

### **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This chapter describes the affected environment and evaluates the potential direct, indirect, short-term, and long-term impacts for each relevant human and natural environmental resource potentially impacted by the Proposed Action. An evaluation of the potential cumulative impacts resulting from the Proposed Action, when added to other past, present, and reasonably foreseeable future actions, is presented in Chapter 4 (Cumulative Impacts). The analysis of potential impacts is based on the full build-out of the Proposed Action. The study area examined includes the project area (i.e., VA Transfer Parcel) and, where applicable, the area surrounding the project area, including the larger Alameda Point area, the San Francisco Bay, and the City and County of Alameda.

Each environmental resource area potentially impacted by the Proposed Action is addressed in its own section, numbered as follows:

- Section 3.1: Biological Resources;
- Section 3.2: Water Resources;
- Section 3.3: Transportation, Traffic, Circulation, and Parking;
- Section 3.4: Cultural Resources;
- Section 3.5: Visual Resources and Aesthetics;
- Section 3.6: Land Use;
- Section 3.7: Air Quality;
- Section 3.8: Greenhouse Gas Emissions and Climate Change;
- Section 3.9: Socioeconomics and Environmental Justice;
- Section 3.10: Hazards and Hazardous Substances;
- Section 3.11: Utilities;
- Section 3.12: Noise;
- Section 3.13: Public Services; and
- Section 3.14: Geology and Soils.

Potential environmental impacts are identified, where applicable, according to their significance. According to the CEQ, the significance of an impact is determined by examining both its context and intensity (40 CFR 1508.27). Context is related to the affected region, the affected interests, and the locality, while intensity refers to the severity of the impact, which is based on the following considerations:

- Impacts may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial;
- The degree to which the proposed action affects public health or safety;
- Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;
- The degree to which the effects on the quality of the human environment are likely to be controversial;
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks;
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration;

- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, highways, or structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources;
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA; and
- Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The impact analysis compares projected future conditions to the affected environment. For each resource area, the potential construction or operational impacts are identified, if applicable, and the methodology and general assumptions used in the impact analysis are presented. Each identified impact is characterized according to its significance. Impacts are either significant (with corresponding mitigation, as feasible) or not significant, or significant and unavoidable where mitigation is not feasible or would not eliminate or reduce the impact to not significant. Although the focus of this analysis is on identifying potential adverse impacts, some beneficial effects also are identified by the analysis. The Navy would be responsible for transfer of excess federal property and VA would be responsible for the construction and operation of the proposed facilities. In addition, VA would be responsible for implementation of, if applicable, the mitigation and avoidance measures identified in this EA.

Under NEPA, the federal agency proposing an action must evaluate the environmental effects (impacts) that can reasonably be anticipated to be caused by or result from the Proposed Action and alternatives. The Proposed Action will be required to comply with federal, state, and local laws and regulations. The potential environmental impacts that have been evaluated are those impacts which can reasonably be expected to result from the lawful implementation of the Proposed Action. In identifying direct impacts and reasonably foreseeable indirect impacts, the Navy and VA have taken into account all applicable measures and restrictions protective of human health and the environment that are required by existing laws and regulations. In many instances, the existence of such laws and regulations renders impacts that might have occurred in the absence of such laws highly unlikely and not reasonably foreseeable. In other instances, such laws and regulations work to lessen potential impacts to levels that are not significant. Because compliance with applicable laws is mandatory for the action proponent, compliance with the requirements of such laws and regulations is generally not identified separately as mitigation. Measures or controls that can be taken to reduce impacts to a level that is not significant are suggested for each alternative, as appropriate.

The Navy's Proposed Action is to dispose of excess property at the former NAS Alameda via a fed-to-fed transfer to VA. Transfer of the property by the Navy to the VA, an administrative action, would not, in itself, have a direct adverse impact on the human and natural environment. Therefore, this EA's impact analysis is focused on the potential impacts resulting from the VA's subsequent construction and operation of a VHA OPC, VBA Outreach Office, Conservation and Management Office, NCA Cemetery, off-site utility/road corridor, and associated infrastructure.

## 3.1 BIOLOGICAL RESOURCES

This section describes the existing physical and regulatory setting related to biological resources, including vegetation, habitat, wildlife, and plant species and discusses the potential effects of the EA Alternatives on these resources.

### 3.1.1 Regulatory Framework

#### Federal Endangered Species Act

The Endangered Species Act (ESA) was enacted in 1973 (7 U.S.C. 136, 16 U.S.C. 1531 *et seq.*). Under the ESA, the Secretary of the Interior and the Secretary of Commerce have the authority to list a species as threatened or endangered (16 U.S.C. 1533[c]). The ESA is administered by both NMFS and USFWS. NMFS is accountable for animals that spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish such as Pacific salmon. USFWS is accountable for all other federally listed plants and animals.

Pursuant to the requirements of the ESA, a federal agency authorizing, funding or carrying out a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project site and determine whether the agency's action could affect any federally listed species (16 U.S.C. 1536(a)(2), (3)). If the action would likely affect a listed species, the agency must consult with the USFWS or NMFS under Section 7 of the ESA to determine whether the action is likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of designated critical habitat (16 U.S.C. 1536(a)(2)). Species subject to ESA are addressed below.

#### Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), as amended, makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued by USFWS. The MBTA does not provide protection for habitat of migratory birds. Permits are issued to qualified applicants for only the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal.

Federal agencies, such as VA and Navy, are required to comply with federal laws, including the MBTA; VA and Navy must analyze potential impacts of all actions, including the alternatives, on migratory birds.

#### Section 404 Clean Water Act

Section 404 of the Clean Water Act (CWA) regulates temporary and permanent fill, as well as the disturbance of wetlands and Waters of the United States. A permit must be obtained from the U.S. Army Corps of Engineers (USACE) prior to dredging or discharging dredged or fill materials into any "Waters of the United States" or wetlands. Waters of the United States are broadly defined in the USACE regulations to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally

include swamps, marshes, bogs, and similar areas” (USACE 1986). Wetlands that are not specifically exempt from Section 404 regulations (such as drainage channels excavated on dry land) are considered to be “jurisdictional wetlands.” The USACE is required to consult with the USFWS, NMFS, USEPA, and SWRCB in carrying out its discretionary authority under Section 404 of the CWA.

### **Executive Order 11990—Protection of Wetlands**

Executive Order 11990 was passed in 1977, in furtherance of NEPA, to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. If there is no practicable alternative to locating in or affecting wetlands, a lead agency shall act to minimize potential harm to the wetlands. A lead agency shall also act to restore and preserve the natural and beneficial values of wetlands as part of the analysis of all alternatives under consideration.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act is the primary law governing marine fisheries management in Waters of the United States. It was enacted in 1976 and amended in 1996 and 2006. Passage of the act created eight regional fishery management councils to manage the fisheries and promote conservation. The 1996 amendments focused on rebuilding overfished fisheries, protecting essential fish habitat, and reducing the amount of incidental fish caught, by controlling annual catch limits. In 2006, the act was further amended to promote fisheries stock recoveries.

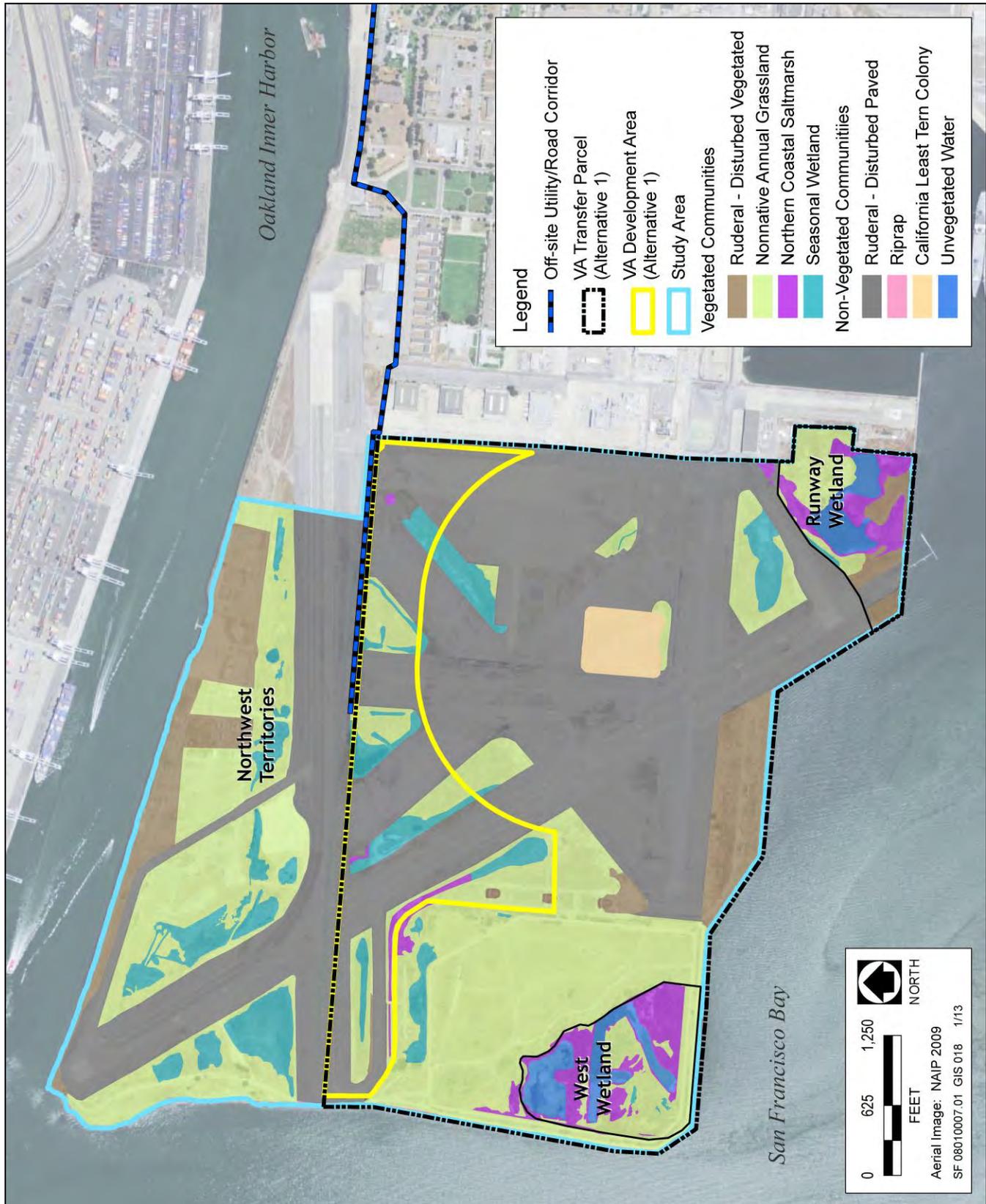
#### **3.1.2 Affected Environment**

Both natural and manmade elements frame the character of the environment. The study area includes the VA Transfer Parcel and the surrounding area, specifically the Alameda Point Northwest Territories development area (see Figures 3.1-1 and 3.1-2). The land comprising the VA Transfer Parcel was created during fill activities in the first half of the twentieth century and is essentially flat and lies just above sea level. The area is surrounded by the San Francisco Bay to the south and west and the Oakland Estuary to the north. The Port of Oakland is situated farther to the north of the estuary. To the east lie developed industrial and urban lands with a row of large aircraft hangars immediately east of the study area. The study area is occupied by former runways and taxiways interspersed with vegetated areas and contains vacant airfield support structures.

#### **Habitat Evaluation**

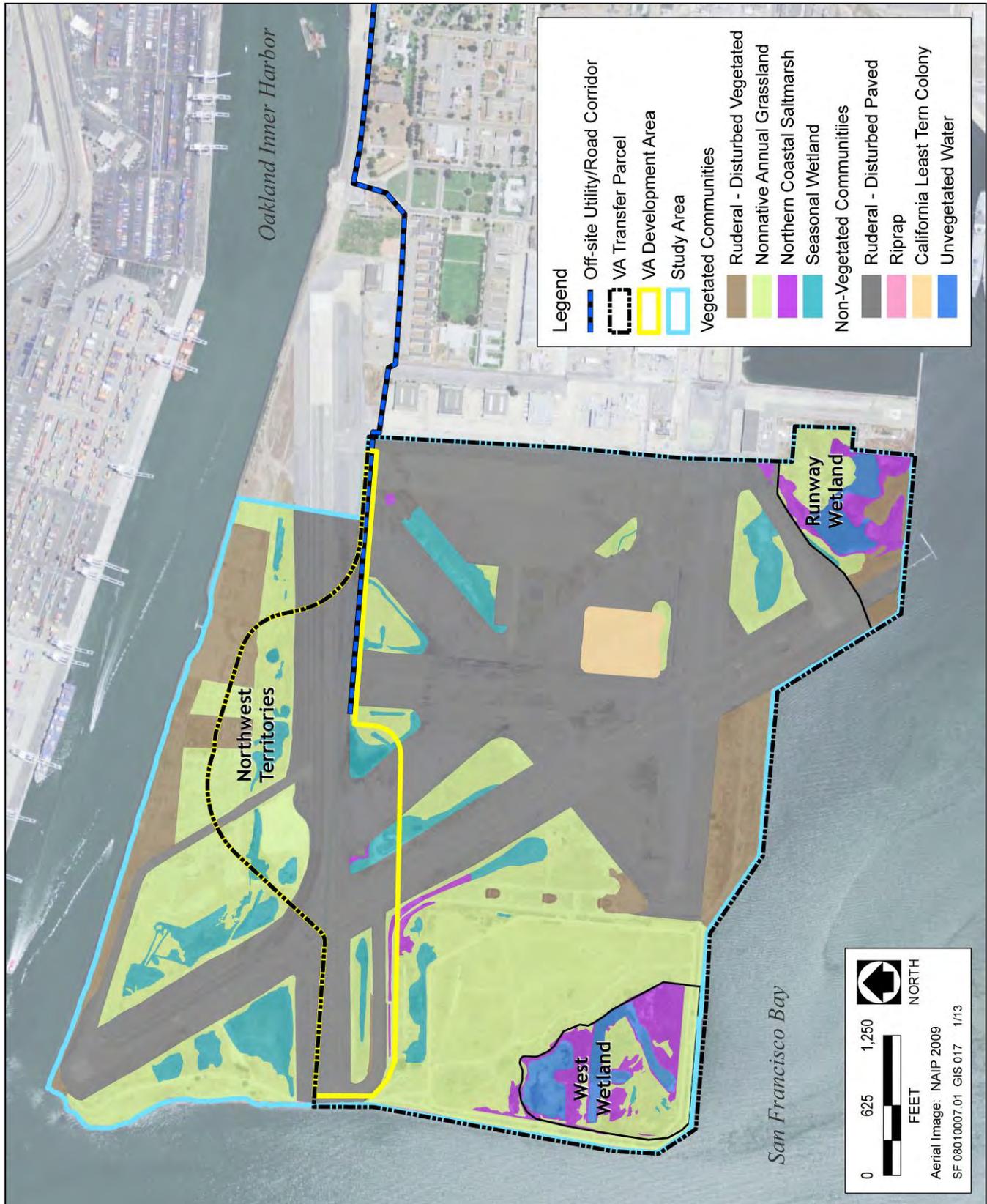
Before fieldwork was conducted, a search was made of the California Department of Fish and Game’s California Natural Diversity Database for the Oakland West U.S. Geological Survey (USGS) 7.5-minute quadrangle and eight adjacent quadrangles. In addition, a species list was obtained from the USFWS for the Oakland West quadrangle including all lands within 5 miles of VA Transfer Parcel, and the California Native Plant Society’s *Inventory of Rare and Endangered Plants* was reviewed for the most recent distribution information for federally listed plant species (AECOM, 2008 and 2011).

