dwelling units in the Richmond district, of which 28 percent are single-family homes and 17 percent are within buildings of 10 or more units.

would be used as residential apartments. Non-residential uses would occupy approximately 30,000 square feet.

The addition of up to 350 dwelling units and 30,000 square feet of non-residential uses would constitute a change from existing conditions within the PSHS district, and would differ from the PTMP in two regards. First, unlike Alternative 1, Alternative 2 would place greater emphasis on residential use than on educational use. Second, as a result of the increased emphasis on residential use, the total number of dwelling units within the district would exceed the maximum of 210 specified on page 45 of the PTMP. As a result, the Trust would be constrained from reaching the maximum stated in one or more other districts of the Presidio, so as to stay below the overall maximum of 1,654.

The addition of up to 350 dwelling units, most of them small studios or one-bedrooms, would provide for a residential population of about 910. Space used for non-residential uses would generate an estimated 25 employees.

Within the context of the Presidio as a whole, the number of conventional dwelling units that are currently occupied would increase to about 1,300 or more under this alternative, depending on when units currently being rehabilitated in the Fort Scott district are brought on line. When combined with the current number of dormitory units, the total of 1,360 occupied units would remain well below the total of 1,654 units allowed for in the PTMP and below the number analyzed in the PTMP EIS. For a time, however, conventional units (as opposed to dormitory-style units) would represent a larger percentage of the overall unit count than anticipated in the PTMP EIS. As described in the PTMP, the unit mix within the Presidio will fluctuate over time, and will begin to change dramatically when the planned removal of conventional units at Wherry Housing is initiated. The resident population of the Presidio is projected to reach a total of about 3,770.

Within the context of the adjacent City neighborhood, the addition of 350 dwelling units would represent an increase of less than one percent in the Richmond neighborhood. In general, residential uses would be compatible with surrounding neighborhood uses, which are principally residential. The scale of the PSHS would remain far greater (taller and bigger) than nearby single-family homes, but this difference in scale would not be accentuated in any way and would not alter the fundamental compatibility of residential use with the residential neighborhood.

Arion Press and Lone Mountain Children's Center, existing tenants, would remain at their current location under Alternative 2, but some interim land uses in the PSHS district would be displaced. Specifically, the waste transfer activity that currently occurs behind the PSHS would be relocated to the former U.S. Army transfer yard (across from Amatory Loop), an area within the Presidio's historic forest. Under Alternative 2, the parking lot behind the PSHS on the upper plateau would not be returned to use as a parking area as in Alternative 1. Composting activities would remain until a suitable new location is found. As in Alternative 1, Battery Caulfield would remain in use as a Trust maintenance or corporation yard until its transformation into open space (natural area and/or recreation) is separately planned for and funded. NPS maintenance activities at Battery Caulfield would be displaced and consolidated or relocated elsewhere in the south district of the GGNRA.

Residents of the new housing proposed within the PSHH district under Alternative 2 could include up to approximately 110 school-age children. These students would seek enrollment at area schools, including schools operated by the SFUSD. Under mitigation agreed to during the PTMP planning process, the Trust will make all reasonable efforts to collaborate with the SFUSD to locate necessary space for students residing at the Presidio and to continue participation in the federal School Impact Aid Program.

### **3.1.2.3 Alternative 3: No Infill Alternative**

The rehabilitation and reuse of buildings within the PSHH district under Alternative 3 would increase activity levels, but not to the same extent as Alternative 1, and not to the extent described in the PTMP EIS. The PSHH would be reduced in size and converted to residential use, together with the majority of other buildings on the site. Non-residential uses would occupy approximately 42,000 square feet.

The addition of up to 230 dwelling units and 42,000 square feet of non-residential uses would constitute a change from existing conditions within the PSHH district, and would differ from the PTMP in two regards. First, unlike Alternative 1, Alternative 3 would place greater emphasis on residential use than on educational use. Second, as a result of the increased emphasis on residential use, the total number of dwelling units within the PSHH district would exceed the maximum of 210 specified on page 45 of the PTMP. As a result, the Trust would be constrained from reaching the maximum stated in one or more other districts of the Presidio, so as to stay below the overall maximum of 1,654.

The addition of up to 230 dwelling units, mostly of them small studios or one-bedrooms, would provide for a residential population of up to about 600. Space used for non-residential uses would generate an estimated 20 employees.

Within the context of the Presidio as a whole, the number of conventional dwelling units that are currently occupied would increase to about 1,180 or more under this alternative, depending on when units currently being rehabilitated in the Fort Scott district are brought on line. When combined with the current number of dormitory units, the total of 1,240 occupied units Presidio-wide would remain well below the total of 1,654 units allowed for in the PTMP and below the number analyzed in the PTMP EIS. For a time, however, conventional units (as opposed to dormitory-style units) would represent a larger percentage of the overall unit count than anticipated in the PTMP EIS. As described in the PTMP, the unit mix within the Presidio will fluctuate over time, and will begin to change dramatically when the planned removal of conventional units at Wherry Housing is initiated. The resident population of the Presidio is projected to reach a total of about 3,770.

Within the context of the adjacent City neighborhood, the addition of 230 dwelling units would represent an increase less than one percent in the Richmond neighborhood. In general, residential uses would be compatible with surrounding neighborhood uses, which are principally residential. The scale of the PSHH would remain far greater (taller and bigger) than nearby single-family homes, but this difference in scale would be reduced by the removal of the non-historic wings and would not alter the fundamental compatibility of residential use with the residential neighborhood.

Arion Press and Lone Mountain Children's Center, existing tenants, would remain at their current location under Alternative 3, but some interim land uses in the PHSH district would be displaced. Specifically, the waste transfer activity that currently occurs behind the PHSH would be relocated to the former U.S. Army transfer yard (across from Amatury Loop), an area within the Presidio's historic forest. Under Alternative 3, the parking lot behind the PHSH on the upper plateau would not be returned to use as a parking area as in Alternative 1. Composting activities would remain until a suitable new location is found. As in Alternative 1, Battery Caulfield would remain in use as a Trust maintenance or corporation yard until its transformation into open space (natural area and/or recreation) is separately planned for and funded. NPS maintenance activities at Battery Caulfield would be displaced and consolidated or relocated elsewhere in the south district of the GGNRA.

Residents of the new housing proposed within the PHSH district under Alternative 3 could include up to approximately 75 school-age children. These students would seek enrollment at area schools, including schools operated by the San Francisco Unified School District. Under mitigation agreed to during the PTMP planning process, the Trust will make all reasonable efforts to collaborate with the SFUSD to locate necessary space for students residing at the Presidio and to continue participation in the federal School Impact Aid Program.

#### **3.1.2.4 Alternative 4: Battery Caulfield Alternative**

The rehabilitation and reuse of buildings within the PHSH district under Alternative 4 would increase activity levels, but not to the same extent as Alternative 1, and not to the extent described in the PTMP EIS. The PHSH and the majority of other buildings on the site would be used as residential apartments. Non-residential uses would occupy approximately 30,000 square feet.

The addition of up to 269 dwelling units (155 of them for seniors) and 30,000 square feet of non-residential uses would constitute a change from existing conditions within the PHSH district and would differ from the PTMP in two regards. First, unlike Alternative 1, Alternative 4 would place greater emphasis on residential use than on educational use. Second, as a result of the increased emphasis on residential use, the total number of dwelling units within the district would exceed the maximum of 210 specified on page 45 of the PTMP. As a result, the Trust would be constrained from reaching the maximum stated in one or more other districts of the Presidio, so as to stay below the overall maximum of 1,654.

The addition of up to 269 dwelling units, most of them small studios or one-bedrooms and some of them for seniors, would provide for a residential population of about 450. Space used for non-residential uses would generate an estimated 20 employees, in addition to employees required to support the assisted living component of the senior housing.

Within the context of the Presidio as a whole, the number of conventional dwelling units that are currently occupied would increase to about 1,219 or more under this alternative, depending on when units currently being rehabilitated in the Fort Scott district are brought on line. When combined with the current number of dormitory units, the total of 1,279 occupied units would remain well below the total of 1,654 units

allowed for in the PTMP and below the number analyzed in the PTMP EIS. For a time, however, conventional units (as opposed to dormitory-style units) would represent a larger percentage of the overall unit count than anticipated in the PTMP EIS. As described in the PTMP, the unit mix within the Presidio will fluctuate over time, and will begin to change dramatically when the planned removal of conventional units at Wherry Housing is initiated. The resident population of the Presidio is projected to reach a total of about 3,770.

Within the context of the adjacent City neighborhood, the addition of 269 dwelling units would represent an increase of less than one percent in the Richmond neighborhood. In general, residential uses would be compatible with surrounding neighborhood uses, which are principally residential. The scale of the PHSH would remain far greater (taller and bigger) than nearby single-family homes, but this difference in scale would be reduced by removal of the non-historic wings and would not alter the fundamental compatibility of residential use with the residential neighborhood.

Arion Press and Lone Mountain Children's Center, existing tenants, would remain at their current location under Alternative 4, but some interim land uses in the PHSH district would be displaced. Specifically, the waste transfer activity that currently occurs behind the PHSH would be relocated to the former U.S. Army transfer yard (across from Amatury Loop), an area within the Presidio's historic forest. Under Alternative 4, the parking lot behind the PHSH on the upper plateau would not be returned to use as a parking area as in Alternative 1. Composting activities would remain until a suitable new location is found. Unlike in Alternative 1, Battery Caulfield would be converted to residential use, displacing both the Trust maintenance or corporation yard and NPS maintenance functions. Trust activities would be relocated to Battery Dynamite in the Fort Scott district, and NPS maintenance activities would be consolidated or relocated elsewhere in the south district of the GGNRA.

Residents of the new housing proposed within the district under Alternative 4 could include approximately 55 school-age children. These students would seek enrollment at areas schools, including schools operated by the SFUSD. Under mitigation agreed to during the PTMP planning process, the Trust will make all reasonable efforts to collaborate with the SFUSD to locate necessary space for students residing at the Presidio and to continue participation in the federal School Impact Aid Program.

#### **3.1.2.5 Park Presidio Access Variant**

The addition of a direct access between the PHSH district and Park Presidio Boulevard would not alter land use, population, housing, employment, or school enrollment associated with any of the alternatives.

#### **3.1.2.6 Cumulative Effects**

The cumulative effects of added employment and population in the Presidio are analyzed in the PTMP EIS and would not increase as a result of any of the project alternatives analyzed here. In fact, the shift from a shared emphasis on residential and educational uses in the PTMP EIS analysis and Alternative 1 to a mostly residential use in Alternatives 2, 3, and 4 would tend to reduce cumulative effects, even though the overall number of dwelling units in the PHSH district would be greater than originally analyzed, as would the percentage of units Presidio-wide that are conventional units versus dormitory-style units. This

reduction in effects, as demonstrated within the Transportation analysis (see Section 3.2), is attributable to the high levels of activity generally associated with educational uses.

From a land use and socioeconomic perspective, the reactivation of the PHSB district after many years of vacancy would benefit the City's overall housing and employment base whether considered in isolation or in combination with other changes planned for the Presidio or surrounding areas.

### 3.1.3 MITIGATION MEASURES

The following mitigation measures derived from the PTMP EIS would limit adverse effects related to land use, housing and schools:

*CO-2 Jobs/Housing Balance Monitoring* – The Trust will monitor housing demand, occupancy, unit mix, and progress toward a jobs/housing balance, and will accommodate Presidio-based employees at a range of income levels. As part of this monitoring effort, the Trust will ensure that the total number of dwelling units Presidio-wide does not exceed the maximum of 1,654.

*CO-3 Collaboration with SFUSD* – The Trust will make all reasonable efforts to collaborate with the SFUSD to locate necessary space for students residing at the Presidio and to continue participation in the federal School Impact Aid Program.

Preparation and review of this environmental assessment meets requirements of PTMP EIS Mitigation Measure CO-1 *Monitoring Area B Uses*, which requires that the Trust review proposed uses for consistency with the PTMP planning principles and consult with the NPS regarding activities with the potential to significantly affect Area A resources. No additional measures have been identified.

## 3.2 Transportation

Traffic, transit, parking, and other transportation-related issues within the Presidio are described on pages 168 to 183 and 302 to 327 of the PTMP EIS and supplemented below to address issues specific to the PHSB project.

### 3.2.1 AFFECTED ENVIRONMENT

The PHSB district is located on the south side of the Presidio, near external roadways including Lake Street, California Street, Park Presidio Boulevard, 14<sup>th</sup> Avenue, and 15<sup>th</sup> Avenue. Access through the district is provided by Wedemeyer Street and Battery Caulfield Road. Lake Street is an east-west oriented street located immediately south of the Presidio, with bike lanes and on-street parking on both sides of the street in the vicinity of the project site. California Street is an east-west oriented street located immediately south of Lake Street with one travel lane each way and on-street parking on both sides of the street.

Park Presidio Boulevard (Highway 1) is a major north-south arterial and a state-designated facility under Caltrans jurisdiction. It has three travel lanes each way with a raised median south of its intersection with Lake Street. Approximately 450 feet north of Lake Street, Park Presidio Boulevard narrows to two travel lanes each way south of the MacArthur Tunnel. Fourteenth Avenue is a north-south oriented residential street with on-street parking on both sides of the street that narrows to a width of 30 feet north of Lake Street near the former entrance to the Presidio. The 14<sup>th</sup> Avenue Gate to the Presidio is currently closed to vehicular traffic. Fifteenth Avenue is a north-south oriented street that is approximately 40 feet wide with one travel lane each way near Lake Street and California Street and narrows to approximately 35 feet near the Presidio gate. Fifteenth Avenue has on-street parking on both sides of the street and provides access to the Presidio approximately 260 feet north of Lake Street. Wedemeyer Street and Battery Caulfield Road are Presidio roadways that provide access to the PHS site and connect 14<sup>th</sup> Avenue with Washington Boulevard north of the site. Wedemeyer Street has one travel lane each way and no on-street parking.

The 15<sup>th</sup> Avenue Gate is currently the only direct vehicular access to the PHS site from outside the Presidio, and traffic count data indicate that the weekday daily traffic through the 15<sup>th</sup> Avenue Gate has increased from about 920 vehicles in November 1998 to about 1,960 vehicles in October 2002, largely due to the occupancy of more buildings in the PHS site.

### **3.2.1.1 Existing Traffic Conditions at Nearby Intersections**

Existing intersection operating conditions were evaluated for weekday AM and PM peak period conditions at six key intersections in the vicinity of the project site. These intersections would most likely experience the greatest change in traffic volumes due to changes in land uses at the project site. The six study intersections, which are shown in Figure 9, are as follows:

- Lake Street/15<sup>th</sup> Avenue
- Lake Street/14<sup>th</sup> Avenue
- Lake Street/Park Presidio Boulevard
- California Street/15<sup>th</sup> Avenue
- California Street/14<sup>th</sup> Avenue
- California Street/Park Presidio Boulevard

The turning movement traffic volumes at the study intersections were counted by Wilbur Smith Associates (WSA) during the morning and afternoon peak commute periods (7:00 to 9:00 AM and 4:00 to 6:00 PM) in November 2000 as part of the data collection efforts undertaken for the PTMP EIS. After recent review of these data for consistency with traffic volume data from other sources (including the preliminary data from the Doyle Drive study), it was determined that new traffic counts at the Lake/Park Presidio Boulevard and California/Park Presidio

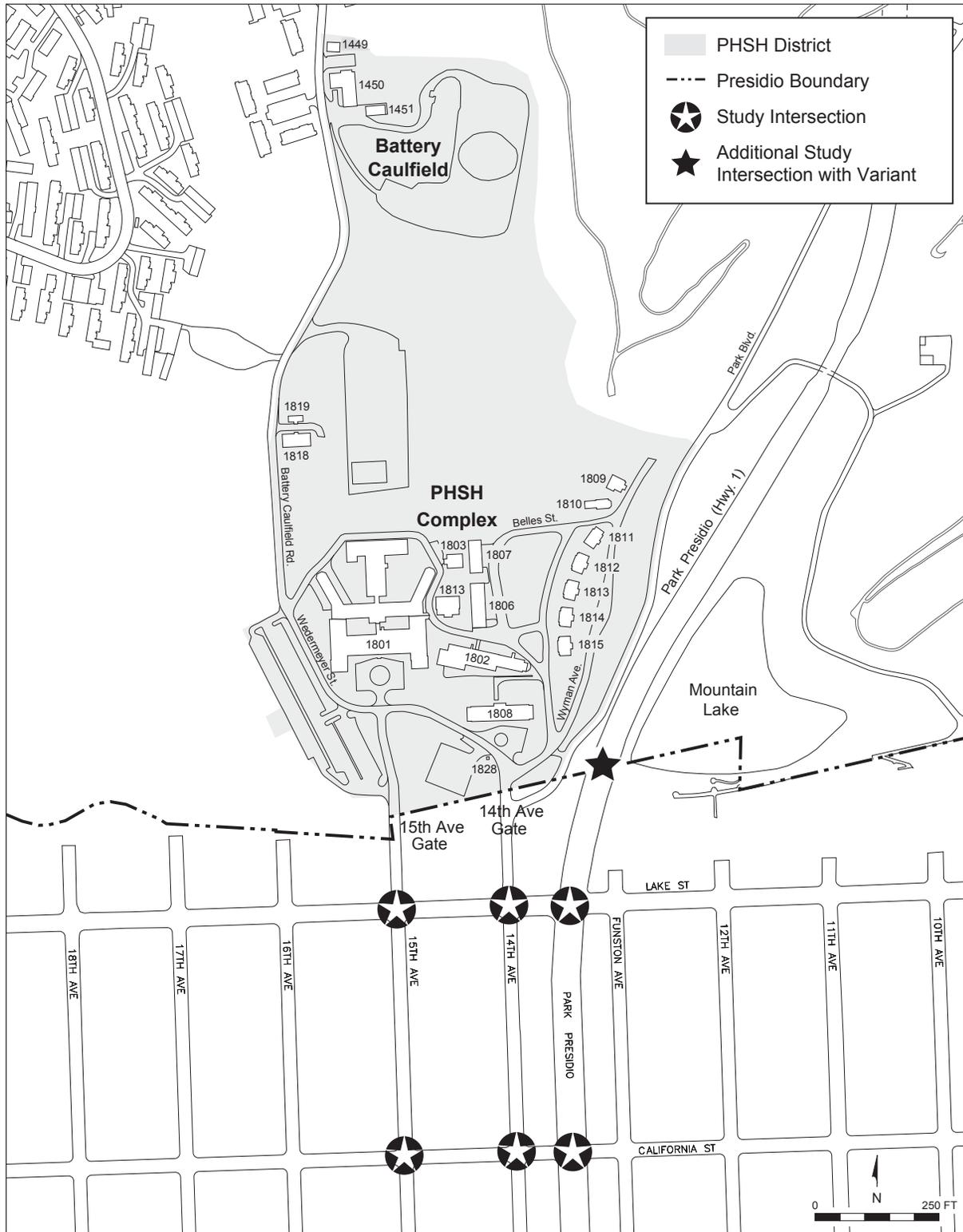


FIGURE 9. STUDY INTERSECTIONS

Source: Presidio Trust, 2003

Boulevard intersections were warranted. Both AM and PM peak turning movement traffic counts were gathered at these two intersections again in January 2004 for the purposes of this analysis. For each study intersection, the peak hour total for the intersection traffic volume during each two-hour period was determined and used for the intersection capacity analysis. In order to conservatively account for the seasonal variation in traffic volumes counts, the intersection turning movement volumes gathered in the winter were adjusted upward by 11 to 15 percent.

The AM and PM peak hour intersection operations analysis was conducted according to the methodology described in the 2000 Highway Capacity Manual (HCM 2000) (Transportation Research Board 2000).<sup>4</sup> The HCM methodology calculates the average delay experienced by a vehicle traveling through the intersection, and assigns a corresponding level of service (LOS), which ranges from LOS A, indicating volumes well below capacity with vehicles experiencing little or no delay, to LOS F, indicating volumes near capacity with vehicles experiencing extremely high delays. An intersection operating at LOS D or better is generally considered to be operating acceptably. Levels of service E and F are generally considered unacceptable at signalized and all-way stop-controlled intersections.

For signalized intersections, the HCM 2000 methodology determines the average delay per vehicle for each lane group based on the particular movement, and traffic volume and capacity associated with that lane group. The average delay per vehicle is then aggregated for each approach and for the intersection as a whole. A combined weighted average delay and LOS are then presented for the intersection as a whole. For unsignalized intersections, average delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn). For two-way stop-controlled intersections, delay and LOS are calculated for each of the two stop-controlled approaches, and operating conditions are reported for the worst approach. For all-way stop-controlled intersections, average delay per vehicle is averaged across all approaches, and operating conditions are reported for the average delay and LOS for the intersection as a whole.

Table 5 presents the results of the intersection LOS analysis for the existing weekday AM and PM peak hour conditions.<sup>5</sup> As the table indicates, all six intersections operate at LOS D or better during the weekday AM peak hour. During the weekday PM peak hour, four intersections operate at LOS D or better, with the California Street/14<sup>th</sup> Avenue and Lake Street/14<sup>th</sup> Avenue intersections currently operating at LOS E.

### **3.2.1.2 Existing Traffic Volumes and Safety Considerations**

The 15<sup>th</sup> Avenue Gate entrance is currently the only direct vehicular access to the PHS site from outside the Presidio. As part of the Presidio Bus Management Plan study (Robert Peccia & Associates 1999a), 24-hour machine traffic counts were conducted at the nine Presidio gates during the second week of May, the first week of August, and the third week of November in 1998. The data indicate that approximately

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<sup>4</sup> It should be noted that the results for establishing the operating conditions shown in the PTMP differ slightly from those shown in this analysis because the transportation analyses conducted as part of the PTMP EIS were based on the 1994 HCM methodology, the accepted methodology at that time.

<sup>5</sup> Detailed calculations of the intersection LOS analysis are provided in technical memoranda for this study.

780 to 920 vehicles per day entered the Presidio via the 15<sup>th</sup> Avenue Gate, which represented approximately one percent of all vehicles entering or exiting the park on a weekday.

Traffic volumes through the 15<sup>th</sup> Avenue Gate have increased as occupancy of buildings in the PHSH district has increased. Additional count data were collected on a weekday in October 2002, when buildings in the eastern part of the PHSH district were occupied by the Jewish Community Center, Arion Press, and Lone Mountain Preschool. The average daily traffic volume was 1,958 vehicles and the PM peak hour traffic volume was 187 vehicles.

Table 5. Intersection Levels of Service – Weekday AM and PM Peak Hours  
Existing Conditions

INTERSECTION	TRAFFIC CONTROL DEVICE	AM PEAK HOUR		PM PEAK HOUR	
		DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS
Lake St/15 <sup>th</sup> Ave	4-Way Stop	17.4	C	12.4	B
Lake St/14 <sup>th</sup> Ave <sup>b</sup>	2-Way Stop	29.3	D	36.1	E
Lake St/Park Presidio Blvd	Traffic Signal	24.4	C	21.5	C
California St/15 <sup>th</sup> Ave <sup>b</sup>	2-Way Stop	27.0	D	26.6	D
California St/14 <sup>th</sup> Ave <sup>b</sup>	2-Way Stop	29.6	D	41.9	E
California St/Park Presidio Blvd	Traffic Signal	30.5	C	38.9	D

Source: Wilbur Smith Associates 2004a.

Notes:

<sup>a</sup> Delay presented in seconds per vehicle based on the 2000 HCM methodology.

<sup>b</sup> LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.

Residents of the neighborhood immediately south of the site have general safety concerns related to traffic flow in and through the area, such as the heavy-volume of U-turns at the intersection of Lake Street/14<sup>th</sup> Avenue and pedestrian crossings across Park Presidio Boulevard at the intersection with Lake Street. Accident data obtained from the San Francisco Department of Parking and Traffic indicate that there have been 13 accidents at the intersection of Park Presidio Boulevard and Lake Street in the past five years, two of which involved pedestrians. There was also an accident at this location in 1996 that resulted in a bicyclist fatality. With respect to the development of the project site, neighborhood residents have expressed safety concerns related to the volume of traffic traveling through the 15<sup>th</sup> Avenue Gate as well as the speed of traffic exiting the gate.

### **3.2.1.3 Projected Future Traffic Conditions**

As regional population and employment continue to grow as projected, traffic on roadways near the project site is expected to increase over current levels. The increased occupancy of the PHSH district described in the PTMP would contribute to this overall increase in traffic volumes on nearby roadways. The PTMP calls for traffic traveling to and from the district to be accommodated by a one-way couplet at the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates, with the 14<sup>th</sup> Avenue Gate accommodating inbound traffic and the 15<sup>th</sup> Avenue Gate accommodating outbound traffic.

### **3.2.1.4 Transit Service**

Major public transit systems serving the project site include the San Francisco Municipal Railway (MUNI) and the Golden Gate Transit (GGT) system operated by the Golden Gate Bridge, Highway and Transportation District. These services provide access to other regional carriers such as BART, AC Transit, Caltrain, SamTrans, and the regional ferry system. In addition, the Presidio's internal shuttle bus service (PresidiGo) serves the park and connects to MUNI and GGT buses at key transfer points.

Five MUNI routes provide regular scheduled daily transit service directly to the San Francisco neighborhoods adjacent to the project site: 1-California, 1AX-California "A" Express, 1BX-California "B" Express, 28-19th Avenue, and the 28L-19th Avenue Limited. Figure 10 illustrates the relative location of these routes to the PHSH district. These MUNI routes operate at a frequency of 6 to 15 minutes during peak commute periods.

Recent ridership data are available for each line's maximum load point, defined as the location along the route at which the highest level of ridership typically occurs. In all instances, with the exception of the 1AX-California route, the maximum load point occurs at a substantial distance from the Presidio (at least 1.6 miles from the PHSH district). Table 6 presents the maximum load points and associated current ridership for the various MUNI bus lines serving the Presidio or its adjacent neighborhoods during the AM and PM peak commute periods. Table 6 indicates that the MUNI lines serving the PHSH district are well-used, but still have available capacity.

Golden Gate Transit (GGT) operates bus lines and ferry routes between San Francisco and Marin and Sonoma Counties. Twenty-one GGT bus lines pass through the Presidio during the AM and PM peak hours, all stopping at the Golden Gate Bridge Plaza. Only Route 10, however, proceeds south into San Francisco via Highway 1, Park Presidio Boulevard, and Geary Boulevard, with the stop nearest to the project site located at the Park Presidio/California intersection.

Early in 2002, the Trust began an internal, free-of-charge shuttle service for the Presidio (PresidiGo) that runs on compressed natural gas. The shuttle's two routes (orange and blue) serve the entire Presidio with more than 40 stops within the park, including key transfer points to MUNI and GGT buses. The service currently operates on 30-minute headways from 7:00 AM to 7:00 PM on weekdays, and on one-hour headways from 11:00 AM to 6:00 PM on weekends.

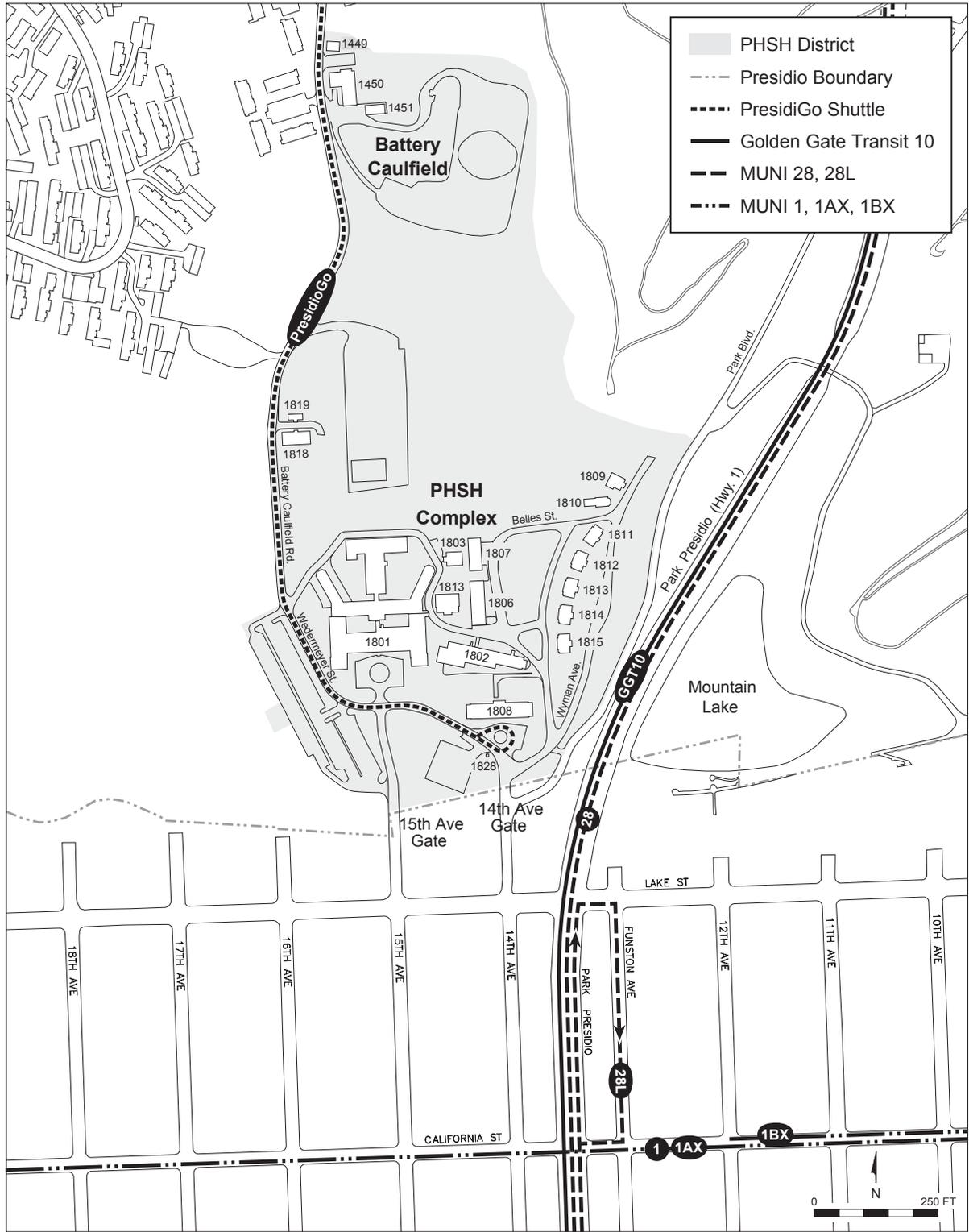


FIGURE 10. EXISTING TRANSIT ROUTES

Source: Presidio Trust, 2003

Table 6. Existing MUNI Passenger Loads

LINE	DIRECTION	MAXIMUM LOAD POINT	AM PEAK HOUR			PM PEAK HOUR			
			PEAK HOUR LOAD	PEAK HOUR CAPACITY	LOAD FACTOR	MAXIMUM LOAD POINT	PEAK HOUR LOAD	PEAK HOUR CAPACITY	LOAD FACTOR
1	to Howard/Main	Clay/Powell	929	987	94%	Clay/Polk	650	1,377	47%
	to Geary/33 <sup>rd</sup>	Sacramento/Polk	444	851	52%	Sacramento/Powell	1,243	1,533	81%
1AX	to Davis/Pine	California/Park Presidio	303	432	70%	n.a.	n.a.	n.a.	n.a.
	to Geary/33 <sup>rd</sup>	n.a.	n.a.	n.a.	n.a.	California/Park Presidio	154	314	49%
1BX	to Davis/Pine	California/Fillmore	653	765	85%	n.a.	n.a.	n.a.	n.a.
	to Park Presidio/California	n.a.	n.a.	n.a.	n.a.	California/Fillmore	248	373	66%
28	to Fort Mason	19 <sup>th</sup> Ave/Lincoln	311	588	53%	19 <sup>th</sup> Ave/Sloat	302	425	71%
	to Daly City BART	19 <sup>th</sup> Ave/Sloat	171	425	40%	19 <sup>th</sup> Ave/Lincoln	374	410	91%
28L	to Park Presidio/California	19 <sup>th</sup> Ave/Lincoln	134	273	49%	n.a.	n.a.	n.a.	n.a.
	to Daly City BART	19 <sup>th</sup> Ave/Sloat	113	331	34%	n.a.	n.a.	n.a.	n.a.

Source: MUNI, FY 2001-2002 Transit Data.

Notes:

<sup>a</sup> n.a. = not applicable; indicates that no runs are made on that route in that direction during that particular time period.

<sup>b</sup> Peak hour capacity is based on the MUNI Bus and Metro FY 2001-2002 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60 percent and 80 percent of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.

<sup>c</sup> Peak hour ridership is assumed to be 60 percent of the two-hour peak period ridership.

<sup>d</sup> The 1-California line operates at a three-minute headway east of Fillmore Street; the peak hour loads correspond to maximum load points that occur in this zone.

The blue PresidiGo line serves the project site with a stop at Wedemeyer Street, in front of Building 1808 (Nurses' Quarters) and the 14<sup>th</sup> Avenue Gate. It connects with the following bus lines: MUNI's 29-Sunset at Lincoln Boulevard, GGT's Transbay lines at the Golden Gate Bridge Plaza, MUNI's 82X-Presidio and Wharves Express at the Transit Center near the Main Post, and MUNI's 43-Masonic on Letterman Drive. During the first nine months of 2003, the PresidiGo service carried an average of 5,620 passengers each month, or an average of about 190 passengers per day. In addition, PresidiGo provides special service for tenants and events within the Presidio. Special service must be arranged in advance and is generally paid for by the tenant or event sponsor.

### **3.2.1.5 Bicycle and Pedestrian Conditions**

Figure 11 illustrates the existing and proposed trails and bikeways in the vicinity of the project site. Paved sidewalks connect the main buildings within the PHSH district by extending, for example, along the north side of Wedemeyer Street in front of Buildings 1801 (the former hospital building) and 1808 (the former nurses' quarters). Pedestrian paths on both sides of 15<sup>th</sup> Avenue and on the east side of 14<sup>th</sup> Avenue connect the site to the nearby park entrances. A similar network of pedestrian paths links together the buildings on Wyman Avenue. A shared pedestrian-bicycle path also crosses under Highway 1 to connect the project site to the Mountain Lake area. Implementation of the approved Bikeways and Trails Master Plan will extend this multi-use path around the south side of the project site to Battery Caulfield Road on the west side of the site. The Master Plan will also provide a continuous pedestrian path in the Wedemeyer Street/Battery Caulfield corridor and add pedestrian paths that connect the project site to Lobos Creek and Baker Beach Apartments.

Sixty-seven pedestrians were counted at Battery Caulfield Road from 7:00 AM to 6:00 PM during a weekday in October 1999; 157 pedestrians were counted the following Saturday during the same time period (Robert Peccia & Associates 1999b).

There are several bicycle routes through the Presidio, although bicycles and vehicles currently share a standard-width roadway along most of these routes. Near the project site, 15<sup>th</sup> Avenue, 25<sup>th</sup> Avenue, and El Camino del Mar are part of the designated San Francisco Citywide Bicycle Routes (Routes 69, 75, and 95, respectively) that continue into the Presidio. Route 69 is a Class III facility (signed route only where bicyclists share roadway with vehicles, generally with wider travel lanes). In the immediate vicinity of the project site, Route 69 follows Wedemeyer Street and Battery Caulfield Road to connect with Route 65 (Class III) at Washington Boulevard. The Presidio Bikeways and Trails Master Plan allows for an uphill bike lane on Wedemeyer Street/Battery Caulfield Road between 15<sup>th</sup> Avenue and Washington Boulevard. Park Boulevard/West Pacific Avenue at the southeast corner of the site is a Class I facility (paved off-street path separated from motor vehicle traffic) that extends from 14<sup>th</sup> Avenue and crosses under Highway 1 to connect to the Presidio Golf Course parking area on West Pacific Avenue. This facility will be extended around the south side of the PHSH site to Battery Caulfield Road on the west side of the site as part of implementation of the Bikeways and Trails Master Plan.

Forty-five bicyclists were counted at Battery Caulfield Road from 7:00 AM to 6:00 PM during a weekday in October 1999; 241 bicyclists were counted the following Saturday during the same time period.

### 3.2.1.6 Parking Conditions

On-street parking in the San Francisco neighborhood near the project site entrance is not metered, but is mostly restricted to a two-hour time limit, except for local residents displaying the appropriate sticker. Near the project site, the “N” residential permit parking zone, in which an “N” sticker is required in order to legally exceed the two-hour parking limit, extends on both sides of 14<sup>th</sup> and 15<sup>th</sup> Avenues between California Street and the Presidio, on both sides of Lake Street between 14<sup>th</sup> and 15<sup>th</sup> Avenues, and on both sides of 15<sup>th</sup> Avenue and on the west side of 14<sup>th</sup> Avenue between California Street and Clement Street. The only other parking restriction in this area is for weekly street cleaning.

As part of a study to assess the potential “spillover” effects of daytime parking fees and time restrictions in the Presidio, parking supply and occupancy surveys were conducted in the early morning, midday, and late afternoon periods of weekdays in October 2001 and December 2000. Survey data indicate that there are approximately 260 on-street parking spaces on Lake and California Streets between 14<sup>th</sup> and 18<sup>th</sup> Avenues and on 14<sup>th</sup> and 15<sup>th</sup> Avenues between California Street and the Presidio. Parking occupancy data indicate that 87 percent of the parking spaces are occupied early in the morning (6:00-8:30 AM) as residents start leaving the area to go to work. About 60 percent are occupied during the middle of the day (11:00 AM-1:00 PM), and about 47 percent are occupied in the late afternoon (3:00-5:00 PM). The cluster of parked vehicles near the 15<sup>th</sup> Avenue Gate suggests that the Presidio is used by some residents in the surrounding neighborhood as a convenient parking area when sufficient on-street parking is not available, and that parking occupancy during late evenings and weekends likely nears 100 percent.

Parking is currently prohibited on the Battery Caulfield site, and there are approximately 30 parking spaces in the paved areas around Buildings 1818, 1819, and 1450. There are 306 parking spaces on the lower plateau. Because there are a number of vacant buildings within the PHS complex, most of these spaces are unoccupied.

## 3.2.2 ENVIRONMENTAL CONSEQUENCES

Impacts related to transportation and circulation are discussed on pages 302 to 327 of the PTMP EIS, which identify a number of intersections where operations will degrade to unacceptable levels of service by the year 2020, including some for which no mitigation is available. The PTMP EIS analysis is incorporated here by reference, together with results of two subsequent transportation studies: Access Study at 14<sup>th</sup> /15<sup>th</sup> Avenue Gates (Presidio Trust 2003d) and Presidio Public Health Service Hospital Transportation Study: Additional Alternatives Analysis (Wilbur Smith Associates 2003). Relevant sections of these studies are summarized below and expanded upon as necessary. Analysis of transportation-related impacts for the four PHS alternatives is further detailed in three technical memoranda prepared for this study (Wilbur Smith Associates 2004a-c).

