

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 Battery Caulfield 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 24).

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 23). 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 Requested No Action Alternative**

Under the Requested No Action Alternative, existing land uses could threaten the water quality of the PHSH district. Existing maintenance activities at Battery Caulfield, runoff from Battery Caulfield Road, and the eroding hillslope of Landfill 10 in the PHSH complex may currently degrade the quality of surface water delivered to the Nike Swale and Lobos Creek. Contaminated runoff and sediment from storage of equipment and materials from Battery Caulfield, along with runoff from Battery Caulfield Road, are directed to the Nike Swale area through the existing storm drain network. Contaminated waters and increased sediment would reduce water quality and function of this wetland area. Southward to the PHSH complex, the dilapidated state of the parking lot atop Landfill 10 is increasing the risk of hillslope erosion. Further erosion of this hillslope could increase sediment loading to Lobos Creek. However, the Trust intends to remediate all landfills within the PHSH district as part of the Presidio-wide environmental remediation program and address this potential erosion source. Surface and groundwater hydrology would not be altered under the Requested No Action Alternative although existing conditions and activities at Battery Caulfield and Battery Caulfield Road could potentially affect water quality of the Nike Swale.

### **3.11.2.2 Alternative 1: PTMP Alternative**

Alternative 1 involves rehabilitation of the existing PHSH complex and requires no new construction. Battery Caulfield would not be affected by Alternative 1, and maintenance operations would continue. Potential water quality impacts on Lobos Creek originating from Landfill 10 would be remediated as discussed under the Requested No Action Alternative.

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. However, compared to the Requested No Action Alternative, increased use, increased vehicle activity, and short-term construction activities within the PHSH complex would have the potential to degrade the quality of surface water delivered to Lobos Creek unless properly controlled. Indirect impacts that can be associated with intensification of land use include increases in concentration of oils, lubricants, grease, sediment, and other pollutants commonly contained in urban runoff.

Similar to the Requested No Action Alternative, degradation of the water quality within the Nike Swale area would continue and potentially increase from ongoing maintenance operations at Battery Caulfield in Alternative 1. Mitigation measures identified below would reduce these potential water quality impacts to a less than significant level.

### **3.11.2.3 Alternative 2: Infill Construction Alternative**

From a hydrologic perspective, Alternative 2 would differ from Alternative 1 in that:

- The ground floor loggia and lobby of Building 1801 would be removed;

- An underground parking structure would be built in the existing basement footprint and between the basement footprints of the non-historic wings of Building 1801;
- Existing buildings at the entrance to Battery Caulfield may be converted to residential units with vehicle parking; and
- Two new residential buildings (one three-story building and one two-story house) would be constructed east of Building 1801. .

The addition of approximately 0.5 acre of 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 underground parking facility is not expected to change groundwater conditions as groundwater elevations are sufficiently below the surface. The new three-story residential building would be built in the existing footprint of Belle Street. The two-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 within the PHS complex. However, a substantial alteration to surface hydrology is not anticipated. Mitigation measures identified below would reduce these potential impacts to a less than significant level.

Conversion of existing buildings and paved surfaces to accommodate residential uses and parking at the entrance to Battery Caulfield would potentially alter site hydrology and groundwater conditions. Because the existing site condition is largely impervious, residential use would not substantially alter the degree of surface runoff or infiltration. However, the drainage and routing of such runoff would likely be altered by a change in land use. These potential changes to hydrology and groundwater are not considered appreciable. However, because of Battery Caulfield'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. 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. PTMP EIS Mitigation Measures NR-11/13 *Battery Caulfield and Wetlands/Compliance* would preserve the functioning hydrologic connectivity between Battery Caulfield and the Nike Swale.

Residential activities, including vehicle parking, at Battery Caulfield could affect water quality by introducing water contaminants from landscaping fertilizers or vehicle use. Concentration of oils, grease, herbicides, and nutrients could 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 as a storage and maintenance yard, however, a conversion to residential use in one portion of the site would likely reduce the presence of certain contaminants. Overall, a net decrease in water quality contaminants could result from this alternative. Mitigation measures identified below would reduce these potential impacts on water quality to a less than significant level.