Aerial images of the VA Transfer Parcel were examined for potential vegetation and wildlife habitats. Reconnaissance-level surveys of most of VA Transfer Parcel were conducted on February 20 and June 13, 2008.



Source: Data compiled by AECOM in 2012

**Figure 3.1-1: Vegetation and Wildlife Habitat, VA Transfer Parcel (Alternative 1)**



Source: Data compiled by AECOM in 2012

**Figure 3.1-2: Vegetation and Wildlife Habitat, VA Transfer Parcel (Alternative 2)**

In addition, on May 16, 2008, and June 13, 2008, focused botanical surveys were conducted at VA Transfer Parcel, and general biological conditions were noted. All distinct habitat types were identified, and all plant and wildlife species observed or detected by sign were recorded. cursory observations were made with binoculars from the edge of the fenced boundary at the northwest corner of the point on February 20, 2008. In addition, a follow-up survey was conducted on May 21, 2012 to review portions of VA Transfer Parcel added under Alternative 2 and not surveyed in 2008.

### Vegetation and Wildlife Habitat

The vegetation and wildlife habitats located within the VA Transfer Parcel is provided in Table 3.1-1, illustrated in Figures 3.1-1 and 3.1-2, and described below.

**Table 3.1-1: Vegetation and Wildlife Habitat in VA Transfer Parcel (Alternative 1 and 2)**

Type	Alternative 1		Alternative 2	
	VA Transfer Parcel (acres)	VA Development Area (acres)	VA Transfer Parcel (acres)	VA Development Area (acres)
Ruderal - Disturbed (vegetated and paved)	310.2	68.5	353.9	68.1
Nonnative Annual Grassland	154.6	26.6	180.0	32.8
Northern Coastal Salt Marsh	24.1	2.7	24.1	1.1
Seasonal Wetland	26.6	13.2	31.7	10.4
Riprap	4.9	0.0	4.9	0.0
California Least Tern Colony	9.5	0.0	9.5	0.0
Unvegetated Waters	19.5	0.0	19.5	0.0
<b>Total</b>	<b>549.4</b>	<b>111.0</b>	<b>623.6</b>	<b>112.4</b>

#### *Ruderal-Disturbed (Vegetated and Paved)*

The VA Transfer Parcel, and the larger Alameda Point area, sits on fill and has been severely disturbed by cut-and-fill operations and by grading, paving, and development. Ruderal-disturbed habitat is typical of disturbed lands on which the native vegetation has been completely removed by human activities, such as grading, disking, cultivation, or other surface disturbances. Disturbed areas, if left undeveloped, may become re-colonized by exotic species and native species. Native vegetation may ultimately become at least partially restored if the soils are left intact and there is no further disturbance.

Ruderal-disturbed habitat varies in vegetative cover and composition because of, among other causes, the degree of disturbance and vegetation re-colonization. There are two distinct ruderal-disturbed sub-habitats: (1) ruderal-disturbed vegetated habitat containing a greater coverage of vegetation, resulting mainly from soft sand or soil substrate, and (2) ruderal-disturbed paved habitat containing very sparse vegetation and a hard paved substrate. Ruderal-disturbed paved habitat represents the largest habitat, in terms of acreage, within the study area.

Ruderal-disturbed vegetated habitat in the study area is characterized by large expanses of nearly solid iceplant (*Carpobrotus edulis*) to large patches of iceplant interspersed with bare ground. Plant species present in these habitats include iceplant, rosy iceplant (*Drosanthemum floribundum*), and woolly sunflower (*Eriophyllum* sp.). In the upland areas, ruderal-disturbed habitat intergrades with nonnative annual grassland habitat. In these areas, patches of iceplant are interspersed with grasses and forbs typical of the nonnative annual grassland habitat described below.

Wildlife species generally associated with ruderal-disturbed lands include raccoon (*Procyon lotor*), opossum (*Didelphus virginianus*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*). Killdeer (*Charadrius vociferus*) are also often associated with open disturbed substrates. Long-billed curlew (*Numenius americanus*) can be associated with open areas with clumps of vegetation. Wildlife species that feed on seeds or other parts of the vegetation, including finches, goldfinches, sparrows, and a variety of rodents, may occur in this habitat type. Insects present in disturbed habitats provide food for species such as western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), loggerhead shrike (*Lanius ludovicianus*), horned lark (*Eremophila alpestris*), and western fence lizard (*Sceloporus occidentalis*). This community can support a variety of predators, including snakes, various raptors, and red fox (*Vulpes vulpes*). The study area's close proximity to the waters of San Francisco Bay makes areas of ruderal-disturbed paved habitat on site suitable for shorebirds, such as CLT and Caspian tern (*Sterna caspia*), which typically nest on gravel or sandy substrates.

The Alternative 1 VA Transfer Parcel contains approximately 310.2 acres of ruderal-disturbed habitat. Of this area, approximately 68.5 acres are located in the Alternative 1 VA Development Area. The Alternative 2 VA Transfer Parcel contains approximately 353.9 acres of ruderal-disturbed habitat. Of this area, approximately 68.1 acres are located within the Alternative 2 VA Development Area (Table 3.1-1; Figures 3.1-1 and 3.1-2).

### ***Nonnative Grassland***

Nonnative grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland, 1986). Nonnative grasses and weedy annual and perennial forbs, primarily of Eurasian/Mediterranean origin, dominate this vegetation type, probably because of human disturbance. Scattered native grass and wildflower species, representing remnants of the original vegetation, may also be common.

Nonnative annual grassland within the study area exists as a patchwork of perennial and annual grasses that intergrades and forms ecotones with ruderal-disturbed habitat, seasonal wetlands, and salt marsh (Figures 3.1-1 and 3.1-2). Characteristic annual and perennial nonnative grasses found in this habitat on site include tall fescue (*Festuca arundinacea*), velvet grass (*Holcus lanatus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), Italian ryegrass (*Lolium multiflorum*), soft chess (*Bromus hordeaceus*), pampas grass (*Cortaderia selloana*), and annual bluegrass (*Poa annua*). Common nonnative forbs found include cranesbill (*Geranium dissectum*), red-stemmed filaree (*Erodium cicutarium*), vetch (*Vicia* sp.), cut-leaf plantain (*Plantago coronopus*), English plantain (*Plantago lanceolata*), iceplant, curly dock (*Rumex crispus*), and field bindweed (*Convolvulus arvensis*). Although this habitat is dominated by nonnative species, the native species coyote brush, saltgrass (*Distichlis spicata*), pickleweed (*Salicornia virginica*), and alkali heath (*Frankenia salina*) are also present.

Grassland habitats, both native and nonnative, attract reptiles and amphibians such as alligator lizard (*Gerrhonotus* spp.), western fence lizard, and Pacific slender salamander (*Batrachoseps attenuatus*), which feed on invertebrates found in this vegetation community. This habitat also attracts seed-eating and insect-eating species of birds and mammals. California quail (*Callipepla californica*), mourning dove, and western meadowlarks are a few granivores that nest and forage in grasslands. Insectivores such as the western scrub-jay (*Aphelocoma californica*), barn swallow (*Hirundo rustica*), and northern mockingbird (*Mimus polyglottos*) use the habitat for foraging only. Grasslands are important foraging grounds for insectivorous bats such as myotis (*Myotis* spp.) and pallid bats (*Antrozous pallidus*).

A large number of other mammal species, such as the California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), Beechey (California) ground squirrel (*Spermophilus beecheyi*), red fox, striped skunk (*Mephitis mephitis*), and black-tailed jackrabbit (*Lepus californicus*), also forage and nest or den within grasslands. Small rodents attract raptors such as owls, which hunt at night, as well as day-hunting raptors such as the red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*) among others. Some amphibian species that breed in adjacent ponds or wetlands may also aestivate (or spend the summer) in small mammal burrows within portions of these habitats.

Alternative 1 VA Transfer Parcel contains approximately 154.6 acres of nonnative annual grassland habitat. Of this area, approximately 26.6 acres are located in the Alternative 1 VA Development Area. The Alternative 2 VA Transfer Parcel contains approximately 180.0 acres of nonnative annual grassland habitat. Of this area, approximately 32.8 acres are located in the Alternative 2 VA Development Area (Figures 3.1-1 and 3.1-2).

### ***Northern Coastal Salt Marsh***

Northern coastal salt marsh consists of highly productive, herbaceous, and suffrutescent perennials up to 4 feet tall. Usually found along sheltered margins of bays, lagoons, and estuaries, this plant community develops a dense to moderate cover. Subject to continuously fluctuating salinity and water levels, northern coastal salt marsh is typically dominated by a low diversity of salt tolerant hydrophytes.

Northern coastal salt marsh is located in a thin strip on the northern edge of the Northwest Territories along the Oakland Inner Harbor, the western edge of the VA Transfer Parcel area, and the Runway Wetland area (Figures 3.1-1 and 3.1-2). On site the salt marsh is dominated by pickleweed (*Salicornia pacifica*) and saltgrass. Characteristic nonnative species include cranesbill, red-stemmed filaree, Mediterranean barley, bird's-foot trefoil, red sandspurry (*Spergularia rubra*), and bull thistle (*Cirsium vulgare*), among others. Northern coastal salt marsh may be considered Waters of the United States.

Both migratory and resident bird species utilize this habitat. Resident species like the American avocet (*Recurvirostra americana*) and black necked stilt (*Himantopus mexicanus*) use northern coastal salt marsh for nesting and breeding, while western sandpipers (*Calidris mauri*), marbled godwits (*Limosa fedoa*), and long-billed dowitcher (*Limnodromus scolopaceus*) are migratory shorebirds that use salt marsh habitat for resting and feeding. The savannah sparrow (*Passerculus sandwichensis*) nests in pickleweed and peripheral halophytes in upper marsh and upland transitional zones and the salt marsh common yellowthroat (*Geothlypis trichas sinuosa*) nests in tidal and nontidal brackish and freshwater marshes primarily in the South Bay, south of the project site.

Non-breeding birds, including larger shorebirds, swallows, blackbirds, and other species roost in large numbers in salt marsh, while several species of ducks, and in a few locations, herons and egrets, also nest in salt marshes. Rails nest in cordgrass, denser stands of pickleweed, and marsh gumplant, particularly in the lower marsh zone where numerous small tidal channels are present, in both salt and brackish tidal marshes. The California vole (*Microtus californicus*) occurs here as well, and is often the most common small mammal. Salt marshes may also be utilized by fishes for breeding, rearing, and foraging for numerous insects and aquatic invertebrates.

The Alternative 1 VA Transfer Parcel contains approximately 24.1 acres of northern coastal salt marsh. Of this area, approximately 2.7 acres are located in the Alternative 1 VA Development Area. The Alternative 2 VA Transfer Parcel contains approximately 24.1 acres of northern coastal salt marsh habitat. Of this area, approximately 1.1 acres are located in the Alternative 2 VA Development Area (Table 3.1-1; Figures 3.1-1 and 3.1-2).

### ***Seasonal Wetland***

Seasonal wetlands support annual and perennial native and nonnative wetland indicator plant species. This plant association typically resembles a wetland community only following the wet season; it dries up rapidly with the onset of summer and the wetland indicator species go dormant. During the dry season, such sites may not be readily recognizable as wetland species go to seed and typical upland grasses and forbs become established.

Within the VA Transfer Parcel, seasonal wetlands occur where water ponds and soils remain saturated during the growing season. Seasonal wetlands are found primarily in the Main Runway Area between the runways of the former airfield, in the southeast corner (i.e., Runway Wetland), and in the southwest corner (i.e., West Wetland) of the VA Transfer Parcel (Figures 3.1-1 and 3.1-2). The approximately 32-acre Runway Wetland encompasses two perennial ponds, surrounded by salt marsh and ruderal-disturbed lands. These two ponds are hydrologically connected to the San Francisco Bay through three openings in the southern rock seawall, and are connected to each other during periods of elevated water levels. The West Wetland is comprised of a linear, channel-like pond to the south and a second pond to the north, both of which are perennial. A strip of land ranging from 100- to 150-foot wide lies adjacent to the seawall, and separates the ponds from the Bay (Battelle and BBL, Inc. 2008 and Tetra Tech 2004). Both the Runway and West Wetland are located outside of the VA Development Area.