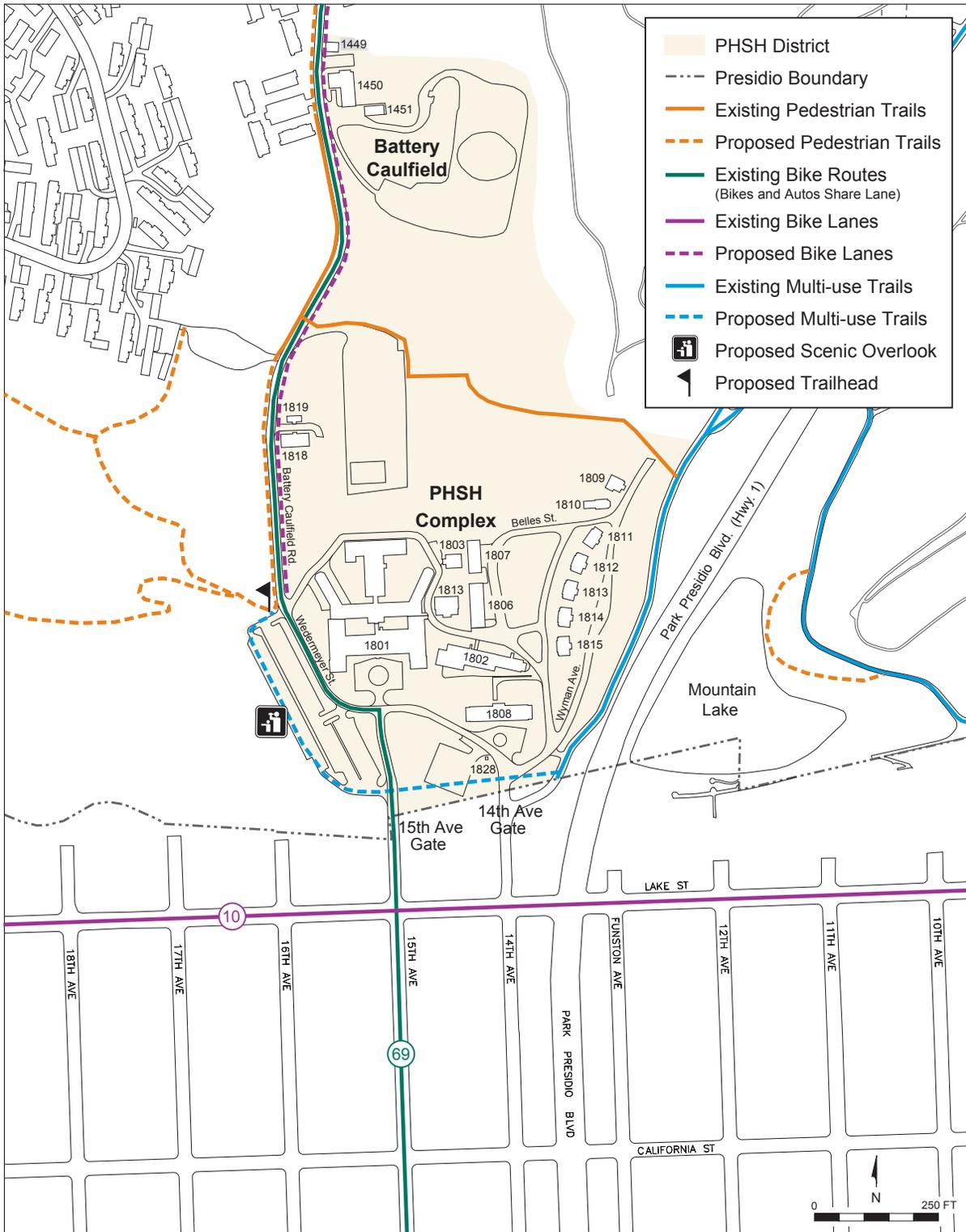


FIGURE 11. TRAILS AND BIKEWAYS

Source: Presidio Trust, 2003

### 3.2.2.1 Travel Demand

Trip generation rates, mode split, auto occupancy factors, and other travel and parking demand parameters were used to estimate the number of weekday daily, AM, and PM peak hour trips that would be generated by each of the four proposed alternatives.

The methodology is based on that used in the cumulative analysis for the PTMP EIS, which, in turn, was based on trip generation information from standard data sources such as the San Francisco Planning Department Guidelines for Environmental Review (SF Guidelines), the State of California Department of Transportation (Caltrans), and the Institute of Transportation Engineers (ITE). Modal split and auto occupancy for each of the alternatives vary by land use type and differ between external trips and trips internal to the Presidio. All of these travel characteristics incorporate the transportation demand management (TDM) measures included in the PTMP. Parking demand has also been estimated for midday weekday, evening, and weekend conditions, based on the methodology used in the PTMP EIS.

In order to estimate the number of person trips that would be generated by each alternative, trip generation rates were developed for and applied to the different land use types (residential, senior residential, cultural/educational, recreation, office, etc.). A trip generation rate expresses the number of person trips that would be generated by a unit (dwelling unit or square foot) of given land use type. Person trips for each alternative were calculated for weekday daily, AM peak hour, and PM peak hour conditions. In order to accurately reflect the different travel behavior characteristics of different types of housing, different trip generation rates were used for senior housing and conventional housing.

Trip generation rates by land use type were estimated based on information from the San Francisco Guidelines for Environmental Review, the Institute of Transportation Engineers Trip Generation Manual-Sixth Edition, the Caltrans' 15<sup>th</sup> Progress Report on Trip Ends Generation Research Counts, and the San Diego Traffic Generators Manual. Based on these sources, the person trip generation rates shown in Table 7 were developed to reflect the land uses described for each alternative.

Based on the Trust's live/work model, it is expected that many of the employed residents living in the Presidio would work within the park. The expected balance of employment and residential land uses within the Presidio by 2020 creates the opportunity for Presidio residents to work within the Presidio; therefore some of the trips would both originate and terminate in the Presidio. In order to evaluate internal trips differently from trips to and from other parts of the City or Bay Area, and to accurately reflect the effect of the jobs/housing balance on travel behavior, the number of person trips generated by the proposed land uses in each alternative was separated into external and internal trips. Approximately 5 to 14 percent (depending on the alternative) of the trips generated or attracted to the project site were assumed to begin and end within the Presidio. Presidio residents working in the Presidio could walk, bike, or ride the internal shuttle service to destinations within the Presidio. Because internal trips are more likely to be made by transit, walking, or bicycling than external trips, the separation of the two types of trips allowed for the application of different mode splits.

Table 7. Trip Generation Rates by Land Use

TIME PERIOD	LAND USE TYPE						
	INDUSTRIAL/ WAREHOUSE <sup>1</sup>	OFFICE <sup>a</sup>	CONFERENCE <sup>a</sup>	RECREATION <sup>a</sup>	CULTURAL/ EDUCATIONAL <sup>a</sup>	RESIDENTIAL <sup>b</sup>	SENIOR RESIDENTIAL <sup>b</sup>
Daily	6	15	8.5	45	67	10	5
<i>Inbound</i>	50%	50%	50%	50%	50%	50%	50%
<i>Outbound</i>	50%	50%	50%	50%	50%	50%	50%
AM Peak Hour	0.60	2.25	0.85	2.48	10.7	0.90	0.20
<i>Inbound</i>	80%	90%	80%	60%	53%	20%	20%
<i>Outbound</i>	20%	10%	20%	40%	47%	80%	80%
PM Peak Hour	0.90	1.50	0.85	4.50	12.1	1.05	0.25
<i>Inbound</i>	20%	15%	30%	50%	47%	70%	70%
<i>Outbound</i>	80%	85%	70%	50%	53%	30%	30%

Source: Wilbur Smith Associates 2003.

Notes:

<sup>a</sup> Number of person trips per 1,000 gross square feet.

<sup>b</sup> Number of person trips per dwelling unit.

Project site-generated person trips were assigned to travel modes in order to estimate the number of auto, transit, and walk/bicycle trips. Mode split information was obtained from the PTMP EIS. This information was based on Presidio employee and resident surveys and the minimum performance standards of the Transportation Demand Management Program as outlined in Appendix D of the PTMP.

Auto person trips refer to person trips involving either a driver or a passenger in a private vehicle. To determine the number of vehicle trips generated by the number of auto person trips, average vehicle occupancy was used. The assumed vehicle occupancy factor varies by land use. The chosen vehicle occupancy factors were based on the PTMP EIS, which in turn are based on Citywide Travel Behavior Survey (CTBS) travel data published by the San Francisco Planning Department.

Table 8 presents the projected daily, AM peak hour, and PM peak hour travel demand estimates by mode for typical weekday conditions for the four project alternatives analyzed. Daily and peak hour travel demand vary by alternative, depending on the land uses included in each alternative and the intensity of use. Detailed travel demand calculations by alternative are provided in technical memoranda for the transportation analysis for this project.

Table 8. Estimated Trip Generation<sup>a</sup> by Mode of Travel and by Alternative  
Weekday Daily, AM and PM Peak Hour

TIME PERIOD	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<b>Daily</b>				
<b>Person Trips<sup>b</sup></b>				
Auto	5,354	2,816	2,048	1,759
Transit	1,557	701	496	427
Other <sup>c</sup>	1,604	658	460	410
Total	8,515	4,175	3,004	2,596
<i>Vehicle Trips<sup>d</sup></i>	3,728	2,212	1,600	1,346
<b>AM Peak Hour</b>				
<b>Person Trips<sup>b</sup></b>				
Auto	313	298	222	171
Transit	92	69	50	36
Other <sup>c</sup>	95	63	45	32
Total	500	430	317	239
<i>Vehicle Trips<sup>d</sup></i>	225	229	170	127
<b>PM Peak Hour</b>				
<b>Person Trips<sup>b</sup></b>				
Auto	707	343	260	203
Transit	206	80	59	44
Other <sup>c</sup>	213	73	53	40
Total	1,126	496	372	287
<i>Vehicle Trips<sup>d</sup></i>	494	265	199	151

Source: Wilbur Smith Associates 2003.

Notes:

<sup>a</sup> Includes inbound and outbound trips.

<sup>b</sup> Person trips refer to trips made by all modes.

<sup>c</sup> “Other” includes walking, bicycling, and other modes.

<sup>d</sup> Vehicle trips are calculated by dividing the auto person trips by the average number of persons per vehicle.

The modal split for the PTMP or no action alternative (Alternative 1) would be approximately 63 percent by auto, 18 percent by transit use, and 19 percent by walking and bicycle. For the other three alternatives, the modal split would be approximately 67 to 72 percent by auto, 15 to 17 percent by transit use, and 13 to 16 percent by walking and bicycle. The average number of occupants per vehicle would be 1.3 to 1.4 for all alternatives. The number of weekday daily person trips would range from about 2,600 for Alternative 4 to approximately 8,500 for Alternative 1; vehicle trips would follow a similar pattern. In general, approximately 6 to 11 percent of the daily trips generated by each alternative would occur during the AM peak hour, and 11 to 13 percent would occur during the PM peak hour.

The geographic distribution of employee, visitor, and resident trips to the project site was based on data gathered as part of the PTMP EIS transportation analysis, which in turn was based on a survey of Presidio employees, the San Francisco Guidelines for Environmental Review, and results from the San Francisco County Transportation Authority travel demand model. The PSHH-generated and -attracted trips were distributed to San Francisco, the East Bay, the North Bay, and the South Bay. The trips to and from San Francisco were further separated into four quadrants of the City, or Superdistricts as described in the Citywide Travel Behavior Survey. Based on the trip distribution, external vehicle trips were assigned to the local street network, and external transit trips were assigned to the appropriate transit routes.

#### **3.2.2.2 Traffic at Local Intersections**

Currently, the 15<sup>th</sup> Avenue Gate is open to vehicular (and pedestrian) traffic and the 14<sup>th</sup> Avenue Gate is open only to pedestrians. Although this configuration functions adequately with the existing level of traffic, future occupancy of the PSHH and other Presidio buildings is expected to warrant improved access and circulation. The NPS 1994 General Management Plan Amendment for the Presidio recognized such access needs and recommended reopening the 14<sup>th</sup> Avenue Gate to vehicular traffic and operating the 14<sup>th</sup> Avenue and 15<sup>th</sup> Avenue Gates as a one-way couplet with the 14<sup>th</sup> Avenue Gate accommodating northbound traffic entering the Presidio and the 15<sup>th</sup> Avenue Gate accommodating southbound traffic exiting the Presidio. This one-way couplet was assumed in the analysis of transportation-related impacts of land use alternatives in the PTMP EIS and was also assumed for the assessment of traffic impacts related to the four PSHH alternatives. Alternatives 2, 3, and 4 were also analyzed assuming the Park Presidio Boulevard Access Variant, which would provide a new intersection on Park Presidio Boulevard and with which both the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates would be open to inbound (northbound) traffic only.

All of the action alternatives would generate less traffic than Alternative 1 in the peak hours, and consequently the effects on nearby roadways and intersections, including effects on Highway 1 and U.S. 101, would be less than anticipated with Alternative 1. With the Park Presidio Boulevard Access Variant, Alternatives 2, 3, and 4 would result in slightly more traffic on Highway 1 north of the new intersection than with the roadway network configuration assumed in the PTMP. Compared to Alternative 1, Alternatives 2, 3, and 4 with the Park Presidio Boulevard Access Variant would result in less than one percent more total traffic on Highway 1 just north of the project site.

Tables 9 and 10 compare the projected average delay per vehicle and associated intersection level of service under the various alternatives with and without the Park Presidio Access Variant in the AM peak hour and PM peak hour, respectively. With the Park Presidio Access Variant, signal timings for other intersections on Park Presidio Boulevard could possibly be modified to optimize individual intersection operation and progression of traffic on Park Presidio Boulevard. The analysis described below assumes slight modifications to the signal timings at the intersections of Lake Street/Park Presidio Boulevard and California Street/Park Presidio Boulevard. However, these modifications would not compromise the ability of pedestrians to safely cross Park Presidio Boulevard.

**Alternative 1: PTMP or No Action Alternative** – Under Alternative 1, in the AM peak hour, all but two intersections would operate at LOS D or better. The minor approaches to the two-way stop-controlled intersections of Lake Street/14<sup>th</sup> Avenue and California Street/14<sup>th</sup> Avenue would operate at LOS F. In the PM peak hour, the minor approaches to the two-way stop-controlled intersections of Lake Street/14<sup>th</sup> Avenue, California Street/14<sup>th</sup> Avenue and California Street/15<sup>th</sup> Avenue would operate at LOS F.

While the low-volume traffic on one or both of the minor approaches to these intersections would incur delay, the majority of the traffic on the uncontrolled approaches (California Street or Lake Street) would not have to stop and therefore would not incur any delay. The possible mitigation measure identified for Lake Street/14<sup>th</sup> Avenue in the PTMP EIS included signalization and restriping to provide a westbound left-turn pocket at Lake Street /14<sup>th</sup> Avenue (Mitigation Measure TR-11). The possible mitigation measure identified in the PTMP EIS for the California Street/14<sup>th</sup> Avenue intersection included installing STOP signs on California Street at the intersection and restriping to add a right-turn lane to the northbound approach, or possibly installing a traffic signal if queues on the westbound approach were determined to extend into the adjacent intersection of Park Presidio Boulevard/California Street.

While signalization would mitigate the operation of these intersections, it has been determined, through subsequent analysis (Access Study at 14<sup>th</sup>/15<sup>th</sup> Avenue Gates, Presidio Trust, February 2003) and coordination with the San Francisco Department of Parking and Traffic following their comments on the PTMP EIS that questioned the need for improving the minor approaches to these intersections (PTMP EIS, Volume II, Chapter 5, page 5-59), that the LOS E or F conditions on the minor approaches to Lake Street/14<sup>th</sup> Avenue could be mitigated with other measures such as RIGHT TURN ONLY restrictions for the minor approach(es). The minor approach(es) to the intersection of Lake Street/14<sup>th</sup> Avenue are expected to operate with more average delay per vehicle than the minor approach(es) to the intersection of California Street/14<sup>th</sup> Avenue or California Street/15<sup>th</sup> Avenue. Therefore, such measures would also likely improve the minor approach(es) to the intersection of California Street/14<sup>th</sup> Avenue to LOS D or better in the AM and PM peak hours, and to improve the minor approach(es) to the intersection of California Street/15<sup>th</sup> Avenue to LOS D or better in the PM peak hour.

It should be noted that the intersection of California Street/15<sup>th</sup> Avenue was not expected to operate at LOS F in the PM peak hour based on the traffic analysis for the Final Plan Alternative in the PTMP EIS. The Highway Capacity Manual (HCM) methodology was revised in 2000; because the revisions were very recent at the time of the PTMP EIS analysis, the HCM 2000 methodology was not widely accepted

Table 9. Intersection Levels of Service – Weekday AM Peak Hour  
Year 2020 Conditions

INTERSECTION	CONTROL	ONE-WAY COUPLET AT 14 <sup>TH</sup> & 15 <sup>TH</sup> AVE. GATES								VARIANT: NEW PARK PRESIDIO BLVD. ACCESS WITH INBOUND ONLY TRAFFIC AT 14 <sup>TH</sup> & 15 <sup>TH</sup> AVE. GATES					
		ALTERNATIVE 1		ALTERNATIVE 2		ALTERNATIVE 3		ALTERNATIVE 4		ALTERNATIVE 2		ALTERNATIVE 3		ALTERNATIVE 4	
		DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS
Lake Street/ 15 <sup>th</sup> Avenue	4-way STOP	27.0	D	29.1	D	27.2	D	26.0	D	21.6	C	21.3	C	21.1	C
Lake Street/ 14 <sup>th</sup> Avenue <sup>b</sup>	2-way STOP	86.9	F	68.8	F	62.9	F	59.5	F	45.1	E	43.7	E	42.5	E
Lake Street/ Park Presidio Boulevard	Signal	37.9	D	38.1	D	37.9	D	37.9	D	39.6	D	39.1	D	38.6	D
California Street/ 15 <sup>th</sup> Avenue <sup>b</sup>	2-way STOP	28.4	D	27.7	D	27.4	D	27.5	D	32.1	D	31.9	D	31.7	D
California Street/ 14 <sup>th</sup> Avenue <sup>b</sup>	2-way STOP	58.8	F	53.0	F	51.7	F	50.8	F	61.1	F	58.2	F	55.5	F
California Street/ Park Presidio Boulevard	Signal	42.3	D	42.3	D	42.3	D	42.3	D	42.3	D	42.3	D	42.3	D
New Alternative Access/ Park Presidio Boulevard	Signal	--	--	--	--	--	--	--	--	5.6	A	4.9	A	4.8	A

Source: Wilbur Smith Associates 2004c.

<sup>a</sup> Delay presented in seconds per vehicle based on the HCM 2000 methodology.

<sup>b</sup> See footnote 5.

Table 10. Intersection Levels of Service – Weekday PM Peak Hour  
Year 2020 Conditions

INTERSECTION	CONTROL	ONE-WAY COUPLET AT 14 <sup>TH</sup> & 15 <sup>TH</sup> AVE. GATES								VARIANT: NEW PARK PRESIDIO BLVD. ACCESS WITH INBOUND ONLY TRAFFIC AT 14 <sup>TH</sup> & 15 <sup>TH</sup> AVE. GATES					
		ALTERNATIVE 1		ALTERNATIVE 2		ALTERNATIVE 3		ALTERNATIVE 4		ALTERNATIVE 2		ALTERNATIVE 3		ALTERNATIVE 4	
		DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS	DELAY <sup>a</sup>	LOS
Lake Street/ 15 <sup>th</sup> Avenue	4-way STOP	22.1	C	19.2	C	18.8	C	18.3	C	17.4	C	17.1	C	16.9	C
Lake Street/ 14 <sup>th</sup> Avenue <sup>b</sup>	2-way STOP	>90	F	>90	F	>90	F	>90	F	>90	F	>90	F	>90	F
Lake Street/ Park Presidio Boulevard	Signal	36.4	D	36.3	D	36.2	D	36.2	D	50.0	D	48.7	D	48.2	D
California Street/ 15 <sup>th</sup> Avenue <sup>b</sup>	2-way STOP	55.6	F	47.4	E	45.5	E	44.3	E	42.7	E	41.0	E	39.7	E
California Street/ 14 <sup>th</sup> Avenue <sup>b</sup>	2-way STOP	>90	F	>90	F	>90	F	>90	F	>90	F	>90	F	>90	F
California Street/ Park Presidio Boulevard	Signal	75.4	E	75.4	E	75.4	E	75.4	E	72.0	E	71.6	E	71.3	E
New Alternative Access/ Park Presidio Boulevard	Signal	--	--	--	--	--	--	--	--	7.0	A	6.9	A	6.8	A

Source: Wilbur Smith Associates 2004c.

<sup>a</sup> Delay presented in seconds per vehicle based on the HCM 2000 methodology.

<sup>b</sup> See footnote 5.

at the time. The PTMP EIS therefore used an older (1994) HCM methodology. The HCM 2000 methodology has since become widely accepted, and using this methodology the intersection of California Street/15<sup>th</sup> Avenue is forecasted to operate at LOS F in the PM peak hour, while it was forecasted to operate at LOS D in the PTMP EIS. The California Street/15<sup>th</sup> Avenue intersection is a two-way stop-controlled intersection like California Street/14<sup>th</sup> Avenue and Lake Street/14<sup>th</sup> Avenue, and the Trust would work with the San Francisco Department of Parking and Traffic to develop acceptable improvements if desired. It is likely that alternatives to signalization, such as turn restrictions on the minor approach(es) similar to Lake Street/14<sup>th</sup> Avenue, would improve the operation on the minor approaches to this intersection.<sup>6</sup>

The signalized intersection of California Street/Park Presidio Boulevard would operate at LOS E in the PM peak hour. This intersection is expected to operate at LOS E due to the growth in traffic volumes associated with Bay Area regional trends in population and employment. The PTMP EIS determined that this intersection would be unmitigable, and the Presidio's contribution to the total peak hour traffic volume is expected to be less than two percent.

**Alternative 2: Infill Alternative** – Alternative 2 would generate 2,212 daily vehicle trips, or 41 percent fewer than Alternative 1, due to its emphasis on residential rather than combined residential and educational uses. In the AM peak hour, Alternative 2 would generate slightly more vehicle trips than Alternative 1, but in the PM peak hour would generate about 46 percent fewer vehicle trips than Alternative 1.

As shown in Table 9, in the AM peak hour in 2020, Alternative 2 would yield the same intersection levels of service as Alternative 1 (the PTMP or no action alternative), but would result in the same or less average delay per vehicle at all intersections except Lake Street/15<sup>th</sup> Avenue and Lake Street/Park Presidio Boulevard. With the variant that assumes direct access to the project site from Park Presidio Boulevard, the LOS F conditions at the minor approach to the two-way stop-controlled intersection of Lake Street/14<sup>th</sup> Avenue would improve to LOS E under Alternative 2, the LOS D conditions at the all-way stop-controlled intersection of Lake Street/15<sup>th</sup> Avenue would improve to LOS C, and all other intersections would operate at the same levels of service as with Alternative 1.

In the PM peak hour in 2020, Alternative 2 would operate at the same levels of service as Alternative 1, except at the intersection of California Street/15<sup>th</sup> Avenue, which would improve to LOS E. As with Alternative 1, one or both of the minor approaches to the three two-way stop-controlled intersections of Lake Street/14<sup>th</sup> Avenue, California Street/14<sup>th</sup> Avenue and California Street/15<sup>th</sup> Avenue are expected to operate at LOS E or F. The signalized intersections of Lake Street/Park Presidio Boulevard and California Street/Park Presidio Boulevard would operate at LOS D and E, respectively, as they would

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<sup>6</sup> Although mitigation could improve conditions at LOS E or F two-way stop controlled intersections, the Trust does not consider these conditions to be significant environmental effects. At the intersection of California Street/15<sup>th</sup> Avenue, traffic volumes would be the same as analyzed/reported in the PTMP EIS, and at all two-way stop-controlled intersections, drivers are presented with choices that necessarily reduce the delay they experience to acceptable levels. For example, when a driver experiences delay at the minor leg of a two-way stop-controlled intersection, the driver always has the option of making a right turn and using a less direct route to a destination. Because of driver choice, the limited delays experienced at the intersection as a whole, on the major approaches, LOS E or F conditions at two-way stops are not considered to be significant environmental effects.

with Alternative 1. The California Street/Park Presidio Boulevard intersection could not be mitigated. The Presidio would contribute less than two percent to the total peak hour volumes at this intersection.

With the variant that assumes direct access to the project site from Park Presidio Boulevard in the PM peak hour, levels of service would be the same as under Alternative 1 except at one intersection. At the two-way stop-controlled intersection of California Street/15<sup>th</sup> Avenue, the LOS F conditions expected for the minor approach under Alternative 1 would improve to LOS E with Alternative 2.

**Alternative 3: No Infill Alternative** – Alternative 3 would generate 1,600 daily vehicle trips or 57 percent fewer than Alternative 1 due to its emphasis on residential uses and its smaller size. In the AM peak hour, Alternative 3 would generate 170 vehicle trips or 24 percent fewer than Alternative 1, and in the PM peak hour Alternative 3 is expected to generate 199 vehicle trips or 60 percent fewer trips than Alternative 1.

In the AM peak hour in 2020, Alternative 3 would yield the same intersection levels of service as Alternative 1 but with delays that are about the same or less than with Alternative 1. With the variant that assumes direct access to the project site from Park Presidio Boulevard, the levels of service would be the same as with Alternative 1 except at the intersections of Lake Street/14<sup>th</sup> Avenue and Lake Street/15<sup>th</sup> Avenue. The LOS F conditions at the minor approach to the two-way stop-controlled intersection of Lake Street/14<sup>th</sup> Avenue under Alternative 1 would improve to LOS E under Alternative 3. At the all-way stop-controlled intersection of Lake Street/15<sup>th</sup> Avenue, the LOS D conditions associated with Alternative 1 would improve to LOS C with Alternative 3. With the Park Presidio Access Variant, Alternative 3 would result in average delays ranging between 50 percent less and 12 percent more than Alternative 1.

In the PM peak hour in 2020, Alternative 3 would yield the same levels of service as Alternative 1 under the one-way couplet scenario except at the intersection of California Street/15<sup>th</sup> Avenue, which would improve to LOS E. Assuming direct access to Park Presidio Boulevard, levels of service would be the same as with Alternative 1 with the exception of the minor approach(es) of California Street/15<sup>th</sup> Avenue, which would operate at LOS E compared to LOS F with Alternative 1.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate the least vehicle trips on a daily basis as well as during the AM and PM peak hours due to its emphasis on residential use and its inclusion of senior housing. Alternative 4 is expected to generate 1,346 daily vehicle trips or 64 percent fewer than Alternative 1. In the AM peak hour, Alternative 4 would generate 127 vehicle trips or 44 percent fewer than Alternative 1, and in the PM peak hour Alternative 4 is expected to generate 151 vehicle trips or 69 percent fewer trips than the number of vehicle trips generated by Alternative 1.

As shown in Table 9, in the AM peak hour in 2020, Alternative 4 would yield the same intersection levels of service as Alternative 1, but would result in the same or less average delay per vehicle at all intersections. The most substantial difference in average delay would occur at the intersection of Lake Street/14<sup>th</sup> Avenue, where the average delay would be about 31 percent less than with Alternative 1. With the variant that assumes direct access to the project site from Park Presidio Boulevard, levels of service

would be the same as with Alternative 1 except at the intersections of Lake Street/14<sup>th</sup> Avenue and Lake Street/15<sup>th</sup> Avenue. The LOS F conditions at the minor approach to the two-way stop-controlled intersection of Lake Street/14<sup>th</sup> Avenue would improve to LOS E with Alternative 3, and the LOS E conditions at the intersection of Lake Street/15<sup>th</sup> Avenue would improve to LOS C with Alternative 3.

In the PM peak hour in 2020, Alternative 4 would operate at the same levels of service as Alternative 1 except at the intersection of California Street/15<sup>th</sup> Avenue, which would improve from LOS F with Alternative 1 to LOS E. The average delay per vehicle would be the same or less than with Alternative 1 at all intersections. As with Alternative 1, the signalized intersection of California Street/Park Presidio Boulevard would operate at LOS E. This signalized intersection could not be mitigated. The Presidio would contribute less than two percent to the total peak hour volumes at this intersection. With the variant that assumes direct access to the project site from Park Presidio Boulevard, all intersections would operate at the same levels of service as with Alternative 1 except the intersection of California Street/15<sup>th</sup> Avenue which would improve from LOS F to LOS E.

### 3.2.2.3 Traffic Operations and Safety Considerations

Traffic conditions on Park Presidio Boulevard and in the surrounding residential neighborhood would vary across alternatives and with the Park Presidio Access Variant. Table 11 shows anticipated peak hour traffic volumes through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates for each of the alternatives with and without the variant. Future traffic volumes through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates would relate directly to the level of comfort and safety concerns of the residents of the surrounding neighborhood.

Table 11. Comparison of Peak Hour Traffic Volumes<sup>a</sup> through 14<sup>th</sup>/15<sup>th</sup> Avenue Gates

ALTERNATIVE	AM PEAK HOUR	PM PEAK HOUR
Alternative 1	300	560
Alternative 2	310	480
Alternative 3	290	450
Alternative 4	270	430
Alternative 2 with Variant	150	270
Alternative 3 with Variant	150	250
Alternative 4 with Variant	140	240

Source: Wilbur Smith Associates 2004c.

<sup>a</sup> Forecasted 2020 gate volumes have been rounded.

**Alternative 1: PTMP or No Action Alternative** – Alternative 1 is expected to result in approximately 300 and 560 vehicles per hour traveling through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates in the AM and PM peak

hours, respectively. A PM peak hour volume of 560 vehicles is about three times the PM peak hour volume of 187 vehicles per hour observed in October 2002.

**Alternative 2: Infill Alternative** – Alternative 2 would result in 14 percent fewer PM peak hour vehicle trips through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates than Alternative 1. During the AM peak hour, Alternative 2 would generate about three percent more vehicle trips through the gates due to its emphasis on residential uses rather than residential and educational uses. The reduction in traffic volume through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates would result in less traffic on nearby residential neighborhood streets, and therefore could result in a higher level of comfort, quality of life benefits, and safer conditions for neighborhood residents.

With the Park Presidio Access Variant, Alternative 2 would result in about half the volume of traffic through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates during both the AM and PM peak hours compared to Alternative 1. In addition, the Park Presidio Access Variant would improve pedestrian and bicycle safety at the intersection of Lake Street/Park Presidio Boulevard because the new intersection on Park Presidio Boulevard would replace the Lake Street intersection as the first intersection encountered by southbound traffic on Highway 1.

**Alternative 3: No Infill Alternative** – When compared to Alternative 1, Alternative 3 would result in 3 and 20 percent fewer vehicle trips through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates during the AM and PM peak hours, respectively. With the Park Presidio Access Variant, Alternative 3 would result in 50 and 55 percent less traffic through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates during the AM and PM peak hours, respectively, than Alternative 1. Less traffic through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates would result in less traffic on nearby residential neighborhood streets, and therefore could result in a higher level of comfort, improved quality of life, and safer traffic conditions for neighborhood residents. The Park Presidio Access Variant would also improve pedestrian and bicycle safety at the intersection of Lake Street/Park Presidio Boulevard by creating a new intersection on Park Presidio Boulevard that would be encountered by southbound traffic on Highway 1 prior to reaching Lake Street.

**Alternative 4: Battery Caulfield Alternative** – Due to its emphasis on residential use and inclusion of senior housing, Alternative 4 would generate 10 and 23 percent fewer vehicle trips through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates in the AM and PM peak hours, respectively, than Alternative 1. With the Park Presidio Access Variant, Alternative 4 would result in 53 and 57 percent less traffic through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates during the AM and PM peak hours, respectively, than Alternative 1. The Park Presidio Access Variant would also improve pedestrian and bicycle safety at the intersection of Lake Street/Park Presidio Boulevard because the new intersection would replace the Lake Street intersection as the first intersection encountered by southbound traffic on Highway 1.

#### **3.2.2.4 Transit**

The land uses associated with the PHSB alternatives would generate transit trips on several Bay Area transit providers, and would most affect the three transit providers that directly serve the project site, including MUNI, Golden Gate Transit (GGT) and the Presidio's internal shuttle (PresidiGo). Trips to and

from the project site expected to be made by transit were estimated based on the expected mode split discussed in Section 3.2.2.1, Travel Demand, and then assigned to transit routes based on the geographic distribution of origins and destinations. Because some transit passengers may use more than one transit mode (e.g., transfer from MUNI to PresidiGo), the sum of transit trips made on each transit provider may exceed the total number of transit passengers. Table 12 summarizes the expected AM peak hour and PM peak hour transit trips to and from the project site by transit service provider for each alternative.

Table 12. Peak Hour Transit Trips to/from Project Site by Service Provider and Alternative

TIME PERIOD & SERVICE PROVIDER	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<b>AM Peak Hour</b>				
MUNI	71	61	43	30
Golden Gate Transit	8	6	5	3
PresidiGo	37	19	14	11
<b>PM Peak Hour</b>				
MUNI	163	70	51	36
Golden Gate Transit	17	7	5	4
PresidiGo	76	23	17	15

Source: Wilbur Smith Associates 2004.

**Alternative 1: PTMP or No Action Alternative** – Alternative 1 would generate 1,557 daily transit trips. The alternative would generate 92 transit trips in the AM peak hour and 206 transit trips in the PM peak hour. If MUNI does not provide additional capacity for Routes 1, 1AX, and 1BX on California Street by 2020, the cumulative ridership due to regional growth trends and implementation of the PTMP could exceed capacity on one or more of these three routes in the inbound (toward downtown) direction in the AM peak hour. However, the Presidio is expected to contribute only two percent or less to the total projected 2020 ridership on these routes. In the PM peak hour, cumulative ridership on MUNI Route 28 could exceed capacity if additional capacity is not added to this route. In the southbound direction, projected ridership on MUNI Route 28 is expected to exceed capacity without ridership generated by the Presidio. The maximum load point for the MUNI Route 28 occurs south of Golden Gate Park, and many passengers traveling to and from the Presidio are expected to board or alight the bus at a considerable distance from the maximum load point.

GGT Route 10<sup>7</sup> is the Golden Gate Transit route that directly serves the project site. Ridership on this route could slightly exceed capacity in the PM peak hour in the southbound direction if capacity is not increased beyond the current level. The Presidio is expected to contribute about 11 percent to the total PM peak hour projected ridership in 2020. Mitigation called for in the PTMP EIS, including increased frequency on MUNI lines, PresidiGo service, and monitoring of GGT routes and coordination with GGT, would reduce the effects of Alternative 1 on transit service.

**Alternative 2: Infill Alternative** – Alternative 2 would generate 701 daily transit trips, or 55 percent fewer than Alternative 1. In the AM peak hour, Alternative 2 would generate 69 transit trips, or 25 percent fewer than Alternative 1. In the PM peak hour, Alternative 2 would generate 80 transit trips, or 61 percent fewer than Alternative 1. Alternative 2 is expected to result in 14 percent and 57 percent less MUNI ridership in 2020 than Alternative 1 in the AM and PM peak hours, respectively. On Golden Gate Transit, Alternative 2 would result in 25 percent and 59 percent less ridership in 2020 in the AM and PM peak hours, respectively. Mitigation called for in the PTMP EIS, including increased frequency on MUNI lines, PresidiGo service, and monitoring of GGT routes and coordination with GGT, would reduce the effects of Alternative 2 on transit service.

**Alternative 3: No Infill Alternative** – Alternative 3 would generate 496 daily transit trips, or 68 percent fewer than Alternative 1. In the AM peak hour, Alternative 3 would generate 50 transit trips, or 46 percent fewer than Alternative 1. In the PM peak hour, Alternative 3 would generate 59 transit trips, or 71 percent fewer than Alternative 1.

Compared to Alternative 1, Alternative 3 is expected to result in 39 percent and 69 percent less MUNI ridership in 2020 in the AM and PM peak hours, respectively. On Golden Gate Transit, Alternative 3 would result in about 39 percent and 71 percent less ridership in 2020 in the AM and PM peak hours, respectively. Mitigation called for in the PTMP EIS, including increased frequency on MUNI lines, PresidiGo service, and monitoring of GGT routes and coordination with GGT, would reduce the effects of Alternative 3 on transit service.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate 427 daily transit trips, or 73 percent fewer than Alternative 1. In the AM peak hour, Alternative 4 would generate 36 transit trips, or 61 percent fewer than Alternative 1. In the PM peak hour, Alternative 4 would generate 44 transit trips, or 79 percent fewer than Alternative 1.

Compared to Alternative 1, Alternative 4 is expected to result in 58 percent and 78 percent less MUNI ridership in 2020 in the AM and PM peak hours, respectively. On Golden Gate Transit in 2020, Alternative 4 is expected to result in about 63 percent and 76 percent less ridership in 2020 in the AM and PM peak hours, respectively. Mitigation called for in the PTMP EIS, including increased frequency on MUNI lines, PresidiGo service, and monitoring of GGT routes and coordination with GGT, would reduce the effects of Alternative 4 on transit service.

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<sup>7</sup> Ridership data presented are for GGT Route 50. GGT Route 50 no longer exists, but GGT Route 10 follows the same alignment in San Francisco. Ridership data for GGT Route 10 are not yet available.

### 3.2.2.5 Pedestrians and Bicycles

The number of person trips to and from the project site expected to be made by bicycling, walking, or some other mode was calculated assuming the mode split discussed in Section 3.2.2.1, Travel Demand.

All of the alternatives assume improvements to the pedestrian and bicycle circulation network consistent with the Bikeways and Trails Master Plan (see Figure 11). In the vicinity of the project site, the Bikeways and Trails Master Plan would provide a multi-use path that would extend from Battery Caulfield Road on the west side of the site around the south side of the site to connect with Park Boulevard, which is an existing multi-use path that continues under Highway 1 to the Mountain Lake area. The Master Plan would also provide an uphill bike lane on Wedemeyer Street/Battery Caulfield Road between 15<sup>th</sup> Avenue and Washington Boulevard, a pedestrian path in the Wedemeyer Street/Battery Caulfield corridor, and pedestrian paths that connect the project site to Lobos Creek and the Baker Beach Apartments.

**Alternative 1: PTMP or No Action Alternative** – Alternative 1 would generate 1,604 daily pedestrian or bicycle trips. The alternative would generate 95 pedestrian or bicycle trips in the AM peak hour and 213 pedestrian or bicycle trips in the PM peak hour. The expected level of pedestrian and bicycle activity with Alternative 1 would be accommodated within the bicycle and pedestrian network planned as part of the Presidio Bikeways and Trails Master Plan.

**Alternative 2: Infill Alternative** – Alternative 2 would generate 658 daily pedestrian or bicycle trips, or 62 percent fewer than Alternative 1. In the AM peak hour, Alternative 2 would generate 63 pedestrian or bicycle trips, or 34 percent fewer than Alternative 1. In the PM peak hour, Alternative 2 would generate 73 pedestrian or bicycle trips, or 66 percent fewer than Alternative 1. Since Alternative 2 would generate fewer bicycle and pedestrian trips than Alternative 1, the expected level of pedestrian and bicycle activity with Alternative 2 could be accommodated within the bicycle and pedestrian network planned as part of the Presidio Bikeways and Trails Master Plan.

**Alternative 3: No Infill Alternative** – Alternative 3 would generate 460 daily pedestrian or bicycle trips, or 71 percent fewer than Alternative 1. In the AM peak hour, Alternative 3 would generate 45 pedestrian or bicycle trips, or 53 percent fewer than Alternative 1. In the PM peak hour, Alternative 3 would generate 53 pedestrian or bicycle trips, or 75 percent fewer than Alternative 1. The expected level of pedestrian and bicycle activity with Alternative 3 would be accommodated within the bicycle and pedestrian network planned as part of the Presidio Bikeways and Trails Master Plan.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate 410 daily pedestrian or bicycle trips, or 74 percent fewer than Alternative 1. In the AM peak hour, Alternative 4 would generate 32 pedestrian or bicycle trips, or 66 percent fewer than Alternative 1. In the PM peak hour, Alternative 4 would generate 40 pedestrian or bicycle trips, or 81 percent fewer than Alternative 1. The expected level of pedestrian and bicycle activity with Alternative 4 would be accommodated within the bicycle and pedestrian network planned as part of the Presidio Bikeways and Trails Master Plan.

**Park Presidio Access Variant** – In combination with any of the action alternatives, the proposed access to Park Presidio Boulevard would improve pedestrian and bicycle safety when compared to existing conditions. By providing for an intersection north of the intersection of Lake Street/Park Presidio Boulevard, the variant would slow southbound traffic before it reaches the crosswalk and designated bicycle route on Lake Street.

### 3.2.2.6 Parking

Parking demand generated by the four land use alternatives has been estimated for the midday weekday, evening, and weekend conditions, based on the methodology used in the PTMP EIS. Parking demand consists of both long-term demand (i.e., employee and resident parking) and short-term demand (i.e., visitor parking). Long-term parking for non-residential land uses was estimated by determining the number of employees for each land use and applying the average mode split and vehicle occupancy from the trip generation estimates for both external and internal trips. Each employee vehicle trip was assumed to require one space per day. A long-term rate of 1.13 to 1.32 spaces per dwelling unit was used for standard residential units (depending on the mix of unit types/sizes for each alternative), and a rate of 0.27 space per dwelling unit was used for all senior housing, based on the Institute of Transportation Engineers' Parking Generation Manual, Second Edition.