The water quality impacts of Alternative 2 would be similar to those of Alternative 1. As in Alternative 1, potential water quality impacts on Lobos Creek from Landfill 10 would be remediated under a separate

project. Maintenance operations would continue on the eastern portion of Battery Caulfield; therefore adverse impacts on water quality of the Nike Swale, as discussed under the Requested No Action Alternative, would remain. 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 identified below would reduce these potential water quality impacts to a less than significant level.

#### **3.11.2.4 Alternative 3: No Infill Alternative**

Alternative 3 involves removal of wings from Building 1801 and no underground parking facility or other new construction. 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. As discussed under Alternatives 1 and 2, potential water quality impacts on Lobos Creek from existing landfills would be remediated as a separate project. Battery Caulfield would not be affected by Alternative 3, and maintenance operations would continue; therefore negative impacts on water quality at the Nike Swale, as discussed under the Requested No Action Alternative, would remain under Alternative 3. Alternative 3 would involve greater land disturbance activities at the PSHH complex that could affect water quality of downstream Lobos Creek. However, because demolition activities would be temporary, impacts on hydrology and water quality at the PSHH complex would be less than significant with implementation of the mitigation measures identified below.

#### **3.11.2.5 Alternative 4: Battery Caulfield Alternative**

Alternative 4 includes elements of Alternative 3 at the PSHH complex and also involves new residential construction at Battery Caulfield. As discussed above for Alternative 2, residential use at Battery Caulfield could alter the amount, flow, and quality of waters delivered to the Nike Swale. Alternative 4 would develop a substantially larger number of residences and parking than proposed under Alternative 2. The new construction and land use could potentially alter the hydrology and water quality at Battery Caulfield. Compared to the site's current use, however, conversion to residential use, regardless of the number of units, would likely reduce the presence of certain contaminants because the existing activities are heavily affecting the water quality of the surrounding area. Further, use of Battery Caulfield for housing would reduce but not eliminate pollutant delivery to the Nike Swale.

Alterations to water resources associated with renovation/construction of Building 1801 and removal of its non-historic wings are consistent with conditions described above under Alternative 3. Alterations associated with new construction on Belles Street would be the same associated with Alternative 2. The number of residential units constructed at the PSHH complex would be the smallest of all the alternatives.

Compared to the No Action Alternative and other alternatives, Alternative 4 would reduce water quality impacts on the Nike Swale by ceasing operations and maintenance use of Battery Caulfield. Alternative 4 has the potential to affect hydrology and water quality in the same manner as Alternative 2 because both would place residential units at Battery Caulfield. However, the magnitude of land use impacts on hydrology and water quality at the Nike Swale would be intensified under Alternative 4. Mitigation measures identified below would reduce these potential impacts on water quality to a less than significant level.

#### **3.11.2.6 Park Presidio Boulevard Access Variant**

This variant would provide improved vehicular access to the PSHH district under Alternatives 1, 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 Boulevard Access Variant is not expected to substantially alter hydrology, groundwater, or water quality if best management practices are implemented. Reductions in storm water runoff in the area would be achieved not only by directing storm water flows associated with Park Presidio Boulevard away from Mountain Lake, but also by redirecting runoff in the vicinity of the Wyman Avenue houses.

#### **3.11.2.7 Cumulative Effects**

Implementation of the PSHH project could potentially contribute to the cumulative degradation of surface and groundwater quality, due to changes in local hydrology and increased contamination that may result from new construction and land use activities at Battery Caulfield and the PSHH 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 adapted from the PTMP EIS and have been modified (where necessary) to incorporate and respond to the PSHH project. These measures are considered conditions of approval due to their adoption at the end of the PTMP planning and environmental review process, and will be implemented in all alternatives except where noted. Implementation of these measures will collectively address all potentially significant effects related to hydrology, wetlands, and water quality.