Seasonal wetlands are also located outside the northern border of the VA Transfer Parcel area within Alameda Point's Northwest Territories (Figures 3.1-1 and 3.1-2). These wetlands form where water ponds and soils remain saturated during the growing season and are found mainly in the tarmac area between the runways of the former airfield.

Plant species found in seasonal wetlands on site include nonnative species such as tall fescue, velvet grass, Bermuda grass, Mediterranean barley, curly dock, annual bluegrass, Italian ryegrass, bird's-foot trefoil (*Lotus corniculatus*), and loosestrife (*Lythrum hyssopifolia*). Native species present include common nut-sedge (*Cyperus eragrostis*), Baltic rush (*Juncus balticus*), toad rush (*Juncus bufonius*), rusty popcorn-flower (*Plagiobothrys nothofulvus*), and wooly marbles (*Psilocarphus* sp.). Seasonal wetlands may be considered Waters of the United States.

Though seasonal wetlands found within the VA Transfer Parcel are of low to medium quality, well developed seasonal wetland habitat can be very productive for wildlife in that they may offer water, food, and cover for a

variety of species. Amphibians such as pacific treefrog (*Pseudacris regilla*) commonly occur in this habitat. Red-winged blackbird, common yellowthroat (*Geothlypis trichas*), and killdeer often use these areas for foraging and nesting. Snowy egret (*Egretta thula*), green heron (*Butorides virescens*), black-crowned night-heron (*Nycticorax nycticorax*), and mallard (*Anas platyrhynchos*), as well as numerous migrating shorebirds also forage in this habitat. Mammals commonly present in this habitat include California meadow vole, raccoon, striped skunk, and gray fox (*Urocyon cinereoargenteus*). This habitat may provide foraging and drinking areas for aerial and ground feeding insectivorous bats, such as *Myotis* species.

The Alternative 1 VA Transfer Parcel contains approximately 26.6 acres of seasonal wetland habitat. Of this area, approximately 13.2 acres are located in the Alternative 1 VA Development Area. The Alternative 2 VA Transfer Parcel contains approximately 31.7 acres of seasonal wetland habitat. Of this area, approximately 10.4 acres are located in the Alternative 2 VA Development Area (Table 3.1-1; Figures 3.1-1 and 3.1-2). Because of their location on a former airfield, these wetland areas are dispersed in a matrix composed of more asphalt than grassland or upland; therefore, these wetlands are considered medium to low quality. See Appendix C (Wetland Delineation and Preliminary Jurisdictional Determination Report) for more information on study area seasonal wetlands (AECOM, 2012).

### **Riprap**

Riprap is a non-natural permanent cover of rock, concrete, or other material, placed to protect shoreline. Riprap absorbs and deflects the energy of the waves and the gaps in between the riprap help slow water flow. This helps protect the land while reducing the erosion and scour of the shoreline edge.

There is very little or no vegetation in this habitat, although it is a site on which bay algae, other organic debris, flotsam, and jetsam collect. This habitat may be used by invertebrates and smaller mammals and birds for cover and foraging. Larger birds—such as California brown pelican and double-crested cormorant (*Phalacrocorax auritus*)—may utilize the rock riprap for roosting. On the aquatic side, subtidal portions of the riprap may be used as a refuge and grazing substrate for fishes and other aquatic animals.

Approximately 4.9 acres of riprap are found in the Alternative 1 and Alternative 2 VA Transfer Parcels. As shown in Figures 3.1-1 and 3.1-2, no riprap is located in the VA Development Area under Alternative 1 or Alternative 2.

### **California Least Tern Colony**

The California Least Tern (CLT) (*Sternula antillarum browni*), federally listed as endangered, nests and roosts on a ruderal-disturbed paved portion of the former NAS Alameda airfield area and forages in the adjacent open water (Figures 3.1-1 and 3.1-2). Its primary nesting area is an approximately 9.5-acre fenced section on the southern portion of the former airfield area in the VA Transfer Parcel. This area, known as the CLT colony, is continually managed to promote its use by CLT, including the regular removal of weedy vegetation and the introduction of gravel, seashells, and other nesting area substrates. The CLT was first documented nesting at the former NAS Alameda in 1976, while the air station and its runways were still active. Since that time and the closure of NAS Alameda, the colony has grown to be the largest in the San Francisco Bay Area. As seen in Figures 3.1-1 and 3.1-2, the existing CLT is not located in the VA Development Area under either Alternative 1 or Alternative 2, and a buffer from the boundary of this nesting colony (i.e., the fence) has been proposed to limit human activity close to

the colony. No CLT nesting is known to occur in the VA Development Area. For an additional discussion on the CLT, see Section “Federally Listed Animal Species” below.

### ***Unvegetated Waters***

Unvegetated waters are the portions of permanent or intermittent water bodies such as lakes and pools, springs, canals, ponds, rivers and streams, with sparse to no vegetation cover. These areas provide refuge and foraging habitat to a variety of birds migrating through and inhabiting Alameda Point.

Unvegetated waters are found in the VA Transfer Parcel Runway Wetland and West Wetland areas indicated on Figures 3.1-1 and 3.1-2 as well as one small area of Oakland Estuary that encroaches within the straight-line boundary of the study area north of the Northwest Territories. At the Runway Wetland there are two perennial open water areas associated with the salt marsh and they are connected during high water. There are three openings in the riprap that connect the ponds to the bay. Within the West Wetland, the canal-shaped pond was created by removing dredged materials to cover the landfill or disposal area. The northernmost pond is connected to the Bay by a culvert and both ponds are connected when inundated during higher tides.

In the Alternative 1 and Alternative 2 VA Transfer Parcels, approximately 19.5 acres of unvegetated waters are located in the Runway Wetland and the West Wetlands. These areas contain seasonal or perennial ponding water that may be considered Waters of the United States. As seen in Figures 3.1-1 and 3.1-2, no unvegetated waters are located in the VA Development Area under either Alternative 1 or Alternative 2.

### **Off-Site Utility/Road Corridor**

An off-site utility/road corridor would be constructed to the east of the VA Development Area and would be located outside the VA Transfer Parcel on property located within Alameda Point. The off-site corridor would provide vehicle, pedestrian, and bicycle access and provide a utility right-of-way to the VA Development Area from the City of Alameda and is proposed to run along West Redline Avenue and connect to Main Street. The off-site corridor would encompass approximately 6 acres of property outside of the VA Transfer Parcel. This area is comprised of developed urban land consisting of former NAS Alameda buildings (currently utilized for commercial, administrative, and office uses), paved surface roads, sidewalks, managed lawns, non-native vegetation, recreational parks, and street trees. The off-site utility/road corridor does not contain any sensitive habitat areas. The existing habitat only supports a few avian species and other common terrestrial wildlife that are common in disturbed and urban settings.

### **Adjacent Marine Environment**

The open waters adjacent to the study area are typical of San Francisco Bay waters in general and have mainly silty mud and sand substrates that are naturally not more than 25 feet deep, although dredging operations for shipping operations in the Oakland Inner Harbor and Alameda pier area may deepen water to more than 50 feet. The San Francisco Bay is an estuarine system with a mixture of saline oceanic waters from the Pacific Ocean and outflow of fresh water from both local watersheds and distant watersheds, such as those from Coyote Creek and Guadalupe Rivers to the south and the Petaluma, Napa, Sacramento, and San Joaquin Rivers to the north. Vegetated habitats in the San Francisco Bay include sublittoral kelp populations and eelgrass (*Zostera marina*) beds.

Eelgrass beds exist both north of Alameda Point along the northern edge of the Oakland Inner Harbor and adjacent to the Alameda Point area at the southeastern terminus of the breakwater. Benthic, or bottom-dwelling, fauna in the open waters of San Francisco Bay include a large variety of invertebrates, such as polychaetes (i.e., marine worms), crustaceans (e.g., crabs, amphipods, and isopods), mollusks such as clams and mussels, echinoderms, and fishes such as halibut and sole. Pelagic organisms also are widely observed and include planktonic organisms (e.g., phytoplankton, copepods, and larval animals), crustaceans (e.g., shrimps and mysids), and many bony fish and shark species. These lower taxa provide a prey base for the higher taxa, such as marine mammals and birds, which also are commonly present in this environment. The VA Transfer Parcel does not have any marine habitats; however, the western and southern boundaries of the parcel border San Francisco Bay. The VA Development Area does not border any marine habitats.

## **Federally Listed Threatened and Endangered Species**

### ***Federally Listed Plant Species***

Based on a review of California Department of Fish and Game's (CDFG) California Natural Diversity Database (CDFG 2011), the California Native Plant Society's *Inventory of Rare and Endangered Plants* (CNPS 2001, 2010), USFWS species list (USFWS 2010), and knowledge of the region, it was determined that 16 federally listed plant species have been recorded as occurring within 5 miles (i.e., Oakland West USGS 7.5-minute quadrangle and 8 surrounding quadrangles) of the Proposed Action. A list of the 16 federally listed plant species is presented in Appendix B (Biological Resources Supporting Information). Based on a review of available documentation and the results of reconnaissance and focused botanical surveys conducted during the species blooming periods in 2008, all 16 of the plant species are presumed absent from the VA Transfer Parcel or are not expected to occur due to a lack of suitable habitat and are not evaluated further.

The VA Transfer Parcel and VA Development Area under both Alternative 1 and Alternative 2 does not contain any designated or proposed critical habitat or federally listed plant species.

### ***Federally Listed Animal Species***

Twenty six federally listed terrestrial (i.e., amphibians, reptiles, birds, mammals, and insects) and marine (i.e., fish, crustaceans, and mammals) animal species have been recorded as occurring within 5 miles (i.e., Oakland West USGS 7.5-minute quadrangle and 8 surrounding quadrangles) of the Proposed Action. Based on a review of available documentation, including the results of focused surveys conducted for the Proposed Action and by local groups, 12 of the federally listed terrestrial and all 10 of the marine animal species are presumed absent from the VA Transfer Parcel or are not expected to occur due to a lack of suitable habitat or lack of nearby source populations or suitable connectivity to the project site from presently extant populations and are not evaluated further. A list of the federally listed terrestrial and marine animal species occurring within 5 miles of the Proposed Action is presented in the Biological Assessment in Appendix B (Biological Resources Supporting Information).

The following four federally listed terrestrial animal species are known to occur on or in the vicinity of the Proposed Action:

### ***California Least Tern***

As described in the “Vegetation and Wildlife Habitat Types” section above, the CLT, federally listed as endangered, nests and roosts on a ruderal-disturbed paved portion of the former NAS Alameda airfield area (Figures 3.1-1 and 3.1-2) and forages in the adjacent open water. Its primary nesting area (CLT colony) is an approximately 9.5-acre fenced section on the southern portion of the former airfield area in the VA Transfer Parcel. The existing CLT colony is not located in the VA Development Area under either Alternative 1 or Alternative 2.

### ***California Clapper Rail***

The California clapper rail (*Rallus longirostris obsoletus*), federally listed as endangered, has been observed in the *Spartina alterniflora* (and hybrid with *S. foliosa*) and pickleweed-dominated marshes 3 to 4 miles away (to the north and south) as recently as 2008. However, they have never been documented within the VA Transfer Parcel despite twice-monthly Friends of Alameda Wildlife Refuge (FAWR) bird counts which began in the spring of 2004 and biological surveys conducted within the VA Transfer Parcel. Therefore, the likelihood that California clapper rails would occur on site is extremely low.

### ***Salt Marsh Harvest Mouse***

Although suitable habitat is present for salt marsh harvest mouse (*Reithrodontomys raviventris*), federally listed as endangered, within the Runway Wetland and West Wetland areas, trapping surveys have resulted in negative findings (Navy, 1995, 1997; Bias and Morrison, 1999; Harvey, 2009). The probability of dispersal onto the VA Transfer Parcel is extremely low given the small dispersal range of the species and the potential for salt marsh harvest mouse to occur on site is extremely low.

### ***Western Snowy Plover***

The western snowy plover (*Charadrius alexandrinus nivosus*), federally listed as threatened, has been observed in past years on Bay Farm Island near the Oakland Airport (CDFG 2010); the last recorded observation was in 1979. Since then, western snowy plovers have been observed within the VA Transfer Parcel during the bird count surveys by FAWR biologists. Since the inception of the twice-monthly FAWR bird counts in the spring of 2004, one western snowy plover was observed in July of 2004 (Hurt 2006) and one in September of 2006 (Euing 2007). Western snowy plovers were observed nesting within the California Least Tern colony during at least 2 years in the early 1980s (Feeney 1994, Feeney and Collins 1993, USN 1999, USFWS 2000). Given the past and recent occurrences within the VA Transfer Parcel and presence of suitable habitat, the western snowy plover is likely to continue to use the action area as a stopover site during migration, and potentially, as a nesting location. Suitable nesting habitat is located within the CLT colony and other tarmac areas, and suitable foraging habitat occurs in the intertidal mudflats of the Runway Wetland and the West Wetland.

The California brown pelican (*Pelecanus occidentalis*) uses Breakwater Island (located south of the Runway Wetland) as a winter roost. This species was formerly listed as endangered but has since recovered and was officially delisted on November 17, 2009 (USFWS, 2009). For this reason, the California brown pelican is not discussed further in this EA.

The VA Transfer Parcel, under both Alternative 1 and Alternative 2, does not contain any designated or proposed critical habitat for federally listed wildlife species. The San Francisco Bay adjacent to Alameda Point is designated critical habitat for the Central California Coast steelhead (*Oncorhynchus mykiss*) District Population Segments (DPS) and the North American green sturgeon southern (*Acipenser medirostris*) DPS.