Short-term parking was estimated based on the total daily visitor trips and the average turnover rate. A short-term parking turnover rate of six vehicles per space per day was applied to industrial/warehousing and office uses, ten vehicles per space per day were used for cultural/educational uses, and three vehicles per space per day was used for conference uses. Table 13 presents the estimated weekday midday, evening, and weekend parking demand for all alternatives. Detailed parking demand calculations by alternative are provided in technical memoranda describing this study's transportation analysis.

Table 13 presents a comparison of peak period (weekend) parking demand to parking supply for each alternative. Alternative 4 would generate the lowest overall parking demand, followed by Alternative 3. Peak period parking demand for Alternatives 2, 3, and 4 is 2 percent, 34 percent, and 51 percent less, respectively, than the peak period parking demand for Alternative 1.

**Alternative 1: PTMP or No Action Alternative** – According to the Final Plan Alternative described in the PTMP, the PHS district was estimated to have a demand of 674 spaces, and therefore was proposed to have a parking supply of 708 spaces. The parking demand calculation assumptions for residential uses in the PTMP EIS were intended to reflect the wide range of types and sizes of residential units throughout the Presidio. The parking demand assumptions used for the calculations in the PTMP EIS have been refined for the purposes of this site-specific study, and consequently the parking demand for Alternative 1 is estimated to be 462 spaces. The parking supply of 708 parking spaces called for in the PTMP would far exceed the peak period demand, thus allowing for a reduction in this proposed parking supply.

Table 13. Parking Demand (Spaces) by Time of Day and Alternative

TIME PERIOD	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Weekday Midday	398	266	199	144
Weekday Evening	389	446	297	217
Weekend	462	454	304	228
Peak Period Demand	462	454	304	228
Proposed Supply	708	475	330	233
Surplus / (Deficit)	246	21	26	5

Source: Wilbur Smith Associates 2004.

**Alternative 2: Infill Alternative** – There are currently approximately 306 parking spaces on the lower plateau of the project site. Alternative 2 would increase the number of spaces on the lower plateau to 475, but 91 of these spaces would be underground or under buildings, leaving 384 surface parking spaces—a 25 percent increase from the 306 surface parking spaces currently on the lower plateau.

Alternative 2 is expected to have a peak period demand of 419 spaces, or about 2 percent less than Alternative 1. The proposed supply of 475 spaces would accommodate the estimated demand, and allow 21 additional spaces for drivers circulating to find parking spaces during peak periods.

**Alternative 3: No Infill Alternative** – Alternative 3 is expected to have a peak period demand of 304 spaces, or about 34 percent less than Alternative 1. The proposed supply of 330 spaces would adequately accommodate the estimated demand, and would provide about nine percent additional spaces for drivers circulating to find parking spaces.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate the least overall parking demand, with a weekend demand for about 228 spaces in 2020, or approximately half the weekend demand expected for Alternative 1. The proposed supply of 233 spaces would accommodate the expected demand, but would allow only about two percent additional spaces for drivers circulating trying to find parking spaces.

### 3.2.2.7 Construction Traffic

Construction activities would include reconstruction and renovation of existing buildings, structural improvements and other seismic work, utility upgrades, and other infrastructure improvements. Construction traffic would include trucks hauling away construction debris and delivering construction materials, as well as traffic created by the construction workers. The volume of daily construction traffic would vary by alternative, depending on the extent of demolition and new construction and the duration of the construction project.

**Alternative 1: PTMP or No Action Alternative** – There would be no demolition or new construction with Alternative 1.

Construction vehicles associated with building rehabilitation would reach the Presidio and project site via several routes, including the Golden Gate Bridge Plaza and the slip ramp from Richardson Avenue (construction of which is expected to be complete in 2004). Construction routes through the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates would be minimized.

Construction-related traffic could create some conflicts with local and regional traffic, especially larger construction vehicles. However, because construction vehicles traveling to and from the project site would use various gates to enter/exit the Presidio and would be dispersed throughout the Bay Area, the vehicle trips on regional roadways would generally fall within the normal fluctuations in traffic volume. A Comprehensive Traffic Management Plan would be developed to provide specific routes and other measures to minimize potential traffic impacts, particularly for the residential Lake Street neighborhood immediately south of the project site.

**Alternative 2: Infill Alternative** – Alternative 2 would result in a maximum of 48,000 gross square feet of demolition and no more than 48,000 gross square feet of new construction. Because Alternative 2 would involve demolition and new construction, Alternative 2 would also likely result in more construction-related traffic to and from the site than Alternative 1. In addition, Alternative 2 would include underground parking. Construction traffic related to excavation for and construction of underground parking would account for about 40 to 50 percent of the estimated truck trips associated with Alternative 2. Overall, Alternative 2 is expected to generate two to three times the number of construction truck trips to and from the project site than Alternative 1, which would correspond to an average of 11 to 15 one-way truck trips per day compared to the estimated six one-way truck trips expected with Alternative 1. Although Alternative 2 would generate considerably more construction-related traffic than Alternative 1, this traffic could be controlled through a Construction Traffic Management Plan, which would specify routes and other measures to minimize potential traffic impacts, particularly for the residential Lake Street neighborhood immediately south of the project site.

**Alternative 3: No Infill Alternative** – Alternative 3 would result in 125,000 gross square feet of demolition and no new construction. Alternative 3 would involve substantially more demolition than Alternative 1, which would likely result in more truck trips to and from the site. Alternative 3 would not include underground parking, and therefore would not have truck trips associated with excavating soil for an underground parking structure. Overall, Alternative 3 would generate approximately 4,200 one-way truck trips, or about 62 percent more than the 2,600 one-way truck trips expected to be generated by Alternative 1. The construction period would likely be similar to or slightly less than that for Alternative 1, and Alternative 3 would generate on average about nine one-way truck trips per day on average, or about 50 percent more than the six one-way truck trips per day expected with Alternative 1. The construction-related traffic generated by Alternative 3 could be controlled through a Construction Traffic Management Plan, which would provide specific routes and other measures to minimize potential traffic impacts, particularly for the residential Lake Street neighborhood immediately south of the project site.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would result in approximately 116,000 gross square feet of demolition and no more than 73,000 gross square feet of new construction. Although Alternative 4 would result in demolition and new construction activities and Alternative 1 would not, Alternative 4 would allow less overall building square footage at the project site. The construction period would be approximately 20 months and Alternative 4 would generate about ten one-way truck trips per day on average, or about 65 percent more than the number of truck trips expected with Alternative 1. This number of truck trips and the traffic that would be generated by construction workers could be controlled through a Construction Traffic Management Plan, which would provide specific routes and other measures to minimize potential traffic impacts, particularly for the residential Lake Street neighborhood immediately south of the project site.

### 3.2.2.8 Cumulative Effects

The analysis of Year 2020 cumulative traffic conditions includes increases in traffic volumes resulting from implementation of the PTMP (including the PHSB district), and population and employment trends for the rest of the Bay Area region. The cumulative transportation-related effects of the PHSB district were included in the transportation analysis for the PTMP EIS, and are described in this analysis for Alternative 1 (PTMP or no action alternative). Under all of the PHSB action alternatives, the PHSB district's contribution to 2020 peak hour traffic volumes on nearby streets would be less than described for Alternative 1. At the nearby intersection of Lake Street/ Park Presidio Boulevard, the PHSB alternatives are expected to contribute 15 percent or less, depending on the alternative, to the cumulative increase in PM peak hour traffic between now and 2020.

Similarly, the analysis of year 2020 cumulative transit ridership includes transit ridership attributable to the PTMP (including the PHSB district) and Bay Area regional population and employment trends. Alternatives 2, 3, and 4 are expected to comprise on average between three and five percent of the estimated cumulative increase in PM peak hour MUNI ridership on the routes serving the PHSB district, depending on the alternative.

### 3.2.3 MITIGATION MEASURES

The intersection of California Street/Park Presidio Boulevard is expected to operate at LOS E with all alternatives in the PM peak hour, and could not be mitigated within any of the alternatives. The Presidio as a whole would contribute two percent or less to the total peak hour traffic volumes through this intersection.

The following measures are part of the PTMP EIS and would apply to all alternatives with and without direct access to Park Presidio Boulevard, unless indicated otherwise. For measures that fall outside the Presidio, the Trust would coordinate with the City's Department of Parking and Traffic, which would have sole jurisdiction.

TR-11 *Lake Street / 14<sup>th</sup> Avenue Intersection Improvements* – Designate the 15<sup>th</sup> Avenue Gate for outbound traffic, and open the 14<sup>th</sup> Avenue Gate for inbound traffic. Alternatively, if the Park Presidio

Access Variant is implemented, designate both the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates for inbound traffic only. If desired prior to the intersection operations deteriorating to LOS E or F, implement right-turn-only restrictions for the minor approaches at the intersection of Lake Street/14<sup>th</sup> Avenue.

TR-15 *California Street / 14<sup>th</sup> Avenue Intersection Improvements* – If desired, prior to the intersection operations deteriorating to LOS E or F, install STOP signs on the California Street approaches to this intersection and restripe to add a right-turn lane to the northbound approach. This improvement could require removal of some on-street parking spaces. Installing STOP signs on California Street would improve the operation of this intersection to an acceptable level of service, however queues on the westbound approach could potentially extend into the intersection of California Street/ Park Presidio Boulevard. Therefore, if queues on the westbound approach to this intersection are determined to affect the operation of California Street/ Park Presidio Boulevard, a traffic signal may be warranted at the intersection of California Street /14<sup>th</sup> Avenue. A traffic signal at this location would adequately mitigate the operation of the intersection to an acceptable level of service.<sup>8</sup>

TR-22 *TDM Program Monitoring* – The Trust has agreed to implement a TDM Program to reduce automobile usage by all tenants, occupants, and visitors as summarized in Section 2 (also see Appendix D of the PTMP for a full description). The Trust would monitor implementation and effectiveness of the TDM program on an ongoing basis. If the TDM performance standards as described in the PTMP (Appendix D) are not being reached, the Trust will implement more aggressive TDM strategies or intensify components of the existing TDM program, such as requiring tenant participation in more TDM program elements, or implementing more frequent and/or extensive shuttle service.

TR-23 *Parking Supply* – In order for parking supply to meet, but not exceed, demand, the Trust has committed to reducing the parking supply in the future as decisions are made about future building uses and landscape treatments. In addition, the Trust seeks to ensure that sufficient parking is provided in order to meet expected demand and avoid spillover effects. At the project site, the former 233-space parking lot just east of Buildings 1818 and 1819 that is currently being used for composting activities would not revert to a parking lot in any of the alternatives, except under Alternative 1. For Alternative 1, the 708-space parking supply proposed in the PTMP EIS for the PHSB district would far exceed the demand as calculated for this study, and the parking supply could be reduced to 485 spaces and adequately meet the estimated demand of 462 spaces.

TR-25 *Transit Service Monitoring Program* – The Trust currently monitors MUNI operations and passenger loads within the Presidio. Continued monitoring of MUNI service in the Presidio, and similar monitoring of GGT service at the Presidio would indicate any capacity problems. For example, if the

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<sup>8</sup> In a comment letter on the PTMP EIS, the San Francisco Department of Parking and Traffic (DPT) expressed concern about the reasonableness of signalization at this intersection. Since the average delay per vehicle on the minor approaches to the intersection of California Street/14<sup>th</sup> Avenue is expected to be less than for the minor approaches to the intersection of Lake Street/14<sup>th</sup> Avenue, the alternatives to signalization developed for the intersection of Lake Street/14<sup>th</sup> Avenue would also likely improve the operation of the minor approaches of the intersection of California Street/14<sup>th</sup> Avenue. The Trust will continue to work with the San Francisco DPT to develop an acceptable mitigation measure for this intersection. Ultimately, because this intersection is within the City and County of San Francisco's jurisdiction, implementation of the measure will be at the discretion of the City and County of San Francisco.

monitoring were to reveal insufficient capacity for northbound Presidio-generated passengers during the PM peak hour, the Trust will coordinate potential improvements with the Golden Gate Bridge Highway and Transportation District.

TR-26 *Construction Traffic Management Plan* – During pre-construction activities, the contractor(s) of individual projects will work with the Trust to develop a Construction Traffic Management Plan. The plan will include information on construction phases and duration, scheduling, proposed haul routes, permit parking, staging area management, visitor safety, detour routes, and pedestrian movements on adjacent routes.

### **3.2.3.1 New Measures**

TR-27 *California Street / 15<sup>th</sup> Avenue Intersection Improvements* (new measure) – If desired prior to the operation of both minor approaches deteriorating to LOS E or F, restrict the northbound and/or southbound approach (depending on the alternative) to right turns only with signage and striping. Because this intersection is within the City and County of San Francisco’s jurisdiction, the Trust will coordinate with the San Francisco Department of Parking and Traffic to ensure the City’s concurrence on the mitigation measure. Ultimately, implementation of the measure will be at the discretion of the City and County of San Francisco. The Trust will coordinate with the City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

Other intersection improvement measures included in the PTMP EIS fall outside the PSHH district and vicinity, and therefore are not repeated here. Mitigation Measure TR-9 *Bicycle and Pedestrian Amenities*, would be implemented as planned improvements are funded pursuant to the adopted Presidio Trails and Bikeways Master Plan. The Trust would also continue to support improvements to MUNI service (Mitigation Measure TR-10 *Support Increased MUNI Frequencies*), and would continue operating the PresidiGo shuttle. Mitigation Measure TR-21 *Presidio-wide Parking Management*, which applies to the Crissy Field area, would not apply to the PSHH district, where the Trust’s private development partner(s) would be required to manage parking to address dual goals: to avoid spillover impacts on adjacent neighborhoods and natural or recreation areas, and to discourage excessive auto ownership and auto use by project residents.

## **3.3 Historic Resources**

### **3.3.1 AFFECTED ENVIRONMENT**

The history and the significant buildings, structures, and landscapes of the Presidio are described on pages 68 to 76 of the PTMP EIS. This description, and the 1993 National Historic Landmark District (NHL) nomination, are incorporated here by reference, and portions relating to the PSHH district are summarized below. Further information can be found in the draft Planning and Design Guidelines included in Appendix A.

### **3.3.1.1 Presidio NHLD**

The entirety of the Presidio, including the PSHH district, is designated as a NHLD. In 1993, the NPS completed an update of the original 1962 landmark nomination, establishing these boundaries and defining 662 buildings, sites, structures, and objects as contributing to the significance of the NHLD.

For purposes of the NHLD, the Presidio's period of significance was identified as from 1776 to 1945, with themes related to the military, exploration and settlement, Hispanic heritage, and historic archaeology. Building 135 (the Golden Gate Club), dating from 1949, was the only structure from outside the period of significance that was found to contribute to the NHLD, because this building was the site of the signing of the U.S. Japan Security Treaty in 1951.

Since the U.S. Army's departure and formation of the Trust, jurisdiction over the Presidio has been split between the NPS and the Trust, and approximately 40 historic buildings have been demolished,<sup>9</sup> leaving about 430 contributing elements within the Trust's jurisdiction and 622 within the Presidio as a whole.

### **3.3.1.2 History of the PSHH District**

The Marine Hospital Service, a division of the U.S. Treasury, established a hospital at the project site in the 1870s. The original complex consisted of two-story wood frame buildings on the west shore of Mountain Lake, and continued to grow as needs of the hospital expanded. In 1912, the Service was reorganized and renamed the U.S. Public Health Service to reflect its role as the federal guardian of public health. In 1928, plans were completed for a new hospital building. The new building (Building 1801 or the PSHH) opened in 1932 to the west of the original hospital building, which was then removed from service and demolished. Later changes included the construction of Park Presidio Boulevard as an approach to the Golden Gate Bridge, an expansion of Building 1801 in the 1950s, and development of a Nike Missile facility at Battery Caulfield north of the PSHH also in the 1950s.

### **3.3.1.3 Contributing Buildings and Structures within the PSHH District**

Contributing buildings and predicted historic archaeological sites within the PSHH District are shown in Figure 12. The buildings include four from the early decades of the 20<sup>th</sup> century before the 1870s-era hospital was replaced. Building 1810 and Building 1809, single-family residences on Wyman Avenue, date from 1915 and 1920 respectively. Residential quarters 1806 and 1807 date from between 1920 and 1928, and originally comprised living quarters associated with the 19<sup>th</sup> century hospital complex.

Eleven buildings on the lower plateau (Buildings 1801, 1802, 1805, 1808, and 1811 through 1815) and the immediately adjacent area (Buildings 1818 and 1819) date from 1930 to 1932, when the project site was almost entirely redeveloped. The largest building is Building 1801, which was altered in the 1950s to add two projecting wings in front, with a connecting one-story loggia and lobby. The 1950s additions obscure most of the building façade from 1932, and are not considered eligible for the National Register (Presidio Trust 2004).

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<sup>9</sup> Thirty-seven buildings were demolished by the NPS, fire destroyed Building 1055, and Buildings 633 and 1387 have suffered damage or structural failures resulting in their pending demolition by the Trust.

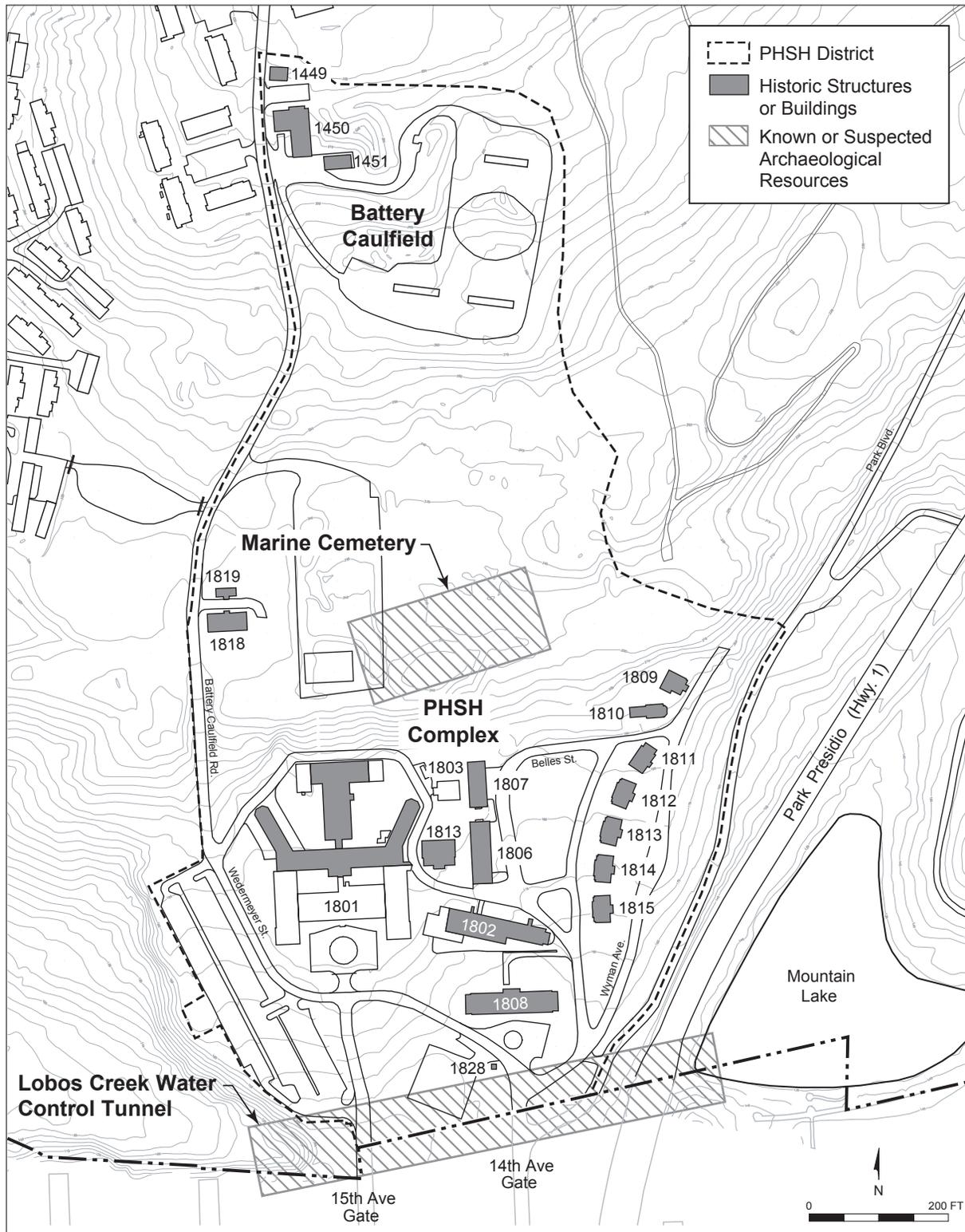


FIGURE 12. HISTORIC BUILDINGS AND ARCHAEOLOGICAL RESOURCES

Source: Presidio Trust, 2003

Other contributing buildings in the PHSH district include Buildings 1449, 1450, and 1451, which were Army structures unassociated with the nearby hospital complex. The largest building (Building 1450) was constructed as a radio transmitting station to serve the coastal defense batteries and was later used to support the adjacent missile facility.

The Nike Missile facility itself was constructed in 1953, after the agreement between the U.S. Air Force and the U.S. Army that determined that the Army would be responsible for short-range missiles such as the Nike Ajax and Nike Hercules. The Nike Missile facility at Battery Caulfield is not considered eligible for the National Register (Presidio Trust 2004).

#### **3.3.1.4 Cultural Landscape Features within the PHSH District**

Designed landscapes of the PHSH district have been altered substantially over time; however, the site's special orientation and topography remain largely unchanged from the NHLD period of significance, as do a number of smaller landscaped open spaces, elements of the circulation system, and some site vegetation. The PHSH dominates the lower plateau and views from the south, with a backdrop of Monterey pines on the slope behind the building. The formal entry drive and lawn from the 1932 construction period are gone, but open space still defines the front of Building 1801 and a lawn still slopes down from the front of the houses on Wyman Avenue. A "Central Green" lies between the houses and Buildings 1806 and 1807, although the structure which once formed its northern edge no longer exists. Remains of a terraced garden include the foundations of a pair of small green houses and step up the slope behind the Central Green. Tree stands also remain near the 15<sup>th</sup> Avenue Gate, behind Building 1801, and along the Presidio Golf Course boundary.

Wyman Avenue, Belles Street, and Park Boulevard remain essentially unchanged from their pre-1932 alignment, and the site includes remnants of foundation plantings as well as trees that date from the period of significance.

#### **3.3.1.5 Regulatory Environment**

As described in the PTMP EIS (page 82), the Trust is required to comply with the National Historic Preservation Act (NHPA). Section 110 of the NHPA sets out the broad responsibilities of federal agencies to integrate preservation into their ongoing activities, and requires agencies to "minimize harm" to National Historic Landmarks like the Presidio. Section 106 of the NHPA requires federal agencies to take into account the effects of their actions on historic properties, and to seek comments on their actions from an independent reviewing agency, the Advisory Council on Historic Preservation (ACHP).

During preparation of the PTMP, the Trust consulted with the ACHP, the California State Historic Preservation Officer (SHPO), and the NPS (NPS), and executed a Programmatic Agreement (PA) regarding the plan and various operation and maintenance activities within Area B of the Presidio. This PA establishes procedures by which the Trust will satisfy its Section 106 and Section 110 responsibilities (see PTMP EIS Appendix D for the full text of the agreement).

Pursuant to Stipulation X of the PA, the Trust has submitted to the ACHP, SHPO, NPS, and concurring parties a consultation package regarding the PHSB project. That consultation package includes this EA, public comments received during the scoping period on the EA, and the draft Planning and Design Guidelines (Appendix A). Consultation under the NHPA will proceed as indicated in Stipulation X, and will be completed prior to project approval. Review of any new construction proposed as part of the project will occur as set forth in Stipulation XI, and review of historic rehabilitation proposed by the Trust's private development partner(s) as part of the project will occur during the Trust's design review and/or during the Part I and Part II Certification Process (36 CFR Part 67) established for rehabilitation tax credit projects.

### 3.3.2 ENVIRONMENTAL CONSEQUENCES

The potential impacts of development within the Presidio on historic resources and the cultural landscape, including the NHLD as a whole, are assessed on pages 196 through 215 of the PTMP EIS. This analysis, which addresses a variety of alternatives for the PHSB district, is incorporated here by reference and summarized below. A site-specific analysis of potential impacts associated with the current range of alternatives for the project site follows.

The PTMP analysis presents a discussion of proposed changes within the PHSB district, including one scenario that would demolish all of the buildings on the site, one that would remove non-historic buildings only, one that would rehabilitate and reuse the buildings as they currently stand, and one that would build out the adopted Plan's maximum allowable new construction (130,000 square feet) and demolition (130,000 square feet).

The analysis concludes that demolition of historic buildings within the PHSB district would have an adverse effect on the NHLD, but that rehabilitation and reuse of the buildings as they currently exist or rehabilitation and reuse following demolition of non-historic additions would have a beneficial effect on the NHLD. The analysis also indicates that if non-historic square footage is removed and replaced with buildings elsewhere within the PHSB district, new (replacement) space would be sited and designed to reinforce historic character-defining features of the PHSB district in conformance with the PTMP planning principles and planning district guidelines. These principles and guidelines require that new construction be compatible with the historic setting of the Presidio, and that character-defining features of the PHSB district be maintained. As a result, the EIS concludes that new construction would not impair the integrity of the NHLD.

#### 3.3.2.1 Alternative 1: PTMP or No Action Alternative

Building rehabilitation and reuse under this alternative would have a beneficial effect on historic architectural resources. Historic portions of Building 1801 and other buildings in the PHSB district would be rehabilitated in accordance with the Secretary of the Interior's Standards and returned to active use. Physical changes within the PHSB district would also comply with the planning principles and the planning district guidelines in the PTMP and with the Guidelines for Rehabilitating Buildings at the

Presidio of San Francisco (ARG 1995). Where historic fabric is proposed for removal, it would be documented according to Historic American Building Survey standards.

Non-historic elements within the PHSB district, including the non-historic wings on the front of Building 1801 and the connecting loggia, would also be rehabilitated and maintained in this alternative. The wings would retain their current configuration and appearance, although any blue panels or other façade materials that are missing or damaged would be replaced in kind.

Rehabilitating and retaining existing non-historic additions to the PHSB district would not affect historic resources, since there would be no appreciable change in the appearance of the historic resources when compared to existing conditions or to the conditions that existed when the National Register eligibility of the PHSB district was established. Retaining non-historic elements would not, however, return the historic hospital building to its original prominence or expose its principal façade. Alternative 1 would not involve new construction, and thus would have no impacts associated with the introduction of new buildings within the PHSB district.

In combination with remediation of Landfills 8 and 10, and with planned trail and access improvements, Alternative 1 would involve landscape changes within the PHSB district. These changes would include re-creation of a formal entry drive from the 14<sup>th</sup> Avenue Gate to Building 1801, reconfiguration of parking areas on the lower plateau, and additions to remnant planted borders and designed landscape areas throughout the lower plateau. All changes would be required to conform to the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (NPS 1992b).

In conformance with the PTMP, Alternative 1 would include installation of interpretive materials in some building lobbies and at key wayside locations throughout the PHSB district. Specifically, signs and/or landscape treatments would commemorate the site of the former Marine Hospital Cemetery, and would explain the history of the Nike Missile Site and the significance of the Public Health Service and individual buildings within the district. Pursuant to the Presidio Trust Act, the NPS would be asked to assist the Trust in developing interpretive materials. The Fort Point and Presidio Historical Association and the California Heritage Council (CHC) have also agreed to assist the Trust.

### **3.3.2.2 Alternative 2: Infill Alternative**

Building rehabilitation and reuse in Alternative 2 would have a beneficial effect on historic architectural resources, similar to Alternative 1. Historic portions of Building 1801 and other buildings in the PHSB district would be rehabilitated in accordance with the Secretary of the Interior's Standards and returned to active use. Where historic fabric is proposed for removal, it would be documented according to Historic American Building Survey standards.

Physical changes within the PHSB district would comply with the site-specific Planning and Design Guidelines prepared for the PHSB district and included in draft form in Appendix A. These guidelines, which are intended to provide specific direction to project designers and ensure compliance with the planning principles and the planning district guidelines in the PTMP, will be finalized following public review and consultation with the SHPO, ACHP, and other signatories to the PA.

Non-historic elements within the PHSH district, including the non-historic wings on the front of Building 1801, would be rehabilitated and retained in this alternative, similar to Alternative 1. However, the one-story loggia and lobby connecting the wings would be removed to reveal the central portion of the historic facade, and the wings themselves would receive a new façade treatment. In addition, non-historic additions at the rear of Building 1801 may be removed and the front wings may be lowered in height, either by removing a rooftop wind screen or by removing the wind screen and up to two stories of the wings. These changes would improve the wings' compatibility with the historic building behind them, and would therefore have a beneficial effect on historic architectural resources.

New construction would occur at up to three locations within the PHSH district under this alternative. A new three-story building (about 14,000 square feet) would be constructed at the north end of the Central Green, a new two-story duplex would be constructed at the south end of Wyman Avenue, and building space could be added to the central wing at the rear of Building 1801. In conformance with the draft Planning and Design Guidelines as well as the PTMP planning district guidelines and the Secretary of the Interior's Standards, all new construction would be compatible with surrounding historic buildings in scale, massing, and design, but would be clearly distinguishable as contemporary, rather than mimicking an earlier style or period. The new buildings sited north of the Central Green and at the south end of Wyman Avenue would be located where buildings existed on the site previously, and would reinforce the campus-like setting by fitting onto compact sites, close to existing buildings as called for in the PTMP planning district guidelines.

In combination with remediation of Landfills 8 and 10, and with planned trail and access improvements, Alternative 2 would involve landscape changes within the PHSH district. These changes would include re-creation of a formal entry drive from the 14<sup>th</sup> Avenue Gate to Building 1801, reconfiguration of parking areas on the lower plateau and elimination of the parking area at Landfill 8, and additions to remnant planted borders and designed landscape areas throughout the lower plateau. Underground parking proposed for the area in front of and beneath the PHSH would increase the amount of landscaping in the area, raise the forecourt to the height of the building's first floor, and also introduce access and egress points on the south and west sides of the building.

All site changes would be required to conform with the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (NPS 1992b), and would be preceded by preparation of a detailed cultural landscape assessment for areas within and adjacent to the leasehold boundary proposed by the Trust's private development partner(s).

In conformance with the PTMP, Alternative 2 would include installation of interpretive materials in some buildings lobbies and at key wayside locations throughout the PHSH district. Specifically, signs and/or landscape treatments would commemorate the site of the former Marine Hospital Cemetery, and would explain the history of the Nike Missile Site and the significance of the Public Health Service and individual buildings within the complex. Pursuant the Presidio Trust Act, the NPS would be asked to assist the Trust in developing interpretive materials. The Fort Point and Presidio Historical Association and the CHC have also agreed to assist the Trust.

### **3.3.2.3 Alternative 3: No Infill Alternative**

Building rehabilitation and reuse in Alternative 3 would have a beneficial effect on historic architectural resources, similar to Alternative 1. Historic portions of Building 1801 and other buildings in the PSHH district would be rehabilitated in accordance with the Secretary of the Interior's Standards and returned to active use. Where historic fabric is proposed for removal, it would be documented according to Historic American Building Survey standards.

Physical changes within the PSHH district would comply with the site-specific Planning and Design Guidelines prepared for the PSHH district and included in draft form in Appendix A. These guidelines, which are intended to provide specific direction to project designers and ensure compliance with the planning principles and the planning district guidelines in the PTMP, will be finalized following public review and consultation with the SHPO, ACHP, and other signatories to the PA.

Non-historic elements within the PSHH district, including the non-historic wings on the front of Building 1801, would be removed in this alternative, revealing the historic façade. Non-historic portions of Building 1802 would also be removed, along with the entirety of Building 1803. All of these changes would have a beneficial effect on historic architectural resources. Alternative 3 would also not involve new construction, and thus would have no impacts associated with the introduction of new buildings within the PSHH district.

In combination with remediation of Landfills 8 and 10, and with planned trail and access improvements, Alternative 3 would involve landscape changes within the PSHH district. These changes would include re-creation of a formal entry drive from the 14<sup>th</sup> Avenue Gate to Building 1801, reconfiguration of parking areas on the lower plateau and elimination of the parking area at Landfill 8, and additions to remnant planted borders and designed landscape areas throughout the lower plateau. All changes would be required to conform to the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (NPS 1992b) and would be preceded by preparation of a detailed cultural landscape assessment for areas within and adjacent to the leasehold boundary proposed by the Trust's private development partner(s).

In conformance with the PTMP, Alternative 3 would include installation of interpretive materials in some building lobbies and at key wayside locations throughout the PSHH district. Specifically, signs and/or landscape treatments would commemorate the site of the former Marine Hospital Cemetery, and would explain the history of the Nike Missile Site and the significance of the Public Health Service and individual buildings within the complex. Pursuant to the Presidio Trust Act, the NPS would be asked to assist the Trust in developing interpretive materials. The Fort Point and Presidio Historical Association and the CHC have also agreed to assist the Trust.

### **3.3.2.4 Alternative 4: Battery Caulfield Alternative**

Building rehabilitation and reuse in Alternative 4 would have a beneficial effect on historic architectural resources, similar to Alternative 1. Historic portions of Building 1801 and other buildings in the PSHH district would be rehabilitated in accordance with the Secretary of the Interior's Standards and returned to

active use. Where historic fabric is proposed for removal, it would be documented according to Historic American Building Survey standards.

Physical changes within the PHSH district would comply with the site-specific Planning and Design Guidelines prepared for the PHSH district. These guidelines, which are intended to provide specific direction to project designers and ensure compliance with the planning principles and the planning district guidelines in the PTMP, will be finalized following public review and consultation with the SHPO, ACHP, and other signatories to the PA.

The non-historic wings on the front of Building 1801 would be removed in this alternative, revealing the historic façade, similar to Alternative 3. Additional, non-historic additions may also be removed, along with non-historic Building 1803. These changes would have a beneficial effect on historic architectural resources.

New construction would occur at two locations within the PHSH district under this alternative. A new three-story building (about 14,000 square feet) would be constructed at the north end of the Central Green, and up to 64 apartments (about 56,000 square feet) would be constructed at Battery Caulfield on the upper plateau. In conformance with the guidelines included in Appendix A, as well as the PTMP planning district guidelines and the Secretary of the Interior's Standards, all new construction would be compatible with surrounding historic buildings in scale, massing, and design, but would be clearly distinguishable as contemporary, rather than mimicking an earlier style or period. The new building sited north of the Central Green would be located where buildings existed on the site previously and would reinforce the campus-like setting by fitting onto a compact site, close to existing buildings as called for in the PTMP planning district guidelines. The new construction at Battery Caulfield would introduce buildings where none have existed in the past, although they would be scaled to ensure that the lower plateau and the PHSH maintain their prominence, with the PHSH district's principal density and development.

In combination with remediation of Landfills 8 and 10, and with planned trail and access improvements, Alternative 4 would involve landscape changes within the PHSH district. These changes would include re-creation of a formal entry drive from the 14<sup>th</sup> Avenue Gate to Building 1801, reconfiguration of parking areas on the lower plateau and elimination of the parking area at Landfill 8, and additions to remnant planted borders and designed landscape areas throughout the lower plateau. All changes would be required to conform to the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (NPS 1992b), and would be preceded by preparation of a detailed cultural landscape assessment for areas within and adjacent to the leasehold boundary proposed by the Trust's private development partner(s).

In conformance with the PTMP, Alternative 4 would include installation of interpretive materials in some building lobbies and at key wayside locations throughout the PHSH district. Specifically, signs and/or landscape treatments would commemorate the site of the former Marine Hospital Cemetery, and would explain the history of the Nike Missile Site and the significance of the Public Health Service and individual buildings within the complex. Pursuant to the Presidio Trust Act, the NPS would be asked to

assist the Trust in developing interpretive materials. The Fort Point and Presidio Historical Association and the CHC have also agreed to assist the Trust.

### **3.3.2.5 Park Presidio Access Variant**

Providing direct access between the PHSH district and Park Presidio Boulevard in combination with Alternatives 2, 3, or 4 would require some changes to the PHSH district's internal roads and landscaping, but not to the extent that significant impacts on the cultural landscape would occur. Specifically, the new access point would require that Wyman Avenue and Hays Street join and turn west earlier than they do currently, intersecting with a modified intersection or traffic circle at the front of Building 1808. A formal entry drive from the 14<sup>th</sup> Avenue Gate would also intersect this intersection, since this gate would be open for inbound access to the site (as would the 15<sup>th</sup> Avenue Gate). Also, an open foreground would be maintained in front of Building 1801, and the landscaped open areas in front of the Wyman Avenue homes would be preserved. Park Boulevard would continue to exist as a trail and service road immediately west of Park Presidio Boulevard, but its alignment would also be modified somewhat at its southern terminus.

Consistent with the alternatives analyzed above, all changes would be required to conform with the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (NPS 1992b) and would be preceded by preparation of a detailed cultural landscape assessment for areas within and adjacent to the leasehold boundary proposed by the Trust's development partner(s).

### **3.3.2.6 Cumulative Effects**

All alternatives would have a beneficial effect on historic architectural resources because they would involve rehabilitation and reuse of historic structures within the PHSH district. When the rehabilitation of historic buildings at the PHSH district is considered in combination with the ongoing rehabilitation of other historic buildings at the Presidio, the cumulative effect would also be beneficial. Since the Presidio became a national park site, approximately 167 historic residential buildings, along with approximately 750,000 square feet of non-residential space, have been rehabilitated. The PHSH project would add seven historic residential buildings (duplexes and single family homes) and about 250,000 square feet of nurses' dormitories and non-residential space to this total.

Landscape and circulation changes associated with each alternative would be carefully designed and constructed to avoid adverse effects on character-defining features of the cultural landscape. The same is true for changes associated with other planned projects in the area, such as the remediation of landfill sites, the creation of trails, establishment of a trailhead and scenic overlook as called for in the Presidio Trails and Bikeways Master Plan, and the ecological enhancement of natural areas. Thus, with the mitigation measures agreed to as part of the PTMP, cumulative impacts on the cultural landscape of the PHSH district and the NHLD would be avoided.

### 3.3.3 MITIGATION MEASURES

The following mitigation measures derived from the PTMP EIS would avoid adverse effects on historic resources and the cultural landscape due to physical changes within the PHSH district, including building removal and new construction:

CR-1 *Documentation of Building Addition to be Removed* – Should all or some of the non-historic additions to Building 1801 or Building 1802 be removed, appropriate mitigating measures will be determined in consultation with the SHPO and the ACHP during the Section 106 consultation process. In this instance, measures will protect historic fabric from inadvertent damage due to removal of non-historic additions. Any historic fabric proposed for removal during rehabilitation of historic buildings will be recorded using Historic American Building Survey Standards.

CR-2 *Code Compliance* – As stipulated in the Presidio Trust Act, the Trust will upgrade buildings to meet life/safety standards and to comply with the Americans with Disabilities Act (ADA) as necessary. Rehabilitation of historic buildings will include modifications to meet applicable building codes to the extent practicable.

CR-3 *Long-Term Maintenance and Preservation of Vacant Buildings* – Following rehabilitation of historic buildings, the Trust will ensure that development partners or designees perform continued maintenance, thereby preventing damage to historic features and ensuring that buildings are adequately maintained. Buildings within the PHSH district that remain vacant following rehabilitation and occupancy of Building 1801 and associated smaller buildings will be inspected regularly. The Trust will prioritize and undertake necessary stabilization work to ensure long-term preservation and safe conditions for park visitors.

CR-6 *Monitoring of Visitor Impacts on Sensitive Resources* – The Trust will monitor sensitive cultural resources, such as historic landscape features and vacant structures, and prioritize actions to reduce any adverse impacts on these resources caused by park visitors and uses. Potential remedies (in addition to the remedy embodied in the Trust’s current project to rehabilitate and reuse vacant buildings in the PHSH district) may include temporary closure of areas, protective barriers, and informational signs.