NR-11/13 *Battery Caulfield and Wetlands/Compliance* – 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 for the Nike Swale through the following mitigation measures in every alternative that proposes land use or drainage changes at Battery Caulfield.

- Water balance conditions of the 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 PHS 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 following best management practices 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.
- *(Alternative 2 only)* – 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.

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 at Battery Caulfield and Nike Swale area, will be prevented. Planning and construction at the Battery Caulfield site, as proposed in Alternative 4, will also be consistent with Mitigation Measures NR-11 *Battery Caulfield*, NR-13 *Wetlands/Compliance*, and UT-7 *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 increases in 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 *Battery Caulfield* and NR-13 *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 *Battery Caulfield*, NR-13 *Wetlands/Compliance*, and NR-19 *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 PSHH district is repeated here and has been supplemented based on additional consultation with the NPS, additional field surveys undertaken in the fall of 2003, and public and agency comments.

The PSHH district is on an elevated plateau that separates Mountain Lake and Lobos Creek (see Figure 25). 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 PSHH 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 PSHH 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 PSHH 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 PSHH 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 PHSH district: freshwater seep, central coast riparian scrub, central dune scrub, and coast live oak woodland (see Figure 25). 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 PHSH 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 (*Salix lucinda* ssp. *lasiandra*), arroyo willow, wax myrtle, rush, and California blackberry (*Rubus 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 champion (*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.