### Common Wildlife

The VA Transfer Parcel is composed of developed and disturbed land that was previously utilized for military, industrial, and aircraft uses. The parcel is located entirely on manmade lands (i.e., fill material imported during the early to mid-twentieth century) and the majority of the parcel is situated on the inactive runways, taxiways, and other paved aircraft areas of the former NAS Alameda. The existing habitat only supports a few avian species and other common terrestrial wildlife that are common in disturbed and urban settings. Mammals recorded at the VA Transfer Parcel include striped skunks, Norway rats (*Rattus norvegicus*), Virginia opossums, gray foxes (*Urocyon cinereoargenteus*), red foxes, raccoons, Beechey ground squirrel, black-tailed hare, feral dogs (*Canis lupus familiaris*), feral cats (*Felis silvestris catus*), and a colony of domestic rabbits (*Oryctolagus cuniculus*). Western fence lizard is the only reptile recorded on site.

Raptor species documented on site include peregrine falcon (*Falco peregrinus*), Prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), red-tailed hawk, northern harrier, white-tailed kite, turkey vulture (*Cathartes aura*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), and short-eared owl (*Asio flammeus*).

Waterfowl and shorebird species recorded include Canada goose (*Branta Canadensis*), American coot (*Fulica Americana*), mallard, bufflehead (*Bucephala albeola*), lesser scaup (*Aythya affinis*), killdeer, western gull (*Larus occidentalis*), Wilson's snipe (*Gallinago delicate*), and willet (*Catoptrophorus semipalmatus*). Other bird species observed include loggerhead shrike, common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), Horned larks, western meadowlark, black phoebe (*Sayornis nigricans*), European starling, Brewer's blackbird, mourning dove, white-crowned sparrow (*Zonotrichia leucophrys*), rock dove (domestic pigeon, *Columba livia*), and house finch (*Carpodacus mexicanus*).

### Habitat Linkages and Corridors

The VA Transfer Parcel is located within the far southwestern end of the former NAS Alameda property. Access to the site is limited to the public and is confined by urban development and the waters of the San Francisco Bay. Migration (i.e., habitat linkages and corridors) through the area is generally feasible only for bird species. The VA Transfer Parcel and its surrounding area serves as a migratory corridor for birds moving through the San Francisco Bay Area, including CLT (see above), which migrates to the western United States. In addition, parcel, contains suitable habitat, primarily the wetland habitats in the south and western portion of the parcel, which serves as a migratory linkage for many bird species. Although the Alternative 1 and Alternative 2 VA Development Areas are not located in the confined CLT colony, the area serves as a migratory stopover for other native birds traveling north-south along California's coast.

### **3.1.3 Environmental Consequences**

#### **Assessment Methods**

The impact analysis compares projected future conditions to the affected environment, and identifies potential construction or operational impacts that can reasonably be anticipated to be caused by or result from the Proposed Action and alternatives.

#### **Federal Endangered Species Act**

On August 30, 2011, the Navy and VA submitted a Biological Assessment (BA) to the USFWS and requested formal Section 7 consultation, pursuant to Section 7(a)(2) of the ESA, for the Proposed Action, which at the time was the project as described under Alternative 1 in this EA. Following submission of the BA, the USFWS notified the Navy and VA on September 29, 2011 that they were unable to initiate formal consultation, citing a desire for additional information. The USFWS, Navy, and VA then met numerous times to discuss the additional information needs as well as concerns regarding potential impacts of the project on the CLT. As a result of these discussions, the USFWS, Navy, VA, City of Alameda, and East Bay Regional Parks District (EBRPD) worked collaboratively to revise the project to minimize potential adverse affects of the Proposed Action on the CLT. This collaborative process resulted in the development of Alternative 2 (Preferred Alternative), which moved the proposed VA Development Area north, farther away from the CLT colony.

Following the development of the new alternative, the Navy and VA on May 24, 2012 requested formal Section 7 consultation for the proposed project as re-defined under Alternative 2. On August 29, 2012, the Navy and VA received a Biological Opinion (BO) from the USFWS concurring with the Navy and VA's determination on the Proposed Action (Preferred Alternative 2) (USFWS, 2012). More information on the BA and BO, including determination of effect and commitments to avoid and minimize potential impacts to the CLT are included below and in Appendix B (Biological Resources Supporting Information).

#### **Alternative 1**

##### ***Construction***

##### ***Vegetation and Wildlife Habitat***

Full build-out of the Alternative 1 VA Development Area would result in the modification or loss of approximately 20% (111.0 acres) of the existing vegetation and wildlife habitat area within the VA Transfer Parcel. The majority (86%) of the VA Development Area is comprised of previously disturbed and developed areas consisting of ruderal-disturbed vegetated and paved habitat (68.5 acres) and nonnative annual grassland (26.6 acres) situated on the former runways, taxiways, and aircraft parking areas of the former NAS Alameda. The remaining lands affected from development would be northern coastal salt marsh (2.7 acres) and seasonal wetland (13.2 acres) habitat. A summary of the vegetated and wildlife habitat potentially affected by Alternative 1 is included in Table 3.1-2.

**Table 3.1-2: Potential Effects - Vegetation and Wildlife Habitat in VA Transfer Parcel (Alternative 1)**

Type	VA Transfer Parcel		VA Development Area		
	Acres	Percent Total Area <sup>1</sup>	Acres	Percent Total Area <sup>1</sup>	Percent of Total Vegetation and Habitat Type within VA Transfer Parcel
Ruderal - Disturbed (vegetated and paved)	310.2	57%	68.5	62%	22%
Nonnative Annual Grassland	154.6	28%	26.6	24%	17%
Northern Coastal Salt Marsh	24.1	4%	2.7	2%	11%
Seasonal Wetland	26.6	5%	13.2	12%	50%
Riprap	4.9	<1%	0	0%	0%
California Least Tern Colony	9.5	2%	0	0%	0%
Unvegetated Waters	19.5	3%	0	0%	0%
Total	549.4	-	111.0	-	20%

Note:

<sup>1</sup> Percent calculations are approximate.

Based on the habitat types present and the animal species generally found in the area, it is anticipated that impacts on ruderal-disturbed and nonnative annual grasslands within the VA Development Area would not result in adverse effects to habitat or vegetation, as they are generally sparse and are marginal habitat for local species.

Approximately 13.2 acres of seasonal wetland and northern coastal salt marsh (2.7 acres) would be permanently impacted, an adverse impact, by the buildout of the VA Development Area under Alternative 1 (see Appendix C [Wetland Delineation and Preliminary Jurisdictional Report]). These areas provide more suitable habitat for local plants and wildlife, especially local birds than the ruderal-disturbed and nonnative annual grassland habitats. However, as previously mentioned, the wetland and marsh habitat is located within a formerly developed area situated on the former NAS Alameda airfield and areas are dispersed within a matrix composed of more asphalt than grassland or upland. While the wetlands are generally well developed within that matrix, native species are few and overall species diversity and structural diversity is low. Therefore, these wetlands are considered medium to low quality.

The northern coastal salt marsh and seasonal wetlands within the VA Development Area may be considered Waters of the United States and their disturbance would likely be subject to a CWA Section 404 permit prior to the start of construction. As part of the permitting process, the VA would prepare a Section 404(b)(1) analysis in accordance with 40 CFR 230 to demonstrate that the Proposed Action represents the least environmentally damaging practicable alternative. Compensatory mitigation would be required to ensure no net loss to wetlands. Any compensatory mitigation proposed to offset unavoidable impacts to aquatic resources must conform to regulations specified in 40 CFR 230 ([http://www.epa.gov/owow/wetlands/pdf/wetlands\\_mitigation\\_final\\_rule\\_4\\_10\\_08.pdf](http://www.epa.gov/owow/wetlands/pdf/wetlands_mitigation_final_rule_4_10_08.pdf)). Compensatory mitigation can be achieved through four methods: restoration of a previously existing wetland or other aquatic site, enhancement of an existing aquatic site's functions, creation of a new aquatic site, or preservation of an existing aquatic site. The mechanisms for providing compensatory mitigation are permittee-responsible compensatory mitigation, mitigation banks, and in-lieu fee mitigation.

USACE is responsible for determining the appropriate form and amount of compensatory mitigation required for loss of Waters of the United States. Generally, depending on the quality of wetlands, mitigation is provided at a minimum 1:1 ratio; that is, for every 1 acre affected, 1 acre of mitigation is provided.

To reduce the adverse impact (i.e., direct removal of, placement of fill into, or hydrological interruption of federally protected wetlands resulting in a net loss) to the northern coastal salt marsh and seasonal wetlands habitat within the VA Development Area to less than significant, the VA will implement **Mitigation Measure BIO-1**. With implementation there would be no significant impact to northern coastal salt marsh and seasonal wetlands habitats.

### **Mitigation Measure BIO-1**

*The Proposed Action is within the USACE San Francisco District's San Francisco Bay Wetland Mitigation Bank (Bank). Nontidal/seasonal wetland and other waters within the service area may be eligible to use the Bank for mitigation on a case-by-case basis (i.e., for projects with impacts to nontidal/seasonal wetlands or other waters that may have been historic tidal wetlands or other waters). VA proposes a replacement ratio of 1:1 and shall consult with USACE to determine if a Bank, in-lieu fee, or permittee-responsible mitigation is the appropriate mitigation. Should mitigation credits be unavailable at the Bank to suit the needs of the project, VA shall seek out other methods to mitigate permanent impacts to nontidal/seasonal wetlands in consultation with the USACE.*

Direct impacts to existing vegetation and wildlife habitat areas would be limited to the VA Development Area. Under Alternative 1, the remaining portion of the VA Transfer Parcel, approximately 438 acres, including the existing CLT colony and adjacent ruderal disturbed, nonnative annual grassland, northern coastal salt marsh, and the West and Runway Wetlands, would be left undeveloped open space, and be preserved for future use of wildlife. In addition, existing paved surfaces (e.g., runways, taxiways, aircraft parking areas) would be removed from the VA Development Area and areas outside of building and structure footprints would be landscaped, increasing pervious surface area, adding managed vegetation, and improving habitat for common wildlife. The 438 acres of undeveloped open space and landscaped portions of the VA Development Area would be a beneficial impact.

There is the potential for indirect adverse effects from construction-related activities including sources of noise (e.g., construction traffic and the operation of construction equipment) and increased human presence during construction to spill over into the remaining VA Transfer Parcel, including the CLT colony. To minimize and avoid adverse effects on the CLT, the VA, will implement avoidance and minimizations measures to control noise and other potential adverse effects that would be expected during construction. For a more detailed discussion of potential effects to the CLT colony see section "Federal Listed and Threatened Species" below. Given these conditions, construction-related activities would not result in a significant adverse indirect impact to the CLT colony and other vegetated and wildlife habitats.

Alternative 1 would result in the modification or loss of the existing vegetation and wildlife habitat area in an area limited to the VA Development Area (20% of the total VA Transfer Parcel). The majority of this area is comprised of marginal habitat (i.e., ruderal disturbed and nonnative annual grassland). To reduce adverse impacts to northern coastal salt marsh and seasonal wetlands located within the VA Development Area, the VA will implement mitigation (i.e., **Mitigation Measure BIO-1**). In addition, habitat within the VA Development Area

would be improved with the introduction of managed landscaping and the majority of the VA Transfer Parcel (80%), including the CLT colony and other existing wetlands (e.g., Runway and West Wetlands) would be left undeveloped open space. Therefore, Alternative 1 would not have a significant adverse construction-related impact on vegetated and wildlife habitat.

### **Off-Site Utility/Road Corridor**

Construction of the off-site utility/road corridor would result in the installation of below-grade utilities and improvements to the existing paved surface roads. No sensitive habitat or protected plant or animal species are known to occur within this area, and therefore construction activities would not affect any sensitive biological resource and would only disturb an already densely developed urban environment. Alternative 1 would have no significant impact to biological resources within the off-site corridor.

### **Adjacent Marine Environment**

No open water is located in the Alternative 1 VA Transfer Parcel, the VA Development Area is set back from the nearest open waters (i.e., Oakland Inner Harbor and San Francisco Bay), and no in-water work is proposed as part of the Proposed Action. Furthermore, development of a SWPPP (see Section 3.2 [Water Resources]) would minimize the potential for dust, accidental hazardous materials releases, and runoff during construction activities, thereby minimizing potential indirect effects on the adjacent marine environment. Construction activities would not have a significant impact on the adjacent marine environment.

### **Federally Listed Threatened and Endangered Species**

#### *Federally Listed Plant Species*

As previously noted, the VA Transfer Parcel does not contain any designated or proposed critical habitat or federally listed plant species. Therefore, Alternative 1 would have no construction-related impact to federally listed or designated or proposed plant species and habitat.

#### *Federally Listed Animal Species*

Two federally listed species, the CLT and western snowy plover, occur or have the potential to occur within the VA Transfer Area or surrounding area and/or be affected by the Proposed Action. CLT return each year to a fenced colony within the southern portion of the closed runway of the former NAS Alameda, and are considered to be present and breeding on site. The western snowy plover occurs occasionally within the VA Transfer Area or surrounding area, with the most recent sighting in September 2006. Although the VA Transfer Parcel contains suitable nesting habitat for western snowy plover, they have not been documented nesting on site since the 1980s. Regardless, western snowy plover is considered to have the potential to use the VA Transfer Parcel for both nesting and as a temporary stopover during migration. Because of their sporadic presence on-site, implementing Alternative 1 may affect, but is not likely to adversely affect western snowy plover throughout the life of the project. Due to their presence in the VA Transfer Parcel, implementing Alternative 1 may affect, and is likely to adversely affect CLT throughout the life of the project. However, no direct loss of CLT nesting habitat would occur. Potential construction-related effects on the CLT and western snowy plover are discussed below. In

addition, the analysis includes two other federally listed animal species, California clapper rail and salt marsh harvest mouse, which have been known to occur only in the areas surrounding the VA Transfer Parcel.

The VA Transfer Parcel does not contain any federally designated or proposed critical habitat. However, the waters of San Francisco Bay immediately adjacent to the VA Transfer Parcel (western and southern boundaries) fall within designated critical habitat for the Central California Coast steelhead DPS and the North American green sturgeon southern DPS. Because there is no open water within the VA Transfer Parcel and no in-water work proposed as part of the VA's Proposed Action, there would be no direct effects to critical habitat for listed fish species. The project would employ standard prevention measures—such as a SWPPP, silt fences, and construction Best Management Practices—that would ensure there are no indirect effects to critical habitat within San Francisco Bay by minimizing noise, dust, and runoff. Therefore, Alternative 1 would have no construction-related impact (i.e., no effect) to federally designated or proposed habitat.