CR-7 *Compliance with Standards for Building and Cultural Landscape Rehabilitation* – The Trust will ensure that building rehabilitation conforms to the Guidelines for Rehabilitating Buildings at the Presidio of San Francisco (ARG 1995) and the Secretary of the Interior’s Standards for the Rehabilitation of Historic Properties (NPS 1992a). Review for compliance with the Secretary of Interior’s Standards may occur within the Investment Tax Credit Part I and Part II Certification process as delineated in 36 CFR Part 67.

For historic landscape rehabilitation, the Trust will ensure conformance to the Secretary of the Interior’s Guidelines for the Treatment of Cultural Landscapes (NPS 1992b). To ensure compliance, the Trust will require its private development partner(s) to submit a detailed cultural landscape assessment for areas within and adjacent to their proposed leasehold boundary prior to approval of site improvements.

CR-8 *Ongoing Identification of Historic Properties* – Consistent with requirements under Section 110 of the NHPA and the signed PA, the Trust will continue to evaluate for possible inclusion in the list of contributing resources, those buildings or structures that may become 50 years old or may have achieved exceptional significance since the 1993 NHL Update form was completed. These evaluations will also encompass archaeological discoveries.

PTMP EIS Mitigation Measure CR-5 *Historic Forest* would not apply within the PSHS district, since the PSHS district does not contain any forested areas identified as part of the Presidio's historic forest. PTMP EIS Mitigation Measure CR-4 *Future Planning* will be satisfied by circulation of this EA for public comment and concurrent consultation pursuant to the PA.

## 3.4 Archaeological Resources

### 3.4.1 AFFECTED ENVIRONMENT

Archaeological resources of the Presidio are described on pages 76 to 82 of the PTMP EIS, and relevant portions are incorporated here by reference and expanded upon as necessary.

The history of the Marine Hospital and Presidio are intertwined both in the development of military reservation lands and in the provision of services to the community. As a civilian facility, the Marine Hospital provided free medical care, both short-term and convalescent, to merchant marines. While none of the buildings from the original 1870s complex remain, the site had been continuously used as a marine hospital for more than 100 years, from its 1875 opening to its closing in 1981 by the U.S. Public Health Service.

Subsurface remains of the cemetery associated with the early history of this facility exist, and lie largely beneath an extensive paved court and parking area located on the rise near the southwest corner of the upper plateau. Historical research suggests that a substantial cemetery once existed behind the former Marine Hospital. While records could not be found to establish that the burials of the cemetery had been relocated, the Army assumed that a relocation had taken place. In 1990 the Army conducted a test excavation in an area presumed to have been the Marine Hospital Cemetery and found the remains of two burials below almost 15 feet of concrete rubble. In 2002, field investigations for environmental remediation of Landfill 8 by the Trust also encountered human remains near the ground surface (URS 2003). Historical research suggests that the remains of approximately 500 to 600 individuals are interred in the cemetery.

The known and predicted archaeological features within the site vicinity contribute to the NHL and are of national significance. These features are shown in Figure 12 and include the following:

- *PHAF-34 (Marine Hospital and Cemetery)* – This is an area of sensitivity that includes historic features associated with squatters or farmers (?-1869), the earlier construction of the Marine Hospital, outbuildings, historic refuse deposits (1875-1932), and the Marine Hospital Cemetery (1885- ).

- *PHAF-10 (Lobos Creek Water Control)* – Remains include the Hotalling Tunnel and parts of early water supply systems connecting Mountain Lake to the Spring Valley Water Works on Lobos Creek (1857-?).
- *PPAF-3 (Mountain Lake)* – This water source and the surrounding area have high potential for prehistoric archaeological sites (but no documented incidence of discovery), including the temporary encampment used in the spring of 1776 by a Spanish expedition led by Juan Bautista de Anza in the area adjacent to Mountain Lake prior to establishment of El Presidio de San Francisco in the Main Post area that summer.

### 3.4.2 ENVIRONMENTAL CONSEQUENCES

Potential impacts on archaeological resources are assessed on pages 215 to 219 of the PTMP EIS. This analysis is incorporated here by reference and expanded upon below. Reference is made to the Programmatic Agreement executed between the Trust, NPS, SHPO, and ACHP regarding routine maintenance projects and projects that implement the PTMP. A copy of the PA is included in Appendix D of the PTMP EIS and is available for review at the Trust’s offices and website ([www.presidio.gov](http://www.presidio.gov)).

#### 3.4.2.1 Alternative 1: PTMP or No Action Alternative

Under this alternative, no building demolition or replacement construction would occur. Therefore, direct effects on archaeological resources would be minimal and limited to such ground-disturbing activities as infrastructure upgrades, pavement removal, and landscaping. Under the terms of Stipulation XII, Archaeology, of the PA, an Archaeological Management Assessment and Monitoring Program would be prepared to determine whether subsurface coring or trenching and/or test excavations are required prior to ground disturbance, and ground-disturbing activities and construction would be closely observed (PTMP EIS Mitigation Measures CR-8 and CR-9). In accordance with the terms of Stipulation XIII, Discoveries, of the PA, if it appears that a previously unidentified property that could be eligible for inclusion in the National Register or could contribute to the NHLD could be affected, or a known historic property could be affected in an unanticipated manner, the Trust would stop any potentially harmful activities in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the property until it concludes consultation with the State Historic Preservation Officer (PTMP EIS Mitigation Measures CR-14 and CR-15). Other terms of Stipulations XII, Archaeology, and XIII, Discoveries, of the PA as reiterated in the PTMP mitigation measures listed below would also be implemented to protect and manage the archaeological record.

#### 3.4.2.2 Alternative 2: Infill Alternative

Under this alternative, the potential for direct effects on archaeological resources would be slightly greater than Alternative 1 due to ground-disturbing activities associated with underground parking and the approximately 48,000 square feet of demolition and infill construction at locations within the lower plateau. Similar to Alternative 1, however, the measures identified as stipulations of the PA and

committed to as part of project implementation would avoid or minimize harm to archaeological resources.

#### **3.4.2.3 Alternative 3: No Infill Alternative**

Ground-disturbing activities associated with demolition of approximately 125,000 square feet of non-historic buildings on the lower plateau would have the likelihood of encountering archaeological resources. Similar to Alternative 1, the measures identified as stipulations of the PA and committed to as part of project implementation would avoid or minimize harm to archaeological resources.

#### **3.4.2.4 Alternative 4: Battery Caulfield Alternative**

Direct effects on archaeological resources due to 56,000 square feet of new construction within Battery Caulfield would be unlikely since ground-disturbing activities would take place within a heavily modified area where there are no known or suspected resources. Demolition of 116,000 square feet of building area on the lower plateau would likely encounter archaeological resources. Similar to Alternative 1, the measures identified as stipulations of the PA and committed to as part of project implementation would avoid or minimize harm to archaeological resources on the lower plateau.

#### **3.4.2.5 Park Presidio Access Variant**

Grading and construction of the Park Presidio Access Variant would occur in an area of the PHS district that was disturbed when Highway 1 was originally constructed in the 1930s. As a result, the likelihood of encountering archaeological resources is minimal. Nonetheless, measures identified in the PA would avoid or minimize harm to archaeological resources if unexpected discoveries occur.

#### **3.4.2.6 Cumulative Effects**

Based on the cumulative analyses in the PTMP EIS, excavation or grading associated with development plans could disturb or destroy archaeological resources. Cumulative impacts on known prehistoric archaeological sites or historic archaeological resources are, in general, not expected to be adverse. Ground-disturbing activities and construction projects would be closely observed in the vicinity of sensitive archeological areas, and archaeology stipulations in the PA would be adhered to; these stipulations include preparation of an Archaeological Management Assessment and Monitoring Program (AMA/MP) prior to ground disturbance. Because new construction would involve site investigations prior to excavation and/or monitoring for archaeological resources as needed during excavation, the likelihood that archaeological resources would be destroyed or damaged without appropriate attention to recordation and recovery would be minimized.

### **3.4.3 MITIGATION MEASURES**

The following measures are included in the PA and PTMP EIS and would apply to all alternatives:

CR-8 *Archaeological Management Assessment and Monitoring Program* – The Trust will require its private development partner(s) to retain the services of a qualified archaeologist who will develop an

AMA/MP for areas and undertakings within and adjacent to their proposed leasehold boundary. This program will ensure that all planned site disturbances are reviewed by a qualified archaeologist prior to final design and/or approval. In addition to the AMA/MP, the project archaeologist will prepare and the Trust will review an archaeological research design for any archaeological investigations that are required, and/or test excavations or data recovery from prehistoric or historic sites that are known or discovered. The Trust's management of archaeological properties is reviewed annually in accordance with Stipulation XXI of the PA. The AMA/MP and any research design required pursuant to this measure would be incorporated into the Trust's annual report.

*CR-9 Ground-Disturbing Activities* – Ground-disturbing maintenance activities and construction projects will be closely observed in the PSHH district's lower plateau to discover, document, protect, and manage the archaeological record of the Presidio. The AMA/MP described in Mitigation Measure CR-8 will specify whether archival research, subsurface coring or trenching, and/or test excavations are required prior to ground disturbance, and if so, where. Archaeological monitoring is appropriate in areas of predicted archaeological sensitivity or for sampling purposes in areas that are not considered sensitive when the natural ground surface is obscured by paving or fill, or in other instances where a pedestrian survey or archaeological testing cannot reasonably be accomplished. Any required archaeological monitoring will be implemented in accordance with the AMA/MP and prepared by qualified personnel, and the project archaeologist will have the authority to stop excavation, grading or other construction activities in the vicinity of the discoveries to allow for investigation, evaluation, and (if appropriate) recovery. If historic properties or prehistoric properties are discovered during implementation of an undertaking, a detailed report will be prepared. Should circumstances arise where the Trust cannot address archaeological concerns in a manner consistent with the AMA/MP, the Trust will notify the SHPO. Following completion of all ground-disturbing activities, the project archaeologist will be required to prepare a written report of their findings for inclusion in the Trust's annual report.

*CR-11 Excavation Permits* – The Trust will require all excavation permits to undergo archaeological review by qualified personnel, as defined in Stipulation III of the PA, prior to initiation of the requested activity. The excavation clearance process is included as Appendix B to the PA.

*CR-13 Curation of Archaeological Collections* – All records associated with excavations and excavated materials not subject to the Native American Graves Protection and Repatriation Act (NAGPRA) that are deemed important for preservation will be accessioned, catalogued, and managed in accordance with 36 CFR Part 79, "Curation of Federally-Owned and Administered Collections."

*CR-14 Discoveries* – If it appears that an excavation in the PSHH district would affect a previously unidentified property that could be eligible for inclusion in the National Register, or could contribute to the NHL, or affect a known historic property in an unanticipated manner, the Trust will stop any potentially harmful activities in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the property until it concludes consultation with the SHPO.

*CR-15 Treatment of Discoveries* – If the newly discovered property has not previously been included in or determined eligible for the National Register and provisions for its treatment are not contained in an

approved research design or AMA/MP, the Trust may assume that the property is eligible for purposes of the PA. The Trust will notify the NPS and SHPO at the earliest possible time and consult to develop actions that shall take the effects of the undertaking into account. The Trust will notify the SHPO of any time constraints, and the Trust and the SHPO will mutually agree upon time frames for this consultation, which will not exceed 30 days. If treatment of the discovery is not included in an approved research design or AMA/MP, the Trust will develop written recommendations reflecting its consultation with the NPS and SHPO and, as necessary, will present a plan and schedule to implement these recommendations.

PTMP EIS Mitigation Measures CR-10 *Archaeological Grid and Database* and CR-12 *Archaeological Management Plan for El Presidio* would not apply to the PHSH project, except that any reports or excavated materials not subject to NAGPRA would become the property of the Trust and would be incorporated into the Presidio's archaeological grid map and database.

## 3.5 Air Quality

### 3.5.1 AFFECTED ENVIRONMENT

The existing air quality environment of the Presidio and its regulatory context are described on pages 124 to 126 of the PTMP EIS and incorporated here by reference. Information relevant to the PHSH district is summarized and updated below.

#### 3.5.1.1 Air Quality Management

The nine-county San Francisco Bay Area Air Basin has a history of recorded violations of federal and state ambient air quality standards for ozone, carbon monoxide (CO), and inhalable particulate matter less than ten microns in diameter (PM<sub>10</sub>). The U.S. EPA has classified the Bay Area a moderate non-attainment area for ozone, and as a maintenance (attainment) area for carbon monoxide. The California Air Resources Board (CARB) has given the Bay Area state-level non-attainment status for ozone and PM<sub>10</sub>.

The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for managing compliance with the ambient air quality standards in the Bay Area. With the State Implementation Plan (SIP) and the Clean Air Plan (CAP), the BAAQMD identifies the steps that must be taken to attain and maintain the federal and state standards, respectively. Local jurisdictions can cooperate with these efforts by implementing transportation control measures to reduce emissions from motor vehicles. The Trust's Transportation Demand Management (TDM) program would implement the relevant transportation control measures from the 2000 BAAQMD CAP (PTMP EIS, page 125).

In order to ensure that the proposed alternatives would not disrupt goals of attainment, federal actions must include a formal conformity determination if the action would cause total direct and indirect emissions of non-attainment pollutants to exceed specified thresholds. For any federal action in the Bay Area causing more than 100 tons per year of an ozone precursor (either reactive organic gases [ROG] or

nitrogen oxides [NO<sub>x</sub>] or CO, the general conformity rule would apply (40 CFR 51.853). Federal actions causing emissions below these thresholds are presumed to conform to the SIP.

The Trust manages the air quality effects of land use development by managing construction activities and the demand for transportation. Development at the Presidio must conform to the Presidio-wide TDM program that would reduce emissions from motor vehicle sources. The Trust also coordinates land uses to avoid collocation of sensitive receptors and substantial sources of pollution. Through these efforts, the Trust can ensure that its actions would be consistent with the SIP and the CAP and that it would not disrupt efforts to attain the ambient air quality standards.

### **3.5.1.2 Air Quality Conditions and Monitoring**

Air quality at the Presidio is generally superior to that of most urban areas because the park is generally upwind of most sources of pollution. Violations of the state and federal standard for ozone persist in the Bay Area inland from San Francisco. Pollutants from San Francisco tend to be carried into the more sheltered areas of the region and cause violations of the standards there. Because of the City's location and climate, neither federal nor state ozone standards have recently been exceeded in San Francisco. Only state standards for PM<sub>10</sub> have been recently exceeded locally. Concentrations of carbon monoxide in the Bay Area have complied with federal and state standards since 1991. Additional information about ambient air quality data is available in the PTMP EIS (pages 125 to 126).

Toxic air contaminants also affect the region. Because the effects of these contaminants are largely localized, ambient standards are not used to characterize their concentrations. Contaminants that are emitted primarily from motor vehicles account for over one-half of the average calculated cancer risk for Bay Area residents. Ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due largely to reductions in air toxics from motor vehicles, the calculated average cancer risk has been significantly reduced in recent years. Based on 2000 ambient monitoring data, the calculated cancer risk is 167 in one million, which is about 45 percent less than what was observed five years earlier (BAAQMD 2001).

### **3.5.1.3 Local Source Inventory**

Traffic-related emissions of criteria pollutants are generated along the roadways that surround and bisect the PHSB district. Traffic congestion at the Presidio or on nearby roadways or intersections can occasionally result in localized elevated concentrations (hotspots) of carbon monoxide if heavy traffic coincides with stagnant weather conditions. Diesel trucks, buses, and other equipment are sources of particulates in diesel exhaust, which are considered to be a toxic air contaminant.

Existing stationary sources of air pollutants within the PHSB district are limited to a central boiler system and small printing and metal casting operation operated by a tenant, both within Building 1802. The boiler system is a natural gas-fired steam generator, rated at approximately seven million British thermal units per hour (MMBtu/hr). It currently operates to provide heating and steam for the occupied buildings adjacent to Building 1802. Emissions from the boiler are limited to those typically associated with natural gas combustion, including less than 25 pounds per day (lb/day) of NO<sub>x</sub> and a very small quantity

(less than 0.05 lb/day) of formaldehyde and other combustion-related pollutants. Other units that may have been historically located at the PSHH district are either non-operational or have been removed. The existing boiler is exempt from BAAQMD permitting requirements and federal performance standards because the unit has a heat-input capacity of less than 10 MMBtu/hr. The tenant's printing and metal casting operation is also exempt from permitting because of its small capacity and minimal potential emissions (BAAQMD 2000).

### 3.5.2 ENVIRONMENTAL CONSEQUENCES

Air quality impacts of land use and development under the PTMP are assessed on pages 252 to 260 of the PTMP EIS and incorporated here by reference. The PTMP EIS is supplemented here by analysis of issues specific to the PSHH project alternatives under consideration.

#### 3.5.2.1 Alternative 1: PTMP or No Action Alternative

Under this alternative, no building demolition or replacement construction would occur. Limited emissions from rehabilitation of existing buildings (with this alternative and all other alternatives) would warrant control. Consistent with BAAQMD recommendations for construction activity (BAAQMD 1999), rehabilitation activities having the potential to cause dust (PM<sub>10</sub>) emissions (e.g., for infrastructure upgrades, which could cause small amounts of ground disturbance) would be subject to basic control measures (PTMP EIS Mitigation Measure NR-20).

Motor vehicle use and operation of minor stationary sources would be associated with the new uses (with this alternative and all other alternatives). Emissions from traffic at congested intersections can, under certain circumstances, cause a localized build-up of CO concentrations. Although regional monitoring data demonstrates that CO concentrations have recently been well below the applicable standards, the potential for localized increases in CO concentrations from increased traffic warrants investigation. Use of the Caltrans-approved CALINE4 dispersion model and guidance from the BAAQMD (BAAQMD 1999) allows a comparison of CO concentrations with the applicable ambient air quality standards. Table 14 shows that traffic (with this alternative and all other alternatives, including the possible Park Presidio Access Variant) would not be likely to cause a violation of the CO standards.

Emissions that would be caused throughout the region by new motor vehicle trips and increased consumption of natural gas and other energy are estimated using the URBEMIS2002 emission model developed by the CARB and shown in Table 15. Mobile source emission estimates reflect the implementation of the Trust TDM program, which would minimize the activity of mobile sources (PTMP EIS Mitigation Measure NR-21).

The central boiler system and tenant activities at Building 1802 could remain in service under this alternative. The area source estimates provided by URBEMIS2002 capture the emissions that could be associated with any foreseeable small new stationary sources (e.g., steam-generating boilers) that may be necessary to provide basic utilities, even though none has been specifically proposed (for this alternative and all other alternatives). Any new sources for heating or steam generation would likely be small

enough to be exempt from BAAQMD permitting requirements, and no notable sources of air toxics or odors would occur. For projects subject to the California Environmental Quality Act (CEQA), the BAAQMD recommends a threshold of significance of 80 pounds per day for ROG, NO<sub>x</sub>, and PM<sub>10</sub>. Because emissions from mobile and area sources would not exceed these thresholds, these emissions would not be significant in the regional context.

### **3.5.2.2 Alternative 2: Infill Alternative**

Approximately 48,000 square feet of infill development would be built and 48,000 square feet of building area would be demolished with this alternative. Demolition and ground-disturbing activities associated with rehabilitation and construction would cause short-term emissions of construction dust and equipment exhaust that would be greater than in Alternative 1. Basic control measures and demolition techniques that would be part of the project implementation (PTMP EIS Mitigation Measures NR-20 and NR-22) would minimize emissions during the demolition and construction phases. Impacts on localized and regional air quality from motor vehicle emissions and other operating-phase emissions would be less than those illustrated for Alternative 1 because of a reduced demand for transportation. The TDM program would reduce these emissions further (PTMP EIS Mitigation Measure NR-21).

### **3.5.2.3 Alternative 3: No Infill Alternative**

Emissions of construction dust and equipment exhaust would be greater than in Alternative 1 because of demolition of approximately 125,000 square feet of building area on the lower plateau. Basic control measures and measures for demolition techniques that would be part of the project implementation (PTMP EIS Mitigation Measures NR-20 and NR-22) would minimize emissions during the demolition and construction phases. Impacts on localized and regional air quality from motor vehicle emissions and other operating-phase emissions would be less than those illustrated for Alternative 1, and the TDM program would reduce these emissions further.

### **3.5.2.4 Alternative 4: Battery Caulfield Alternative**

Emissions of construction dust and equipment exhaust would be greater than in Alternative 1 because of demolition of approximately 116,000 square feet of structures on the lower plateau and 73,000 square feet of new construction including 56,000 square feet within Battery Caulfield. Basic control measures for demolition techniques that would be part of the project implementation (PTMP EIS Mitigation Measures NR-20 and NR-22) would minimize emissions during the demolition and construction phases. Impacts on localized and regional air quality from motor vehicle emissions and other operating-phase emissions would be less than those illustrated for Alternative 1, and the TDM program would reduce these emissions further.

### **3.5.2.5 Park Presidio Access Variant**

As shown in Table 14, implementation of the Park Presidio Access Variant would have a negligible effect on localized CO concentrations. Construction activities would cause short-term emissions of dust and equipment exhaust that would be reduced through implementation of basic control measures.

### 3.5.2.6 Cumulative Effects and General Conformity

Localized CO concentrations shown in Table 14 are based on traffic volumes that include project traffic with background traffic, which is projected to increase over time. In this way, Table 14 takes into consideration cumulative effects on localized air quality. Air quality impacts from motor vehicle emissions and other operating-phase emissions (shown in Table 15) would contribute to ongoing violations of federal or state ambient air quality standards for ozone and PM<sub>10</sub> in the region. To minimize the cumulative effects of these impacts, the Trust would ensure that the alternatives would be consistent with the regional CAP by requiring implementation of the TDM program (PTMP EIS Mitigation Measure NR-21). Additionally, any new stationary sources associated with the alternatives would either be exempt or subject to the permitting regulations and requirements of the BAAQMD, which would ensure consistency of those emissions with the SIP and CAP.

Short-term emissions from construction activities could cause cumulative air quality effects if other nearby projects were to be under construction at the same time. In the vicinity of the PSHS district, there are existing landfill sites that are environmentally contaminated and require cleanup. The remediation work may occur simultaneously with demolition or construction phases of the PSHS alternatives. Basic control measures that would be part of the project implementation would also be part of other nearby projects at the Presidio.

The proposed alternatives would not disrupt goals of attainment. Implementation of the TDM program ensures consistency with the CAP, and conformity with the SIP is ensured because the relatively small scale of the proposed demolition and construction activities (a maximum of 73,000 square feet new construction for any alternative) would not create emissions in excess of the 100-ton-per-year threshold of the general conformity rule (40 CFR 51.853).

### 3.5.3 MITIGATION MEASURES

The following measures are found in the PTMP EIS and apply to all alternatives.

NR-20 *Basic Control Measures* – To reduce construction-generated particulate matter (PM<sub>10</sub>) emissions, construction contractors will implement as appropriate the BAAQMD’s recommended control measures for emissions of dust during construction. Basic control measures are: (1) water all active construction areas at least twice daily; (2) cover all trucks hauling soil, sand, and other loose materials or require trucks to maintain at least two feet of freeboard; (3) pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas; (4) sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas; and (5) sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

NR-21 *Transportation Control Measures (TCMs)* – The Presidio Trust Transportation Demand Management (TDM) program will implement the TCMs of the 2000 CAP to minimize air emissions from Presidio-related activities. In addition, consistent with the 2000 CAP, the Trust will coordinate land uses to provide buffer zones and avoid conflicts from toxic contaminants or odors.

NR-22 *Deconstruction/Demolition Techniques* – To the extent feasible, the Trust will apply an environmentally effective approach, including a combination of deconstruction and demolition techniques, to remove outdated structures and to reduce PM<sub>10</sub> emissions from demolition.

Table 14. Predicted Localized CO Concentrations at Congested Intersections

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 2 W/ VARIANT	ALTERNATIVE 3 W/ VARIANT	ALTERNATIVE 4 W/ VARIANT
<b>1-Hour Average (ppm)</b>							
Lake Street / 14 <sup>th</sup> Avenue	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Lake Street / Park Presidio Boulevard	5.0	5.0	5.0	5.0	5.0	5.0	5.0
California Street / 15 <sup>th</sup> Avenue	3.9	3.9	3.9	3.9	3.9	3.9	3.9
California Street / 14 <sup>th</sup> Avenue	3.9	3.9	3.9	3.9	3.9	3.9	3.9
California Street / Park Presidio Boulevard	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<b>8-Hour Average (ppm)</b>							
Lake Street / 14 <sup>th</sup> Avenue	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Lake Street / Park Presidio Boulevard	3.4	3.4	3.4	3.4	3.4	3.4	3.4
California Street / 15 <sup>th</sup> Avenue	2.6	2.6	2.6	2.6	2.6	2.6	2.6
California Street / 14 <sup>th</sup> Avenue	2.6	2.6	2.6	2.6	2.6	2.6	2.6
California Street / Park Presidio Boulevard	3.4	3.4	3.4	3.4	3.4	3.4	3.4

Source: Aspen Environmental Group 2004.

Notes:

The California ambient air quality standards are 20 ppm (1-hour) and 9 ppm (8-hour). The national standards are 35 ppm (1-hour) and 9 ppm (8-hour).

Concentrations are based on CALINE4 outputs which are adjusted with future anticipated background CO concentrations of 3.5 ppm (1-hour) and 2.3 ppm (8-hour).

ppm = parts per million.

Table 15. Estimated Average Weekday Emissions from Vehicle Trips and Area Sources

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Average Weekday Vehicle Trips	3,728	2,212	1,600	1,346
Reactive Organic Gases (ROG) (lb/day)	24.89	26.87	18.34	19.69
Nitrogen Oxides (NO <sub>x</sub> ) (lb/day)	15.09	9.46	6.81	6.32
Carbon Monoxide (CO) (lb/day)	149.07	89.22	64.81	55.17
Sulfur Dioxide (SO <sub>2</sub> ) (lb/day)	0.23	0.13	0.09	0.08
Particulate Matter (PM <sub>10</sub> ) (lb/day)	31.71	17.79	12.88	10.95

Source: Aspen Environmental Group 2004.

Notes:

Based on BAAQMD recommendations for compliance with CEQA, a significant impact would occur if operation-related emissions equal or exceed 80 pounds per day (lb/day) of ROG, NO<sub>x</sub>, or PM<sub>10</sub>.

Emission estimates are based on use of the CARB URBEMIS2002 model for each alternative.

## 3.6 Noise

### 3.6.1 AFFECTED ENVIRONMENT

Noise-related characteristics of the Presidio under the PTMP land use plan are described on pages 127 to 130 of the PTMP EIS. The description is incorporated here by reference, and portions relevant to the PSHS district are summarized below and expanded upon as necessary.

Community noise can be expressed with the following terminology, introduced in the PTMP EIS (pages 127 to 129). The A-weighted decibel scale (dBA) characterizes the pitch and loudness, as perceived by humans. The equivalent energy indicator,  $L_{eq}$ , is an average of noise over a stated time period, usually one hour. The day-night average,  $L_{dn}$ , is a 24-hour average, which accounts for the greater sensitivity of most people to nighttime noise. The sound level that is exceeded ten percent of the time is known as  $L_{10}$ . If the  $L_{eq}$  is similar for two locations, a higher  $L_{10}$  indicates a wider fluctuation of noise levels and a lower  $L_{10}$  indicates steadier noise levels. Generally, a 3-dB difference in community noise is noticeable to most people, a 5-dB difference may cause a change in community reaction, and a difference of 10-dB is perceived as a doubling of loudness.

#### 3.6.1.1 Noise Control Regulations and Programs

The Federal Highway Administration (FHWA) regulations (23 CFR 772) establish Noise Abatement Criteria (NAC), which aim to protect noise-sensitive land uses from highway noise. The FHWA

procedures state that noise impacts from traffic are serious enough to warrant consideration of abatement when noise levels for a project approach or exceed the NAC or when they substantially exceed existing noise levels. The NAC are shown in Table 16.

Table 16. FHWA Noise Abatement Criteria (Hourly dBA)

	ACTIVITY CATEGORY	L <sub>eq</sub> (H)	L <sub>10</sub> (H)
A	Lands on which serenity and quiet are of extraordinary significance and serve as important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57 (Exterior)	60 (Exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (Exterior)	70 (Exterior)
C	Developed lands, properties, or activities not included in Categories A or B above.	72 (Exterior)	75 (Exterior)
D	Undeveloped lands.	None Applicable	None Applicable
E	Residences, motels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (Interior)	55 (Interior)

Source: 23 Code of Federal Regulations, Part 772, Table 1.

Notes: Either L<sub>eq</sub> or L<sub>10</sub> (but not both) may be used on a project.

The San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code, 1994) contains the local noise control regulations that apply to the urban neighborhoods surrounding the Presidio. The noise ordinance regulates construction noise, fixed-source noise, and unnecessary, excessive, or offensive noise disturbances within the City. Sections 2907 and 2908 of the San Francisco Police Code provide that:

- Construction noise is limited to 80 dBA at 100 feet from the equipment during daytime hours (7:00 AM to 8:00 PM). Impact tools are exempt provided that they are equipped with intake and exhaust mufflers.
- Nighttime construction (8:00 PM to 7:00 AM) that would increase ambient noise levels by 5 dBA or more is prohibited unless a permit is granted by the Director of Public Works.

To protect new multi-family residential units associated with development alternatives (including apartments, condominiums, long-term care facilities, and other attached dwellings) from unacceptable exterior noise environments (PTMP EIS, page 128), the Trust would enforce noise insulation requirements equivalent to the California Noise Insulation Standards (Part 2, Title 24, California Code of Regulations) with building permit conditions.

### 3.6.1.2 Existing Noise Conditions

The existing noise environment of the PHSH district is characterized by existing traffic, most notably on Park Presidio Boulevard, and natural noise sources. The PHSH district is generally quieter than the surrounding urban environment, although there is a moderate level of human activity due to the current uses, including use of the parking lots.

Existing daytime noise levels in the areas surrounding the PHSH district are in the range of approximately 52 to 62 dBA  $L_{eq}$ , depending on the receptor's proximity to traffic. In the neighborhood immediately adjacent to the PHSH district, the exterior noise levels at the residences nearest to the Presidio gates are about 58 dBA  $L_{eq}$ . At the 14<sup>th</sup> Avenue Gate, the exterior noise is a steady background noise caused by traffic on Park Presidio Boulevard, while at the 15<sup>th</sup> Avenue Gate it is a fluctuating noise caused by traffic periodically passing through the gate.

At each of the monitoring locations examined for this analysis, traffic noise dominates the existing daytime noise environment. Away from traffic noise and noise from other human activity, the natural environment provides noise levels commonly below 60 dBA. All noise levels within the PHSH district are below the 67-dBA NAC threshold for recreation areas, residences, schools, and hospitals. Noise levels at the measurement location closest to the Nike Swale wetland area (near Building 1818) are also below the more restrictive 57-dBA NAC for areas where serenity and quiet are of extraordinary significance. The results of the noise monitoring program for daytime noise levels are summarized in Table 17.

### 3.6.1.3 Noise-Sensitive Areas

Examples of noise-sensitive areas that need to be protected include residences, schools, day care centers, parks, hospitals, convalescent centers, and recreational facilities. Existing and planned noise-sensitive uses include: the existing Lone Mountain Children's Center (in Building 1806); residences within the City of San Francisco (especially along 14<sup>th</sup> and 15<sup>th</sup> Avenues) and at the Presidio including housing associated with the development alternatives; and tranquil historic monuments or natural settings (such as the proposed improvements to the former Marine Hospital Cemetery below the Nike Swale).

## 3.6.2 ENVIRONMENTAL CONSEQUENCES

Noise effects of the PTMP and plan alternatives are assessed on pages 260 to 268 of the PTMP EIS and incorporated here by reference. The PTMP EIS analysis is supplemented here by analysis of the issues specific to the alternatives being considered for the PHSH project.

### 3.6.2.1 Alternative 1: PTMP or No Action Alternative

On a short-term basis, limited noise would occur from rehabilitation activity (with this alternative and all other alternatives). Much of the rehabilitation work would occur within the existing buildings, which would shield outside areas from noise. Outdoor work would include infrastructure upgrades, pavement removal, and landscaping. No building demolition or replacement construction would occur. All

Table 17. Summary of Short-Term Noise Measurements, PHSH District

SITE	DESCRIPTION	TIME	DOMINATING NOISE SOURCE	HOURLY L <sub>Eq</sub> (DBA)	L <sub>10</sub> (DBA)
R1	Wyman Avenue Housing at Building 1811	7:30 AM	Park Presidio Traffic	60.2	62
R2	15 <sup>th</sup> Avenue Gate	7:55 AM	15 <sup>th</sup> Avenue Traffic	57.8	62
R3	Battery Caulfield at Building 1451	8:25 AM	Battery Caulfield Road Traffic	61.4	66
R4	Upper Plateau at Building 1818	9:10 AM	Battery Caulfield Road Traffic	53.6	56
R5	14 <sup>th</sup> Avenue Gate (closed to traffic)	9:45 AM	Park Presidio Traffic	58.0	60
R10 (*)	PHSH District, Wyman Avenue at Building 1810	9:05 AM	Park Presidio Traffic	59.6	61

Source: Aspen Environmental Group 2003; except (\*) from 2001, as shown in Table 8, PTMP EIS.

Notes: Tests were duration of 15 to 30 minutes, taken on November 19, 2003.

rehabilitation activities would be required to implement measures to manage construction-type noise (PTMP EIS Mitigation Measure NR-23). With these measures in place, the short-term noise from rehabilitation would be minimized.

Proposed rehabilitation of the PHSH complex would introduce noise-sensitive housing to an area of the Presidio that is near a major traffic corridor that can cause excessive noise (Park Presidio Boulevard). The results of noise monitoring (see Table 17) illustrate that at buildings on Wyman Avenue, or at other buildings proposed for rehabilitation for residential use elsewhere on the lower or upper plateau, the existing noise levels are within the 67 dBA NAC. This means that there are no areas within the PHSH district where the existing noise would preclude future residential use. Additionally, the Trust would enforce noise insulation requirements equivalent to the California Noise Insulation Standards (Part 2, Title 24, California Code of Regulations) for new residences. New residences within the PHSH district (under this or other alternatives) would therefore not be exposed to excessive noise.

Operation and occupation of the rehabilitated PHSH district would cause increased traffic noise that could be noticeable for residents in the adjacent neighborhoods. Because no location in the PHSH district exceeds the FHWA NAC shown in Table 16, traffic noise increases are evaluated by considering whether they would cause noise to approach or exceed the NAC. The PTMP EIS illustrated that, although noticeable traffic noise increases (greater than 3 dBA) would occur on roadways providing access to the PHSH district, future traffic would not cause noise levels to approach or exceed the NAC (PTMP EIS,

page 265). Traffic noise levels caused by this alternative (and other alternatives) in the vicinity of the 14<sup>th</sup> and 15<sup>th</sup> Avenue Gates are shown in Table 18.

Table 18. Traffic Noise Levels In the Vicinity of PHS Gates by Alternative

LOCATION	ALTERNATIVE 1 (dBA)	ALTERNATIVE 2 (dBA)	ALTERNATIVE 3 (dBA)	ALTERNATIVE 4 (dBA)	ALTERNATIVE 2 W/ VARIANT (dBA)	ALTERNATIVE 3 W/ VARIANT (dBA)	ALTERNATIVE 4 W/ VARIANT (dBA)
14 <sup>th</sup> Ave. Gate	63.8	63.4	63.2	63.1	63.0	62.9	62.7
15 <sup>th</sup> Ave. Gate	61.4	60.6	60.4	60.3	59.0	58.8	58.6

Source: Aspen Environmental Group 2004.

Notes: Traffic noise levels in terms of  $L_{eq}(h)$  for 2020 PM peak hour traffic at 50 feet from the center line of the roadway at the gate, except for noise levels at the 14<sup>th</sup> Avenue Gate under the Park Presidio Access Variant, which are the combined noise levels of this access at 100 feet plus the 14<sup>th</sup> Avenue Gate at 50 feet.

Includes all pass-through traffic, inbound and outbound in future year 2020.

Noise from traffic under this alternative would increase above existing conditions, but not to levels that would exceed those anticipated under the PTMP EIS. Traffic noise levels at residences and the former Marine Hospital Cemetery near Battery Caulfield Road were not estimated because none of the alternatives would notably affect traffic volumes on Battery Caulfield Road. The noise levels shown in Table 18 indicate that the traffic noise impacts experienced by residences in the City of San Francisco would not exceed the NAC.

### 3.6.2.2 Alternative 2: Infill Alternative

Approximately 48,000 square feet of infill development would be built and 48,000 square feet of building area would be demolished with this alternative. Demolition and construction activities would cause noise levels to be elevated for the short term of the construction phase. Demolition and most construction activities are capable of causing routine noise levels of approximately 79 to 84 dBA at 100 feet from the activity if noise control is not used, or 69 to 74 dBA with noise control. Demolition activities could include mechanical wrecking and use of an on-site temporary concrete crushing operation, especially if concrete would be recycled on-site. Construction could require use of dozers, loaders, trucks, cranes, compressors, and pneumatic tools. During the periods of demolition and concrete crushing operation, and periods of heavy truck activity for material removal or delivery, noise levels for receptors near the site or along roads providing access to the site could be considerable.

Demolition, rehabilitation, and construction would generally occur more than 400 feet from any residences in the City of San Francisco. An exception to this would be if implementation of the new alternative access to Park Presidio Boulevard occurs. The edge of this new roadway segment would be approximately 100 feet from the nearest residence on 14<sup>th</sup> Avenue, and the majority of the construction work for the new intersection would occur about 300 feet from homes. (See further discussion in Section 3.6.2.5, Park Presidio Access Variant, below.) Other exceptions would include minor roadway

improvements near the gates, parking lot improvements, landscaping, or infrastructure upgrades. The non-historic wings of Building 1801 are more than 400 feet from the nearest City residence.

All demolition, rehabilitation, and construction activities would be required to implement measures to manage construction-type noise (PTMP EIS Mitigation Measure NR-23). With these measures in place, short-term noise levels would be minimized.

Traffic generated by occupation and operation of this alternative would be less than in Alternative 1. The noise levels shown in Table 18 indicate that residences in the City of San Francisco would not experience significant traffic noise impacts.

### **3.6.2.3 Alternative 3: No Infill Construction**

Although this alternative would not involve infill construction, construction-related noise would be greater than in Alternative 1 due to demolition of approximately 125,000 square feet of building area on the lower plateau. Demolition activities could include mechanical wrecking and use of an on-site temporary concrete crushing operation, especially if concrete would be recycled on-site. The measures identified in the PTMP EIS and committed to as part of project implementation would avoid or minimize noise impacts during all demolition and rehabilitation phases.

The traffic that would be generated by occupation and operation of this alternative would be less than Alternative 1. The noise levels shown in Table 18 indicate that residences in the City of San Francisco would not experience significant traffic noise impacts.

### **3.6.2.4 Alternative 4: Battery Caulfield Alternative**

Construction-related noise would be greater than in other alternatives because of demolition of approximately 116,000 square feet of building area on the lower plateau and 73,000 square feet of new construction including 56,000 square feet within Battery Caulfield. The measures identified in the PTMP EIS and committed to as part of project implementation would avoid or minimize noise impacts during all demolition, rehabilitation, and construction phases.

The traffic that would be generated by occupation and operation of this alternative would be less than Alternative 1. The noise levels shown in Table 18 indicate that residences in the City of San Francisco would not experience significant traffic noise impacts.

### **3.6.2.5 Park Presidio Access Variant**

The new access would help to remove some traffic from 14<sup>th</sup> and 15<sup>th</sup> Avenues and locate it within the Presidio, farther from homes in the adjacent neighborhood. Although it would be entirely within the Presidio, the noise from traffic on this alternative access route would still be audible at the 14<sup>th</sup> Avenue Gate. The closest edge of the roadway for the new alternative access would be approximately 100 feet from the nearest existing home in the City of San Francisco. In this analysis, noise from traffic at the 14<sup>th</sup> Avenue Gate is combined with noise from traffic on the new access, and the combined noise level for the

home is shown in Table 18. As with other alternatives, the noise impacts for the new access alternatives would not exceed the NAC.