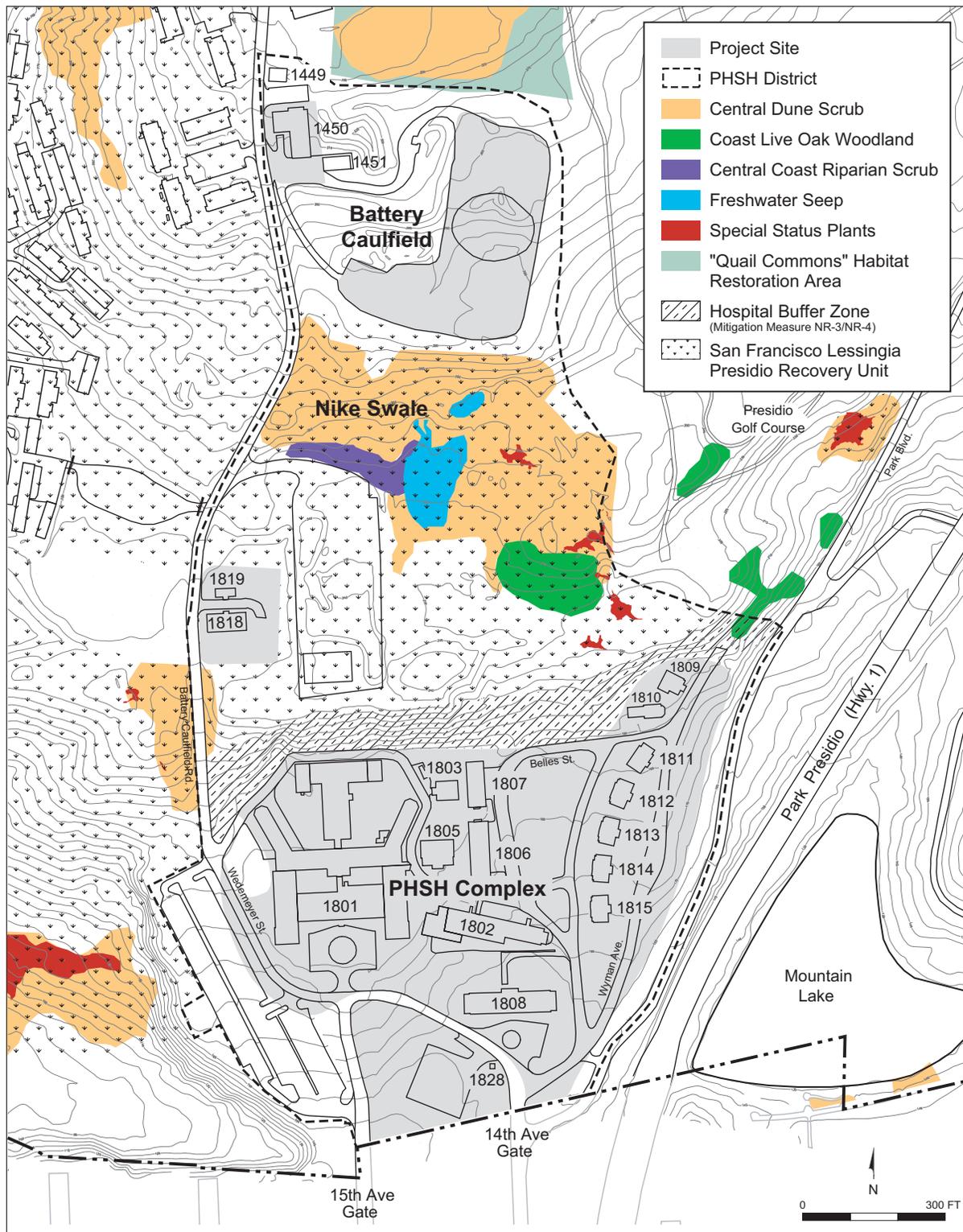


FIGURE 25. BIOLOGICAL RESOURCES

Source: Presidio Trust, 2003; USFWS, 2004

**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 PSH, and iceplant (*Carpobrotus edulis*) mats on the slope below Battery Caulfield. Representative wildlife observed in this habitat includes northern flicker (*Colaptes auratus*), European 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 PSH district include the PSH complex on the lower plateau, outlying buildings (Buildings 1450, 1818, and 1819), Battery Caulfield on the upper plateau, and Battery Caulfield Road.

**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 24.

Table 24. 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>	–/–/ 1B
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.

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.

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

**CNPS:** California Native Plant Society.

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 central dune scrub and bluff scrub plant communities. San Francisco wallflower occurs in the restored dunes at Lobos Creek.

*San Francisco Champion.* San Francisco champion 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). A remnant population of San Francisco champion currently occurs in Area B of the Presidio along Lincoln Boulevard at the “Silene Site.” This species was reintroduced to the restored Lobos Creek dunes between 1996 and 1998, where only a few individuals survive today.

**Special-Status Wildlife** – Special-status wildlife species with potential to occur in the vicinity of the PHSH district are described below. A summary of these species is provided in Table 25.

*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.

Table 25. 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 prior to construction; known from the San Francisco region.

Table 25. Occurrences of Special-Status Wildlife Species Near the Project Site

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

Source: Jones & Stokes.

Notes:

SC = Species of Concern (federal).

SSC = Species of Special Concern (state).

E = Endangered (both federal and state).

FS = U.S. Forest Service Sensitive Species.

*Nesting Raptors.* Several species of raptors may nest in the PHSH 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 PHSH 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 California Department of Fish and Game (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 PHSH 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 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 PSHH complex. A survey conducted by Central Coast Bat Research Group in November 2003 determined that special-status bats are not using PSHH 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 PSHH district (see Figure 25). It is unclear, however, whether quail from the lone Presidio covey breed there exclusively every year, or in adjacent areas, possibly including the PSHH district (personal communication with Thomas Gardali, Point Reyes Bird Observatory).

Within the PSHH 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 PSHH district. One is located along the eastern border of the PSHH district adjacent to the Presidio Golf Course along the row of eucalyptus trees, and the second is located along the western edge of the PSHH 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/corporation 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 area immediately 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 PHSH district on November 3, 2003. The oak and conifer trees in the PHSH 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 PHSH district and to the alternatives being evaluated. Under all five 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 Requested No Action Alternative**

Under the Requested No Action Alternative, there would be no direct removal of native plant communities, special-status plants, or special-status wildlife or their habitats because there would be no additional building rehabilitation, demolition, or new construction. In addition, all existing vacant buildings would be deactivated and the buildings that are or can be readily occupied would provide about 68,000 sf of non-residential use. Non-residential use would consist of mostly cultural and educational activities and some office facilities on both the upper and lower plateau. Human presence associated with non-residential uses could indirectly affect native plant communities and special-status plants through off-trail use and accidental trampling. Human presence could also indirectly affect native and special-status wildlife, in particular nesting birds and California quail, through noise disturbance and traffic.