The Navy and VA, in a BA submitted to the USFWS on August 30, 2011 requesting formal consultation under Section 7 of the ESA, and determined that the effects of Alternative 1 “may affect, and is likely to adversely affect” the CLT and “may effect, but is not likely to adversely affect” the western snowy plover. As identified above in section “Assessment Methodology”, the USFWS notified the Navy and VA that they were unable to initiate formal consultation on September 29, 2011. The USFWS, Navy, and VA then met numerous times to discuss concerns regarding potential impacts of the project on the CLT. As a result of these discussions, the USFWS, Navy, VA, City of Alameda, and EBRPD worked collaboratively to revise the project to minimize potential adverse affects of the Proposed Action on the CLT. This collaborative process resulted in the development of Alternative 2 (Preferred Alternative), which moved the proposed VA Development Area north, farther away from the CLT colony. Therefore, the Navy and VA did not receive concurrence from USFWS on their August 30, 2011 affects determination for Alternative 1.

Appendix B includes copies of the consultation letters. A description of the potential effects to the CLT and western snowy plover and a summary of the avoidance and minimization measures that VA would implement to minimize adverse impacts to the CLT and western snowy plover is provided below. If VA were to proceed with Alternative 1, VA would complete formal consultation under Section 7 of the ESA as is legally required. Subsequent NEPA analysis would also be required to incorporate the findings and conclusions of the Section 7 formal consultation into the biological resources analysis for Alternative 1.

### **California Least Tern**

Alternative 1 construction activities would take place within the VA Development Area, approximately 1,400 feet from the CLT colony. The remaining VA Transfer Parcel (approximately 438 acres), including the CLT colony would be left undeveloped open space. No direct construction-related activities would occur outside the VA Development Area and would not result in the modification or direct disturbance of the CLT colony or the habitat immediately surrounding it. In addition, project construction would have no direct effects on CLT nesting or foraging habitat located outside the VA Transfer Parcel and VA Development Area.

Direct effects to the CLT from construction activities would primarily consist of increased noise and vibration, construction traffic, and operation of construction equipment, which could have an effect on the CLT colony. In addition, increased human activities associated with construction may increase habitat for predators of the CLT. To minimize or avoid any potential direct effects, including noise and vibration from construction activities

within the VA Development Area, to the CLT, primary grading and site preparation activities would not occur during the CLT breeding season (April 1 through August 15). Additionally, a setback distance (approximately 1,400 feet) from the colony has been included that would limit potential impacts to nesting related to increased noise, lighting, or human presence. This setback area would be delineated using temporary construction fencing and would be overseen by approved biological monitors during the breeding season and remain in place during the non-breeding season. During the CLT breeding/nesting season, construction activities would be restricted to those activities that would not result in an increase in the ambient noise level and vibration in and around the CLT colony on the site. Pile driving and pavement demolition activities requiring the use of impact tools (e.g., hydraulic breakers, jack hammers, scarifiers, and compactors) would not occur during the species' nesting season because these activities and equipment have the potential to increase the ambient noise level and vibration in and around the CLT colony on the site.

There is the potential for indirect adverse effects from construction-related activities including sources of noise (e.g., construction traffic and the operation of construction equipment) and increased human presence during construction. To minimize and avoid adverse effects, the VA, as described above, will implement conservation measures and best management practices to control noise and other potential effects that would be expected during construction. During the CLT breeding/nesting season, construction activities would be restricted to those activities that would not result in an increase in the ambient noise level and vibration in and around the CLT colony. To reduce the potential of adverse indirect effects of increased human presence during construction, a chain-link fence will be installed to establish a development setback area, preventing construction personnel and equipment from approaching the colony. Because stockpiled construction materials may provide additional cover, and garbage produced by construction waste and workers could attract predators, garbage will be properly disposed and a biological monitor will routinely check stockpiled construction materials for potential predators and other conditions. The off-site utility/road corridor alignments is proposed to follow the existing roadways, which have been used and in operation for decades in areas that contain no habitat for listed species and are well removed from any sensitive species habitat and would not have a significant effect on the CLT.

For additional information on the CLT, potential impacts, and proposed avoidance and mitigation measures see Appendix B (Biological Resource Supporting Information).

### **Western Snowy Plover**

Current evidence suggests that western snowy plover visits the surrounding area sporadically as a foraging migrant. As long as the species retains this status, direct effects on the species are likely to be minimal. The increased presence of humans and equipment during construction would increase the likelihood of disturbances (e.g., noise, light, etc.) to foraging and resting birds. These impacts would be intermittent, and are unlikely to affect the use of the site by snowy plover. Potential indirect effects of the project action on western snowy plover are generally shared and similar to those identified for CLT, albeit on a smaller scale as this species is currently only sporadically present as a migrant. Potential indirect effects would arise from increased human activity near foraging and potential nesting areas (CLT colony) and the daily use of new structures in the vicinity of the of these areas. Should the western snowy plover reestablish itself as a nesting species in the action area, effects on the species are likely to be identical to those identified for the CLT and thus the proposed avoidance and minimization measures for the CLT are also adequately protective. Based on current habitat use by the snowy

plover, the effects of Alternative 1 would be minimal. Therefore, there would be no significant adverse impact on the western snowy plover resulting from construction.

For additional information on the western snowy plover, potential impacts, and proposed avoidance and mitigation measures see Appendix B (Biological Resource Supporting Information).

### **California Clapper Rail**

Although California clapper rails have been observed in the *Spartina alterniflora* (and hybrid with *S. foliosa*) and pickleweed-dominated marshes 3 to 4 miles away (to the north and south) as recently as 2008, they have never been documented within the VA Transfer Parcel despite twice-monthly FAWR bird counts which began in the spring of 2004, and biological surveys conducted within the surrounding area. The VA Transfer Parcel lacks the important habitat elements for the species, including taller salt marsh vegetation such as *Scirpus* spp. and *Spartina* spp. and deep channels with full tidal connection; thus, suitable nesting habitat is absent and the quality of potential foraging habitat is diminished. Due to the surrounding unsuitable land uses isolating the VA Transfer Parcel from known populations, lack of documented observations within habitats on site despite regular avian surveys the last eight years, and the low quality of salt marsh habitats for the species, the likelihood that clapper rails would occur within the action area is extremely low. Therefore, there would be no impact (i.e., no effect) on the California clapper rail resulting from construction.

### **Salt Marsh Harvest Mouse**

Trapping surveys for salt marsh harvest mouse have resulted in negative findings. An 8-night live trapping survey conducted in 1995 detected no salt marsh harvest mouse present (USN 1995, 1997) within the Runway Wetland or West Wetland marsh areas at that time. A second live-trapping survey was conducted in October 2009 (H.T. Harvey & Associates, 2009), which again found no salt marsh harvest mouse within the wetlands on site. The results of these surveys suggest that salt marsh harvest mouse has never occurred within the wetlands on site due to its isolation from source populations elsewhere around San Francisco Bay (H.T. Harvey & Associates, 2009). Potential salt marsh habitat on site is isolated from other marshes with known salt marsh harvest mouse populations by a minimum of 3 miles of barriers such as water bodies and highly developed urbanized areas. As a result, the probability of dispersal onto the VA Development Area is extremely low given the small dispersal range of the species (Bias and Morrison 1999). Therefore, there would be no impact (i.e., no effect) on the salt marsh harvest mouse resulting from construction.

### **Common Wildlife**

Common species would be affected through the removal of marginal habitat (non-native grasslands), and removal of existing vegetated areas within the VA Development Area. In addition, common wildlife in the VA Development Area would be subjected to increases in noise and dust associated with construction. As a result, some habitats would be reduced in extent during construction and some common species would temporarily decline in local abundance. However, potential impacts to common species and habitats would not be substantial due to the current low abundance of wildlife on the site. This is due to the extent of developed/urban land uses on the site, the long history of site disturbance, the intensive nature of such disturbance in some areas, and the site's isolation from more extensive areas of natural habitat by the bay and by urban development in the project vicinity. Further, these species/habitats are abundant throughout many areas in the region, and the project site supports

extremely small percentages of the populations. Consequently, any impacts of the project on common species and habitats would have a negligible effect on regional populations. In addition, habitat within the VA Development Area would be improved with the introduction of managed landscaping and the majority of the VA Transfer Parcel (80%) would be left undeveloped open space, which could be utilized by common wildlife. Therefore, Alternative 1 would not have a significant adverse construction-related impact on common wildlife.

### **Habitat Linkages and Corridors**

As previously described under “Habitat Linkages and Corridors,” because the VA Transfer Parcel is confined by urban development and the San Francisco Bay, there are limited non-avian habitat linkages or corridors. Existing terrestrial habitats only support a few non-avian species that have recently pioneered from nearby source populations and are common in disturbed and urban settings. There would be no impacts on non-avian habitat linkages and corridors and therefore they are not analyzed further in this EA.

The VA Transfer Parcel is utilized as a migratory stopover and nesting area for birds migrating along the Pacific Flyway. In particular, the existing wetlands present along the western edge of the VA Development Area, the West Wetland and the Runway Wetland, provide foraging and nesting habitat for these species. However, all construction activities would take place only within the VA Development Area. The remaining VA Transfer Parcel, including the West Wetland and the Runway Wetland would be left undeveloped open space. No direct construction-related activities would occur outside the VA Development Area and would not result in the modification or direct disturbance of these areas. The wetland areas within the VA Development Area generally contain marginal habitat for migrating birds, but these areas may still be used by grassland species. The wetland areas within the VA Development are dispersed within a matrix composed of more asphalt than grassland or upland; therefore, these wetlands are considered medium to low quality, and a 1:1 replacement ratio is proposed for mitigation. Discussions with USACE would take place to discuss replacement or enhancement opportunities on site or other options would be considered until a mutual mitigation solution is agreed upon. Construction within the VA Development Area would result in a loss of less than 3% of wetland habitat and 3% of grassland habitat used for migratory species. Because the impacts to wetlands would require at minimum 1:1 compensatory mitigation resulting in no net loss of wetlands, and because the area is used by wildlife adapted to disturbed and urban environments, it is anticipated that this loss would not result in a significant adverse impact.

## ***Operation***

### **Vegetation and Wildlife Habitat**

There would be no significant direct adverse impacts to existing vegetation and wildlife habitat areas from the operation of Alternative 1. The majority of all operational activities would be limited to the VA Development Area, with exception to the CLT conservation and management activities, grounds maintenance activities, and limited use of the existing bunkers by the VA. Operations will also not have a direct effect on CLT nesting or foraging habitat. Operational activities would occur year round but are removed from foraging and nesting habitats at a sufficient distance to avoid direct effects to the CLT.

There is the potential for indirect adverse effects to the CLT colony from operational activities including effects to habitat and foraging, increased predation, increased human activity, noise, and lighting. However, to minimize and avoid adverse effects on the CLT colony, the VA, will implement avoidance and minimization measures to

control noise and other potential effects that would be expected during operation. These measures would also be expected to help minimize and avoid adverse effects on other habitat areas. For a more detailed discussion of potential effects to the CLT colony see section “Federal Listed and Threatened Species” below.

#### **Off-Site Utility/Road Corridor**

Alternative 1 would have no operational impact to biological resources within the off-site utility/road corridor.

#### **Adjacent Marine Environment**

Operational activities would have no impact on the adjacent marine environment.

#### **Federally Listed Threatened and Endangered Species**

##### *Federally Listed Plant Species*

The VA Transfer Parcel does not contain any designated or proposed critical habitat or federally listed plant species. Therefore, Alternative 1 would have no construction-related impact to federally listed or designated or proposed plant species and habitat.

##### *Federally Listed Animal Species*

As identified above, the CLT and western snowy plover, have potential to occur within the VA Transfer Area or surrounding area and/or be affected by the Proposed Action. Because of the sporadic presence of the western snowy plover, implementing Alternative 1 may affect, but is not likely to adversely affect western snowy plover throughout the life of the project. Due to their presence in the VA Transfer Parcel, implementing Alternative 1 may affect, and is likely to adversely affect CLT throughout the life of the project. Potential operational effects on the CLT and western snowy plover are discussed below. In addition, the analysis includes two other federally listed animal species, California clapper rail and salt marsh harvest mouse, which have been known to occur only in the areas surrounding the VA Transfer Parcel.

Alternative 1 would have no operational impacts to federally designated or proposed habitat, including the adjacent San Francisco Bay (i.e., designated critical habitat for the Central California Coast steelhead DPS and the North American green sturgeon southern DPS).

#### **California Least Tern**

Alternative 1 would not result in a significant adverse impact to the CLT or the CLT colony from operational activities. All operational activities would take place within the VA Development Area, approximately 1,400 feet from the CLT colony. The remaining VA Transfer Parcel (approximately 438 acres), including the CLT colony would be left undeveloped open space with limited use for CLT conservation and management, grounds maintenance, and limited use of the existing bunkers. In addition, operation would have no direct effects on CLT nesting or foraging habitat located outside the VA Transfer Parcel.

Operations would have no direct effects on CLT nesting or foraging habitat. Operational activities would occur yearround but are removed from foraging and nesting habitats at a sufficient distance to avoid direct effects to the

CLT. There is the potential for indirect adverse effects from operational activities including sources of noise (e.g., traffic and occupation and use of proposed facilities), increased human presence, and lighting. In addition, occupation and activities within the VA Development Area would have the potential to have an effect on the CLT, including predation, perceived predation and human disturbance, and reduce the ability to conduct effective predator management at the site. To reduce the adverse effects as described above, the VA will implement avoidance and minimization measures to reduce potential adverse impacts. The measures would include preparing and implementing a long-term monitoring and management plan; vegetation control and weed removal; maintaining the undeveloped portions of the VA Transfer Parcel; design and treating building and structures with anti-perching devices; limiting height of vegetation; preparing an implementing a predator management plan; restricting access to the undeveloped portion of the VA Transfer Parcel; limiting OPC and cemetery operations to daytime hours; managing and directing noise generated from occasional cemetery memorial services away from CLT colony; and all exterior lighting will be strategically placed, would be directional and point downward using shielded valences/surrounds, and with anti-perching devices.