### 3.6.2.6 Cumulative Effects

Noise from PHSH district development, including operational traffic noise, would coincide with anticipated region-wide growth in traffic noise, especially from traffic on Park Presidio Boulevard, which could increase by roughly 1.2 dBA  $L_{eq}$  between existing conditions and 2020. Noise from any PHSH alternative would be localized and would only affect the area adjacent to or in the vicinity of the PHSH district. Other Presidio construction projects such as the remediation of existing landfills in the area could overlap with PHSH development, creating additional noise. All construction projects would be required to conform to measures to manage construction-type noise, ensuring that short-term noise increases would be minimized. The cumulative effects of other foreseeable changes in traffic noise were analyzed in the PTMP EIS and were found to be minor (PTMP EIS, page 369). Under any alternative, PHSH development would not exceed the noise levels anticipated in the PTMP EIS.

### 3.6.3 MITIGATION MEASURES

The following measures are found in the PTMP EIS and apply to all alternatives.

NR-23 *General Construction/Demolition Noise* – During construction, contractors and other equipment operators will be required to comply with the San Francisco Noise Ordinance (San Francisco Municipal Code, Section 2907b), which requires that each piece of powered equipment, other than impact tools, emit noise levels of not more than 80 A-weighted decibels (dBA) at 100 feet. To reduce noise impacts, barriers will be erected around construction sites and stationary equipment such as compressors; this will reduce noise by as much as 5 dBA. To further reduce noise impacts on visitors, some construction sites will be temporarily closed, and appropriate barriers placed at a distance of 250 feet from the sites.

NR-24 *Traffic Noise Reduction* – Vehicle traffic throughout the Presidio represents the major source of existing and future noise, especially from U.S. Highways 101 and 1. Although the Trust cannot control the level of noise produced by privately owned vehicles, it can control which types of transit vehicles are used at the Presidio. The Trust will use and encourage other city and transit providers to select transit vehicles that produce less noise pollution. Energy-conserving government vehicles will be used by maintenance and other divisions. If possible, electric or other alternative vehicles will be used to reduce noise levels.

PTMP EIS Mitigation Measure NR-25 (Traffic Noise Monitoring and Attenuation) applies to areas some distance from the PHSH district and does not apply to the proposed alternatives.

## 3.7 Visual Resources

### 3.7.1 AFFECTED ENVIRONMENT

Important views and other visual resources are described on pages 122 to 123 of the PTMP EIS. This description is incorporated here by reference, and portions relevant to the PHSB district are summarized below and expanded upon as necessary.

#### 3.7.1.1 Visual Characteristics of the PHSB District and Surrounding Areas

The Presidio as a whole is a major visual resource for the San Francisco Bay Area, and its forested ridges and green aspect provide marked contrast to the adjacent urban landscape. The historic forest is one of many scenic resources, and stands in and around views toward the Golden Gate Bridge, the Pacific Ocean, and the Bay. Nearby are steep bluffs covered with gray-green coastal scrub, picturesque valleys, and distinguished historic buildings.

Developed areas within the PHSB district are in severely deteriorated condition, and many buildings and paved areas provide an unsightly contrast to the beautiful natural surroundings and scenic vistas. Building 1801, the PHSB (see Figure 13), is particularly derelict, with cyclone fencing around its perimeter and visibly deteriorated building materials on all facades. The non-historic wings almost completely obscure the historic front façade.

Other areas on the lower plateau, such as the houses along Wyman Avenue and the paved parking areas south and west of the PHSB, are equally deteriorated. Where buildings have been rehabilitated, such as Building 1808, or where views are available toward surrounding areas, visual characteristics are more pleasing. For example, the hillside north of the Central Green once housed a terraced garden that is long overgrown, and now forms a forested “buffer” between the lower plateau and the upper plateau (see Figure 14).

On the upper plateau, paved areas are worn and untidy, and include an abandoned tennis court, an abandoned parking area that now provides space for stock piles of green waste and compost, and the former Nike Missile Site at Battery Caulfield. Built into the slope at two elevations, Battery Caulfield is an unsightly mix of heavy equipment, stock-piled materials, and broken pavement (see Figure 15). The only evidence of the former missile installation is rusted metal doors that lie flush to the ground surface, and the soil berms that were constructed or retained nearby.

Visually attractive resources on the upper plateau include vegetated areas between and around Battery Caulfield and the composting area. Here a trail wanders through an area where the natural landscape seems close at hand, and trees delineate the edge of the Presidio Golf Course.



Source: Presidio Trust, 2003

FIGURE 13. BUILDING 1801, EXISTING CONDITIONS



FIGURE 14. VIEW LOOKING NORTH FROM THE CENTRAL GREEN, EXISTING CONDITIONS

Source: Presidio Trust, 2003



Source: Presidio Trust, 2003

FIGURE 15. VIEW TOWARD BATTERY CAULFIELD, EXISTING CONDITIONS

### **3.7.1.2 Important Views**

Dramatic views are available from Battery Caulfield, from the PHSH, and from many other areas on the lower plateau (see Figure 16). Of particular note are views from the parking lot west of the PHSH, where the Presidio Trails and Bikeways Master Plan calls for development of a scenic vista point to take advantage of spectacular views of Lobos Valley and the Pacific Ocean. Looking east, views from upper stories of the PHSH hold Mountain Lake in their foreground with an urban panorama of the City's neighborhoods beyond.

## **3.7.2 ENVIRONMENTAL CONSEQUENCES**

The potential impacts of use and development within the Presidio on visual resources are assessed on pages 247 to 252 of the PTMP EIS. No impacts specific to the PHSH district were identified, and the analysis concluded that the visual character of the Presidio would not be substantially altered. This analysis is supplemented below, with an assessment of the issues specific to the alternatives being considered for the PHSH project.

### **3.7.2.1 Alternative 1: PTMP or No Action Alternative**

By rehabilitating and reusing existing buildings, improving the surrounding landscape, and accommodating planned access and open space improvements, Alternative 1 would positively affect the visual character of the PHSH district. Chain-link fencing on the lower plateau would be removed, damaged building fabric would be repaired or replaced in kind, parking areas would be re-landscaped, and open space areas would be improved.

The views to and from the PHSH district shown in Figures 13 to 15 would not change dramatically as a result of Alternative 1, because all historic and non-historic elements would be retained, and no new construction would occur. However, the planned use of 14<sup>th</sup> Avenue as an entrance to the PHSH district would reemphasize motorists' view toward Building 1808 upon arrival to the site, and the planned construction of a scenic overlook west of the PHSH would emphasize pedestrians' view toward Lobos Valley and the Pacific Ocean.

New activity on the site would mean an increase in lighting, both within buildings and within adjacent parking areas and landscape zones. Exterior lighting would be focused downward, and conformance with PTMP EIS Mitigation Measure NR-7 *Artificial Light* would minimize related impacts.

### **3.7.2.2 Alternative 2: Infill Alternative**

Similar to Alternative 1, Alternative 2 would rehabilitate and reuse existing buildings, improve the surrounding landscape, and accommodate planned access and open space improvements, positively affecting the visual character of the PHSH district. Chain-link fencing on the lower plateau would be removed, damaged building fabric would be repaired or replaced, parking areas would be re-landscaped, and open space areas would be improved. In addition, Alternative 2 would re-clad the non-historic wings of the PHSH and would remove the central loggia and lobby structure connecting the non-historic wings

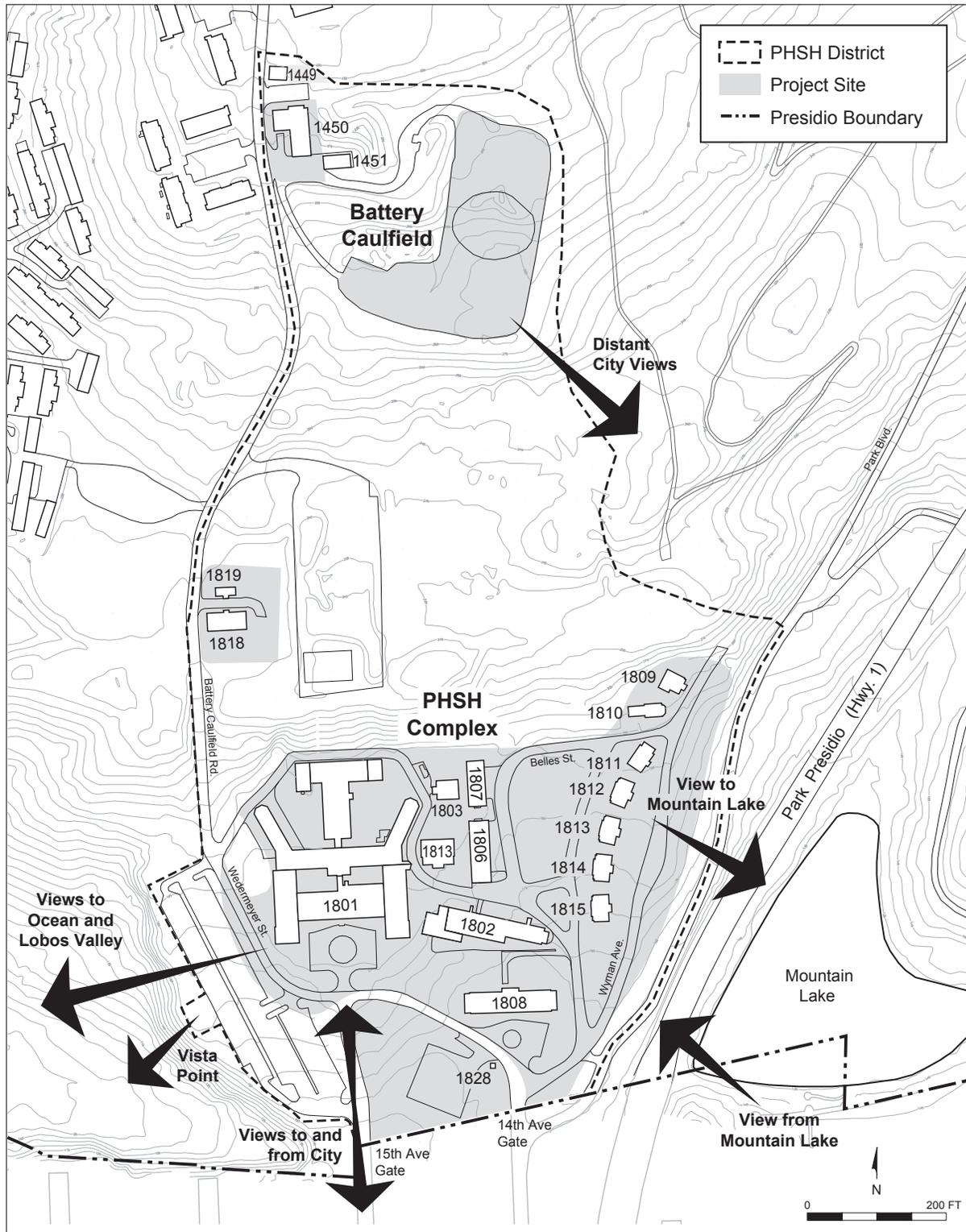


FIGURE 16. IMPORTANT VIEWS TO AND FROM THE PSH DISTRICT

Source: Presidio Trust, 2003

of the building, revealing the principal façade of the historic building (see Figure 17). Alternative 2 would also potentially remove up to two floors of the non-historic wings to reduce their visual mass and reveal the cornice line of the historic building façade (see Figure 18).

New construction of a small residential building at the south end of Wyman Avenue and of another residential building at the north end of the Central Green (see Figure 19) would change the visual appearance in these areas of the lower plateau, but would be designed to conform to PTMP planning district guidelines and to be compatible with surrounding buildings.

Views to and from the PSHH district would not change dramatically, although re-cladding the non-historic wings of the PSHH would remove the blue façade material, which is jarring to some contemporary viewers, and removal of the central loggia/lobby as well as possibly some floors of the wings would reduce the visual bulk of the building when viewed from the south. Introduction of underground parking would increase green space, particularly in front and to the west of the PSHH. In addition, the planned use of 14<sup>th</sup> Avenue as an entrance to the PSHH district would reemphasize motorists' view toward Building 1808 upon arrival to the site, and the planned construction of a scenic overlook west of the PSHH would emphasize pedestrians' view toward Lobos Valley and the Pacific Ocean.

New activity on the site would mean an increase in lighting, both within buildings and within adjacent parking areas and landscape zones. Exterior lighting would be focused downward, and conformance with PTMP EIS Mitigation Measure NR-7 *Artificial Light* would minimize related impacts.

### **3.7.2.3 Alternative 3: No Infill Alternative**

Similar to Alternative 1, Alternative 3 would rehabilitate and reuse existing buildings, improve the surrounding landscape, and accommodate planned access and open space improvements, positively affecting the visual character of the PSHH district. Chain-link fencing on the lower plateau would be removed, damaged building fabric would be repaired or replaced, parking areas would be re-landscaped, and open space areas would be improved. In addition, Alternative 3 would remove non-historic additions to the PSHH, dramatically changing the building's appearance (see Figure 20).

Other views to and from the PSHH district shown in Figures 13 to 15 would not change dramatically as a result of Alternative 3, because no new construction would occur. However, the planned use of 14<sup>th</sup> Avenue as an entrance to the PSHH district would reemphasize motorists' view toward Building 1808 upon arrival to the site, and the planned construction of a scenic overlook west of the PSHH would emphasize pedestrians' view toward Lobos Valley and the Pacific Ocean.

New activity on the site would mean an increase in lighting, both within buildings and within adjacent parking areas and landscape zones. Exterior lighting would be focused downward, and conformance with PTMP EIS Mitigation Measure NR-7 *Artificial Light* would minimize related impacts.



FIGURE 17. BUILDING 1801, ALTERNATIVE 2 (Non-historic Wings Remain at their Current Height)

Source: Presidio Trust, 2003



FIGURE 18. BUILDING 1801, ALTERNATIVE 2 (Non-historic Wings Reduced in Height)

Source: Presidio Trust, 2003

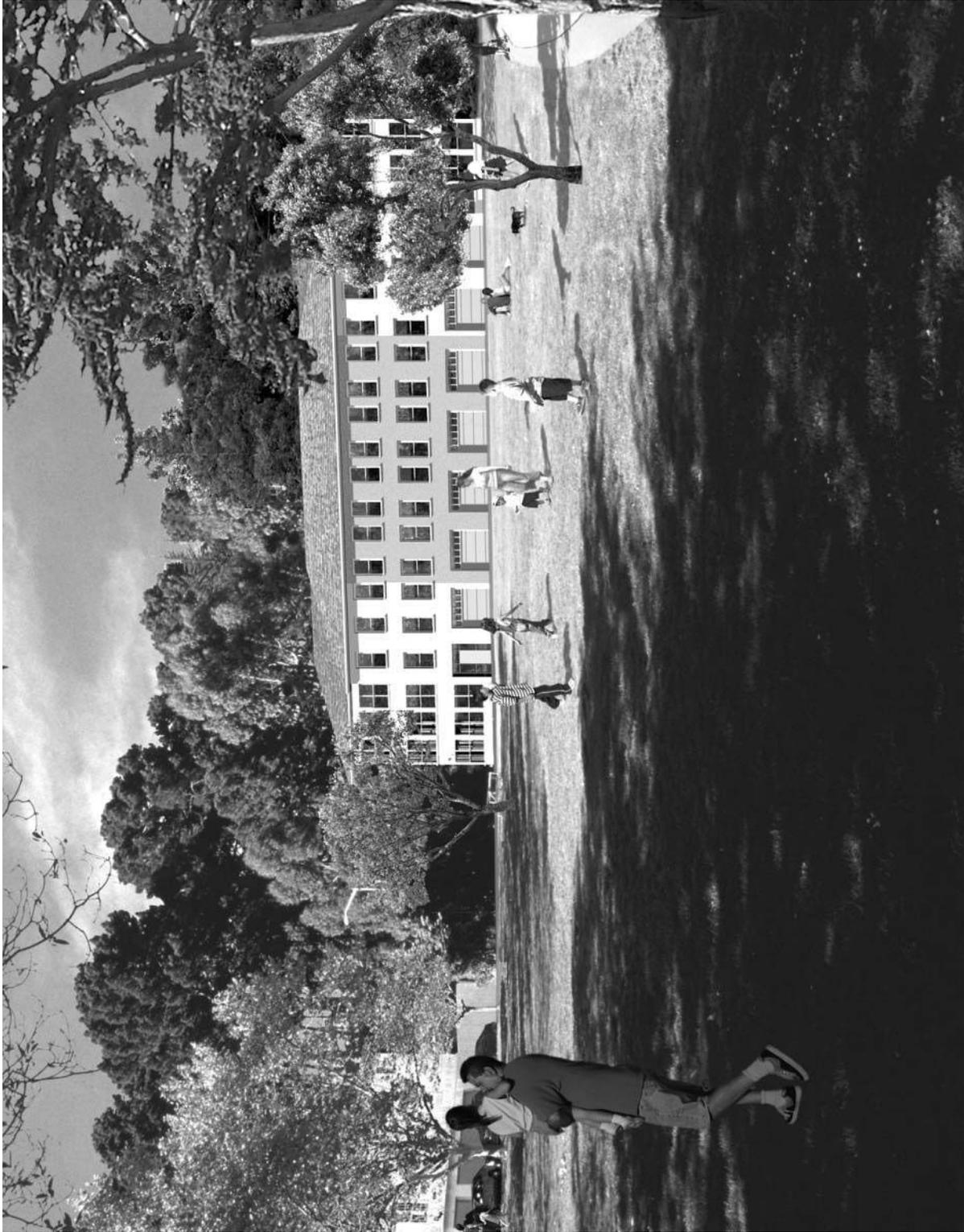


FIGURE 19. VIEW LOOKING NORTH FROM THE CENTRAL GREEN, ALTERNATIVES 2 AND 4

Source: Presidio Trust, 2003



Source: Presidio Trust, 2003

FIGURE 20. BUILDING 1801, ALTERNATIVES 3 AND 4 (Non-historic Wings Removed)

#### **3.7.2.4 Alternative 4: Battery Caulfield Alternative**

Similar to Alternative 1, Alternative 4 would rehabilitate and reuse existing buildings, improve the surrounding landscape, and accommodate planned access and open space improvements, positively affecting the visual character of the PSHH district. Chain-link fencing on the lower plateau would be removed, damaged building fabric would be repaired or replaced, parking areas would be re-landscaped, and open space areas would be improved. In addition, Alternative 4 would remove non-historic additions to the PSHH, dramatically changing the building's appearance (see Figure 20).

Unlike Alternative 1, however, Alternative 4 would introduce new residential construction at the north end of the Central Green on the lower plateau (see Figure 19), and would introduce new residential construction at Battery Caulfield (see Figure 21). The new building on the lower plateau would be designed to conform to PTMP planning district guidelines and to be compatible with nearby historic buildings. New construction on the upper plateau would replace heavy equipment, stock-piled soil, and other materials, and would be scaled to be compatible with nearby Building 1450 and nearby non-historic housing. Buildings would step up the site using existing grades and would not exceed two stories in height. The presence of residential buildings at Battery Caulfield would change the visual appearance of the area as well as distant views to and from the upper plateau. Changes to distant views would be mitigated to a large extent by the forested area immediately behind the PSHH, which provides a backdrop for the building and a visual buffer between the lower and upper plateaus.

As in other alternatives, the planned use of 14<sup>th</sup> Avenue as an entrance to the PSHH district would reemphasize motorists' view toward Building 1808 upon arrival to the site, and the planned construction of a scenic overlook west of the PSHH would emphasize pedestrians' view toward Lobos Valley and the Pacific Ocean.

New activity on the site would mean an increase in lighting, both within buildings and within adjacent parking areas and landscape zones. Exterior lighting would be focused downward, and conformance with PTMP EIS Mitigation Measure NR-7 *Artificial Light* would minimize related impacts.

#### **3.7.2.5 Park Presidio Access Variant**

The addition of direct access between the PSHH district and Park Presidio Boulevard under Alternatives 2, 3, or 4 would involve modifications to existing landscaping, roads, and retaining walls in the immediate area but would not substantially change the visual character of the PSHH district. The new, signalized intersection would be used mostly by traffic exiting the district, and motorists would be treated to a view of Mountain Lake to the east. Recreational users within Mountain Lake Park and adjacent areas of the Presidio may be able to see the new traffic signal, but their auditory and visual experience is already largely informed by Park Presidio Boulevard traffic, and this would not change.

#### **3.7.2.6 Cumulative Effects**

When considered in combination with planned improvements within the Presidio, all alternatives for the PSHH district would result in positive visual changes due to their emphasis on rehabilitating and reusing buildings on the site and their contribution to landscaping and other site improvements.



FIGURE 21. VIEW TOWARD BATTERY CAULFIELD, ALTERNATIVE 4

Source: Presidio Trust, 2003

New buildings would be sited and scaled to avoid substantial visual impacts, and increases in lighting would be monitored as agreed to during the PTMP environmental review process. Even Alternative 4, which would add new buildings on the site of a Trust and NPS maintenance yard, would represent a positive visual change when viewed in the context of the PTMP's commitment to remove non-historic housing west of Battery Caulfield Road over time, thereby increasing open space in the park by about 100 acres.

### 3.7.3 MITIGATION MEASURES

No mitigation measures were identified in the PTMP EIS regarding visual resources. (Mitigation Measure NR-7, listed at the end of the Biological Resources analysis, addresses artificial lighting.) No additional measures have been identified.

## 3.8 Visitor Use

### 3.8.1 AFFECTED ENVIRONMENT

The visitor experience, including interpretation/information facilities, interpretation programs, visitor facilities, visitor services, and park-based programs, are described on pages 158 to 161 of the PTMP EIS. This description is incorporated here by reference, and portions relevant to the PHSB district are summarized below and expanded upon as necessary.

#### 3.8.1.1 Existing Presidio-wide Visitor Facilities, Services, and Programs

The Presidio as a whole has a number of facilities geared to park visitors, ranging from the NPS visitor center to informational kiosks and wayside signs and including meeting venues, exhibition halls, and single-purpose facilities like the park archives and the archaeology lab. The park also has a number of existing services, events, and programs offered to the visitor by the NPS, the Trust, and Presidio tenants.

Primary visitor destinations within the Presidio include Crissy Field (Area A) and Baker Beach, meeting and exhibition venues such as the Officers' Club and the Golden Gate Club, and recreational facilities such as the Presidio Golf Course, the YMCA, and the trails and bikeways throughout the park. In total, the Trust estimates that the Presidio receives approximately 4.6 million visitors a year, including 2.6 million within the area under Trust jurisdiction (Area B). The 4.6 million visitors represent more than 25 percent of the visitors to the entire Golden Gate National Recreation Area as a whole (including Muir Woods, Fort Point, and the Maritime Museum).<sup>10</sup>

#### 3.8.1.2 Existing and Planned Facilities, Services, and Programs in the PHSB District

The PHSB district currently contains few visitor amenities. The district is used by visitors associated with the tenants in the district (e.g., Arion Press) and visitors who are aware of existing trails in the area.

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<sup>10</sup> Trust and NPS estimates cited in the PTMP EIS, Volume 1, page 158.

These trails connect the PHSH district to Mountain Lake on the east and Lobos Valley on the west, and pass through the abundant bird habitat in the Nike Swale area below Battery Caulfield. Areas of both the lower and upper plateaus, including areas around unoccupied buildings and around the Nike Swale, are currently fenced to prevent access. Visitor orientation is provided at an informational kiosk uphill from the 15<sup>th</sup> Avenue Gate.

In the future, the number of trails and the number of visitor programs and amenities are projected to increase in conformance with the PTMP and the Presidio Trail and Bikeway Master Plan adopted in 2003. Specifically, the existing trails will be extended to provide better connections to adjacent areas of the Presidio, and a trailhead and scenic overlook will be developed west of the PHSH. The trailhead may include a public restroom, as well as informational signs. Other informational and interpretive signs will be provided throughout the PHSH district, and signs, an exhibit, and/or a landscape treatment will commemorate the site of the former Marine Hospital Cemetery behind Building 1801.

### 3.8.2 ENVIRONMENTAL CONSEQUENCES

The potential impacts of use and development within the Presidio on the visitor experience are assessed on pages 292 to 296 of the PTMP EIS. No impacts are identified within the PHSH district. Overall, the number of park visitors is projected to increase to 7.2 million annually in Area B.

#### 3.8.2.1 Alternative 1: PTMP or No Action Alternative

Rehabilitation and reuse of buildings in the PHSH district would facilitate and not preclude planned improvements related to trails and bikeways, interpretation, and other aspects of the visitor experience, resulting in beneficial impacts. Following the construction period, open space areas on the lower plateau would be opened to the public, as would the lobby of Building 1801.

Interpretive materials would be provided within the lobby of Building 1801 and at key locations throughout the lower plateau, at Battery Caulfield, and at the site of the former Marine Hospital Cemetery. Visitor orientation would be provided via one or more kiosks near park entrances, as well as informational signs at the scenic overlook and trailhead planned for west of the PHSH.

Arion Press would continue to offer its current array of public programs and exhibitions, and new education-related tenants would also offer programs to park visitors and residents. The Trust or the NPS would offer periodic tours or site walks, and stewardship (volunteer) activities would continue at the Nike Swale, adjacent natural areas, and the area known as “Quail Commons” north of Battery Caulfield. Battery Caulfield itself would remain fenced and off-limits to the public for the near term, because it would remain in use as a maintenance yard.

#### 3.8.2.2 Alternative 2: Infill Alternative

Similar to Alternative 1, Alternative 2 would have beneficial effects on the visitor experience because it would rehabilitate and reuse buildings in the PHSH district, and would facilitate and not preclude planned improvements related to trails and bikeways, interpretation, and public programming. Following the

construction period, all open space areas on the lower plateau would be opened to the public, with the exception of areas immediately behind Building 1801. The lobby of Building 1801 would also be open to the public.

Interpretive materials would be provided within the lobby of Building 1801 and at key locations throughout the lower plateau, at Battery Caulfield, and at the site of the former Marine Hospital Cemetery. Visitor orientation would be provided via one or more kiosks near park entrances, as well as informational signs at the scenic overlook and trailhead planned for west of Building 1801.

Arion Press would continue to offer its current array of public programs and exhibitions, and the Trust or the NPS would offer periodic tours or site walks. Stewardship (volunteer) activities would continue at the Nike Swale, adjacent natural areas, and Quail Commons. Battery Caulfield itself would remain fenced and off-limits to the public for the near term, because it would remain in use as a maintenance yard.

### **3.8.2.3 Alternative 3: No Infill Alternative**

Similar to Alternative 1, Alternative 3 would have beneficial effects on the visitor experience because it would rehabilitate and reuse buildings in the PHS district, and would facilitate and not preclude planned improvements related to trails and bikeways, interpretation, and public programming. Following the construction period, all open space areas on the lower plateau would be opened to the public, with the exception of areas immediately behind Building 1801. The lobby of Building 1801 would also be open to the public.

Interpretive materials would be provided within the lobby of Building 1801 and at key locations throughout the lower plateau, at Battery Caulfield, and at the former Marine Hospital Cemetery. Visitor orientation would be provided via one or more kiosks near park entrances, as well as informational signs at the scenic overlook and trailhead planned for west of Building 1801.

Arion Press would continue to offer its current array of public programs and exhibitions, and the Trust or the NPS would offer periodic tours or site walks. Stewardship (volunteer) activities would continue at the Nike Swale, adjacent natural areas, and Quail Commons. Battery Caulfield itself would remain fenced and off-limits to the public for the near term, because it would remain in use as a maintenance yard.

### **3.8.2.4 Alternative 4: Battery Caulfield Alternative**

Similar to Alternative 1, Alternative 4 would have beneficial effects on the visitor experience because it would rehabilitate and reuse buildings in the PHS district, and would facilitate and not preclude planned improvements related to trails and bikeways, interpretation, and public programming. Following the construction period, all open space areas on the lower plateau would be opened to the public, with the exception of areas immediately behind Building 1801. The lobby of Building 1801 would also be open to the public.

Interpretive materials would be provided within the lobby of Building 1801 and at key locations throughout the lower plateau, at Battery Caulfield, and at the former Marine Hospital Cemetery. Visitor

orientation would be provided via one or more kiosks near park entrances, as well as informational signs at the scenic overlook and trailhead planned for west of the PHSH.

Arion Press would continue to offer its current array of public programs and exhibitions, and the Trust or the NPS would offer periodic tours or site walks. Stewardship (volunteer) activities would continue at the Nike Swale, adjacent natural areas, and Quail Commons. Battery Caulfield itself would become a residential area, with increased public access.

### **3.8.2.5 Park Presidio Access Variant**

Providing direct vehicular access between Park Presidio Boulevard and the PHSH site would increase the accessibility of the park, which would be an improvement for park visitors arriving (and departing) by auto. Pedestrians and bicyclists would be prohibited from using the new intersection, but would experience safety improvements at the nearby intersection of Lake Street and Park Presidio Boulevard.

Provision of the new access would necessitate adjustments to the south end of Park Boulevard, a multi-use trail and service road that connects the PHSH district to Mountain Lake. Pedestrians would be routed to sidewalks and crosswalks in the vicinity of Building 1808, and bicyclists would be routed to local roads and/or a multi-use trail connection providing east-west access across the lower plateau as shown in the Presidio Trails and Bikeways Master Plan.

### **3.8.2.6 Cumulative Effects**

When combined with improvements anticipated throughout the Presidio as part of the PTMP, the GMPA (for shoreline portions under NPS jurisdiction), and the Presidio Trails and Bikeways Master Plan, the PHSH project would improve the visitors' experience. Improvements would include increased access within developed areas of the park, improved trails and bikeways, additional interpretive and orientation materials, and additional opportunities for park programs provided by the Trust, the NPS, and park tenants.

## **3.8.3 MITIGATION MEASURES**

The following mitigation measures are adapted from the PTMP EIS section regarding the visitor experience:

*CO-4 Limitation of Visitor Opportunities* – The Trust will limit visitor opportunities to those that are suited and appropriate to the significant natural, historic, scenic, cultural, and recreational resources of the Presidio. Only those visitor activities that are consistent with the Trust Act and appropriate to the purpose for which the park was established will be allowed. The Trust will welcome tenants to provide activities consistent with these requirements.

*CO-5 Prohibitions on Visitor Use* – The Trust will prohibit visitor uses that impair park resources or values or unreasonably interfere with NPS interpretive activities or other existing, appropriate park uses.

CO-6 *Management Controls* – The Trust will impose management controls on visitor uses, if necessary, to ensure that the Presidio’s resources are protected. If an ongoing or proposed activity would cause unacceptable impacts to park resources, adjustments would be made to the way the activity is conducted, including placing limitations on the activity, so as to eliminate unacceptable impacts. Any restrictions would be based on professional judgment, law and policy, the best available scientific study or research, appropriate environmental review, and other available data. As visitor use changes over time, the Trust will decide if management actions are needed to keep use at acceptable and sustainable levels.

CO-7 *Monitoring of Visitor Levels* – The Trust will monitor visitation levels to ensure that park uses do not unacceptably affect Presidio resources, including visitor experience. Visitor carrying capacities for managing visitor use will be identified if necessary.

NR 14 *Visitor Management* – The Trust will monitor visitor numbers and use in the vicinity of the wetlands on the upper plateau (Nike Swale area) and will take steps to reduce or eliminate related impacts as necessary. Informational leaflets, signs, and regulatory measures will be employed as necessary.

## 3.9 Utilities and Services

### 3.9.1 AFFECTED ENVIRONMENT

The Presidio’s infrastructure and utilities are described on pages 184 to 192 of the PTMP EIS. Public safety-related services are described on pages 166 and 167. These descriptions are summarized and expanded upon below, where relevant to the PSHH district.

#### 3.9.1.1 Water Supply and Demand

The Trust operates a facility that treats water from nearby Lobos Creek to provide potable water to the park under permit from the California Department of Health Services.<sup>11</sup> Supplemental water is purchased from the City and County of San Francisco (CCSF) as needed. Similar to Presidio supplies, the amount of CCSF water used varies significantly based on the type of water year. Between 1999 and 2003, CCSF provided between 6 and 18 percent of the total water consumed at the park, and the remainder was provided by Lobos Creek. During this period, use of CCSF water ranged from 0 gallons per day in the winter and spring to 1 million gallons per day (mgd) at the peak of the dry season.

The San Francisco Public Utilities Commission (SFPUC), the CCSF department that provides water to San Francisco and surrounding communities, estimates that the current total demand for water from its system is approximately 90 mgd. In its Urban Water Management Plan, the SFPUC identifies the Presidio as a “retail customer,” with an estimated daily demand of 1 mgd through the year 2020 (SFPUC 2001). Because the Presidio is a retail customer, the purchase and use of water from the SFPUC is

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<sup>11</sup> Provision 11 of the permit stipulates that, to help protect water quality within the Lobos Creek Valley, the use of reclaimed water within the PSHH district is prohibited (DHS 1997).

subject to its water shortage regulations, including mandatory water rationing programs and rate structures adopted during drought conditions.

The Trust is committed to reducing the demand for off-site water resources by conserving water and by implementing water recycling in northern and eastern sections of the park (see PTMP page 55). Phase one of the Trust's water recycling plant, which is currently under construction, will provide approximately 200,000 gallons per day (gpd) for irrigation purposes, reducing dependence on Lobos Creek and CCSF water.

The PHSH site receives water from the Trust system from the north and the CCSF system to the south. Presently, one of the three CCSF lines, a 10-inch line entering the site from 15<sup>th</sup> Avenue, serves as a fire connection with 70 pounds per square inch (psi) of static hydrant pressure. The CCSF water system is in fair to good condition.

Based on water demand estimates developed for the PTMP EIS, current average daily water use within the PHSH district is 6,800 gallons. The PTMP EIS estimates that the future Presidio-wide average daily demand for water would be 0.72 million gallons.

#### **3.9.1.2 Wastewater Treatment and Disposal**

All of the on-site sanitary sewer mains from the PHSH district run south to the CCSF combined sewer system in 14<sup>th</sup> Avenue and then to Lake Street, which routes wastewater to the CCSF's Oceanside Water Pollution Control Plant (OSP), the City's newest treatment plant (and one of the few plants in the United States built largely underground). OSP meets all federal and state discharge standards. Approximately 95 percent of the pollutants are removed from the wastewater stream before discharge into the Pacific Ocean through the 4.5-mile Southwest Ocean Outfall. During peak wet weather, OSP treats 60 mgd from the City's west side. In 2000, the OSP treated an average of approximately 17 mgd.

Given their age, the joints of the sewer mains within the PHSH district may allow inflow and infiltration, which could increase flows to OSP during the wet season.

Based on estimates developed in the PTMP EIS, current average daily wastewater flows within the PHSH district are 6,000 gpd. The PTMP EIS estimates that the Presidio is expected to generate 0.65 mgd annually at full occupancy.

#### **3.9.1.3 Storm Drainage**

The on-site storm water collection system drains to the 17<sup>th</sup> Avenue system, which connects to the Richmond Transport system, part of the City's combined sewer system. Most of the piping is in good condition; however, several sections are crushed and in need of repair. The district does not experience flooding problems.

#### **3.9.1.4 Solid Waste**

The Trust handles solid waste disposal through contracts with the Golden Gate Disposal and Recycling Company, a subsidiary of Norcal Waste Systems, Inc. Currently, the Presidio generates approximately

2,250 tons of waste per year. Discards are delivered to a transfer station run by Sanitary Fill Company, which is also owned by Norcal Waste Systems, Inc. Close to 90 percent of the waste is transferred from Norcal Waste System Inc.'s transfer station to USA Waste's Altamont Landfill, located in Alameda County 62 miles southeast of San Francisco. The balance of the waste ends up in 15 to 20 other landfills in the region. At the current rate of disposal, the Altamont Landfill capacity is sufficient through 2008. However, if the region's diversion rate increases to 50 percent by 2005, this will extend the capacity of the landfill until 2011.

Using estimates developed by Golden Gate Disposal and the Trust in coordination with the City, Presidio residents are expected to generate 3,400 tons per year at full occupancy.<sup>12</sup> To minimize the park's impact on the solid waste stream, the Trust has initiated a comprehensive waste reduction and recycling program, which includes recycling, outreach and education, and in-house salvage, compost, and regeneration programs. The program received a WasteWise Program Champion Award from the EPA. According to the EPA and Golden Gate Disposal, in 2002 the Presidio diverted over 67 percent (1,500 tons of material, including organics) from the waste stream.

### **3.9.1.5 Gas System**

Pacific Gas and Electric Company (PG&E) owns and maintains the gas infrastructure at the Presidio, including the PSHH district. An existing high-pressure gas line extends from 14<sup>th</sup> Avenue into the district and fires a boiler system at Building 1802. Based on estimates developed for the PTMP EIS, Presidio-wide development under the PTMP would generate demand for up to 2.30 million therms of natural gas annually.

### **3.9.1.6 Electrical System**

PG&E provides high-voltage electric service to the district. Power comes through the 14<sup>th</sup> Avenue Gate and feeds Buildings 1801 and 1802, where it is "stepped down" to a usable voltage and delivered to other buildings within the district. A 12,000-volt line at 14<sup>th</sup> Avenue and Lake Street was recently installed.

In the near future, PG&E will be replacing overhead electric facilities with underground lines on 14<sup>th</sup> and 15<sup>th</sup> Avenues and other streets within the Mid-Lake District as part of its Rule 20 Undergrounding Program. The costs for undergrounding will be recovered through electric rates after the project is completed (expected by the fourth quarter 2004).

Based on estimates developed for the PTMP EIS, up to 50.24 million kilowatt-hours of electricity would be consumed at the Presidio annually at full occupancy.

### **3.9.1.7 Fire Protection and Emergency Response**

Presently, the Presidio Fire Department provides fire prevention and protection, fire suppression, rescue, and emergency medical services to the Presidio through an interagency agreement with the NPS. The Presidio Fire Department maintains two fire stations within the GGNRA, one located on the Main Post

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<sup>12</sup> Based on the average amount of garbage generated in a single-family home in San Francisco: 35 pounds per week or approximately 1,800 pounds per year.

and the other in the Marin Headlands. Fire Station 51 (Main Post) houses one engine company, one truck company, one paramedic (advanced life support or ALS) ambulance, and one command vehicle. Each day, between seven and ten firefighters are on duty, with an Assistant Chief on duty to supervise operations and serve as the Incident Commander. In 2003, the Presidio Fire Department responded to over 1,100 calls for service. Calls for service within Area B numbered 660. Of this number, 90 percent of the calls for service were for emergency medical services.

The National Fire Protection Association (NFPA) establishes the standards, requirements and recommended practices for fire departments in the United States. The NFPA also establishes the Fire Codes and the Life Safety Codes used by the NPS and the Presidio Fire Department. NFPA 1710 establishes the minimum number of on-duty personnel, the minimum number of fire apparatus, and the minimum response times to areas within the department's jurisdiction. This standard provides guidance to the Presidio Fire Department and helps shape the department's planning of present and future deployment of firefighting forces, equipment and emergency resources.

NFPA 1710 establishes a minimum four-minute response time for all calls for service that involve fire and emergency medical services. The standard requires fire departments to meet the four-minute response time at least 90 percent of the time. In 2003, the Presidio Fire Department reached the four-minute response benchmark 74 percent of the time for fire-related and emergency medical services calls for service generated at the Presidio. This response rate is due greatly to the large response area that is covered by one fire station. Average response times, which take into account travel distance, road conditions, and traffic conditions, to the Baker Beach Apartments area and the PSHS district are 6.3 minutes. These two areas of the Presidio have been historically deficient in the required response times and have been managed using risk management practices. Over the past four years, the increase in population in the Baker Beach Apartments area has resulted in an increase in calls for service.

To provide fire suppression and rescue services to incidents that exceed the capability of the Presidio Fire Department, the department has entered into a mutual aid agreement with the San Francisco Fire Department (SFFD) whereby assistance will be provided by SFFD personnel on an "as available" basis at the request of the Presidio Fire Department (NPS 2004b).