After 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. These actions should have a long-term beneficial effect on Presidio native plant communities because they 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 PHS complex, and complement ongoing habitat restoration activities under the Presidio's park stewardship program.

### **3.12.2.2 Alternative 1: PTMP Alternative**

**Native Plant Communities** – Under Alternative 1, rehabilitation of the PHS complex would create up to 173,000 sf of residential and other uses, most likely educational. Also under this alternative, 17,000 sf of existing building area on the upper plateau would be used for a mix of office and cultural/educational activities. The total maximum building area under Alternative 1 would be 400,000 sf. 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.

After 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. As described above under the Requested No Action Alternative, these actions should have long-term beneficial effects on Presidio native plant communities because they 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 PHS complex, and complement ongoing habitat restoration activities under the Presidio's park stewardship program.

Rehabilitation, operation, and human use of the lower plateau associated with 210 residential units and 173,000 sf of cultural and educational activities could indirectly affect both remnant and restored native plant communities by increasing tenant, visitor, and pet traffic; 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. In addition, heavy day use by students associated with expansion of educational facilities could indirectly affect native plant communities through off-trail use and accidental trampling. Alternative 1 would result in more indirect impacts on native plant communities than the Requested No Action Alternative.

Implementation of the mitigation measures identified at the end of this section would substantially reduce potential indirect 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. After 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 to 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 indirect impacts, including trampling by students, or 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 Northern San Francisco Peninsula (USFWS 2003). 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. Intense or frequent trampling could kill established plants, destabilize the dune substrate, and inhibit seedling establishment and growth.

Alternative 1 would result in more indirect impacts on special-status plants than the Requested No Action Alternative because of the overall increase in human disturbance. 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 revegetation 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 provide a wildlife movement corridor connecting the Lobos Creek area with the Nike Swale area and Quail Commons.

Rehabilitation, operation, and human use of the lower plateau associated with 210 residential units and 173,000 sf of cultural and educational activities could adversely affect native wildlife by increasing tenant, visitor, vehicular, and pet traffic, along with light, noise, and trash. These activities could disturb sensitive wildlife species that do not acclimate to increased exposure to human traffic, vehicular traffic, and pets. The increase in day use under this alternative would substantially increase traffic entering and leaving the PSHH district, which could increase wildlife mortality caused by collisions with vehicles. Truck traffic and noise from construction activities could also affect sensitive wildlife species during the two- to three-years construction period. Bird species sensitive to human and pet disturbance could abandon native scrub habitats in the lower plateau, especially during the nesting season. Bats 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.

Alternative 1 would result in more indirect and direct impacts on special-status wildlife when compared to the Requested No Action Alternative because of the overall increase in human disturbance. 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 2: Infill Alternative**

**Native Plant Communities** – Under Alternative 2, rehabilitation and infill construction within the PSHH complex would create up to 308 residential units on the lower plateau and possibly 13 residential units within existing buildings on the upper plateau. Unlike Alternative 1, Alternative 2 would result in a decrease in cultural and educational activities within the PSHH district; however, both alternatives would have a maximum building area of 400,000 sf.

Following 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. 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 in intensity to those identified for Alternative 1 and substantially greater in intensity than those identified for the Requested No Action Alternative. As with Alternative 1, increased occupancy and expanded landscaping associated with residential development 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. Following 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 and substantially greater in intensity than those identified for the Requested No Action Alternative. Unlike Alternative 1, Alternative 2 would result in a decrease in cultural and educational activities within the PHS district; however, both alternatives would have a maximum building area of 400,000 sf. Slightly higher residential occupancy and expanded landscaping under Alternative 2 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 Alternative 1 would have a larger day use population, however, the two alternatives would likely place equal amounts of disturbance pressure on special-status plants.