For additional information on the CLT, potential impacts, and proposed avoidance and minimization measures see Appendix B (Biological Resource Supporting Information).

#### **Western Snowy Plover**

Alternative 1 would not result in a significant adverse impact to the western snowy plover from operational activities. As identified, current evidence suggests that western snowy plover visits the surrounding area sporadically as a foraging migrant. As long as the species retains this status, direct effects on the species are likely to be minimal. The increased presence of humans and other operational activities would increase the likelihood of disturbances (e.g., noise, light, etc.) to foraging and resting birds. These impacts would be intermittent, and are unlikely to affect the use of the site by snowy plover. Potential indirect effects of the project action on western snowy plover are generally shared and similar to those identified for CLT, albeit on a smaller scale as this species is currently only sporadically present as a migrant. Potential indirect effects would arise from increased human activity and the daily use of new structures in the vicinity. Should the western snowy plover reestablish itself as a nesting species in the action area, effects on the species are likely to be identical to those identified for the CLT and thus the proposed avoidance and minimization measures for the CLT are also adequately protective. Based on current habitat use by the snowy plover, the effects of Alternative 1 would be minimal. Therefore, there would be no significant adverse impact on the western snowy plover resulting from operation.

For additional information on the western snowy plover, potential impacts, and proposed avoidance and mitigation measures see Appendix B (Biological Resource Supporting Information).

#### **California Clapper Rail**

Due to the surrounding unsuitable land uses isolating the VA Transfer Parcel from known populations, lack of documented observations within habitats on site despite regular avian surveys the last eight years, and the low quality of salt marsh habitats for the species, the likelihood that clapper rails would occur within the action area is extremely low. Therefore, there would be no impact (i.e., no effect) on the California clapper rail resulting from operation.

### **Salt Marsh Harvest Mouse**

As identified above, the probability of dispersal onto the VA Transfer Parcel is extremely low given the small dispersal range of the species (Bias and Morrison 1999). Therefore, there would be no impact (i.e., no effect) on the salt marsh harvest mouse resulting from operation.

### **Common Wildlife**

Potential adverse impacts from operation of Alternative 1 to common species and habitats would not be significant due to the current low abundance of wildlife on the site. This is due to the extent of developed/urban land uses on the site, the long history of site disturbance, the intensive nature of such disturbance in some areas, and the site's isolation from more extensive areas of natural habitat by the bay and by urban development in the project vicinity. In addition, habitat within the VA Development Area would be improved with the introduction of managed landscaping and the majority of the VA Transfer Parcel would be left undeveloped open space, which could be utilized by common wildlife.

### **Habitat Linkages and Corridors**

Because ongoing operational activities at the VA facilities would be confined to the VA Development Area, impacts to migratory habitat in the remainder of the VA Transfer Parcel are not expected to occur. Further, because the CLT colony would be preserved, and potential future public access would be limited to the perimeter of this area these areas are anticipated to be utilized by wildlife through the operational period of the VA facilities. Therefore, operational impacts would not be significant.

## **Alternative 1 – Biological Resources Environmental Consequences Summary**

The potential biological environmental consequences presented for Alternative 1 are those as described in the Biological Assessment initially submitted to USFWS. A BO was neither rendered nor formally requested from USFWS, therefore the Navy and VA did not receive concurrence from USFWS on their determination of effects on listed and threatened species resulting from Alternative 1. If VA were to proceed with Alternative 1, VA would complete formal consultation under Section 7 of the ESA as is legally required. Subsequent NEPA analysis would also be required to incorporate the findings and conclusions of the Section 7 formal consultation into the biological resources analysis for Alternative 1.

## **Alternative 2 (Preferred Alternative)**

### ***Construction***

#### **Effects to Vegetation/Habitat**

Effects under Alternative 2 would be similar to those described under Alternative 1, except that the VA Transfer Parcel would be 75 acres larger (larger area is comprised mostly of additional ruderal-disturbed and non-native annual grasslands) and the VA Development Area (less than 2 acres larger than Alternative 1) would be located farther north. Full build-out of the Alternative 2 VA Development Area would result in the modification or loss of approximately 18% (112.4 acres) of the existing vegetation and wildlife habitat area within the VA Transfer

Parcel. The majority (89%) of the VA Development Area is comprised of previously disturbed and developed areas consisting of ruderal-disturbed vegetated and paved habitat (68.0 acres) and nonnative annual grassland (32.8 acres) situated on the former runways, taxiways, and aircraft parking areas of the former NAS Alameda. The remaining lands affected from development would be northern coastal salt marsh (1.1 acres) and seasonal wetland (10.4 acres) habitat. A summary of the vegetated and wildlife habitat potentially affected by Alternative 2 is included in Table 3.1-3.

**Table 3.1-3: Potential Effects - Vegetation and Wildlife Habitat in VA Transfer Parcel (Alternative 2)**

Type	VA Transfer Parcel		VA Development Area		
	Acres	Percent Total Area <sup>1</sup>	Acres	Percent Total Area <sup>1</sup>	Percent of Total Vegetation and Habitat Type within VA Transfer Parcel
Ruderal - Disturbed (vegetated and paved)	353.9	57%	68.0	<b>60%</b>	11%
Nonnative Annual Grassland	180.0	29%	32.8	<b>29%</b>	5%
Northern Coastal Salt Marsh	24.1	4%	1.1	<b>1%</b>	<1%
Seasonal Wetland	31.7	5%	10.4	<b>9%</b>	2%
Riprap	4.9	0%	0.0	<b>0%</b>	0%
California Least Tern Colony	9.5	0%	0.0	<b>0%</b>	0%
Unvegetated Waters	19.5	0%	0.0	<b>0%</b>	0%
Total	623.6	-	112.4	-	18%

Note:  
<sup>1</sup> Percent calculations have been rounded and may not equal 100%.

Alternative 2 would result in the modification or loss of the existing vegetation and wildlife habitat area in an area limited to the VA Development Area (18% of the total VA Transfer Parcel). The majority of this area is comprised of marginal habitat (i.e., ruderal-disturbed and nonnative annual grassland). To reduce adverse impacts to northern coastal salt marsh and seasonal wetlands located within the VA Development Area, the VA would implement mitigation (i.e., **Mitigation Measure BIO-1**). In addition, habitat within the VA Development Area would be improved with the introduction of managed landscaping and the majority of the VA Transfer Parcel (82%), including the CLT colony and other existing wetlands (e.g., Runway and West Wetlands) would be left undeveloped open space.

There is the potential for indirect adverse effects from construction-related activities including sources of noise (e.g., construction traffic and the operation of construction equipment) and increased human presence during construction to spill over into the remaining VA Transfer Parcel, including the CLT colony. To minimize and avoid adverse effects on the CLT, the VA, will implement avoidance and minimization measures to control noise and other potential effects that would be expected during construction. These measures would also be expected to help minimize and avoid adverse effects on other habitat areas. For a more detailed discussion of potential effects to the CLT colony see section “Federal Listed and Threatened Species” below. Therefore, Alternative 2 would not have a significant adverse construction-related impact to the CLT colony and other vegetated and wildlife habitats.

### **Off-Site Utility/Road Corridor**

Effects under Alternative 2 would be similar to those described under Alternative 1. Therefore, no significant impact to biological resources would occur within the off-site utility/road corridor.

### **Adjacent Marine Environment**

Effects under Alternative 2 would be similar to those described under Alternative 1. Therefore, no significant impact to biological resources would occur on the adjacent marine environment.

### **Federally Listed Threatened and Endangered Species**

#### *Federally Listed Plant Species*

As previously noted, the VA Transfer Parcel does not contain any designated or proposed critical habitat or federally listed plant species. Therefore, Alternative 2 would have no construction-related impact to federally listed or designated or proposed plant species and habitat.

#### *Federally Listed Animal Species*

Effects under Alternative 2 would be similar to those described under Alternative 1. Potential effects to the California clapper rail and salt marsh harvest mouse, no impact, are identical to Alternative 1 and are not described in detail below. In addition, Alternative 2 would have no construction-related impact to federally designated or proposed habitat.

The Navy and VA has determined that the effects of Alternative 2 (Preferred Alternative) “may affect, and is likely to adversely affect” the CLT and “may effect, but is not likely to adversely affect” the western snowy plover. As identified above in section “Assessment Methodology”, the Navy and VA coordinated with and consulted with the USFWS pursuant to Section 7(a)(2) of the ESA, as amended, on this determination. The Navy and VA received concurrence from USFWS, as documented in the USFWS BO, dated August 29, 2012, on the determination that the “proposed project is likely to adversely affect the least tern” and “that the proposed project may affect, but is not likely to adversely affect the snowy plover” (USFWS 2012). The USFWS BO states that the “proposed project will increase predation pressure, increase the perception of predation, and reduce the quantity and quality of foraging habitat, adversely affecting all life stages of the least tern at NAS Alameda, thereby resulting in take of the least tern in the form of harm, through habitat modification and disruptions in breeding success, and harassment.” The USFWS BO concludes, “that this level of anticipated take is not likely in jeopardy to the least tern” (USFWS 2012).

Appendix B includes copies of the consultation letters. A description of the potential effects to the CLT and western snowy plover and a summary of the avoidance and minimization measures that VA will implement to reduce adverse impacts to the CLT and western snowy plover is provided below.

### **California Least Tern**

Alternative 2, with the implementation of specific avoidance and minimization efforts, would not result in a significant adverse impact to the CLT from construction-related activities. All construction activities would take

place within the VA Development Area, approximately 1,400 to 1,800 feet from the CLT colony. The remaining VA Transfer Parcel (approximately 511 acres), including the CLT colony would be left undeveloped open space. No direct construction-related activities would occur outside the VA Development Area and would not result in the modification or direct disturbance of the CLT colony or the habitat immediately surrounding it. However, implementation of Alternative 2 would result in the development of approximately 112 acres of currently vacant land (i.e., VA Development Area). The alignment of the majority of the VA Development Area under Alternative 2 is now located within a portion of the area known as the Northwest Territories, as identified in the City of Alameda 1996 Reuse Plan, which is farther away from the CLT colony than under Alternative 1. The development footprint under Alternative 2, was specifically designed to reduce the potential effects of the Proposed Action on the CLT, including providing and maintaining most of the site as undeveloped open space which provides a large buffer between the CLT colony and development. However, the reintroduction of uses within this former military airfield area would have the potential to have an effect on the CLT, including predation, perceived predation and human disturbance, and reduce the ability to conduct effective predator management at the site.

Direct effects to the CLT from construction activities would primarily consist of increased noise and vibration, construction traffic, and operation of construction equipment, which could have an effect on the CLT colony. In addition, increased human activities associated with construction may increase habitat for predators of the CLT. There is the potential for indirect adverse effects from construction-related activities including sources of noise (e.g., construction traffic and the operation of construction equipment) and increased human presence during construction. To reduce the adverse effects as described above, to the CLT to less than significant, the VA will implement **Mitigation Measure BIO-2** to minimize the potential for harm and harassment of the CLT resulting from the project related activities. With implementation there would be no significant impact to the CLT from construction.

### **Mitigation Measure BIO-2**

*To minimize potential adverse effects of the VA's Proposed Action, the VA will implement specific avoidance and minimization measures, as identified in the 2012 USFWS BO (see Appendix B [Biological Resources Supporting Information]). The measures pertain to the Navy's fed-to-fed transfer and VA's subsequent construction and operation of the Proposed Action as described under Alternative 2 in this EA. The measures provide for the long-term conservation and management of the CLT, including implementing land use restrictions for long-term maintenance, management, and monitoring of the CLT. A summary of the avoidance and minimization measures that the VA will implement include the following:*

- *The undeveloped portion of the VA Transfer Parcel will remain undeveloped, providing a buffer from human related activities, and will be managed in perpetuity for the long-term persistence and sustainability of the CLT colony.*
- *CLT management activities will continue at current levels or greater levels, as determined by an annual monitoring report. CLT colony management activities will include:*
  - *Vegetation control and weed removal within the undeveloped portions of the VA Transfer Parcel;*

- *Maintenance of the fence surrounding the CLT colony;*
- *Maintenance of the CLT colony and preparation for the breeding season by placement of appropriate substrates and other measures to enhance nesting habitat;*
- *Breeding season monitoring of the CLT colony;*
- *Management of feral cats and other terrestrial predators; and*
- *Control of avian predators (e.g., gulls, corvids, and raptors).*
- *Preparation of a long-term monitoring and management plan and update as needed. The plan will be reviewed and approved by the USFWS.*
- *Preparation of a predator management plan to maintain protection from predator threats at current or lesser intensity. The plan will be reviewed and approved by the USFWS.*
- *The VA will conduct an education program for all newly hired employees located at the VA Transfer Parcel.*
- *Lighting, including that for roads, building security, and public safety, will be designed to minimize nuisance nighttime light levels.*
- *The VA will develop strategies to minimize erosion and introduction of pollutants into stormwater runoff according to RWQCB guidelines.*
- *The VA will incorporate building and landscape design features to protect the CLT and its colony, including anti-perching features, limit the height of buildings, structures, and landscape plantings and features, and installing a permanent barrier along the VA Development Area to prevent unauthorized access into of the undeveloped portion of the VA Transfer Parcel.*
- *During CLT breeding season, a qualified biological monitor will be present, during all construction activities, to ensure that no activities adversely affect CLT using the colony.*
- *During the non-breeding season, a qualified environmental inspector will be present on site regularly throughout the non-breeding season.*
- *All refuse storage will be stored in secure, covered containers, and emptied on a regular basis and all dumpsters will have lids and placed in roofed enclosures.*
- *Military honors salutes will be conducted at committal service shelters or the designated assembly area only, and be conducted in a manner that directs firing (i.e., rifles or other small arms only) away from the CLT colony. No artillery or explosives salutes will be permitted.*
- *The volume of carillon output would be limited to ensure that use does not increase ambient noise levels at the CLT colony by more than 10%.*
- *During CLT breeding season, memorial events, such as those held on Memorial Day, will be conducted at designated assembly areas or committal services shelters. Events will be organized,*

*staged, and conducted to direct noises away from the CLT colony. The use of amplifiers or public address systems will be permitted only to the extent that they do not increase ambient noise levels at the site, as measured at the north end of the CLT colony.*

- *All construction vehicles and equipment for construction activities will use designated site access points and remain on designated construction routes.*
- *Stockpiling of materials that may provide additional shelter for potential CLT predators at the construction site will be kept to a minimum and inspected on a regular basis by the biological monitor.*
- *During the CLT breeding season, no materials or equipment will be brought on site during evening or nighttime hours (i.e., dusk to dawn).*
- *Pile driving and pavement demolition activities requiring impact tools are prohibited during the CLT breeding season. The use of other types of construction equipment that would not increase the ambient noise level at the site, as measured from the north end of the CLT colony, are permitted during the CLT breeding season.*
- *The tops of buildings under construction, including on-site trailers, will be inspected for avian predators once each week from April 1 to August 15.*

The 2012 USFWS BO includes a complete and detailed list of the avoidance and minimization measures that the VA will implement to minimize potential impacts to the CLT, see Appendix B (Biological Resources Supporting Information).