#### **3.9.1.8 Law Enforcement**

Law enforcement services at the Presidio are provided by the U.S. Park Police (USPP) San Francisco Field Office (SFFO) pursuant to an interagency agreement with the Trust, which reimburses the NPS for its service costs. At present, the USPP has an authorized strength of 83 sworn law enforcement positions, and 33 of these authorized positions are dedicated to the Presidio. USPP law enforcement functions include vehicle patrol, motorcycle patrol, foot patrol, horse-mounted patrol, bicycle and trail bike patrol, search and rescue, emergency medical service support, traffic safety, criminal investigations, narcotics enforcement, dispatch, emergency communications, and administrative support. Emergency calls at the Presidio have an average response time of less than three minutes, while the non-emergency response time is less than ten minutes. Area B of the Presidio is divided into two beats patrolled 24 hours a day. Each patrol beat typically has two patrol cars with a single officer. Currently there is no police station

available 24 hours a day, only a dispatch center that can be called via 911 to report incidents. To augment USPP in special or unusual circumstances, the USPP has entered into a mutual aid agreement with the San Francisco Police Department (SFPD) whereby assistance will be provided by SFPD law enforcement personnel at the request of the USPP.

Today, most of the building square footage within the PHS district is unoccupied. Building 1801 is entirely vacant and the lack of occupancy has made it impossible to secure the building from vandalism and theft, which has led to a gradual acceleration of deterioration within the building.

### 3.9.2 ENVIRONMENTAL CONSEQUENCES

The demand for utilities and services Presidio-wide is assessed on pages 298 to 301 and pages 328 to 352 of the PTMP EIS. The discussion is incorporated here by reference and supplemented by analysis of issues specific to the PHS project alternatives under consideration. A summary of annual utility demands based primarily on demand assumptions by land use from the PTMP EIS is provided in Table 19.

Table 19. Annual Utility Demands

UTILITY	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Water Consumption (gpd)	71,000	69,000	55,000	43,000
Wastewater Treatment and Disposal (gpd)	55,000	53,000	40,000	30,000
Solid Waste Generation (tons)				
<i>Construction</i>	4,950	6,800	12,000	11,580
<i>Operation (annual)</i>	740 <sup>a</sup>	820	540	450
Natural Gas Usage (thousand therms)	1.64	1.64	1.13	1.48
Electrical Demand (million kWh)	2.61	1.62	1.24	1.47

Source: Presidio Trust 2002b; California Integrated Waste Management Board 2004.

<sup>a</sup> Based on a generation rate of 0.0013 tons/sf/yr for educational use.

gpd = gallons per day.

kWh = kilowatt-hours.

#### 3.9.2.1 Alternative 1: PTMP or No Action Alternative

**Water Supply and Demand** – The proposed use of the PHS district under this alternative is taken into account in the PTMP EIS water demand calculations, and therefore projected water supply would be sufficient for expected needs. Using water demand estimates developed for the PTMP EIS, the various

land uses associated with this alternative would demand an average of approximately 71,000 gpd annually, an increase of 64,200 gpd over existing conditions. This average demand represents approximately 10 percent of the projected water demand of the Presidio under the PTMP. Water would be fed from either the Trust or the CCSF system.<sup>13</sup> The physical condition and capacity of the feeds from both systems are generally adequate to serve the project; however, some upgrades and new backflow prevention devices, fire laterals, and meters would be required.

As required by PTMP EIS Mitigation Measure UT-1 *Demand Management Best Management Practices*, the alternative would use water efficiently and responsibly. The water system would be designed to maximally conserve water. Water-efficient devices would be installed in all structures, and efficient methods would be used for outdoor irrigation.

**Wastewater Treatment and Disposal** –Wastewater generation was projected in the PTMP EIS by applying a 90 percent factor to the domestic water use estimates (non-irrigation demand). The result was compared to current levels to determine impacts on the City’s sanitary sewer system, which treats wastewater from the Presidio. Based on wastewater projections in the PTMP EIS, proposed uses at full occupancy in the PHSB district under this alternative would generate 55,000 gpd of wastewater annually. Wastewater generated from the PHSB district would be routed to the CCSF’s Oceanside Water Pollution Control Plant, which has sufficient capacity and can absorb wet weather flows better than the Southeast Water Pollution Control Plant.

Existing sewer lines are adequately sized to handle increased flows from development under this alternative. PTMP EIS Mitigation Measure UT-4 *Reduction of Onsite Wastewater Generation* acknowledges that water conservation practices required by PTMP EIS Mitigation Measure UT-1 to minimize water usage within the district would reduce wastewater generation and flows to the CCSF system.

**Storm Drainage** – The existing storm sewer system has sufficient capacity and would be generally functional to meet the needs of this alternative. Storm water would continue to be directed to the CCSF combined sewer system (and not to Lobos Creek), and storm drains along Wyman Avenue would be re-routed to the CCSF system (instead of Mountain Lake). Upgrading inlets in key pedestrian areas, limited slip-lining and/or replacement of damaged piping, and new inlets and piping from new parking areas would be required. Infrastructure improvements would be installed prior to new construction to minimize storm water runoff and comply with existing water quality standards and regulatory requirements (Mitigation Measure UT-6 *Storm Water Drainage System Upgrades*). In addition, designs or measures would be implemented to minimize impervious surfaces in order to reduce storm water runoff volumes and improve water quality, including using on-site vegetation and landscaping as a filtration and retention system to the extent feasible. Grass, sand, and other porous surfaces would be placed around non-porous surfaces such as asphalt to limit storm water flows (Mitigation Measure UT-7 *Storm Water Reduction*).

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<sup>13</sup> Should CCSF supply all water to the PHSB district, water purchases from the CCSF on a Presidio-wide basis would increase from 108,000 gpd as projected in the PTMP EIS to a maximum of 152,000 gpd (under Alternative 1). The increase is still well below the CCSF estimated daily demand of 1 mgd for the Presidio in the SFPUC Urban Water Management Plan. Increased reliance on the CCSF for potable water would reduce demands on Lobos Creek.

During construction activities, best management practices would be used to prevent erosion, surface runoff, and siltation of downstream water bodies (Mitigation Measure NR-15 *Best Management Practices*).

**Solid Waste** – The impacts of demolition, construction, and rehabilitation activities in the PHSH district on the regional waste stream are analyzed in the PTMP EIS. Based on solid waste estimates developed for the PTMP EIS, building rehabilitation within the PHSH district under this alternative would result in the disposal of up to 4,950 tons of debris. Impacts on regional landfills would be substantially reduced by adaptively reusing all existing buildings (minimizing materials use and eliminating almost all demolition waste) and by recycling waste generated during construction to the maximum extent feasible as required by PTMP EIS Mitigation Measure UT-8 (*Waste Diversion*). Waste recycling would include developing and implementing a construction and demolition debris management plan (see Appendix C) with the aim to divert up to 75 to 80 percent of construction waste from landfills as demonstrated by the Letterman Digital Arts project.

During operation, this alternative would generate roughly 740 tons of waste per year. Solid waste would be reduced by as much as two-thirds through efficient resource use, recycling and reuse, diverting organic material from waste, and purchasing products composed of recycled materials.<sup>14</sup>

**Gas System** – The PTMP EIS takes into account the natural gas demand of this alternative. Based on the natural gas use projections of the proposed use (by square foot) within the PTMP EIS, this alternative would consume 1.64 thousand therms of natural gas annually.<sup>15</sup> Existing services are adequately sized for the proposed development at the project site, although some upgrades to the infrastructure may be required. Any improvement in the existing services to the site would be the responsibility of PG&E. The development would adopt the principles of sustainable design and technology, and conservation measures would be implemented to minimize natural gas usage (Mitigation Measure UT-13 *Energy Conservation*).

**Electrical System** – The potential impacts of this alternative on electrical use were analyzed in the PTMP EIS. The square footage for proposed land uses under this alternative was used to project the electrical use and demand. Based on the projections by land use in the PTMP EIS, up to 2.61 million kilowatt-hours (kWh) of electricity would be consumed at the PHSH district annually. The Trust's private development partner(s) would work directly with the Trust (or PG&E)<sup>16</sup> to upgrade the electrical system serving the PHSH district for safety and efficiency, including repair and rehabilitation of old cables and, where possible, undergrounding of overhead lines. Energy conservation practices would be employed within the PHSH district to maximize energy efficiency.

**Fire Protection and Emergency Response** – Without adequate structural fire protection and suppression, a structural fire within the PHSH district could cause significant damage to property and

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<sup>14</sup> Since the PTMP, the Presidio's diversion rate of 65 percent (2002-2003 average) has exceeded the PTMP goal of at least 50 percent (email correspondence, Debby Dunn, Marketing and Community Relations, Golden Gate Disposal, December 8, 2003).

<sup>15</sup> Based upon a gas index of 0.41 therms/square foot (PTMP EIS, page 348).

<sup>16</sup> While the Trust operates and maintains the electrical distribution system at the Presidio, it is a bundled service customer of PG&E. Therefore, the development team may choose service directly from PG&E.

result in deaths and injuries. Fire prevention, protection, and suppression would be primary considerations in the design, construction, rehabilitation, maintenance, and operation of all PHSH facilities. Prevention priorities would focus on occupied structures and historic resources, with emphasis placed evenly on code compliance, early warning detection, suppression systems, and employee training and awareness. Fire prevention at the district would occur through code-compliant new construction, upgrading of existing structures, and properly installed and maintained detection and suppression systems. The best available technology would be used to detect and provide early warning of fires and to prevent and suppress structural fires. Structural fire deficiencies would be addressed and corrected, including removing and replacing the existing fire escapes within Building 1801 with code-compliant exit stairs within the building, and installing automatic wet pipe sprinkler systems. The water supply and delivery system would be designed and maintained to provide sufficient flows to operate fire sprinkler systems and fire hydrants.

Prior to building rehabilitation, construction documents and shop drawings would be submitted, reviewed, and approved by Presidio Fire Department fire inspectors. Construction documents would include all fire prevention requirements for the proposed uses, and the shop drawings would be required to comply with applicable codes and standards. Buildings and structures would be equipped, maintained, and operated in accordance with applicable codes and standards as to provide a reasonable level of life safety, public welfare, and property protection from actual and potential hazards created by fire. The preservation of historic buildings would be effectively integrated with fire management through the use of “minimum impact” techniques. The Presidio Fire Department fire inspectors would inspect construction in progress and provide life safety inspection of subsequent occupancy and public education to reduce fire loss.

In the event of a structural fire at the PHSH district, effective management of the safe and orderly evacuation of building residents would require an adequate number of Presidio Fire Department responders. The existing first alarm response by the Presidio Fire Department would consist of two engines, two paramedic (ALS) ambulances, one truck company, and one chief officer. This level of response would provide between 10 and 13 firefighters to the scene to initiate search and rescue operations, assist in evacuation, and conduct fire suppression operations. The Presidio Fire Department has indicated that additional equipment and staff located in a temporary or permanent location in the southern portion of the Presidio would be required to meet fire flow and provide an adequate number of personnel to conduct an initial attack operation safely within the NFPA standard. According to the Presidio Fire Department, additional equipment and staff would also be required in a suitable location in the southern portion of the Presidio to ensure the availability of the required four-minute response to emergency medical calls for service (see Mitigation Measure CO-12.)

**Law Enforcement** – The increase in resident and employee population in the PHSH district would potentially increase the number of calls for police service from occupants while reducing calls related to vagrancy and vandalism. As required by PTMP EIS Mitigation Measure CO-12 *Expansion of Public Safety Services*, as calls for police service increase, the USPP would make appropriate increases in staff, equipment, and facilities and scale up its operations as necessary to ensure that law enforcement services remain at adequate levels.

### 3.9.2.2 Alternative 2: Infill Alternative

**Water Supply and Demand** – Water demand under this alternative would be less than that taken into account in the PTMP EIS water demand calculations, and therefore projected water supply would be sufficient for expected needs. The alternative would demand approximately 69,000 gpd annually, compared to 71,000 gpd estimated in the PTMP EIS. Use of CCSF water as an alternative source would reduce the Presidio’s dependence on Lobos Creek for water supply (see footnote 13). The physical condition and capacity of feeds from both the Presidio and CCSF systems are generally adequate to serve the project; however, some upgrades and new backflow prevention devices, fire laterals, and meters would be required.

The alternative would use water efficiently and responsibly. The water system would be designed to maximally conserve water. Water-efficient devices would be installed in all structures, and efficient methods would be used for outdoor irrigation.

**Wastewater Treatment and Disposal** – New uses at full occupancy under this alternative would generate 53,000 gpd of wastewater annually, or 2,000 gpd less than proposed uses under the PTMP. Existing sewer lines are adequately sized to handle increased flows from development under this alternative. Water conservation practices to minimize water usage within the PHS district would reduce wastewater generation and flows.

**Storm Drainage** – Impacts on the storm sewer system under Alternative 2 would be similar to those of Alternative 1. Some infrastructure improvements would be required to minimize storm water runoff and comply with existing water quality standards and regulatory requirements. Designs or measures would be implemented to limit or eliminate impervious surfaces in order to reduce storm water runoff volumes and improve water quality.

**Solid Waste** – Under this alternative, almost all of the existing buildings (no less than 88 percent) would be adaptively reused, which would limit demolition and new construction waste. Demolition of the front connector, two-story rear additions and (possibly) the two top levels of the non-historic wings of Building 1801, replacement construction, and rehabilitation of historic buildings would result in the disposal of up to 6,800 tons of debris. Cost-effective, environmentally protective alternatives to disposal of demolition debris would be implemented to minimize impacts on the regional waste stream. These measures would include developing and implementing a construction and demolition debris management plan (see Appendix C) with the aim to divert up to 75 to 80 percent of construction waste from landfills.

During operation, this alternative would generate up to 820 tons of solid waste per year. Solid waste would be reduced by as much as two-thirds through efficient resource use, recycling and reuse, diverting organic material from waste, and purchasing products composed of recycled materials.

**Gas System** – This alternative would consume roughly the same amount of natural gas as Alternative 1 (1.64 thousand therms annually). While existing services are adequately sized for the proposed development, some upgrades to the infrastructure may be required. The development would adopt the

principles of sustainable design and technology, and conservation measures would be implemented to minimize natural gas usage.

**Electrical System** – This alternative would consume 1.62 million kWh of electricity at the district annually compared to 2.61 million kWh under the PTMP (Alternative 1). Similar to Alternative 1, the electrical system serving the district would require upgrading for safety and efficiency, including repair and rehabilitation of old cables and, where possible, undergrounding of overhead lines. A number of energy conservation practices would be employed within the district to maximize energy efficiency.

**Fire Protection and Emergency Response** – Similar to Alternative 1, fire prevention under this alternative would occur through code-compliant new construction, upgrading of existing structures, and properly installed and maintained detection and suppression systems. The best available technology would be used to detect and provide early warning of fires and to prevent and suppress structural fires. Structural fire deficiencies would be addressed and corrected, including removing and replacing the existing fire escapes within Building 1801 with code-compliant exit stairs within the building, and installing automatic wet pipe sprinkler systems. The water supply and delivery system would be designed and maintained to provide sufficient flows to operate fire sprinkler systems and fire hydrants. For new construction, modification, and rehabilitation, construction documents and shop drawings would be submitted, reviewed, and approved by Presidio Fire Department fire inspectors prior to the start of work. All new and existing buildings and structures would be constructed, arranged, equipped, maintained, and operated in accordance with applicable codes and standards. The Presidio Fire Department fire inspectors would inspect construction in progress and provide life safety inspection of subsequent occupancy. As required by PTMP EIS Mitigation Measure CO-12 *Expansion of Public Safety Services*, firefighting staff, equipment, and/or facilities would be increased to provide the required levels of fire protection and emergency medical response to the PHSH district.

**Law Enforcement** – Similar to Alternative 1, this alternative would potentially increase the number of calls for police service while reducing the number of calls related to vagrancy and vandalism. The USPP would make appropriate increases in staff, equipment, and facilities and scale up its operations as necessary to ensure that law enforcement services remain at adequate levels.

### **3.9.2.3 Alternative 3: No Infill Alternative**

**Water Supply and Demand** – Water demand under this alternative would be 55,000 gpd annually, 16,000 gpd less than that taken into account in the PTMP EIS water demand calculations. Therefore, projected water supply would be sufficient for expected needs. Should CCSF water be used as an alternative source, the Presidio's dependence on Lobos Creek for water supply would be reduced (see footnote 13). The physical condition and capacity of the feeds from both the Presidio and CCSF systems are generally adequate to serve the project; however, some upgrades and new backflow prevention devices, fire laterals, and meters would be required.

Water would be used efficiently and responsibly. The water system would be designed to maximally conserve water, water-efficient devices would be installed in all structures, and efficient methods would be used for outdoor irrigation.

**Wastewater Treatment and Disposal** – New uses at full occupancy under this alternative would generate 40,000 gpd annually, or 15,000 gpd less than proposed uses under the PTMP (Alternative 1). Existing sewer lines are adequately sized to handle increased flows from development under this alternative. Water conservation practices to minimize water usage within the PHSB district would reduce wastewater generation and flows.

**Storm Drainage** – Impacts on the storm sewer system under Alternative 3 would be similar to those of Alternative 1. Some infrastructure improvements would be required to minimize storm water runoff and comply with existing water quality standards and regulatory requirements. Designs or measures would be implemented to limit or eliminate impervious surfaces in order to reduce storm water runoff volumes and improve water quality.

**Solid Waste** – Under this alternative, almost all of the existing buildings (no less than 88 percent) would be adaptively reused, and there would be no new construction waste. Demolition of the non-historic additions of Building 1801 and rehabilitation of historic buildings would result in the disposal of approximately 12,000 tons of debris. Cost-effective, environmentally protective alternatives to disposal of demolition debris would be implemented to minimize impacts on the regional waste stream, including developing and implementing a construction and demolition debris management plan (see Appendix C).

During operation, this alternative would generate roughly 540 tons of solid waste per year. Solid waste would be reduced by as much as two-thirds through efficient resource use, recycling and reuse, diverting organic material from waste, and purchasing products composed of recycled materials.

**Gas System** – This alternative would consume roughly two-thirds the amount of natural gas required used under Alternative 1 (1.13 thousand therms compared to 1.64 thousand therms annually under the PTMP). Existing services are adequately sized for the proposed development but some upgrades may be required. The development would adopt the principles of sustainable design and technology, and conservation measures would be implemented to minimize natural gas usage.

**Electrical System** – This alternative would consume less than half the electricity that would be used under Alternative 1 (1.24 million kWh of electricity at the district annually compared to 2.61 million kWh under the PTMP). Similar to Alternative 1, the electrical system serving the district would require upgrading for safety and efficiency, including repair and rehabilitation of old cables and, where possible, undergrounding of overhead lines. Energy conservation practices would be employed within the district to maximize energy efficiency.

**Fire Protection and Emergency Response** – Similar to Alternative 1, fire prevention under this alternative would occur through code-compliant new construction, upgrading of existing structures, and properly installed and maintained detection and suppression systems. The best available technology

would be used to detect and provide early warning of fires and to prevent and suppress structural fires. Structural fire deficiencies would be addressed and corrected, including removing and replacing the existing fire escapes within Building 1801 with code-compliant exit stairs within the building, and installing automatic wet pipe sprinkler systems. The water supply and delivery system would be designed and maintained to provide sufficient flows to operate fire sprinkler systems and fire hydrants. As required by PTMP EIS Mitigation Measure CO-12 *Expansion of Public Safety Services*, firefighting staff, equipment, and/or facilities would be increased to provide the required levels of fire protection and emergency medical response to the PHSH district.

**Law Enforcement** – As with Alternative 1, the increase in resident and employee population at the PHSH district would potentially increase the number of calls for police service from occupants and reduce the calls related to vagrancy and vandalism. USPP law enforcement services would be reviewed and expanded as necessary to ensure that adequate services are maintained.

#### **3.9.2.4 Alternative 4: Battery Caulfield Alternative**

This alternative would require extending utility services to Battery Caulfield, probably along Battery Caulfield Road.

**Water Supply and Demand** – Water demand under this alternative would be 43,000 gpd annually, 28,000 gpd less than that estimated for the PHSH district under the PTMP. Therefore, projected water supply would be sufficient for expected needs. Should CCSF water be used as an alternative source, the Presidio's dependence on Lobos Creek for water supply would be reduced (see footnote 13). The physical condition and capacity of the feeds from the Presidio and CCSF systems are generally adequate to serve the project; however, some upgrades and new backflow prevention devices, fire laterals, and meters would be required. While flow and pressure requirements would be sufficient within the PHSH complex, a booster pump may be needed to meet fire flows within Battery Caulfield.

Water would be used efficiently and responsibly. The water system would be designed to maximally conserve water, water-efficient devices would be installed in all structures, and efficient methods would be used for outdoor irrigation.

**Wastewater Treatment and Disposal** – New uses at full occupancy under this alternative would generate 30,000 gpd of wastewater annually, or 45 percent less than proposed uses for the PHSH district under the PTMP. Existing sewer lines are adequately sized to handle increased flows from development under this alternative. Water conservation practices to minimize water usage within the district would reduce wastewater generation and flows.

**Storm Drainage** – Impacts on the storm sewer system under Alternative 4 would be similar to those of Alternative 1. Some infrastructure improvements would be required to minimize storm water runoff and comply with existing water quality standards and regulatory requirements. Designs or measures would be implemented to limit or eliminate impervious surfaces in order to reduce storm water runoff volumes and improve water quality (see also the discussion of hydrology and associated mitigation in Section 3.11.2.4).

**Solid Waste** – This alternative would generate the most solid waste during construction due to the amount of demolition and new construction. Demolition of the non-historic wings of Building 1801, replacement construction, and rehabilitation of historic buildings would result in the disposal of up to 11,580 tons of debris. Cost-effective, environmentally protective alternatives to disposal of demolition debris would be implemented to minimize impacts on the regional waste stream, including developing and implementing a construction and demolition debris management plan (see Appendix C).

During operation, this alternative would generate roughly 405 tons of solid waste per year, of which as much as two-thirds would be diverted from regional landfills.

**Gas System** – This alternative would consume approximately 10 percent less natural gas than Alternative 1 (1.48 thousand therms compared to 1.64 thousand therms annually under the PTMP). Existing services are adequately sized for the proposed development but some upgrades may be required. The development would adopt the principles of sustainable design and technology, and conservation measures would be implemented to minimize natural gas usage.

**Electrical System** – This alternative would consume 1.47 million kWh of electricity at the district annually compared to 2.61 million kWh under Alternative 1. Similar to Alternative 1, the electrical system serving the PHSB district would require upgrading for safety and efficiency, including repair and rehabilitation of old cables and, where possible, undergrounding of overhead lines. A number of energy conservation practices would be employed within the district to maximize energy efficiency.

**Fire Protection and Emergency Response** – Impacts on structural fire protection at the PHSB complex would be similar to those of Alternative 1. However, new construction at Battery Caulfield would require that the loop road be designed and constructed to ensure fire and emergency vehicle access. Following occupancy of the project, reduction of fire loss would be accomplished through an ongoing fire prevention inspection program and public education. However, unlike Alternatives 1, 2, and 3, occupants of senior housing (Building 1801) or assisted living units (Building 1808) under this alternative who may rely upon skilled nursing or continuing care may not be capable of self-rescue in the event of a fire. This would result in an increased need for available Presidio Fire Department responders to assist with occupant evacuation, in addition to initiating search and rescue operations and conducting fire suppression operations. As required by PTMP EIS Mitigation Measure CO-12 *Expansion of Public Safety Services*, firefighting staff, equipment, and/or facilities would be increased to provide additional coverage to the PHSB district as needed. Also, unlike Alternatives 1, 2, and 3, in which the vast majority of building occupants would be ambulatory, this alternative would include an older population and an assisted living component, increasing emergency medical calls for service and placing an increased response load on the existing paramedic (ALS) ambulance staffed at the Presidio. The Presidio Fire Department has indicated that additional equipment and staff would be required in a suitable location in the southern portion of the Presidio to ensure the availability of the required four-minute response to emergency medical calls for service and to ensure paramedic (ALS) level care is available.

**Law Enforcement** – As with Alternative 1, the number of calls for police service from occupants would potentially increase under this alternative while the number of calls related to vagrancy and vandalism

would decrease. The USPP would review and expand law enforcement services as necessary to ensure that services remain at adequate levels.

### **3.9.2.5 Cumulative Effects**

The PTMP EIS analysis of cumulative impacts on utilities and services, including water, disposal of wastewater, storm drainage, solid waste, electricity and natural gas, and fire protection and law enforcement took into account the combined demand of Presidio development (including new uses in the PHSH district) and other demands outside the park. The analysis concluded that the combined effect of Presidio and other local development would have a negligible effect on service providers. Many of the Presidio's older infrastructure systems have been subject to significant upgrading and replacement. The Trust has a capital investment program designed to bring these systems up to current standards so that they may serve new uses. The PTMP lists safety, efficiency, and long-term sustainability as primary goals of upgrading and replacement work.

The Trust would provide utilities for new uses or would require its private development team(s) to secure necessary utilities at their own expense from outside the park. Utilities would be installed within development areas under requirements prescribed by the Trust and/or service providers. Private development team(s) would be charged no less than the full cost for the use of the services.

With respect to cumulative demand of Presidio development on outside service providers, the Presidio demand for off-site water represents less than ¼ percent of the projected total demand in the CCSF service area (PTMP EIS, page 372). The need for water purchases from the CCSF would be minimized through implementing aggressive water conservation and the use of recycled water. Future wastewater flows from the park to the City's sewage treatment system would represent less than ½ percent of the capacity of either of the City's plants where these flows are treated, and implementation of the proposed water recycling project would result in a direct reduction in flows that would otherwise go the City's system for treatment and disposal (PTMP EIS, page 373). Regional landfills have sufficient capacity to accept Presidio debris, and much of the debris would be diverted from the waste stream. With regard to energy management, Presidio development would occur in a way that uses energy wisely and economically through sustainable practices and design to minimize the park's impact on regional energy demand. The Presidio Fire Department would continue to adjust its operations in order to maintain reasonable levels of fire safety and emergency services consistent with NFPA standards. Similarly, USPP law enforcement services would be expanded as necessary to serve the increased demand for calls. Therefore, Presidio development is expected to have the least possible impact on park or outside service providers' resources, administration, management, or customers.

## **3.9.3 MITIGATION MEASURES**

The following measures are adapted from the PTMP EIS and would apply to all alternatives to mitigate impacts on utilities and services.

### **3.9.3.1 Water Supply and Demand**

UT-1 *Demand Management Best Management Practices* – The Trust, in cooperation with all its tenants and residents, will continue to implement best management practices that encourage water conservation, including the following:

- Installing low-flush toilets, low-flow showerheads, and other water-saving devices in all buildings;
- Integrating non-invasive, drought-tolerant, low-maintenance landscaping into the development areas to the extent possible to promote efficient and effective water application;
- Retrofitting landscaped areas with low-flow irrigation devices; and
- Informing tenants and residents of water conservation practices.

### **3.9.3.2 Wastewater Treatment and Disposal**

UT-4 *Reduction of Onsite Wastewater Generation* – The Trust will implement water conservation best management practices described in Mitigation Measure UT-1 to limit water usage at the Presidio, which will reduce wastewater generation as well. The on-site sewer infrastructure will also be rehabilitated (i.e., slip-lined and broken and cracked sections of pipe replaced) as necessary to reduce storm water infiltration into the wastewater system.

### **3.9.3.3 Storm Drainage**

UT-6 *Storm Water Drainage System Upgrades* – To maintain adequate system capacity and to correct existing operational problems, the Trust will ensure that necessary upgrades to the storm water drainage system be performed. All surface water flow will be directed toward the City and County of San Francisco’s combined sewer system and not to Mountain Lake or Lobos Creek.

UT-7 *Storm Water Reduction* – The Trust will implement designs or measures to limit or eliminate impervious surfaces in order to reduce storm water runoff volumes and improve water quality. The Trust will practice natural storm water reduction by using on-site vegetation and landscaping as filtration and retention systems to the extent feasible.

### **3.9.3.4 Solid Waste**

UT-8 *Waste Diversion* – Cost-effective, environmentally protective alternatives to disposal of demolition debris will be required, including the following:

- Maximizing reuse and recycling of construction and demolition materials consistent with a construction and demolition debris management plan;
- Clearing salvageable items from structures prior to demolition activities, including such items as piping, flooring, doors, windows, bathroom fixtures and kitchen fixtures, hospital equipment, heaters, and lumber;

- Removing and encapsulating contamination before demolition to minimize co-mingling of the wastes and to maximize reuse of the uncontaminated materials;
- Bringing down buildings piece by piece to recover the maximum amount of reusable materials; and
- Size-reducing (especially concrete) and pre-sorting and segregating materials after demolition to increase salvage value of the recovered materials and to decrease tipping fees for different materials in the debris; and
- Recycling materials on-site to reduce both hauling and disposal costs.

### **3.9.3.5 Gas and Electrical Systems**

UT-11 *Environmental Building Design* – The Trust will incorporate the site’s environmental conditions in building design solution, maximizing solar energy and utilizing natural light.

UT-12 and UT 13 *Energy Conservation* – The following practices will be employed within the district to minimize the environmental impacts of energy consumption:

- Develop specific measures to minimize building energy use for buildings to be renovated;
- Meet or surpass the energy conservation requirements of California Title 24 energy code during building rehabilitation where these requirements do not conflict with historic preservation objectives;
- Carry out cost-effective energy conservation retrofits of buildings and utility infrastructure;
- Educate tenants and visitors about energy conservation;
- Develop energy conservation and efficient energy generation demonstration projects in individual buildings;
- Participate in energy-efficient appliance and computer purchasing programs; and
- Install energy management systems in all non-residential buildings both to monitor energy use and to enable remote troubleshooting and building controls.

### **3.9.3.6 Fire Protection and Law Enforcement**

CO-12 *Expansion of Public Safety Services* – The Trust will work with the Presidio Fire Department and the USPP to identify any appropriate increases in staff, equipment, and facilities in order to provide adequate services to a residential community in the PSHH district. Alternatively, the Trust will consider contracting with the San Francisco Fire Department for fire protection and emergency medical response. Should the Presidio Fire Department provide these services, they have indicated a need for additional personnel, equipment, and facilities to improve response times to southern areas of the Presidio (i.e., Wherry Housing and the PSHH district). At a minimum, the Trust has agreed to provide space within an existing building at Wherry Housing or the PSHH district to house an on-duty staff of two

firefighter/paramedic positions and to provide adjacent space for a paramedic (ALS) ambulance. These would be provided upon occupancy of the PHSH project while the Trust and the Presidio Fire Department undertake negotiations regarding possible additional staff, equipment, and/or permanent facilities.

## 3.10 Geology and Soils

### 3.10.1 AFFECTED ENVIRONMENT

The geology of the Presidio is described on page A-5 (Volume III) of the PTMP EIS, which states that “site specific development projects implementing the Plan will require supplemental review to evaluate geologic and seismic hazards.”

The project site is located in a seismically active region. Four major active faults lie near the site: the San Andreas Fault (about 5.2 miles southwest), the North San Gregorio Fault (about 7.8 miles west), the Northern Hayward Fault (about 13.0 miles northeast), and the Rodgers Creek Fault (21.7 miles north). The project site is expected to experience periodic minor earthquakes and possibly a major earthquake (Moment magnitude [Mw] greater than 6.7 [California Division of Mines and Geology 1996]) on one or more of these nearby faults during the life of the proposed development. Numerous earthquakes have been recorded in the region in the past, the largest of which was the 1906 San Francisco Earthquake (Mw of 7.9), which occurred on the San Andreas Fault. The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of October 17, 1989, with a Mw of 6.9 km, in the Santa Cruz Mountains approximately 57.2 miles from the site.

The Working Group on California Earthquake Probabilities at the U.S. Geologic Survey (USGS 2002) predicted a 62-percent probability of a Mw of 6.7 or greater earthquake occurring in the San Francisco Bay Area by the year 2032. More specifically, the estimated 30-year probabilities of a Mw of 6.7 or greater earthquake for the Hayward-Rodgers Creek, San Andreas, and San Gregorio Faults are 27, 21, and 10 percent, respectively. Historically, ground surface displacements closely follow the trace of geologically young faults. The project site is not located within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. Therefore, the risk of surface faulting is very low (Treadwell & Rollo, Inc. 2003).

Large earthquakes of the type likely to occur during the life of the project may be expected to cause very strong ground shaking at the site. This shaking can result in ground failure such as that associated with soil liquefaction, lateral spreading, seismically induced densification of natural or fill soils, and landsliding. The project site is expected to experience seismic shaking and possible damage in approximately the same proportion as the surrounding areas of the Presidio and San Francisco.

Settlement caused by seismic densification may be especially noticeable where thick bodies of poorly compacted fill occur, such as beneath the large parking lot southwest of Wedemeyer Street. This parking lot is partly supported on waste fill, known as Landfill 10, deposited over many years by the U.S. Army.

The Trust is now evaluating options for stabilizing this fill. Preliminary analyses indicate the fill would be subject to some settlement and the southwestern face of the fill deposit might experience minor landsliding in a large earthquake, but the extent of these deformations would be in the range of one foot or less. Based on the analyses to date, deformations of this size are not expected to pose a significant threat to the project site, surrounding residences, or adjacent natural areas.

According to a building seismic analysis prepared for the City and County of San Francisco (Fong & Chan Architects 1990), the PHSB buildings are generally usable and in good condition, with no indication of serious structural damage to the primary structural systems from recent or past earthquakes, settlements, or overloads. Damage to interior finishes and some areas of exterior cladding and deterioration from age or other causes were observed. Also, neither the original 1932 hospital nor the 1952 addition meet current safety standards or conform to code requirements for seismic forces, and would require seismic upgrading (Fong & Chan Architects 1990; Architectural Resources Group 1991; Faye Bernstein & Associates 1999).

The Battery Caulfield site contains three underground storage areas (magazines) that were previously used as a Nike Missile facility. Each magazine is founded on 0.5- to 2.5-foot-thick concrete slabs, at depths of 14 to 23 feet below the existing ground surface, with perimeter walls consisting of 12-inch-thick reinforced concrete. The site is underlain by about 1 to 25 feet of fill (becoming thicker toward the south), consisting primarily of interbedded sand and clay. Beneath the fill is native sand and clay, extending to depths of 17 to 42 feet below the ground surface. Below these depths, the site is underlain by serpentinite bedrock of the Franciscan Complex. The groundwater is at 10 to 30 feet below the ground surface.

### 3.10.2 ENVIRONMENTAL CONSEQUENCES

The following impact evaluation is based on a structural engineering report for Building 1801 (Faye Bernstein & Associates 1999) and a geotechnical feasibility study for the Battery Caulfield site (Treadwell & Rollo, Inc. 2003).

#### 3.10.2.1 Alternative 1: PTMP or No Action Alternative

Building rehabilitation for the proposed uses under this alternative would be geologically and geotechnically feasible. Unless the building is upgraded, in a moderate to major earthquake, the seismic joints between the 1932 PHSB and the 1951 wings (being less than required by current code) would experience differential movement resulting in “pounding” along the joints between the original building and the 1951 wings. Such pounding frequently results in extensive damage (ranging from falling brick and terra cotta to collapse). Rehabilitation of the buildings using standard structural engineering techniques for foundations and building structural features consistent with established practice would result in structural upgrades that would add lateral/seismic resistance in the event of a major earthquake. Seismic design would be based on the criteria established in the California State Historical Building Code. Buildings that would be used for educational uses would be rehabilitated in compliance with applicable provisions of the California Education Code. While one would not expect the same level of

performance as a new building, building rehabilitation and structural upgrading would reduce seismic risk to acceptable levels and would constitute a beneficial impact of Alternative 1.

### **3.10.2.2 Alternative 2: Infill Alternative**

Building rehabilitation and new construction for the proposed uses under this alternative would be geologically and geotechnically feasible. Similar to Alternative 1, this alternative would use standard structural engineering techniques and would result in a successful retrofit for seismic safety purposes. Replacement construction under this alternative would be limited to the lower plateau and would be built to current standards and seismic design factors.

Excavations for the underground parking structure would encounter fill soils, native dune sands, or possibly sandy clay of the Colma formation, depending on location and depth. Fill soils would be segregated, profiled, and transported off-site for disposal at a licensed landfill. Native soil materials would be reused on the project site (if soil is required and the native materials are deemed suitable), or disposed offsite in accordance with applicable regulations. Construction of the underground garage would result in the creation of up about 10,000 cubic yards of excess soil. If this soil cannot be reused on-site for landscaping purposes or for compacted fill, removing the soil would require up to 2,000 truck round trips (evaluated under construction traffic impacts in Section 3.2, Transportation).

### **3.10.2.3 Alternative 3: No Infill Alternative**

Building rehabilitation for the proposed uses under this alternative would be geologically and geotechnically feasible. Similar to Alternative 1, this alternative would use standard structural engineering techniques and would result in a successful retrofit for seismic safety purposes.

### **3.10.2.4 Alternative 4: Battery Caulfield Alternative**

Building rehabilitation and new construction for the proposed uses under this alternative would be geologically and geotechnically feasible. Similar to Alternative 1, this alternative would use standard structural engineering techniques and would result in a successful retrofit of historic buildings for seismic safety purposes. Replacement construction would be built to current standards and seismic design factors. Within Battery Caulfield, new low-rise residential buildings would likely extend over the existing underground magazines. New buildings would be of light timber construction with plywood shear walls and roof diaphragms and concrete foundations with spread footings. The magazines may be used to support new improvements provided they can be backfilled with soil or concrete. Otherwise, they would have to be demolished and removed. In addition, existing fill within Battery Caulfield is likely not suitable for the support of proposed structures and associated improvements, and would be removed and reused/replaced as engineered fill. Settlement would be small and within acceptable limits. As recommended by the PTMP EIS and the geotechnical feasibility study, the stability of the fill slope would be further evaluated during the final geotechnical investigation and may include measures to improve slope stability.

### **3.10.2.5 Park Presidio Access Variant**

The new direct access between the project site and Park Presidio Boulevard would not expose people or property to geologic or seismic hazards. Grading, excavation, and any fill operations during construction would minimize high cuts and fills. Slopes would be made as flat as possible both for embankment stability and to reduce slide potential in cuts. Designs for cut slopes, embankments, earthwork, sub-excavations, erosion control features, and any other pavement improvements would be built to standards set forth in the Highway Design Manual and subject to Caltrans geotechnical review to mitigate the potential for earthquake damage.

### **3.10.2.6 Cumulative Effects**

All building rehabilitation and/or replacement construction within the Presidio is regulated by the Trust. The Trust would withhold development permits for any site with seismic hazards until geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans. The California Geological Survey would provide additional policies and criteria to guide the Trust in evaluating and mitigating seismic hazards. Identifying and mitigating seismic hazards as part of the Trust's land use planning and permitting processes would reduce the threat to public health and safety and minimize the loss of life and property.

## **3.10.3 MITIGATION MEASURES**

The PTMP EIS does not include mitigation measures related to geologic hazards, but indicates that site-specific engineering designs will be required of individual projects. For ease of compliance and monitoring, this requirement is presented here as a mitigation measure. This measure would apply to all alternatives and would effectively mitigate seismic hazards.

GE-1 *Geotechnical Report* – Prior to building rehabilitation and/or replacement construction, as part of a design-level site investigation report, a geotechnical engineer will investigate the site for seismic hazards and recommend measures for earthwork, seismic design, and other geotechnical issues to provide reasonable protection of structural and public safety given site-specific conditions. The geotechnical report will also provide final recommendations by a structural engineer regarding necessary improvements to existing buildings and foundations. Evaluation and mitigation of seismic hazards will be conducted under guidelines established by the California Geological Survey (1997). If construction is proposed at Battery Caulfield, the geotechnical report will include final recommendations for grading, foundation support, seismic design, and other geotechnical issues.

## 3.11 Hydrology, Wetlands and Water Quality

### 3.11.1 AFFECTED ENVIRONMENT

The PTMP EIS describes wetlands, streams, and drainages of the Presidio on pages 118 to 121 and storm water runoff and water quality issues on pages 188 to 189, and the descriptions are incorporated here by reference. The hydrologic environment and water quality of the PSHH district, including the Nike Swale wetland, are described in more detail below.