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 PHS complex could directly and indirectly affect native and special-status wildlife populations near the project site. Following remediation of Landfill 10, dune scrub vegetation would be introduced along the western edge of the PHS complex and would benefit native wildlife. Indirect impacts on native and special-status wildlife under Alternative 2 are expected to be similar in intensity to those identified for Alternative 1 because both alternatives would have a maximum build-out of 400,000 sf. However, increased residential occupancy within the upper plateau under Alternative 2 could intensify the direct and indirect effects on wildlife resources in this area during dusk and nighttime hours.

Introduction of up to 13 residential units at Battery Caulfield could negatively affect native and special-status wildlife, including the breeding population of California quail, through indirect impacts associated with human inhabitation. Increases in human activity after sunset, including noise, traffic, pets, and artificial lighting, may preclude sensitive wildlife from occupying the upper plateau. However, given the

amount of housing in the area, and the low number of potential units (which would be confined to existing buildings), there would only be a slight increase in these indirect impacts under Alternative 2 compared to Alternative 1. Because of the increased occupancy, Alternative 2 would have greater intensity of indirect impacts on native wildlife when compared to the Requested No Action Alternative.

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 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 and a total maximum building area of 275,000 sf. Rehabilitation and demolition activities would be restricted to developed sites, and there would be no direct removal of native plant communities or their habitat. After remediation of Landfill 10, dune scrub vegetation would be introduced along the western edge of the PSHH complex, benefiting native plant communities.

Indirect impacts associated with this alternative include disturbance pressure on native plant communities 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. As with Alternatives 1, 2, and 4, indirect impacts associated with Alternative 3 would be greater in extent and intensity compared to those identified under the Requested No Action Alternative. Both Alternatives 1 and 3 would result in a similar number of residential units, but because Alternative 1 would have a maximum building area of 400,000 sf and heavy day use, Alternative 3 would have fewer indirect impacts on native plant communities than Alternative 1. Similarly, because Alternative 2 would have a maximum building area of 400,000 sf and potential for residential units on the upper plateau, Alternative 3 would have fewer indirect impacts on native plant communities than Alternative 3.

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. Following remediation of Landfill 10, dune scrub vegetation would be introduced west of the PSHH complex and would benefit special-status plant populations. As with Alternatives 1, 2, and 4, indirect impacts associated with Alternative 3 would be greater in extent and intensity than those identified under the Requested No Action Alternative. Higher tenant occupancy, a maximum building area of 400,000 sf, and heavy day use associated with Alternatives 1 and 2 could put more disturbance pressure on special-status plants, compared to Alternative 3. Disturbance pressure associated with all three alternatives would include 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. 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. Following remediation of Landfill 10, dune scrub vegetation would be introduced along the western edge of the PSHH complex, resulting in a long-term beneficial effect on native wildlife.

As with the Alternatives 1, 2, and 4, indirect impacts associated with Alternative 3 would be greater in extent and intensity than those identified under the Requested No Action Alternative. Disturbance pressure would result from 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. Alternatives 1 and 3 would result in a similar number of residential units, which could put approximately equal amounts of disturbance pressure on special-status wildlife. However, because Alternative 3 would result in only 275,000 sf of occupied space and fewer day use activities than Alternative 1, Alternative 3 would have less disturbance pressure on native and special status wildlife, compared to Alternative 1. Alternative 3 would also have fewer direct and indirect effects on wildlife than Alternative 2 because there would be fewer residences overall, less building area, and no new or residential development on the upper plateau. Furthermore, Alternative 3 would have the shortest construction period (17 months) of Alternatives 1 through 4, thereby reducing the amount of time wildlife would be disturbed by truck round trips and potential impacts from construction noise and personnel.