The off-site utility/road corridor alignments is proposed to follow the existing roadways, which have been used and in operation for decades in areas that contain no habitat for listed species and are well removed from any sensitive species habitat and would not have a significant effect on the CLT.

### **Western Snowy Plover**

Current evidence suggests that western snowy plover visits the surrounding area sporadically as a foraging migrant. As long as the species retains this status, direct effects on the species are likely to be minimal. The increased presence of humans and equipment during construction would increase the likelihood of disturbances (e.g., noise, light, etc.) to foraging and resting birds. These impacts would be intermittent, and are unlikely to affect the use of the site by snowy plover. Potential indirect effects of the project action on western snowy plover are generally shared and similar to those identified for CLT, albeit on a smaller scale, as this species is currently only sporadically present as a migrant. Potential indirect effects would arise from increased human activity near foraging and potential nesting areas (CLT colony) and the daily use of new structures in the vicinity of these areas. Should the western snowy plover reestablish itself as a nesting species in the action area, effects on the species are likely to be identical to those identified for the CLT and thus the proposed avoidance and minimization measures (i.e., **Mitigation Measure BIO-2**) for the CLT are also adequately protective. Based on current habitat use by the snowy plover, the effects of Alternative 1 would be minimal. Therefore, there would be no significant adverse impact on the western snowy plover resulting from construction.

For additional information on the western snowy plover, potential impacts, and proposed avoidance and mitigation measures see Appendix B (Biological Resource Supporting Information).

### **Common Wildlife**

Effects under Alternative 2 would be similar to those described under Alternative 1. Therefore, no significant construction-related impact to common wildlife would occur.

### **Habitat Linkages and Corridors**

Effects under Alternative 2 would be similar to those described under Alternative 1. Therefore, no significant construction-related impact would occur to habitat linkages and corridors.

### **Operation**

#### **Vegetation and Wildlife Habitat**

There would be no significant direct adverse impacts to existing vegetation and wildlife habitat areas from the operation of Alternative 2. The majority of all operational activities would be limited to the VA Development Area, with exception to the CLT conservation and management activities, grounds maintenance activities, and limited use of the existing bunkers by the VA. Operations will also not have a direct effect on CLT nesting or foraging habitat. Operational activities will occur year round but are removed from foraging and nesting habitats at a sufficient distance to avoid direct effects to the CLT.

There is the potential for indirect adverse effects to the CLT colony from operational activities including effects to habitat and foraging, increased predation, increased human activity, noise, and lighting. However, to minimize and avoid adverse effects on the CLT colony, the VA, will implement avoidance and minimization measures (i.e., **Mitigation Measure BIO-2**) to control noise and other potential effects that would be expected during operation. These measures would also be expected to help minimize and avoid adverse effects on other habitat areas. For a more detailed discussion of potential effects to the CLT colony see section “Federal Listed and Threatened Species” below. Given these conditions, operational activities would not result in a significant adverse indirect impact to the CLT colony and other vegetated and wildlife habitats.

#### **Off-site Utility/Road Corridor**

Alternative 2 would have no operational impact to biological resources within the off-site utility/road corridor.

#### **Adjacent Marine Environment**

Operational activities would have no impact on the adjacent marine environment.

### **Federally Listed Threatened and Endangered Species**

#### *Federally Listed Plant Species*

The VA Transfer Parcel does not contain any designated or proposed critical habitat or federally listed plant species. Therefore, Alternative 2 would have no construction-related impact to federally listed or designated or proposed plant species and habitat.

#### *Federally Listed Animal Species*

As identified above, effects under Alternative 2 would be similar to those described under Alternative 1. Potential effects to the California clapper rail and salt marsh harvest mouse, no significant impact, are identical to Alternative 1 and are not described in detail below. In addition, Alternative 2 would have no operational impact to federally designated or proposed habitat.

The Navy and VA has determined that the effects of Alternative 2 (Preferred Alternative) “may affect, and is likely to adversely affect” the CLT and “may effect, but is not likely to adversely affect” the western snowy plover. As identified above in section “Assessment Methodology”, the Navy and VA coordinated with and consulted with the USFWS pursuant to Section 7(a)(2) of the ESA, as amended, on this determination. The Navy and VA received concurrence from USFWS, as documented in the USFWS BO, dated August 29, 2012, on the determination that the “proposed project is likely to adversely affect the least tern” and “that the proposed project may affect, but is not likely to adversely affect the snowy plover”. The USFWS BO states that the “proposed project will increase predation pressure, increase the perception of predation, and reduce the quantity and quality of foraging habitat, adversely affecting all life stages of the least tern at NAS Alameda, thereby resulting in take of the least tern in the form of harm, through habitat modification and disruptions in breeding success, and harassment.” The USFWS BO concludes, “that this level of anticipated take is not likely in jeopardy to the least tern” (USFWS 2012).

Appendix B includes copies of the consultation letters. A description of the potential effects to the CLT and western snowy plover and a summary of the avoidance and minimization measures that VA will implement to reduce adverse impacts to the CLT and western snowy plover is provided below.

#### **California Least Tern**

Alternative 2, with the implementation of specific avoidance and minimization efforts, would not result in a significant adverse impact to the CLT from operational activities. All operational activities would take place within the VA Development Area, approximately 1,400 to 1,800 feet from the CLT colony. The remaining VA Transfer Parcel (approximately 511 acres), including the CLT colony would be left undeveloped open space. No regular operational activities, except CLT conservation and management, grounds maintenance, and the use of the existing bunkers, would occur outside the VA Development Area and would not result in the modification or direct disturbance of the CLT colony or the habitat immediately surrounding it. No significant direct effects to the CLT from operational activities are expected. There is the potential for indirect adverse effects from operational activities including sources of noise (e.g., traffic and occupation and use of proposed facilities) and increased human presence. In addition, occupation and activities within the VA Development Area would have the potential to have an effect on the CLT, including predation, perceived predation and human disturbance, and reduce the

ability to conduct effective predator management at the site. To reduce the adverse effects as described above, to the CLT to less than significant, the VA will implement **Mitigation Measure BIO-2**. With implementation there would be no significant impact to the CLT from operation.

### **Western Snowy Plover**

Alternative 1 would not result in a significant adverse impact to the western snowy plover from operational activities. As identified, current evidence suggests that western snowy plover visits the surrounding area sporadically as a foraging migrant. As long as the species retains this status, direct effects on the species are likely to be minimal. The increased presence of humans and other operational activities would increase the likelihood of disturbances (e.g., noise, light, etc.) to foraging and resting birds. These impacts would be intermittent, and are unlikely to affect the use of the site by snowy plover. Potential indirect effects of the project action on western snowy plover are generally shared and similar to those identified for CLT, albeit on a smaller scale as this species is currently only sporadically present as a migrant. Potential indirect effects would arise from increased human activity and the daily use of new structures in the vicinity. Should the western snowy plover reestablish itself as a nesting species in the action area, effects on the species are likely to be identical to those identified for the CLT and thus the proposed conservation and avoidance measures for the CLT are also adequately protective. Based on current habitat use by the snowy plover, the effects of Alternative 2 would be minimal. Therefore, there would be no significant adverse impact on the western snowy plover resulting from operation.

For additional information on the western snowy plover, potential impacts, and proposed avoidance and mitigation measures see Appendix B (Biological Resource Supporting Information).

### **Common Wildlife**

Effects under Alternative 2 would be similar to those described under Alternative 1. Therefore, no significant operational impact would occur to common wildlife.

### **Habitat Linkages and Corridors**

Effects under Alternative 2 would be similar to those described under Alternative 1. Therefore, no significant operational impact would occur to habitat linkages and corridors.

## **Alternative 2 – Biological Resources Environmental Consequences Summary**

As noted previously, a BO was issued by USFWS (August 29, 2012) concurring with the Navy and VA's determination on the Proposed Action (Preferred Alternative 2),

### **No Action Alternative**

#### ***Construction***

Because the proposed VA facilities would not be constructed under this alternative, no construction-related biological effects would occur. There would be no impact.

## ***Operation***

Under the No Action Alternative, there would be no operational biological resources effects. There would be no impact.

### **3.1.4 References**

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## **3.2 WATER RESOURCES**

This section describes the existing physical and regulatory setting and discusses the potential effects of the EA Alternatives related to hydrology, water quality, floodplains, and coastal management.

### **3.2.1 Regulatory Framework**

#### **Clean Water Act**

The Clean Water Act (CWA) (33 U.S. Code [USC] 1251 et seq.) is the major federal legislation governing the water quality aspects of implementing the Proposed Action. The CWA established the basic structure for regulating discharges of pollutants into Waters of the United States (not including groundwater) and waters of the State of California. The CWA authorizes the USEPA to implement pollution control programs.

Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained. In addition, the CWA requires each state to adopt water quality standards for receiving water bodies and to have those standards approved by USEPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality objectives necessary to support those uses.

Responsibility for the protection of water quality in California resides with the State Water Resources Control Board (SWRCB) and nine regional water quality control boards (RWQCBs). The SWRCB establishes State-wide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality statutes and regulations. The RWQCBs develop and implement water quality control plans, more commonly known as basin plans, which consider regional beneficial uses, water quality characteristics, and water quality problems.

#### ***Water Quality Control Plan for the San Francisco Bay Basin***

The Basin Plan for the San Francisco Bay Hydrologic Region identifies the beneficial uses of water bodies and provides water quality objectives and standards. Federal and State laws mandate protection of designated “beneficial uses” of water bodies. The beneficial uses of any specifically identified water body generally apply to all tributary streams to that water body. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.” Those water bodies not specifically designated for beneficial uses in the Basin Plan are assigned the Municipal and Domestic Supply (MUN) use, in accordance with SWRCB Resolution No. 88-63.

#### ***Clean Water Act Section 303***

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for each surface water body of the U.S. based on the water body’s designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards applicable to the Proposed Action are listed in the Basin Plan.

Section 303(d) of the CWA requires each state and authorized Native American tribe to develop a list of water quality–impaired segments of waterways. The list includes waters that do not meet water quality standards necessary to support a waterway’s beneficial uses even after the minimum required levels of pollution control technology have been installed. The 303(d) List for San Francisco Bay is developed through development of a draft list by the San Francisco Bay RWQCB, adoption by the SWRCB, and approval by EPA.

Listed water bodies are priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the “amount” of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The TMDLs include waste load allocations for urban stormwater runoff as well as municipal and industrial wastewater discharges. The SWRCB, RWQCBs, and EPA are responsible for establishing TMDL waste load allocations and incorporating approved TMDLs into water quality control plans, NPDES permits, and waste discharge requirements in accordance with a specified schedule for completion.

### ***Clean Water Act Section 402—NPDES Permits***

The NPDES stormwater permitting program, under Section 402(d) of the federal CWA, is administered by the RWQCBs on behalf of EPA and establishes a framework for regulating nonpoint-source stormwater discharges (33 U.S. Code [U.S.C.] 1251). The objective of the NPDES program is to control and reduce discharges of pollutants to water bodies from surface water, which includes both municipal and industrial wastewater and stormwater runoff. Under the CWA, discharges of pollutants to receiving water are prohibited unless the discharge is in compliance with an NPDES permit. The NPDES permit specifies discharge prohibitions, effluent limitations, and other provisions such as monitoring deemed necessary to protect water quality based on criteria specified in the National Toxics Rule, the California Toxics Rule, and the Basin Plan.

The SWRCB has adopted a State-wide NPDES general permit for stormwater discharges associated with construction activities (Construction General Permit) (Order 2009-0009-DWQ), which became effective on July 1, 2010. Compliance with the Construction General Permit and preparation and implementation of a stormwater pollution prevention plan (SWPPP) that meets Construction General Permit conditions is required for sites that disturb 1 acre or more and drain to the separate sewer system. Construction activities subject to the Construction General Permit include clearing, grading, stockpiling, and excavating. Dischargers must eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of permanent post-construction management measures that would remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

The requirements of the Municipal Regional Stormwater NPDES Permit (adopted October 14, 2009) are implemented by local agencies through the Alameda Countywide Clean Water Program. The Municipal Regional Stormwater NPDES Permit covers stormwater discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo, and Santa Clara Counties, and the cities of Fairfield, Suisun City, and Vallejo.

### **Executive Order 11988: Floodplain Management Act**

EO 11988 was passed in 1977 in furtherance of the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973. The aim of this executive order is to avoid, to the extent possible, the long- and short-term

adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

If no floodplain impact is identified, the action may proceed without further consideration. If the agency determines that a proposed action is located in or would affect a floodplain, a floodplain assessment must be undertaken and included in the NEPA documentation. If there is no practicable alternative to locating in or affecting the floodplain, the agency must act to minimize potential harm to the floodplain. The agency also must act to restore and preserve the natural and beneficial values of floodplains as part of the analysis of all alternatives under consideration.