The PSHH district occupies a ridgeline and southward-sloping series of bluffs and plateaus. Maximum elevation is 330 feet in the north, descending to 150 feet at the southern project site boundary. This relatively open landscape sits over an ancient sand dune complex, which in turn lies over older rock of the Colma Formation (sedimentary sands and clays). Beneath these features, Mesozoic Franciscan bedrock (deformed sedimentary and volcanic *mélange*) is found in most of the district (Montgomery Watson 1996). Surface topography is altered in several locations in the district from past grading activities, resulting in the placement of artificial fill (locally derived and imported).

The PSHH district primarily drains southward into the Lobos Creek catchment. Eastern portions of the district drain to the Mountain Lake catchment. On-site, there are no named streams or perennial flowing channels. The primary receiving watershed of Lobos Creek supplies roughly 85 percent of the domestic water supply to residents of the Presidio through withdraws from the Lobos Creek groundwater basin. In total, the PSHH district is estimated to consist of mostly pervious surfaces, with approximately 30 percent of the 42 acres occupied by buildings, paving, and other hardscape.

The district's physical structure, surface features, and drainage patterns are illustrated in Figure 22. The northern portion of the upper plateau contains the Battery Caulfield site and Buildings 1449, 1450, and 1451. The portion of the upper plateau south of Battery Caulfield includes the Nike Swale area, which contains the Nike Swale wetland, Landfill 8, a parking lot, and Buildings 1819 and 1818. The lower plateau contains the PSHH complex, consisting of Buildings 1801 through 1815 and 1828, parking, Landfill 10, and landscaped areas.

#### 3.11.1.1 Surface Hydrology

**Battery Caulfield** – Surface runoff in this area primarily occurs from impermeable paved surfaces at the Battery Caulfield site. The three Nike Missile silos of the Battery Caulfield site occupy a paved plateau with service roads that drain into a storm water collection system. While surface inlets have been identified, a complete understanding of pipe and outfall locations is not possible because as-built drawings are unavailable. To address this uncertainty and better understand the apparent hydrologic connection between Battery Caulfield and the Nike Swale wetlands below, a field-based flow study was performed (Jones & Stokes 2003). Surface runoff collecting in Drains 1, 1a, 2, and 4 flows southward to hillslope outfalls, infiltrates into the soil through pipeline leaks, and flows farther southward as shallow subsurface flow (throughflow) down-gradient to the Nike Swale wetlands (see Figure 22). Other drains,

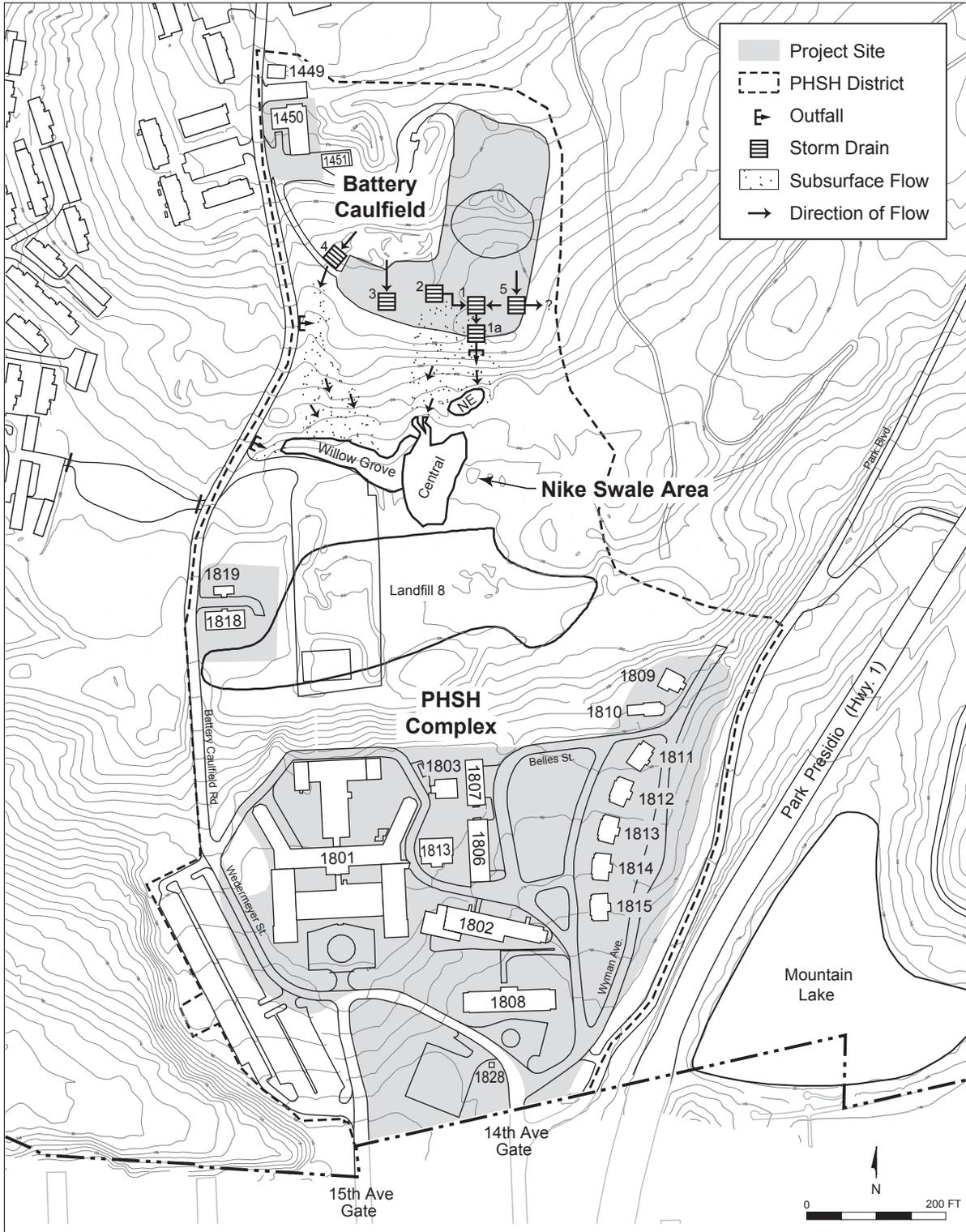


FIGURE 22. EXISTING SITE HYDROLOGY

Source: Presidio Trust, 2003

such as Drain 5 at Battery Caulfield (see Figure 22), collect and direct surface flow to outfalls leading toward the Nike Swale or toward the east outside of the district.

**Nike Swale Area** – The Nike Swale area is largely vegetated, except for a large paved parking area on the west side. The topography, soils, and geology of the Nike Swale area suggest high infiltration capacity of sandy soils, whereby most surface water infiltrates and likely flows down-gradient through the shallow subsurface soil horizon. As described above, the Nike Swale wetlands are supplied by surface water runoff from the Battery Caulfield upslope (see Figure 22). Blocked and leaking storm drain pipes, topography, and sandy soils direct runoff water from the paved Battery Caulfield site subsurface, where it flows to the wetlands. Runoff waters are also directed to the wetlands through outfalls off Battery Caulfield Road. The Nike Swale wetlands are further discussed in Section 3.11.1.4.

The Nike Swale area includes in its southern portion an historic landfill known as Landfill 8. The Landfill 8 area was used as a Merchant Marine cemetery and later as a PHSW waste disposal site (Presidio Trust 2001, Montgomery Watson 1996). The original landfill is now covered by a combination of pervious and impervious surfaces, including vegetation, a paved parking lot, and a tennis court. Similar to areas farther north, surface water infiltrates through the native sandy soils and fill material. Surface waters can then either be absorbed by vegetation and released through transpiration, infiltrate deeper to groundwater, or move southward in the shallow subsurface horizon.

**PHSH Complex** – Like the Battery Caulfield site, the PHSW complex is largely paved, and surface waters run off into a storm drain collection network. The PHSW complex consists of 15 buildings, parking lots, paved sidewalks, and landscaped areas. A natural spring on the southwest side of the PHSW complex may have once fed into Lobos Creek before the area was filled with waste from the PHSW (Urban Watershed Project 2001). The landfill, known as Landfill 10, was graded, covered, and paved for use as a parking lot. Storm drains leading to the City and County of San Francisco's 17<sup>th</sup> Avenue combined sewer system and connecting to the Richmond combined sewer line capture runoff waters from the parking lot and nearby paved areas during normal storm events (Urban Watershed Project 2001). The far east portion of the PHSW complex (Buildings 1809 through 1815) drains to Mountain Lake through culverts that pass under Highway 1.

### 3.11.1.2 Groundwater Hydrology

**Battery Caulfield** – Groundwater elevations in the Battery Caulfield site are found 10 to 40 feet below ground surface (Treadwell and Rollo 2003b). Groundwater movement is mostly controlled by bedrock contact and topographic slope. Three underground missile silos interrupt the groundwater table. These silos contain collected surface and ground waters. Water levels monitored in the silos showed response to seasonal fluctuations in the surrounding water table (Montgomery Watson 1999). However, water level inside the silos is no longer monitored. The silos may have a minor influence on groundwater elevations, velocities, and direction.

The three underground missile silos once contained large amounts of hydraulic fluid. To monitor hydrocarbon contamination from Battery Caulfield, five groundwater monitoring wells were installed and

numerous soil and groundwater samples were taken in and around the site from 1992 to the present (Treadwell and Rollo 2003b). Organic compounds in groundwater were not detected between 1994 and 1999 (Montgomery Watson 1999). However, benzene and toluene were detected in March 2003 (Treadwell and Rollo 2003b). Groundwater monitoring from 1995 through 2003 showed consistent flow to the south (and southeast) through Battery Caulfield.

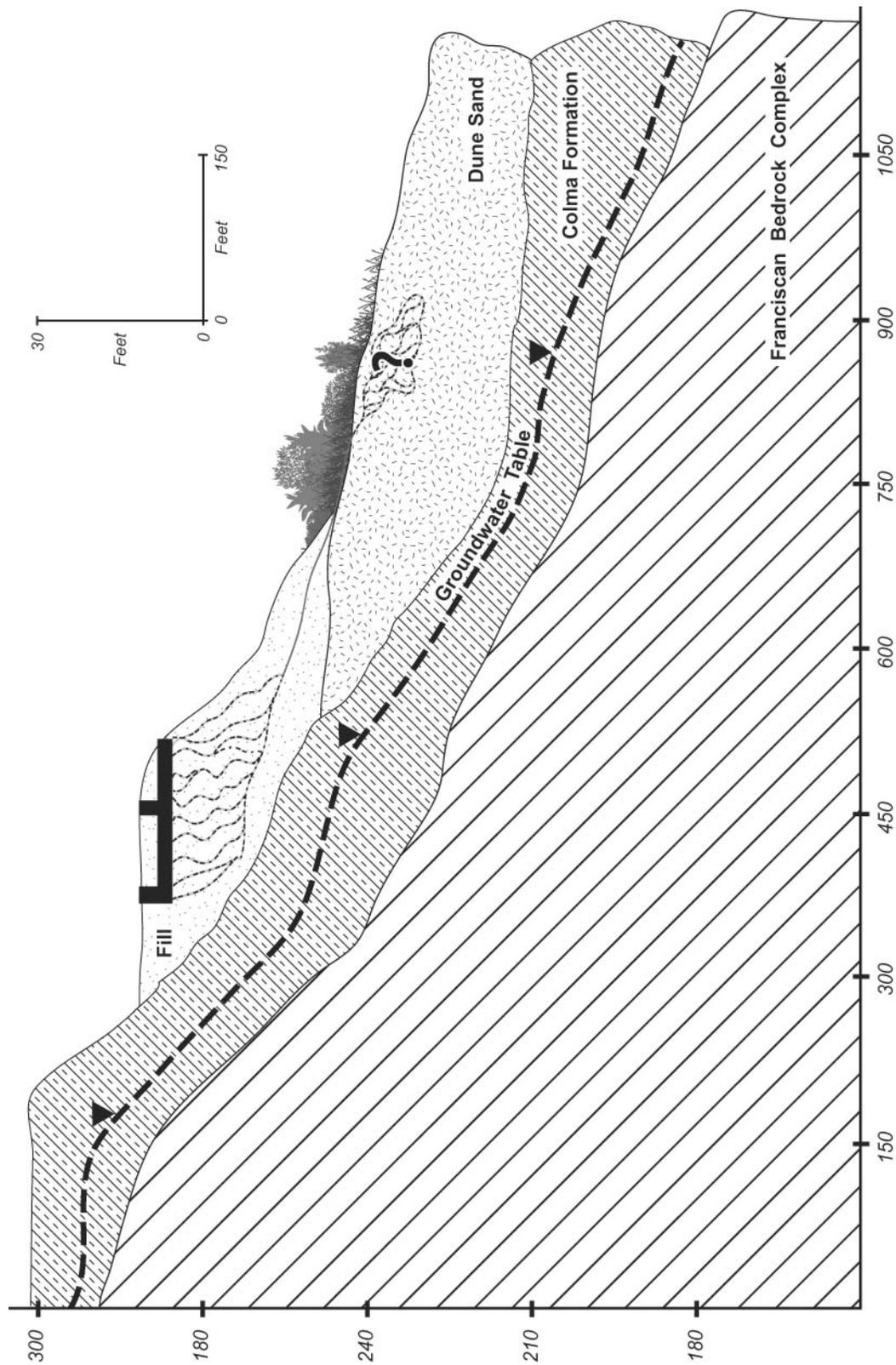
**Nike Swale Area** – Groundwater has not been investigated in the Nike Swale area; however, studies at Landfill 8 have been conducted from 1994 to the present. Groundwater flow through the Landfill 8 area has consistently been south to southeast with hydraulic gradient occurring at a rate of 0.1 feet per foot (Treadwell and Rollo 2003b). The groundwater table is between 10 and 50 feet below the surface (Treadwell and Rollo 2003b). Figure 23 predicts the groundwater table elevation beneath the Nike Swale. Groundwater monitoring at Battery Caulfield and Landfill 8 shows that the groundwater table does not surface at the Nike Swale. Landfill 8 has been monitored for soil and groundwater contamination from wastes in the fill extending 15 feet beneath the surface. Organic compounds have not been detected at the site since 1996, with the exception of a cyanide detection in 2002 (Treadwell and Rollo 2003b). Contaminants were not detected in monitoring results from March and June 2003 (Treadwell and Rollo 2003b).

**PHSH Complex** – Avenues for groundwater infiltration at the PSHH complex are restricted because of the higher proportion of impervious surfaces from buildings and parking lots. Groundwater in the easterly portion of the complex flows toward Mountain Lake, while westerly flows descend toward Lobos Creek. Groundwater elevation in the PSHH complex is 40 to 50 feet below the surface (Treadwell and Rollo 2003b). The groundwater gradient, from the large parking area over Landfill 10 to the head of Lobos Creek, flows southwesterly 10 to 40 feet below the surface, while surface topography drops 60 feet.

### 3.11.1.3 Water Quality

**Battery Caulfield** – Surface water runoff from Battery Caulfield may convey pollutants from items stored in the area. The NPS and the Trust use the paved area to store tractors, landscaping materials, recycled asphalt, telephone poles, and other items potentially containing or leaking contaminants. During storm events, potential contaminants, such as sediment, oils, creosote, and hydrocarbons, from these stored items can infiltrate to soils and, ultimately, to the Nike Swale. Storm water runoff from Battery Caulfield is not treated with oil or sediment filters.

**Nike Swale Area** – Wetlands and native vegetation in the Nike Swale area retain, store, and filter runoff, sediment, and contaminants carried in surface water during storm events. This natural filtering system improves surface water and groundwater quality and provides habitat for birds and wildlife. The wetland area can be degraded from large deposits of sediments and high concentrations of contaminants washed from Battery Caulfield or the nearby road. The Trust's Regeneration Program currently conducts composting operations on the paved parking lot at the east end of the landfill. The Trust has employed management practices to prevent water quality degradation from the migration of compost and manure via wind and rain (Presidio Trust 2001).



Source: Jones & Stokes, 2003

FIGURE 23. CONCEPTUAL CROSS-SECTION OF EXISTING HYDROLOGIC CONDITIONS AT BATTERY CAULFIELD

**PHSH Complex** – Storm drains collect and divert runoff water from the PHSH to a storm sewer line connected to the San Francisco Public Utilities Commission Richmond Transport Station (Presidio Trust 2003). The water quality of Lobos Creek is potentially threatened if storm drains at the PHSH are not maintained and therefore cause storm water to flow overland to Lobos Creek. Localized erosion has been noted on the west-facing slope of the parking area on the west side of the PHSH (Urban Watershed Project 2001). Additional erosion and slope failure could discharge hazardous materials and sediment from the underlying landfill, Landfill 10, to Lobos Creek. The Trust plans to resolve slope stability problems as part of its remediation program. Extensive parking lots in the PHSH complex provide a potential source of water quality impairment from oil- and hydrocarbon-contaminated runoff if drainage is prevented from passing to the storm water system.

#### **3.11.1.4 Wetlands**

The Nike Swale is a collection of small dune slack wetlands (Presidio Trust 2002). The wetlands have been surveyed by standard delineation methodologies. The wetland area is divided into three separate wetlands: Willow Grove, the Central site, and the Northeast site (NPS & URS Corporation 2003). The Willow Grove wetland appears on the north side of the parking lot west of the Nike Swale. The Central and Northeast wetlands appear at the toe of the upper plateau hillslope. All three wetland features exhibit clayey-sandy soils classified as Sirdrak Sand (NPS & URS Corporation 2003).

The specific water balance and hydrology of the Nike Swale wetlands were not identified in previous studies, although several observations have been made. For example, soils in the wetland area are generally saturated during the rainy season. In the drier season, adjacent soils dry out, although the immediate wetland area can remain moist. Previous groundwater sampling data from Battery Caulfield and Landfill 8 suggest that these wetlands are not supported from the day lighting of the water table because the groundwater table is 10 to 30 feet below the wetlands surface (see Figure 23).

To better identify the hydrologic source for the Nike Swale wetlands, a flow study was conducted that indicated the swale is supplied by shallow subsurface flow fed by the storm drain network (that is blocked and leaking) at Battery Caulfield, and from Battery Caulfield Road (Jones & Stokes 2003). Shallow subsurface flow is generally intermittent, being augmented from storm events, but it can support soil moisture long after individual storm events. Runoff from Battery Caulfield flows subsurface via two paths: south through an outfall from Drain 1a on the hillslope, and southeast through outfalls from Battery Caulfield Road and Drain 4 on the west side of Battery Caulfield. The Central and Northeast wetlands receive subsurface flow waters from the outfall of Drain 1a. Outfalls from Battery Caulfield Road and Drain 4 direct subsurface flow to the Willow Grove wetland (see Figure 22). The Willow Grove wetland may also collect north-flowing runoff from the parking lot west of the Nike Swale.

#### **3.11.2 ENVIRONMENTAL CONSEQUENCES**

The PTMP EIS discussed potential changes to hydrology and water quality on pages 240 to 246 and 335 to 341. These discussions are incorporated here by reference and supplemented below by analysis of issues specific to the PHSH project alternatives.

### **3.11.2.1 Alternative 1: PTMP or No Action Alternative**

Alternative 1 involves rehabilitation of the existing PHSH complex and requires no new construction. The Battery Caulfield site would not be affected by Alternative 1, and maintenance operations would continue. Resulting changes to hydrology, groundwater, and wetlands under this alternative would not be appreciable. Impervious surfaces and storm water runoff would not noticeably change from existing conditions, nor would any subsurface activity occur that might influence groundwater. Without proper controls, renovation of the PHSH complex would have the potential to degrade water quality through increased use, increased vehicle activity, and short-term construction activities. Indirect impacts that can be associated with intensification of site use include increases in concentration of oils, lubricants, grease, sediment, and other pollutants commonly contained in urban runoff. Mitigation measures (addressed below) would reduce these potential water quality impacts to a less-than-significant level.

### **3.11.2.2 Alternative 2: Infill Construction Alternative**

Alternative 2 differs from Alternative 1 in that the ground floor transect of Building 1801 would be removed, building wings would be reduced, and an underground parking structure would be built in the existing basement footprint. East of the PHSH complex, two new residential buildings would be constructed, including one three-story building and one single-story unit. The addition of approximately 0.5 acre of a grass landscaped area above the new underground parking facility at Building 1801 may increase rainfall infiltration, reduce site runoff, and provide a water quality filtering benefit. The new three-story residential building would be built in the existing footprint of Belle Street. The single-story residential unit would be constructed in a vegetated area south of Building 1815. These new buildings have the potential to increase the quantity of surface runoff compared to existing conditions at the site. However, a substantial alteration to surface hydrology is not anticipated. The new underground parking facility is not expected to change groundwater conditions as groundwater elevations are sufficiently below the surface. Mitigation measures (addressed below) should reduce these potential impacts to a less-than-significant level.

The water quality impacts of Alternative 2 would be similar to those of Alternative 1. The Battery Caulfield site would not be affected by Alternative 2, and maintenance operations would continue. Intensification of site use, increased vehicle activity, and short-term construction activities related to building renovation/construction may increase the concentration of oils, lubricants, grease, sediment, and other pollutants commonly contained in urban runoff. Mitigation measures (addressed below) would reduce these potential water quality impacts to a less-than-significant level.

### **3.11.2.3 Alternative 3: No Infill Alternative**

Alternative 3 involves removal of wings from Building 1801 and no underground parking facility or other new construction. The Battery Caulfield site would not be affected by Alternative 3, and maintenance operations would continue. In removing the building wings, Alternative 3 would provide an additional acre of grass landscaped area and provide a hydrology and water quality benefit through increased infiltration and reduced runoff. Similar to Alternatives 1 and 2, the intensification of site use, increased vehicle activity, and short-term construction activities related to building renovation/demolition may

increase the concentration of oils, lubricants, grease, sediment, and other pollutants commonly contained in urban runoff. Alternative 3 differs from the previous alternatives in its greater extent of building demolition and removal. Mitigation measures (addressed below) would reduce potential water quality impacts to a less-than-significant level.

#### **3.11.2.4 Alternative 4: Battery Caulfield Alternative**

Alternative 4 includes elements of Alternatives 2 and 3 at the PSHH complex and also involves new residential construction at Battery Caulfield.

**Battery Caulfield** – Construction of new homes, roadway features, and landscaping at Battery Caulfield would potentially alter site hydrology and groundwater conditions. Because the existing site condition is largely impervious, additional residential development would not substantially alter the degree of surface runoff or infiltration. However, the drainage and routing of such runoff would likely be altered through any new development. These potential changes to hydrology and groundwater are not considered appreciable (and can be mitigated for). However, owing to the site’s hydrologic connection to the Nike Swale wetlands below, on-site development that alters the quantity, timing, and delivery of surface and subsurface flows to the Nike Swale can directly influence the functioning of the Nike Swale wetlands. Without adequate mitigation that preserves the functioning hydrologic connectivity between Battery Caulfield and the Nike Swale, this effect would be considered significant. Additionally, increased runoff from the irrigation of landscaped areas during the summer dry season may alter subsurface drainage conditions and increase water delivery to the wetlands during the summer dry season.

New residential activities at Battery Caulfield might affect water quality by introducing water contaminants from landscaping fertilizers or increasing vehicle use. Concentration of oils, grease, herbicides, and nutrients might degrade the quality of waters running off from Battery Caulfield into the Nike Swale. Degraded water quality might contaminate subsurface soils that could then migrate to and degrade the wetlands. Compared to the site’s current use, however, a conversion to residential use would likely reduce the presence of certain contaminants. Overall, a net decrease in water quality contaminants could result from this alternative. Mitigation measures (addressed below) would reduce these potential impacts on water quality to a less-than-significant level.

**PHSH Complex** – Alterations to water resources associated with renovation/construction of Building 1801 and the residential buildings at the PSHH complex are consistent with conditions described above under Alternative 2.

#### **3.11.2.5 Park Presidio Access Variant**

This variant would provide improved vehicular access to the PSHH district under Alternatives 2, 3, and 4. New construction to widen existing roads and create a new intersection would require grading and removal of vegetation. Resulting increases in impervious surfaces and vehicular use are expected to increase storm water runoff and concentrations of urban runoff contaminants. Unless addressed, construction and operational runoff could potentially threaten water quality in nearby Mountain Lake.

During construction, the Trust would implement best management practices to prevent discharges to Mountain Lake. The Trust has requested that Caltrans redirect storm water flows from Park Presidio Boulevard away from Mountain Lake. The Park Presidio Access Variant is not expected to substantially alter hydrology, groundwater, or water quality if best management practices are implemented and if surface runoff to Mountain Lake is reduced. Reduction would be achieved by redirecting runoff in the vicinity of the Wyman Avenue houses, and redirecting surface flows from Park Presidio Boulevard subject to Caltrans agreement.

### 3.11.2.6 Cumulative Effects

Implementation of the PHSB project could potentially contribute to the cumulative degradation of surface and groundwater quality from changes to local hydrology and increased contamination that may result from new construction and land use activities at Battery Caulfield and the PHSB complex. However, the Trust's effort to restore, enhance, and expand wetland habitat provides long-term beneficial impacts that outweigh potential short-term impacts. Mitigation measures adopted as part of the project, including implementation of a storm water pollution prevention plan and best management practices, would reduce potential cumulative impacts on surface water and groundwater quality to a less-than-significant level.

### 3.11.3 MITIGATION MEASURES

The following mitigation measures are based on the PTMP EIS and have been modified (where necessary) to incorporate and respond to the PHSB project. Measures would apply to all alternatives except where noted.

NR-11/13 *Battery Caulfield and Wetlands/Compliance (Alternative 4 only)* – To avoid potential impacts on (and preserve) the hydrologic functioning of the Nike Swale wetlands, the Trust will specifically address water delivery and water quality requirements to the Nike Swale through the following mitigation measures.

- Water balance conditions of Nike Swale wetlands will be identified to assess general rates of water supplied to wetlands.
- Hydrologic conditions of proposed development will be evaluated in terms of storm water runoff rates and potential dry summer season inputs to soil moisture from garden irrigation.
- A storm water and drainage plan for proposed Battery Caulfield development will be designed (in light of the two above points) to maintain adequate water supply to existing wetlands features. This drainage plan will consider the potential role that (a) decreases of winter-related runoff or (b) increases in summer soil moisture may have in significantly affecting the wetlands.
- The storm water and drainage plan for the proposed Battery Caulfield site will evaluate how changes/replacement (of drains, pipes, and outfalls) of the existing storm drain network will affect the delivery of flows to the Nike Swale wetlands.

- The proposed development project at Battery Caulfield will include best management practices to maintain water quality at the Nike Swale wetlands. Such practices/treatments may include oil/water filtration systems, spill containment vaults, or other approaches to maintain good water quality to the wetlands.

NR-14 *Visitor Management* –To reduce potential visitor impacts on the wetlands and storm drainages in and adjacent to the PHSH district, visitor numbers and uses will be monitored on a recurring basis and measures will be taken to reduce impacts as necessary. Informational leaflets, wayside signs, and regulatory measures will be employed as warranted.

NR-15 *Water Resources Best Management Practices* – To address potentially significant impacts on water resources associated with the project alternatives, the Trust will implement (at a minimum) the best management practices listed below and will require its private development partner(s) to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP):

- Maintain appropriate erosion and siltation controls during construction to prevent downstream sediment yields to the Nike Swale wetlands, Lobos Creek, Mountain Lake, or the engineered storm drain and sewer collection system.
- Permanently stabilize all exposed soil or fill.
- Initiate water conservation programs and waste disposal programs for project and Trust operations, as well as, for residents and tenants, including education and monitoring.
- Ensure that all newly constructed impervious surfaces prevent, to the greatest extent feasible, increased water runoff volume and velocity, reduced water quality, and reduced water infiltration.
- Properly maintain structures or fill to avoid adverse impacts on aquatic environments and public safety.
- Maintain existing (or new) drains and culverts to prevent blocking, sediment accumulation, and potential erosion downstream of outfalls.
- Ensure that modification of the existing basement structure in the vicinity of Building 1801 to accommodate an underground parking facility will not alter shallow subsurface groundwater flow. Due to the presence of hazardous waste underlying the large parking area west of the PHSH, the diversion subsurface drainage around the underground parking facility will not divert toward Landfill 10. Altering shallow subsurface flow paths could increase the release and transport of hazardous chemicals toward Lobos Creek (Alternative 2 only).

NR-16/17/19 *Demolition and Construction Activities and Future Design (Alternative 4 only)* – Because construction at Battery Caulfield would occur within 100 feet of existing wetlands, the following measures will be implemented:

- Install fencing or other barriers adjacent to the Nike Swale to prevent inadvertent human, pet, or equipment access;
- Regularly inspect the Nike Swale to enforce compliance, and/or provide signage and/or other educational devices near the Nike Swale to encourage voluntary compliance;
- During the planning phases for new construction at Battery Caulfield, prevent alterations to drainage patterns or water movement that could induce erosion or siltation on- or off-site. Exceedance of existing or planned storm water drainage systems, or the infiltration rates of soils in the Battery Caulfield site and Nike Swale area, will be prevented. Planning and construction at the Battery Caulfield site, as described in Alternative 4, will also be consistent with Mitigation Measures NR-11, NR-13, and UT-7 *Battery Caulfield, Wetlands/Compliance, and Storm Water Reduction*.

UT-6 *Storm Water Drainage System Upgrades* – To maintain adequate system capacity and to correct existing operational problems, the Trust will ensure that necessary infrastructure upgrades to the storm water drainage system are performed. All surface water flow will be directed toward the City and County of San Francisco’s combined sewer system and not to Mountain Lake or Lobos Creek.

To avoid alterations to the Nike Swale wetlands and to preserve the hydrological functioning of these wetlands, the Trust will ensure that drainage network changes at Battery Caulfield will occur in accordance with Mitigation Measures NR-11 and 13 *Battery Caulfield and Wetlands/Compliance*.

UT-7 *Storm Water Reduction* – The Trust will implement designs or measures to limit or eliminate impervious surfaces in order to reduce storm water runoff volumes and improve water quality. The Trust will practice natural storm water reduction by using on-site vegetation and landscaping as filtration and retention systems to the extent feasible. Such storm water reduction planning will likely occur with the reduction of the built footprint and increase in landscaped area in the PHSH complex. Approaches to reducing storm water runoff at Battery Caulfield will occur in consideration of the existing hydrologic connection to the Nike Swale wetlands and shall be consistent with the conditions of Mitigation Measures NR-11, 13, and 19 *Battery Caulfield, Wetlands/Compliance, and Future Design*.

Mitigation Measure NR-18 *Compensation* discussed in the PTMP EIS is not relevant to the implementation of these alternatives.

## 3.12 Biology

### 3.12.1 AFFECTED ENVIRONMENT

Biological resources, including wetland and riparian communities, are described on pages 83 to 121 of the PTMP EIS. Information relevant to the PHSH district is repeated here and has been supplemented based on additional consultation with the NPS and additional field surveys undertaken in the fall of 2003.

The PHS district is on an elevated plateau that separates Mountain Lake and Lobos Creek (see Figure 24). Prior to its development, the area was part of the vast San Francisco dune complex that stretched across the northern half of the San Francisco peninsula. Somewhat sheltered from the immediate coast, the area developed stable dunes that supported dune scrub vegetation in various stages of succession and regeneration (USFWS 2003). Development within the PHS district significantly altered natural dune processes (e.g., sand transport, sand accumulation, and wind erosion) and removed much of the existing vegetation. Only remnant dune patches remain.

### 3.12.1.1 Existing Biological Habitats and Resources

Remnant and restored dune patches in the vicinity of the PHS district currently support unique and ecologically significant native plant communities and provide important habitat for wildlife, including the largest known California quail (*Callipepla californica*) population in the San Francisco region. Five of these areas, two west of Battery Caulfield Road and outside the PHS district, one north of Building 1801, one west of the Presidio Golf Course, and one in the restored dunes at Lobos Creek (also outside the PHS district), are included in the Presidio recovery unit for the San Francisco lessingia (*Lessingia germanorum*) (USFWS 2003). The remnant dune north of the hospital supports a locally rare example of coast live oak woodland (Vasey 1996) and small colonies of San Francisco lessingia, San Francisco spineflower (*Chorizanthe cuspidata* var. *cuspidata*), and San Francisco dune gilia (*Gilia capitata* ssp. *chamissonis*) (Doherty 2002). The central part of the project area includes the Nike Swale, a graded and filled dune area that supports locally rare coastal dune slack (i.e., a freshwater-filled dune depression) vegetation. The NPS restored native vegetation within the dune sites, and the sites are currently protected and managed pursuant to the PTMP. A sixth dune remnant north of Battery Caulfield provides important California quail nesting and foraging habitat (Presidio Trust 2002e).

Four native plant communities occur within the vicinity of the PHS district: freshwater seep, central coast riparian scrub, central dune scrub, and coast live oak woodland (see Figure 24). Non-native plant communities and developed and landscaped areas also occur in and adjacent to the district.

**Freshwater Seep** – Freshwater seep vegetation occurs in areas where groundwater seepage creates permanently or periodically saturated soils. Freshwater seeps occur throughout the Presidio, including several small seeps within the Nike Swale south of Battery Caulfield (Castellini and Coffman 2003). Freshwater seep vegetation typically includes rushes, sedges, and other plants adapted to moist or wet growing conditions. Freshwater seep vegetation within the Nike Swale includes arroyo willow (*Salix lasiolepis*), wax myrtle (*Myrica californica*), and rush (*Juncus effusus*). Representative wildlife observed in this habitat includes marsh wren (*Cistothorus palustris*) and song sparrow (*Melospiza melodia*).

**Central Coast Riparian Scrub** – Central coast riparian scrub is a shrub-dominated community adapted to the high moisture levels and frequent flooding characteristic of areas along lakes, streams, and perennial springs. Near the PHS district, an isolated stand of central coast riparian scrub occurs along the southwestern edge of the Nike Swale in a small depression that receives and channels runoff from the district (Castellini and Coffman 2003). Riparian scrub within the Nike Swale includes shining willow (*Salex lucinda* ssp. *lasiandra*), arroyo willow, wax myrtle, rush, and California blackberry (*Rubus*

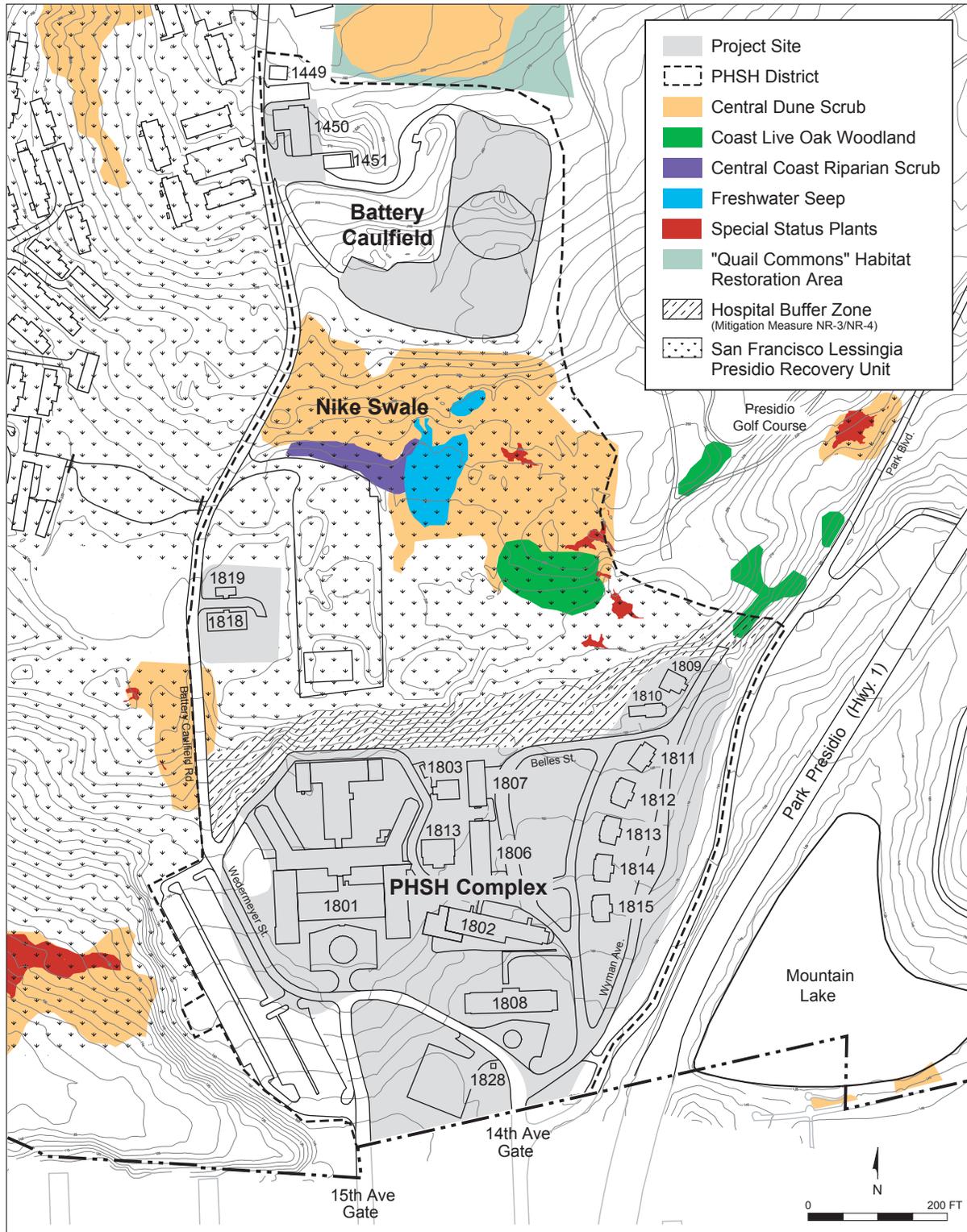


FIGURE 24. BIOLOGICAL RESOURCES

Source: Presidio Trust, 2003; USFWS, 2003

*ursinus*). Representative wildlife observed in this habitat includes Bewick's wren (*Thryomanes bewickii*), ruby-crowned kinglet (*Regulus satrapa*), yellow-rumped warbler (*Dendroica coronata*), and white-crowned sparrow (*Zonotrichia leucophrys*).

**Central Dune Scrub** – Central dune scrub occurs on stable dune deposits inland from the immediate coast. Central dune scrub occurs in patches over a total of 48.5 acres in the Presidio (Presidio Trust 2002b) and is rare in California. Near and within the PHSH district, patches of central dune scrub occur on the restored dunes north of Lobos Creek, west of Battery Caulfield Road, north of the PHSH, north of Battery Caulfield, and west of the Presidio Golf Course. Central dune scrub contains densely packed shrubs interspersed with sparsely vegetated openings in the shrub canopy. Common plants include mock heather (*Ericameria ericoides*), coyote brush (*Baccharis pilularis*), Chamisso's lupine (*Lupinus chamissonis*), dune knotweed (*Polygonum paronychia*), and dune buckwheat (*Eriogonum latifolium*). Dune field disturbances, including erosion, sand accumulation, and animal burrowing, create openings in the dune scrub that support several special-status plants, including San Francisco lessingia, San Francisco spineflower, San Francisco campion (*Silene verecunda* ssp. *verecunda*), San Francisco wallflower (*Erysimum franciscanum*), and San Francisco dune gilia. Representative wildlife observed in this habitat includes wintering Bewick's wren, house finch (*Carpodacus mexicanus*), California towhee (*Pipilo crissalis*), and white-crowned sparrow.

**Coast Live Oak Woodland** – Coast live oak woodland occurs on sheltered, stable dune deposits away from the immediate coast. A stand of small, multi-trunked coast live oaks occurs on a relict dune northeast of the PHSH. Coast live oak woodland occurs on only 5.3 acres in the Presidio (Presidio Trust 2002b). Representative wildlife observed in this habitat includes Hutton's vireo (*Vireo huttoni*), western scrub-jay (*Aphelocoma californica*), yellow-rumped warbler, and white-crowned sparrow.