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 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 within a maximum building area of 362,000 sf. 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, development of up to 77 new residential units at Battery Caulfield would increase the overall intensity and extent of these indirect impacts when compared to these alternatives. Alternative 2 would also include residential development at Battery Caulfield, but because Alternative 2 would involve development of only 13 residential units at this location, all within existing buildings, the indirect impacts on native plant communities on the upper plateau would be less substantial than under Alternative 4. As with Alternatives 1, 2, and 3, indirect impacts associated with Alternative 4 would be greater in extent and intensity than those identified under the Requested No Action Alternative.

Under this alternative, 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 storm water 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 PHSH 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 PHSH complex and would benefit special-status plant populations.

Indirect impacts on special-status plants resulting from Alternative 4 are expected to be greater in extent and intensity than those identified under Alternatives 1 through 3 due to replacement construction of 77 residential units at Battery Caulfield. As with Alternatives 1 through 3, indirect impacts associated with Alternative 4 would be greater in extent and intensity than those identified under the Requested No Action Alternative.

Replacement construction at Battery Caulfield would occur upslope of special-status plant populations north of the PHSH 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 under Alternative 4 are expected to be greater in extent and intensity than those identified under Alternatives 1 through 3. New development of up to 77 residential units at Battery Caulfield would incrementally contribute to the overall extent and intensity of adverse impacts associated with human disturbance, especially to the breeding population of California quail and

wildlife species occupying the Nike Swale. Alternative 2 also includes residential development at Battery Caulfield, but because Alternative 2 only involves development within existing buildings, native and special-status wildlife on the upper plateau would have less disturbance pressure under Alternative 2 compared to Alternative 4. As with Alternatives 1 through 3, impacts associated with Alternative 4 would be greater in extent and intensity than those identified under the Requested No Action Alternative.

Residential development of Battery Caulfield would introduce human disturbance to an area immediately adjacent to a known California quail nesting location. 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. New 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. An increase in quail predation at this location could eventually 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.

#### **3.12.2.6 Park Presidio Boulevard Access Variant**

Construction of the Park Presidio Boulevard intersection would involve some grading and vegetation removal in the southeast corner of the PSHS district. 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.

#### **3.12.2.7 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 PSHH alternatives and each alternative's 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 sf and requires the removal of 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 in 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 the San Francisco lessingia. These mitigation measures would ensure that the project's contributions 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 derived from the PTMP EIS and are considered conditions of approval due to their adoption at the end of the PTMP planning and environmental review process. These mitigation measures have been modified (where necessary) to incorporate and respond to the PSHH project, and will collectively address all potentially significant effects related to biology, except for potential impacts to the California quail, which are addressed separately below.

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 Conservancy, 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 PHSH 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 PHSH 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 (January 1 through August 15). 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.

- To the greatest extent feasible, schedule 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.
- Immediately revegetate 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 plateaus 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-7 *Artificial Light* – The Trust will require that the intrusion of artificial light into the night scene of ecosystems is minimized, and the level of human-caused sound during construction-related activities, project design, and future tenant activities is limited. Artificial lighting will be used only in areas where security, basic human safety, and specific cultural resource requirements must be met. Minimal-impact lighting techniques will be used, and artificial lighting will be shielded to prevent the disruption of the night sky, physiological processes of living organisms, and similar natural processes. No gain in light levels in natural habitats within the Nike Swale area will be sought to the greatest extent feasible. Best management practices (e.g., use of lighting shields on exterior fixtures, provision of interior shades or blinds in all buildings, use of non-reflective glass, prohibition on exterior loud speakers or audible warnings at garages and loading areas, and use of double sets of doors at primary building entrances) will be used to minimize interior and exterior fugitive light and sound.

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 all wildlife, particularly nesting birds by limiting disturbance activities during the breeding season.
- Prior to any demolition activities at the PHS 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 15 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.

Implementation of the following new mitigation measure will address potentially significant impacts associated with the California quail population and will apply to Alternative 4 only, due to the alternative's proposed new construction at Battery Caulfield:

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 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.