**Non-native Plant Communities** – Non-native plant communities are dominated by species that humans have deliberately or accidentally introduced. Non-native plants in the vicinity of the project site include non-native annual grasses on landfill north of Building 1801, a non-historic Monterey pine (*Pinus radiata*) stand on the slope behind the PHSH, and iceplant (*Carpobrotus edulis*) mats on the slope below Battery Caulfield. Representative wildlife observed in this habitat includes northern flicker (*Colaptes auratus*), Eurasian starling (*Sturnus vulgaris*), chestnut-backed chickadee (*Poecile rufescens*), and pygmy nuthatch (*Sitta pygmaea*).

**Developed and Landscaped Areas** – Developed and landscaped areas include buildings, landscaping around buildings, ornamental plantings, parking lots, and paved roads. Developed and landscaped areas in the PHSH district include the PHSH complex, outlying buildings (Buildings 1450, 1818, and 1819), Battery Caulfield on the upper plateau, Battery Caulfield Road, and the Presidio Golf Course.

### 3.12.1.2 Special-Status Species

Special-status species are those species legally protected under the Federal Endangered Species Act (FESA), species proposed or candidates for listing under FESA, and “sensitive” species that are considered sufficiently rare by the scientific community to qualify for such listing.

**Special-Status Plants** – Of the 13 endangered, threatened, and sensitive plants found on the Presidio, five occur in the vicinity of the project site (Doherty 2002), as described below. A summary of these species is provided in Table 20.

Table 20. Known Occurrences of Special-Status Plant Species Near the Project Site

COMMON NAME	SCIENTIFIC NAME	FEDERAL/STATE/CNPS STATUS
San Francisco spineflower	<i>Chorizanthe cuspidate</i> var. <i>Cuspidata</i>	(FSC)/--/1B
Dune gilia	<i>Gilia capitata</i> ssp. <i>chamissionis</i>	--/--/ IB
San Francisco lessingia	<i>Lessingia germanorum</i>	FE/CE/1B
San Francisco wallflower	<i>Erysimum franciscanum</i>	(FSC)/--/4
San Francisco campion	<i>Silene verecunda</i> ssp. <i>verecunda</i>	(FSC)/--/1B

Source: California Department of Fish and Game 2001.

Notes:

**Status definitions:**

-- = no listing status

**Federal:** U.S. Fish and Wildlife Service (50 CFR 17.12, 61 FR 40:7596-7613, February 28, 1996).

FE = listed as endangered under the Federal Endangered Species Act.

(FSC) = Federal Special Concern Species (former Category 2 candidates).

**State:** California Department of Fish and Game (1995).

CE = listed as endangered under the California Endangered Species Act.

**CNPS:** California Native Plant Society (Skinner and Pavlik 1994).

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

4 = List 4 species: a “watch-list” of plants of limited distribution.

*San Francisco Lessingia.* San Francisco lessingia is a low-growing annual in the sunflower family with deep lemon yellow flowers. It is endemic to the northern San Francisco peninsula from San Mateo County north to the Presidio. Four of the seven remaining lessingia colonies occur in the vicinity of the PHSH district and are included in the Presidio recovery unit for the species (USFWS 2003). Lessingia populations occur in the restored dunes at Lobos Creek and in remnant dune patches west of Battery Caulfield Road, northeast of the PHSH, and in a steep roadcut bordering the Presidio Golf Course.

*San Francisco Spineflower.* San Francisco spineflower is an annual plant in the buckwheat family with soft, hairy stems and white-to-rose flowers. It is restricted to open or sparsely vegetated areas on sand or sandy soils along the immediate coast, from San Mateo County to Southern Sonoma County (USFWS 2003). San Francisco spineflower occurs in the remnant dune patches northeast of Building 1801 and west of Battery Caulfield Road, and in the restored dunes at Lobos Creek.

*Dune Gilia.* Dune gilia is an annual plant in the phlox family with showy deep violet flowers. It is restricted mostly to vegetation gaps in low-growing central dune scrub and stable dune grassland from

San Mateo County to Sonoma County (USFWS 2003). Dune gilia occurs in the remnant dune patches northeast of Building 1801 and west of Battery Caulfield Road, and in the restored dunes at Lobos Creek (Doherty 2002).

*San Francisco Wallflower.* San Francisco wallflower is a perennial or subshrub in the mustard family with showy cream-colored to yellow flowers. It occurs in open or sparsely vegetated areas in several plant communities, including central dune scrub, foredune, bluff scrub, and serpentine grassland (Presidio Trust 2002b). San Francisco wallflower occurs in the restored dunes at Lobos Creek.

*San Francisco Campion.* San Francisco campion is a perennial plant in the pink family with white-to-rose flowers. It is restricted to dune scrub habitats between San Francisco and Santa Cruz (USFWS 2003). San Francisco campion was last observed at the Presidio in 1933 until it was reintroduced to the restored Lobos Creek dunes between 1996 and 1998. Only a few individuals survive today.

**Special-Status Wildlife** – Special-status wildlife species with potential to occur in the vicinity of the PHSB district are described below. A summary of these species is provided in Table 21.

*San Francisco Forktail.* The San Francisco forktail (*Ishnura gemina*) is a small damselfly endemic to the Bay Area, from Bodega Bay south to the Salinas River in Monterey County and eastward into Contra Costa and Alameda Counties (Manolis 2003). It was formerly considered a Federal Species of Concern because of its small range. Previous survey efforts located it at the Presidio, only near Fort Point (Presidio Trust 2002b). The freshwater seeps in the Nike Swale may provide suitable habitat for this species.

*Nesting Raptors.* Several species of raptors may nest in the PHSB district, including red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), and Cooper's hawk (*Accipiter cooperii*), although the latter has yet to be found nesting in San Francisco (Presidio Trust 2002b). The other four raptors may nest in the eucalyptus (*Eucalyptus* spp.) trees along the eastern edge of the Nike Swale and Battery Caulfield and in other large trees on and adjacent to the PHSB district. Active raptor nests are protected under CDFG Code 3503.5.

*Long-eared Owl.* The long-eared owl (*Asio otus*) is a rare local breeder, but it is a regular fall migrant and occasional winter visitor to coastal California. It is a CDFG Bird Species of Special Concern. Long-eared owls roost during the day in dense coniferous and other evergreen trees, often near open areas such as grasslands, wetlands, and open brushlands where they hunt at night for rodents and other prey (Grinnell and Miller 1944, Marks et al. 1994). Although this species is not likely to nest in the area, the conifers, oaks, and willow thickets throughout the PHSB district provide potential roost sites for this owl.

*Olive-sided Flycatcher.* The olive-sided flycatcher (*Contopus cooperi*) is a widespread but declining species throughout much of the forested regions in California (Altman and Sallabanks 2000). It is a CDFG Bird Species of Special Concern. These neotropical migratory birds are closely associated with large coniferous trees and snags, often on the edges of meadows, clearcuts, and other open areas where they sally for insects (Altman and Salabanks 2000). In San Francisco, this flycatcher breeds in the

Table 21. Occurrences of Special-Status Wildlife Species Near the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	
		FEDERAL/STATE	POTENTIAL FOR OCCURRENCE IN PROJECT AREA
San Francisco forktail	<i>Ischnura gemina</i>	SC/--	At the Presidio, only documented near Fort Point (Presidio Trust 2002b).
California quail	<i>Callipepla californica</i>	Local concern	Nearly extirpated from San Francisco and the Presidio. A covey remains on Quail Commons and the project site (LSA Associates, Inc. 2001; Harley et al. 2003).
Western screech-owl	<i>Otus kennicottii</i>	Local concern	Nearly extirpated from San Francisco and the Presidio. At least one pair remains near Inspiration Point (Jones & Stokes 1997).
Long-eared owl	<i>Asio otus</i>	--/SSC	No records available, but species is easily overlooked and is likely to occur at least rarely during migration.
Olive-sided flycatcher	<i>Contopus cooperi</i>	SC/SSC	Breeds in the Presidio and documented on the project site (Rosegay 1996, Gardali 2001).
Willow flycatcher	<i>Empidonax traillii</i>	SC/E	Probably an uncommon migrant on the project site and at the Presidio (Presidio Trust 2002b).
Hutton's vireo	<i>Vireo huttoni</i>	Local concern	Documented from the project site and elsewhere at the Presidio (Presidio Trust 2002b, Rosegay 1996).
Loggerhead shrike	<i>Lanius ludovicianus</i>	--/SSC	Rare visitor with few records for the Presidio (Presidio Trust 2002b).
Wrentit	<i>Chamaea fasciata</i>	Local concern	Probably extirpated from the Presidio and San Francisco (Gardali 2003).
Yellow warbler	<i>Dendroica petechia brewsteri</i>	--/SSC	Probably a common migrant on the project site and at the Presidio (Presidio Trust 2002b).
Yellow-breasted chat	<i>Icteria virens</i>	--/SSC	No records available, but species is easily overlooked and is likely to occur during migration.
Western red bat	<i>Lasiurus blossevillii</i>	FS/--	Unknown; acoustic surveys will be conducted in spring of 2004; known from the San Francisco region.

Table 21. Occurrences of Special-Status Wildlife Species Near the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS		POTENTIAL FOR OCCURRENCE IN PROJECT AREA
		FEDERAL/STATE		
Townsend's big-eared bat	<i>Corynorhinus townsendii townsendii</i>	SC/SSC		Unknown; acoustic surveys will be conducted in spring of 2004; known from the San Francisco region.
Fringed myotis	<i>Myotis thysanodes</i>	SC/--		Unknown; acoustic surveys will be conducted in spring of 2004; known from the San Francisco region.
Long-eared myotis	<i>Myotis evotis</i>	SC/--		Unknown; acoustic surveys will be conducted in spring of 2004; known from the San Francisco region.
Long-legged myotis	<i>Myotis volans</i>	SC/--		Unknown; acoustic surveys will be conducted in spring of 2004; known from the San Francisco region.
Pallid bat	<i>Antrozous pallidus</i>	--/SSC		Unknown; acoustic surveys will be conducted in spring of 2004; known from the San Francisco region.

Source: Jones & Stokes.

SC = Species of Concern (Federal).

SSC = Species of Special Concern (State).

E = Endangered (both Federal and State).

FS = U.S. Forest Service Sensitive Species.

Presidio (Rosegay 1996) and also migrates through the area during the spring and fall. The conifers and eucalyptus trees in the PHSH district provide nesting and foraging habitat for this species.

*Willow Flycatcher.* The willow flycatcher (*Empidonax traillii*) is a California-listed endangered species that breeds in montane meadows and, in southern California, in lowland riparian areas (Grinnell and Miller 1944). In San Francisco, however, it is strictly a spring and fall migrant. The trees, shrubs, and especially the willows in the PHSH district provide foraging and roosting habitat for this species.

*Loggerhead Shrike.* The loggerhead shrike (*Lanius ludovicianus*) has declined in urban areas of California (Yosef 1996) and is a rare visitor to San Francisco. It is a CDFG Bird Species of Special Concern. Shrikes prey upon small vertebrates, including birds and large insects (Yosef 1996), and may occur sporadically during migratory movements in the open areas of the PHSH district, as they have occurred a few times in the Presidio (Jones & Stokes 1997). There are no nesting records for San Francisco (Presidio Trust 2002b).

*Yellow Warbler.* The yellow warbler (*Dendroica petechia*) has declined as a breeding bird throughout lowlands of California because of loss of riparian habitat and increased brown-headed cowbird (*Molothrus ater*) brood parasitism (Grinnell and Miller 1944, Lowther et al. 1999). It is a CDFG Bird Species of Special Concern. In San Francisco, these warblers are common migrants that are attracted to flowering eucalyptus and other exotic plants, as well as willows, pines, and various native shrubs where they forage on nectar and arthropods. Within the PHSH district, riparian habitat in the Nike Swale provides suitable foraging habitat for migrant yellow warblers.

*Yellow-breasted Chat.* The yellow-breasted chat (*Icteria virens*) has declined as a breeding bird throughout lowlands of California because of loss of riparian habitat and increased cowbird brood parasitism (Grinnell and Miller 1944, Eckerle and Thompson 2001). It is a CDFG Bird Species of Special Concern. In San Francisco, chats are rare migrants. The willow thicket in the Nike Swale provides suitable breeding habitat for this species.

### **3.12.1.3 Special-Status Bats**

There are 13 bat species that could occur in the San Francisco region, six of which have some level of special status (Heady and Frick 2003). Bat species such as fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevilli*), and long-eared myotis (*Myotis evotis*) may roost and forage in the buildings within the PHSH complex. A survey conducted by Central Coast Bat Research Group in November 2003 determined that special-status bats are not using PHSH buildings for maternity roosts; however, Building 1807 does exhibit evidence of night roosting activity. Buildings in the 1800 series contain suitable habitat for bats because of the ceramic tile roofs, while window coverings on some buildings also provide roost habitat for these species (Heady and Frick 2003).

#### 3.12.1.4 Species of Local Concern

**California Quail** – The California quail (*Callipepla californica*) is a common and widespread bird throughout much of California (Grinnell and Miller 1944). In San Francisco, however, its population and distribution has declined drastically since the 1980s, to the extent that the Golden Gate Audubon Society initiated a “Save the Quail” campaign (LSA Associates, Inc. 2001) and it is considered a Species of Local Concern (Presidio Trust 2002b). The Presidio currently has only one known population of California quail remaining. As a result, the Presidio has designed a quail habitat enhancement action plan intended to reverse this population decline.

Quail nest and forage in chaparral, dune scrub, oak savanna, riparian, and other habitats that provide perennial sources of water and ample cover to protect them from predators (Calkins et al. 1999). Nest sites are typically on the ground or slightly elevated in areas that provide protective cover such as dense clumps of grass and weeds, fencerows, shrubs, brush piles, fallen trees and limbs, and vines (Shuford 1993). In the Presidio, California quail breed at Quail Commons, which is just north of the PHSH district (see Figure 24). It is unclear, however, whether quail from the lone Presidio covey breed there exclusively every year, or in adjacent areas, possibly including the PHSH district (personal communication with Thomas Gardali, Point Reyes Bird Observatory).

Within the PHSH district, quail breeding and foraging habitat is located in the Nike Swale and adjacent dune scrub habitat. There are two existing quail movement corridors located in the upper plateau of the PHSH district. One is located along the eastern border of the PHSH district adjacent to the Presidio Golf Course along the row of eucalyptus trees, and the second is located along the western edge of the PHSH district in the row of Monterey pines (and other vegetation along Battery Caulfield Road). Quail may also use the large wax myrtle and other shrubs north of the maintenance yard as another movement corridor. These movement corridors are important because they provide safe links between Quail Commons and the restored dune scrub and riparian habitat along Lobos Creek.

During a visit to the PHSH district on November 3, 2003, a Jones & Stokes biologist observed a flock of 13 quail above the Nike Swale at the western edge of the maintenance yard. Seven were males, including two color-banded individuals, and six were females, including one that was color-banded. The unbanded quail may be hatch-year birds indicating successful recruitment or they may be immigrants from other populations. All of the quail detected during banding activities and formal surveys in the fall of 2002 were at Quail Commons, with some individuals also detected across Battery Caulfield Road (Harley et al. 2003). One of the individuals banded at Quail Commons has been found in Golden Gate Park. Quail Commons and the immediate area surrounding Quail Commons contain the only known breeding population of California quail within the Presidio and one of few left in San Francisco. The Arboretum in Golden Gate Park is another known breeding location in the region.

**Western Screech-Owl** – The western screech-owl (*Otus kennicottii*) is a common and widespread species throughout much of California (Grinnell and Miller 1944, Cannings and Angell 2001). In San Francisco, its only historic occurrence is at Inspiration Point at the Presidio, but it has been detected in recent years at Arguello Gate and Lobos Creek (Jones & Stokes 1997). It is considered a Species of

Local Concern (Presidio Trust 2002b). Screech-owls roost during the day in dense coniferous and other evergreen trees and hunt at night for rodents, large insects, and other prey in woodlands and open habitats (Cannings and Angell 2001). In California, they are often associated with oaks. The live oaks at the south end of the Nike Swale may provide roost and nest sites for this owl.

**Hutton's Vireo** – The Hutton's vireo (*Vireo huttoni*) is a common and widespread species throughout much of the oak woodlands of California (Grinnell and Miller 1944). In San Francisco, it is restricted to a few locations, including some in the Presidio (Rosegay 1996), and is a Species of Local Concern (Presidio Trust 2002b). This species was detected during a visit to the PSHH district on November 3, 2003. The oak and conifer trees in the PSHH district provide breeding habitat for Hutton's vireo.

**Wrentit** – The wrentit (*Chamaea fasciata*) is a common and widespread species throughout much of the chaparral and other shrublands of California west of the Sierra-Cascade crest and the desert regions (Grinnell and Miller 1944). In San Francisco, it is restricted to very few locations and may be extirpated from the Presidio (Gardali 2002). It is considered a Species of Local Concern (Presidio Trust 2002b). The riparian and dune scrub in the Nike Swale provides breeding and dispersal habitat for the wrentit.

### 3.12.2 ENVIRONMENTAL CONSEQUENCES

Natural resource implications of the PTMP are discussed on pages 225 to 247 of the PTMP EIS. This analysis is incorporated here by reference and summarized and expanded upon below where relevant to the PSHH district and to the alternatives being evaluated. Under all four alternatives, there would be no direct removal of habitat or individual populations of special-status species. The alternatives vary, however, in their potential for indirect impacts on special-status species and significant plant communities.

To avoid or minimize potential indirect impacts on biological resources, mitigation measures are identified. These measures are consistent with those identified in the PTMP EIS and would reduce potential impacts on biological resources to a less-than-significant level.

#### 3.12.2.1 Alternative 1: PTMP or No Action Alternative

**Native Plant Communities** – Under Alternative 1, rehabilitation of the PSHH complex would create up to 210 new residential units on the lower plateau. Rehabilitation activities such as construction staging, stockpiling, and vehicle movement would be restricted to developed sites. Under this alternative, there would be no direct removal of native plant communities or their habitat. In coordination with remediation of Landfill 10, the existing parking lot west of the PSHH complex would be replaced by a smaller parking area, landscaped open space, and dune scrub vegetation. This action would have a long-term beneficial effect on Presidio native plant communities because it would expand native dune habitat, improve habitat connectivity between the Lobos Creek dune system and isolated dune scrub patches along Battery Caulfield Road and northeast of the PSHH complex, and complement ongoing habitat restoration activities under the Presidio's Park Stewardship Program.

Rehabilitation, operation, and human use of the project site could indirectly affect both remnant and restored native plant communities by increasing tenant, visitor, and pet traffic on the lower plateau; releasing water and fertilizer from landscaped vegetation to adjacent dune soils; and facilitating the accidental spread of invasive, non-native plants from worker clothing, equipment, and new landscaping. These activities could disturb native plants, increase soil moisture and nutrient amounts to levels that favor the establishment of weedy non-native vegetation, and fragment native plant communities.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on native plant communities near the project site.

**Special-Status Plants** – Rehabilitation within the PSHH complex is not expected to directly affect special-status plant populations near the project site. Under Alternative 1, there would be no direct removal of special-status plants or their habitats. In coordination with remediation of Landfill 10, introduction of dune scrub vegetation along the western edge of the PSHH complex would have a long-term beneficial effect on special-status plants by increasing the amount of dune habitat available for special-status plant population expansion and by helping connect isolated special-status plant populations at Lobos Creek, Battery Caulfield Road, and northeast of the PSHH complex. This action would support USFWS long-term recovery objectives for the San Francisco lessingia.

Since special-status plants occur in or adjacent to native plant communities near the PSHH complex, they would be vulnerable to the same indirect impacts, including trampling by construction workers or equipment during rehabilitation, the release of water or fertilizer from landscaped vegetation, the accidental spread of non-native plants, and increased off-trail use by residents, visitors, and pets. Protective fencing that is located south of the Nike Swale and symbolic fencing around the dune scrub west of Battery Caulfield Road are expected to limit trampling of special-status plants within these areas. The lessingia population west of the Presidio Golf Course is relatively inaccessible from the PSHH complex and is not expected to experience additional trampling. However, increased trampling of special-status plants could occur along the informal trail that runs through disturbed dune vegetation south of the Nike Swale fence and in the restored dune area at Lobos Creek. These areas are included in the Presidio lessingia recovery unit identified in the USFWS Recovery Plan for Coastal Plants of the San Francisco Peninsula. Special-status plants that are planted or that may become established in restored dune scrub along the western edge of the project site would also be subject to irregular disturbance and trampling. Although some trampling could help maintain special-status plant populations by creating open, sandy patches (USFWS 2003), intense or frequent trampling could kill established plants, destabilize the dune substrate, and inhibit seedling establishment and growth.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status plants near the project site.

**Native and Special-Status Wildlife** – Rehabilitation within the PSHH complex under Alternative 1 could directly and indirectly affect native and special-status wildlife populations near the project site. Ongoing dune restoration in the PSHH district, in coordination with remediation of dune scrub vegetation at Landfill 10, would have a long-term beneficial effect on native wildlife, especially the California quail,

by increasing the amount of dune habitat available for population expansion. Dune restoration activities would support some of the Trust's recovery objectives for California quail by providing a movement corridor connecting the Lobos Creek area with the Nike Swale area and Quail Commons.

Rehabilitation, operation, and human use of the project site could adversely affect native wildlife by increasing tenant, visitor, and pet traffic, along with light, noise, and trash, on the lower plateau. These activities could disturb sensitive wildlife species that do not acclimate to increased exposure to human traffic and pets. Bird species sensitive to human and pet disturbance could abandon native scrub habitats in the lower plateau, especially during the nesting season. Bats that are roosting inside external window coverings could be harmed if they are not removed prior to construction/destruction activities. Tenants and visitors feeding jays, crows, ravens, cats, and raccoons could create a predator saturation effect that would greatly reduce or eliminate populations of some wildlife species. The removal of exotic trees, such as eucalyptus and Monterey pine, would affect tree-dependent species such as pygmy nuthatch, red crossbill (*Loxia curvirostra*), chestnut-backed chickadee and brown creeper (*Certhia americana*). Replacement of exotic trees with other exotic tree species or native tree species would not benefit native wildlife for many years until restored trees reach sizes that serve as replacement habitat.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status and other native wildlife near the project sites.

### **3.12.2.2 Alternative 2: Infill Alternative**

**Native Plant Communities** – Under Alternative 2, rehabilitation and infill construction within the PHS complex would create up to 350 new residential units on the lower plateau. In coordination with remediation of Landfill 10, the existing parking lot west of the PHS complex would be replaced by a smaller parking area, landscaped open space, and dune scrub vegetation. Introduction of dune scrub vegetation at this location would benefit native plant communities. Rehabilitation and infill construction activities would be restricted to developed sites, and there would be no direct removal of native plant communities or their habitat. Indirect impacts on native plant communities are expected to be similar to but somewhat greater in intensity than those identified for Alternative 1 because increased occupancy and expanded landscaping could increase the amount of disturbance from tenants, visitors, and pets near the project site as well as recreational pressure on nearby native plant communities. Additional landscaped vegetation could release more water, fertilizer, or non-native plants into native vegetation.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on native plant communities near the project site.

**Special-Status Plants** – Rehabilitation and infill construction within the PHS complex are not expected to directly affect special-status plant populations near the project site. In coordination with remediation of Landfill 10, dune scrub vegetation would be introduced along the western edge of the project site and would benefit special-status plant populations. Indirect impacts on special-status plants are expected to be similar to those identified for Alternative 1. Higher occupancy and expanded landscaping could put more disturbance pressure on adjacent special-status plant populations by increasing the potential number

of off-trail users (including off-leash pets) and adding sources of non-native plants, water, and fertilizer from landscaped vegetation. Because of the increased occupancy, Alternative 2 would likely have greater intensity of indirect impacts on special-status plants than Alternative 1.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status plants near the project site.

**Native and Special-Status Wildlife** – Rehabilitation and infill construction within the PSHH complex could directly and indirectly affect native and special-status wildlife populations near the project site. In coordination with remediation of Landfill 10, dune scrub vegetation would be introduced along the western edge of the PSHH complex and would benefit native wildlife. Indirect impacts on native and special-status wildlife are expected to be similar to those identified for Alternative 1; however, increased occupancy under Alternative 2 could intensify the direct and indirect effects on wildlife resources. Because of the increased occupancy, Alternative 2 would likely have greater intensity of indirect impacts on native wildlife than Alternative 1.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status and other native wildlife near the project site.

### **3.12.2.3 Alternative 3: No Infill Alternative**

**Native Plant Communities** – Under Alternative 3, rehabilitation and demolition within the PSHH complex would create up to 230 new residential units on the lower plateau. Rehabilitation and demolition activities would be restricted to developed sites, and there would be no direct removal of native plant communities or their habitat. In coordination with remediation of Landfill 10, dune scrub vegetation would be introduced along the western edge of the PSHH complex and would benefit native plant communities. Indirect impacts on native plant communities are expected to be similar in extent and intensity to those identified under Alternative 1.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on native plant communities near the project site.

**Special-Status Plants** – Rehabilitation and demolition within the PSHH complex are not expected to directly affect special-status plant populations near the project site. In coordination with remediation of Landfill 10, dune scrub vegetation would be introduced west of the PSHH complex and would benefit special-status plant populations. Indirect impacts on special-status plants are expected to be similar in extent and intensity to those identified under Alternative 1.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status plants near the project site.

**Native and Special-Status Wildlife** – Rehabilitation and demolition within the PSHH complex could directly and indirectly affect special-status and native wildlife populations near the project site. In coordination with remediation of Landfill 10, dune scrub vegetation would be introduced along the

western edge of the PSHH complex and would have a long-term beneficial effect on native wildlife. Indirect impacts on native wildlife are expected to be similar in extent and intensity to those identified under Alternative 1.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status and other native wildlife near the project site.

#### **3.12.2.4 Alternative 4: Battery Caulfield Alternative**

**Native Plant Communities** – Under Alternative 4, rehabilitation of the PSHH complex and replacement construction at Battery Caulfield would create up to 192 new residential units on the lower plateau and approximately 77 new residential units on the upper plateau, for a total of 269 residential units. In coordination with remediation of Landfill 10, the existing hospital parking lot would be replaced by landscaped open space, and dune scrub vegetation would be restored along the western edge of the project site. Rehabilitation and replacement construction would be limited to developed areas; therefore, there would be no direct removal of native plant communities or their habitat.

Indirect impacts on native plant communities resulting from Alternative 4 are expected to be similar to those identified under Alternatives 1, 2, and 3; however, residential development at Battery Caulfield would increase the intensity of these impacts. Replacement construction at Battery Caulfield would occur directly upslope of sensitive wetland plant communities within the Nike Swale (i.e., riparian seep and riparian scrub vegetation) and northwest of remnant dune scrub and locally rare coast live oak woodland. Construction and ongoing management activities, including replacing unsuitable fill and managing stormwater runoff, could indirectly affect adjacent native plant communities by releasing irrigation water and fertilizer, accidentally spreading non-native plants, and altering local surface water and groundwater flows. Unless adequately controlled, these activities could change the hydrology of wetland plant communities in the Nike Swale, reduce native plant diversity and habitat function, and replace patches of early successional vegetation with shrubby vegetation assemblages that are tolerant of higher soil moisture and nutrient levels.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on native plant communities near the project site.

**Special-Status Plants** – Rehabilitation and replacement construction are not expected to directly affect special-status plant populations near the project site. Since rehabilitation of the PSHH complex and replacement construction at Battery Caulfield would be limited to developed areas, there would be no direct removal of special-status plants or their habitat. In coordination with remediation of Landfill 10, dune scrub vegetation would be introduced west of the PSHH complex and would benefit special-status plant populations.

Indirect impacts on special-status plants resulting from Alternative 4 are expected to be similar in extent to those identified under all three alternatives; however, residential development at Battery Caulfield would incrementally contribute to the intensity of these impacts. Replacement construction at Battery Caulfield would occur upslope of special-status plant populations north of the PSHH complex.

Construction and ongoing management activities could indirectly affect special-status plants by discharging water and fertilizer to nearby dune soils and increasing the potential spread of non-native plants from landscaped vegetation. These actions could increase the cover and extent of shrubby or weedy vegetation and reduce the amount of available open, sandy patches required by some special-status plants for germination and growth.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status plants near the project site.

**Native and Special-Status Wildlife** – Rehabilitation and replacement construction under Alternative 4 could directly and indirectly affect special-status and native wildlife populations near the project site. Direct and indirect impacts on native wildlife are expected to be similar to those identified under Alternatives 1, 2, and 3; however, the additional housing development at Battery Caulfield would greatly intensify impacts associated with human disturbance, especially to the breeding population of California quail and wildlife species occupying the Nike Swale.

Development of Battery Caulfield would introduce human disturbance to an area immediately adjacent to a known California quail nesting location. Greater vehicle traffic to the upper plateau would increase the potential for mortality of adult and young California quail. The one-way roads and new buildings associated with this development could act as partial or complete barriers to quail movement between Quail Commons and the Nike Swale. Development on the upper plateau could also reduce the effectiveness of the restored dune scrub as a wildlife movement corridor by greatly narrowing the width of the corridor. The result would be a narrow movement corridor that could function as a sink if predators inhabit the area. Depredation of a known California quail breeding population could lead to the loss of this species from the Presidio.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential impacts on special-status and other native wildlife near the project site.

### **3.12.2.5 Park Presidio Access Variant**

This variant provides that, under Alternatives 2, 3, and 4, the Trust would construct a new intersection on Park Presidio Boulevard (Highway 1) east of the PSHS district. The new intersection would improve vehicular access to the PSHS complex by allowing southbound traffic to enter the PSHS complex directly via a right turn from Park Presidio Boulevard. Construction would involve some grading and vegetation removal in the southeast corner of the PSHS district. To protect special-status and native plants and wildlife from construction-related impacts, the Trust would implement mitigation measures identified at the end of this section. Vegetation removal could result in an impact on nesting birds; however, implementation of PTMP EIS Mitigation Measures NR- 4 and NR-9 (described below) would ensure that no breeding birds would be disturbed. Increases in vehicular traffic at this location could also result in long-term disturbance to native wildlife from noise and light; because the southeast corner of the PSHS district currently contains vehicular traffic (at Park Boulevard and 14<sup>th</sup> Avenue), however, it is

anticipated that wildlife would become habituated to the subtle changes in the amount of noise, light, and traffic over time.

### **3.12.2.6 Cumulative Effects**

The project site is within the southwestern region of the Presidio, an area of the park that is planned to become less inhabited over time, with removal of Wherry Housing, expansion of open space, and enhancement of natural areas. These efforts are intended to result in expanded native plant communities and protection and enlargement of existing populations of federally listed plants, and would create a corridor for wildlife movement.

Planned actions would cumulatively contribute to an increase in native species richness, the re-introduction and expansion of sensitive species populations, the perpetuation of individual species (by providing food and shelter for residents and migrants), and an increase in the extent of native plant communities and wetland resources. These actions would also cumulatively enhance existing native habitats by filling in gaps between habitats and creating larger contiguous areas of native plant habitat, allowing wildlife to move freely between areas.

Actions under the PHSH alternatives and each alternatives' facilitation or support for other planned projects could also contribute positively to the cumulative long-term enhancement and protection of the Presidio's biological resources.

New construction and land use activities under the project alternatives could have site-specific impacts that would detract from ongoing restoration projects. To partially mitigate the contribution of project-related new construction to cumulative impacts in the area, the Presidio has implemented a "no net construction" prerequisite for new construction that limits any new construction to 130,000 square feet and requires the removal building square footage at least equal to new construction within the district.

Unless mitigated, implementation of the project could potentially contribute to the cumulative degradation of ecologically significant native plant communities, special-status plants, and native wildlife from increased visitor, tenant, and pet disturbance, and invasive non-native plants. In addition, new construction and land use activities at Battery Caulfield could contribute to cumulative changes to local hydrology. Project impacts that could contribute to cumulative impacts have been identified in this document and would be mitigated through measures provided below. Future uses within Battery Caulfield would also be subject to the mitigation measures presented in this document. Long-term monitoring would ensure protection of sensitive plant and wildlife resources. In addition, the Trust would ensure compliance with the long-term objectives and criteria of the USFWS Final Recovery Plan for *lessingia*. These mitigation measures would ensure that the project's contribution to cumulative impacts on biological resources are minimized or avoided. This project could make a minor contribution to cumulative impacts on special-status plants, native plant communities, and native wildlife, as identified in the PTMP EIS. However, mitigation that would reduce the impacts to a less-than-significant level has been adopted as part of the PTMP EIS.

### 3.12.3 MITIGATION MEASURES

The following mitigation measures are based on the PTMP EIS and apply to all alternatives. These mitigation measures have been modified (where necessary) to incorporate and respond to the PHSB project.

NR-1 *Native Plant Communities* – To reduce the possibility of colonization by non-native plant species, the Trust will implement the following mitigation measures.

- Immediately revegetate with native species areas of native vegetation disturbed by construction, infrastructure repair, and increased land use activities.
- Prepare a site-specific revegetation plan for the project site.
- Identify revegetation needs early to allow time to establish seedlings from on-site plants and thus avoid contamination of the gene pool.
- Wherever possible, use planting materials (seeds and cuttings) from the local Presidio gene pool.
- Consult with the Soil Conservation Service, California Native Plant Society, NPS, Golden Gate National Parks Association, and other technical experts on native plant propagation techniques.
- Protect all revegetation efforts through buffers and/or barriers during establishment, and maintain and monitor for at least three years.

NR-3/NR-4 *Threatened, Endangered, Rare, and Sensitive Species* – To ensure long-term protection of special-status species and to mitigate any project-related indirect and direct impacts on these species, an inventory and monitoring program for rare and endangered plant and animal species will continue in the PHSB district. All known populations of special-status species and local species of concern will be protected and, if future populations are uncovered, management objectives will be developed and programs implemented for the particular species. For special-status plants, the Trust will implement the following mitigation measures.

- Within the project site boundary, prohibit the use of invasive non-native species with the potential to compete with special-status plants in landscaping. Prohibited species will include plants on the California Exotic Pest Plants Council List A and B.
- Erect a temporary construction barrier around unfenced special-status plant habitat on the upper plateau and train construction workers in identification and ecological needs of the plants.
- Manage the south-facing dune slope behind the PHSB complex as a buffer to adjacent special-status plant populations on the upper plateau. Management activities may include, but are not limited to, controlling invasive plants and planting low-stature native vegetation buffers (less than six meters high) on the upper slope to discourage access by humans and pets into special-status plant habitats

and minimize potential conflicts with building operations. The Trust will ensure that buffer use is consistent with long-term USFWS recovery objectives for the San Francisco lessingia.

For special-status wildlife, the Trust will implement the following mitigation measures.

- Conduct surveys for special-status wildlife species including San Francisco forktail, special-status birds, raptors, and bats prior to construction activities. If a special-status species is found in the development vicinity, adopt an appropriate buffer zone and site- and species-specific mitigation plan to avoid or minimize impacts. If an inactive or active raptor nest is found within or adjacent to the PHSH district, initiate the most potentially disruptive construction activities prior to or after the raptor nesting season (March through mid-July). An inactive raptor nest would likely be reused and active during the nesting season and should be treated accordingly.

NR-5 *Wildlife and Native Plant Communities* – To protect wildlife and native plant communities during demolition and construction activities, the Trust will implement the following construction-related mitigation measures.

- Schedule, to the greatest extent feasible, heavy equipment use to avoid areas where soils are wet and prone to compaction.
- Do not side-cast or spread excavated materials into native plant communities or special-status species habitat.
- Apply appropriate erosion and siltation controls during construction and stabilize exposed soil or ecologically compatible fill after construction.
- If fill is necessary, use only fill that is certified as weed-free, is compatible with local hydrologic and ecological conditions, and is appropriate for the enhancement of special-status species restoration activities.
- Revegetate immediately native plant areas affected by construction with native plant species appropriate to the area and grown from local seed stock and temporarily cover the soil and/or revegetation areas.
- Ensure that human food is never left exposed to wildlife on the construction site.

To protect wildlife and native plant communities from project-related impacts, the Trust will require that new development and planned intensive human activities on the upper and lower plateau be located at least 100 feet from the edge of existing native plant communities and/or assemblages.

To protect wildlife and native plant communities after redevelopment activities are completed, the Trust will implement the following ongoing mitigation measures.

- Prohibit the use of irrigation, fertilizers, and herbicides in areas adjacent to or up-gradient from the Nike Swale and other sensitive biologic resources on the upper plateau.
- In other landscaped areas (i.e., areas within the project footprint that are not adjacent to or up-gradient from sensitive biological resources), manage the use of supplemental irrigation, fertilizers, and herbicides to avoid increasing the water and nutrient supply to dune scrub and other native plant communities.
- Prepare interpretive materials and install signage emphasizing resource and conservation values in areas adjacent to natural habitat areas and sensitive native plant communities, and provide other educational devices to encourage voluntary compliance with protection measures and discourage pedestrian traffic through sensitive habitats.
- Enforce existing leash restrictions to prevent pet access in adjacent native plant communities, special-status species habitat, and listed species recovery areas
- Regularly inspect adjacent native plant communities, special-status species habitat, and listed species recovery areas for any impacts or damage to biological resources and implement remedial measures (e.g., install and/or modify protective fencing or other barriers) if impacts occur.
- Coordinate all future trail planning and recreation activities in areas adjacent to native plant communities or special-status species habitat with an interdisciplinary team, including a qualified biologist or natural resource specialist.

NR-6 *Best Management Practices* – The Trust will establish and implement both Presidio-wide and site-specific best management practices for construction/demolition activities, development of new and/or expanded tenant and visitor activities, and special events adjacent to natural habitats.

NR-9 *Wildlife and Wildlife Habitat* – To protect nesting birds and bat species, the Trust will implement the following mitigation measures.

- Establish a construction schedule that minimizes effects of lighting and noise on nesting birds by limiting disturbance activities during the breeding season.
- Prior to any demolition activities at the PSHH complex, retain a qualified bat biologist to check all window coverings for bats. The qualified biologist will then remove any bats present without harm.
- To protect active nests of birds covered under the Migratory Bird Treaty Act, limit earth moving, landscaping, vegetation removal, and other heavy equipment activities to the non-breeding season (August through January) and follow park guidelines for the removal of vegetation.
- Retain wax myrtle and other native shrubs adjacent to the maintenance yard, which provide cover and foraging habitat for California quail and other birds.

- Prohibit on the premises the ownership and/or maintenance of pets and/or feral cats.
- Implement a control program for non-native species such as Norway rats, red foxes, and European starlings.

NR-11 *Public Health Services Hospital* – The Trust will ensure that site-specific measures taken during design of the Battery Caulfield site would minimize changes to the local hydrology and the Nike Swale so that hydrophytic vegetation and San Francisco forktail habitat are not adversely affected.

NR-12 *Cumulative Activities* – The Trust will develop measures to ensure that cumulative disturbance to natural habitat areas within the Presidio does not exceed 20 acres within any given year. No more than five acres of that disturbance should be concentrated within one wildlife corridor, sensitive habitat, or plant community without approval from a professional ecologist. This would not apply to disturbances created by natural storm or environmental events. If such events occur, disturbed areas would be restored or treated consistent with natural resources objectives.

### 3.12.3.1 Additional Mitigation Measures

The following mitigation measure would apply to Alternative 4 only.

NR-X *Protection of California Quail* – To ensure that the breeding population of California quail occupying Quail Commons north of Battery Caulfield is adequately protected from potential project impacts associated with Alternative 4, the Trust will implement the following measures.

- Place speed bumps on the new road at Battery Caulfield in order to keep vehicle speeds at or below 10 miles per hour.
- Pending approval and permit from the USFWS, develop and implement a corvid (jays, crows, and ravens) control plan to reduce the impacts of these predators on young quail.
- Provide a 100-foot (minimum) wildlife movement corridor from Quail Commons to the Lobos Creek area and Nike Swale.
- During and after construction, provide and maintain brush piles along the western and eastern edges of Battery Caulfield that can be used for cover from predators. If exotic trees (eucalyptus and Monterey pine) are removed from these corridors, replace these denuded areas with fast-growing native plants such as bush lupine (*Lupinus arboreus*) and native tree species such as Toyon (*Heteromeles arbutifolia*).
- During and after construction, maintain integrity of quail breeding sites (Quail Commons) from human and pet disturbance by implementing Mitigation Measures NR-5 and NR-6, by building and maintaining a fence that is an effective barrier to people between Quail Commons and the upper plateau, and by implementing fire control programs.