### **Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) (U.S.C. Sections 3501 et seq., as amended in 1990 under the Coastal Zone Act Reauthorization Amendments), administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources and balances economic development with environmental conservation. The overall program objectives of CZMA remain balanced to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."

California has a federally approved Coastal Management Program, which includes the California Coastal Act. The program established the San Francisco Bay Conservation and Development Commission (BCDC) as the coastal management and regulatory agency responsible for governing coastal resources within San Francisco Bay. In accordance with its role in implementing CZMA, the BCDC is responsible for conducting federal consistency reviews for projects along the San Francisco Bay segment of the California coastal zone. The coastal management plan for the east side of San Francisco consists of the *McAteer-Petris Act* (California *Public Resources Code* Section 66600 et seq.), the *San Francisco Bay Plan* (Bay Plan) (BCDC, 2006), the *San Francisco Bay Area Seaport Plan* (Seaport Plan), and local management programs. The coastal management plan, in conjunction with other BCDC laws and regulations, forms the BCDC's management program for complying with CZMA.

Federal lands, including the VA Transfer Parcel are outside the coastal zone, but federal activities on land outside the coastal zone that affect resources of the coastal zone must be conducted consistent with the Bay Plan and related Seaport Plan policies to the extent practicable.

### **Section 438 of the Energy Independence and Security Act**

In December 2007, Congress passed the Energy Independence and Security Act (EISA) of 2007. Section 438 of the EISA establishes new stormwater design requirements for federal development and redevelopment projects to reduce the impacts of stormwater runoff associated with new construction and help to sustain water resources. Federal facility projects that have a footprint greater than 5,000 gross square feet (gsf) or that would expand the footprint of existing facilities by more than 5,000 gsf must "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow" (EPA, 2011).

Section 438 of the EISA is to be implemented using low-impact development (LID) techniques to mimic the site's predevelopment stormwater runoff conditions by using site design techniques that store, infiltrate, evaporate, and

detain runoff. The “maximum extent technically feasible” criterion requires full employment of accepted and reasonable stormwater retention and reuse technologies (e.g., bio-retention areas, permeable pavements, cisterns/recycling), subject to site and applicable regulatory constraints (e.g., site size, soil types, vegetation, demand for recycled water, existing structural limitations, State or local prohibitions on water collection).

Executive Order 13514, “Federal Leadership in Environmental, Energy, and Economic Performance,” was signed on October 5, 2009, and required EPA to issue guidance on implementing Section 438 of the EISA. The technical guidance was issued in December 2009 in document EPA 841-B-09-0001, *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*. This guidance creates two options for compliance with the stormwater runoff requirements contained in the EISA.

### **3.2.2 Affected Environment**

#### **Climate**

Alameda Island, including the VA Transfer Parcel is located in the City of Alameda, which is considered semiarid with a moderate, Mediterranean climate characterized by cool dry summers and mild wet winters. Annual rainfall for the project site between 1971 and 2010 averaged approximately 23 inches, 95% of which occurred during the winter rainy season (October–April). The wettest month of the year is January, with an average rainfall of 4.9 inches (IDcide, 2012).

#### **Hydrologic Features**

##### ***VA Transfer Parcel***

The VA Transfer Parcel’s topography is flat. Its San Francisco Bay shoreline (on western and southern boundary) breakwater is lined rock riprap. No creeks or other natural watercourses cross the parcel, which is covered in large part by runway surfaces of the former NAS Alameda. Therefore, no designated wild and scenic rivers flow through the VA Transfer Parcel (USFWS, 2009). Seasonal flooding occurs, and there are jurisdictional wetlands on the parcel, as described in Section 3.1 (Biological Resources). Surface water occurs as sheet flow and is collected in a stormwater drainage system that conveys the water from the VA Transfer Parcel directly to receiving waters.

The Navy installed the existing storm drainage system at the former NAS Alameda in the early 1940s. The system, which consists of drains, catch basins, and discharge outfalls, is a gravity system; a pump station was installed on Main Street to reduce nuisance flooding<sup>1</sup> in the area (APCP, 2003). See Section 3.11 (Utilities) for additional discussion of stormwater drainage and the condition and operation of existing stormwater drainage infrastructure. Since the closure of NAS Alameda, the City of Alameda has been responsible for maintaining the existing storm drain system.

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<sup>1</sup> Nuisance flooding is flooding that causes public inconvenience, but little or no property damage.

## ***Surrounding Area***

The VA Transfer Parcel is located in the western half of the former NAS Alameda (now referred to as Alameda Point), within the northern portion of the South Bay Basin as designated by the San Francisco Bay RWQCB in its *Water Quality Control Plan for the San Francisco Bay Basin* (i.e., Basin Plan) (SFBRWQCB, 2011). The South Bay Basin extends from eastern Livermore west to central San Francisco and Skyline Boulevard, and from Interstate-80 south to the Santa Clara County/Stanislaus County line just north of Henry W. Coe State Park.

Alameda Point is bordered by water on two sides, with San Francisco Bay to the west and south and the Oakland Estuary to the north. Historical records indicate that Alameda Point was formerly a shallow mudflat consisting of young Bay Mud with depths generally ranging from 20 feet to more than 100 feet thick. Over an extended period of time, from 1906 to about 1956, the area was filled to create land. Fill material largely consisted of dredge spoils from the surrounding San Francisco Bay and Oakland Inner Harbor (VA, 2009). The 7-mile-long Oakland Estuary separates the cities of Alameda and Oakland. North of Alameda Point, the Oakland Estuary has a north-south width of approximately 1,000 feet.

The Oakland Estuary has been heavily modified by dredging and bank stabilization projects that began in the mid 1800s, and it is heavily used by commercial ships to access Port of Oakland berths and by recreational boaters for boating and to access marinas located along the estuary. The Oakland Estuary is maintained by the USACE (ARRA, 2005). The Port of Oakland completed a 10-year dredging operation in late 2009 that deepened the estuary from 42 feet to a depth of 50 feet below mean lower low water<sup>2</sup> to accommodate the newest generation of deep-draft container ships. The Port of Oakland conducts annual maintenance dredging to maintain project depths (DredgingToday.com, 2011).

The existing uses of lower San Francisco Bay within the South Bay Basin, as established in the San Francisco Bay RWQCB's Basin Plan, are industrial service supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, water contact recreation, noncontact water recreation, and navigation. Lower San Francisco Bay generally extends from the Bay Bridge south to the Dumbarton Bridge (State Route 84).

The existing uses of the Oakland Inner Harbor within the South Bay Basin are estuarine habitat, wildlife habitat, water contact recreation, noncontact water recreation, and navigation (SFBRWQCB, 2011). Beneficial uses are explained in "Water Quality Control Plan for the San Francisco Bay Basin," below.

## **Water Quality**

### ***VA Transfer Parcel***

The Oakland Estuary and San Francisco Bay are the receiving water bodies for runoff from the VA Transfer Parcel. Rainwater is the only runoff source on the VA Transfer Parcel.

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<sup>2</sup> Mean lower low water is a tidal datum. It is the average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch. The lower low water is the lower of the two low waters of any tidal day.

### ***Surrounding Area***

The Oakland Estuary and San Francisco Bay are the receiving water bodies for runoff for the area south of the VA Transfer Parcel. Within the former NAS Alameda property, the existing storm drainage system has historically been determined to be a reservoir and conveyance for contaminants, including petroleum hydrocarbons, metals, radiologic materials, and polycyclic aromatic hydrocarbons. The sources of these contaminants have included untreated industrial wastewater (before an industrial wastewater treatment system was implemented at Alameda Point in 1975) and contaminated surface soils entrained in stormwater (ARRA, 2005). Currently no industrial runoff occurs as these Navy operations have ceased.

### **Groundwater**

#### ***VA Transfer Parcel***

The VA Transfer Parcel is located in the East Bay Plain Subbasin within the Santa Clara Valley Groundwater Basin (DWR, 2004). Geotechnical studies specific to the VA Transfer Parcel have shown a groundwater depth of between 1 foot and 4.5 feet below the ground surface (AG, 2012). No aquifers are located underneath the VA Transfer Parcel (EPA, 2012).

#### ***Surrounding Area***

The Alameda Point area is located in the East Bay Plain Subbasin within the Santa Clara Valley Groundwater Basin (DWR, 2004). Groundwater has been encountered quite close to the present ground surface. This shallow water-bearing zone is not considered part of a regionally extensive aquifer (ARRA, 2005). The shallow groundwater at Alameda Island was historically of excellent quality and was recharged by rainfall. However, over pumping of shallow groundwater wells resulted in saltwater intrusion and closure of most of the wells by 1900. Only minor pumping of groundwater from the aquifer underlying Alameda Island has occurred since then (ARRA, 2005).

Based on the vulnerability of the shallow groundwater at Alameda Point to contaminants, low yield to wells, high levels of total dissolved solids, and likely land subsidence that may occur with extraction, the San Francisco Bay RWQCB's Basin Plan does not list any designated beneficial uses for this groundwater. Groundwater is not presently used for drinking water and is not considered a potential drinking water source because of its poor quality (Battelle, 2010).

The EPA defines a sole-source aquifer as an underground water source that supplies at least 50% of the drinking water consumed in the area overlying the aquifer. Areas that depend on sole-source aquifers have no alternative drinking water source(s) that could physically, legally, and economically supply all those who depend upon the aquifer for drinking water. No sole-source aquifers are located underneath the Alameda Point area (EPA, 2012).

## **Floodplains**

### ***A VA Transfer Parcel***

Elevations within the VA Transfer Parcel vary from 0 msl to approximately 10 feet above msl (CH2M Hill, 2011). Some locations within the VA Transfer Parcel may be subject to flooding during heavy rainstorms. In addition, the parcel is located within the tsunami inundation area (CDC, 2009). Although the VA Transfer Parcel may be subject to heavy stormwater runoff and from tsunamis, USACE indicates that it is not subject to significant tidal flooding hazards (ARRA, 2005). Further, the San Francisco Bay and its tidally influenced tributaries are partially protected from inundation and damage associated with tsunamis because of restricted sea wave access at the Golden Gate (ARRA, 2005). In addition, the former VA Transfer Parcel is protected by seawalls that are constructed to heights of approximately 15 feet (Navy, 1999).

### ***Surrounding Area***

The former NAS Alameda, including the VA Transfer Parcel, has not been included in FEMA's regional flood hazards mapping program; therefore, Flood Insurance Rate Maps (FIRMs), which typically delineate 100-year flood hazard zones, have not been prepared for the site. FEMA currently categorizes the former NAS Alameda property (FEMA Map #060001C0062G) as Zone D, "possible but undetermined flood hazards." The FEMA base 100-year flood elevation at the former NAS Alameda has been identified to be 7 feet above msl (Navy, 1999). The former NAS Alameda is not located within an identified area of dam-failure inundation hazards (CalEMA, 2009). Seasonal flooding may occur because of flat topography and the sheet flow nature of runoff.

A tsunami is a sea wave produced by an offshore earthquake, a volcanic eruption, or a landslide. Tsunamis can be exceedingly destructive upon reaching exposed coastlines, where they are capable of rising to 100 feet in height and moving at 30 miles per hour. Tsunami modeling for the San Francisco Bay and estuary has been performed by the University of Southern California's Tsunami Research Center. A suite of tsunami source events was selected for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near shore landslides. Based on this modeling, the former NAS Alameda is located within the tsunami inundation area (CDC, 2009). According to Garcia and Houston's *Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound* technical report (1975), simulated tsunami run-up heights for the probable 100-year tsunami ranges from elevation 4.7 to 5.5 feet above msl around the perimeter of NAS Alameda; the 500-year tsunami run-up ranges from 7.5 to 9.5 feet above msl (Navy, 1999). Another analysis of the 100-year tsunami run-up indicates that the northern, western, and southern margins of the NAS Alameda site may be inundated by such an event as a result of water seepage through the seawalls or overtopping of low areas of the walls (Navy, 1999).

Extreme high tides in San Francisco Bay result from the combined effects of astronomical high tides (related to the lunar cycle) and other factors including winds, barometric pressure, ocean temperatures, and freshwater runoff. The USACE indicates that northern Alameda County lacks tidal flooding problems substantial enough to warrant further evaluation of tidal flood control projects (ARRA, 2005). Maximum wave heights in major storm with winds of 60 knots have been calculated at 4 to 6 feet (Navy, 1999).

In addition, based on sea level rise predictions of 16 inches by 2050 and 55 inches by 2099 (BCDC, 2009), sea level rise could cause flooding in some of the coastal areas of Alameda Island, including the VA Transfer Parcel and the VA Development Area. See Section 3.8 (Greenhouse Gases and Climate Change) for more information on projected sea level rise associated with climate change.

### **3.2.3 Environmental Consequences**

#### **Assessment Methods**

Implementing the Proposed Action would change existing drainage patterns, introduce landscaping, and develop new structures on the site. The Proposed Action also would involve constructing a new drainage system to collect, drain, and discharge runoff from the VA Development Area to the Oakland Estuary and San Francisco Bay. The Proposed Action would include a new irrigation system for the proposed NCA Cemetery and other vegetation in the VA Development Area. Site preparation, construction, and operation activities would affect water resources.

The site of the Proposed Action is not located in an area containing a sole-source aquifer or a river designated as Wild and Scenic. Therefore, no impact would occur related to sole-source aquifers or Wild and Scenic Rivers, and these issues are not discussed further in this EA.

#### **Alternative 1**

##### ***Construction***

##### **Water Quality**

Excavation, grading, and construction within the VA Development Area would require temporary disturbance of surface soils and removal of existing on-site pavement. Grading would employ the use of scrapers, dump trucks, and bulldozers. All construction staging would be located within the VA Development Area. All installation of off-site utilities would occur in previously disturbed areas within existing roadways. During the construction period, excavation and grading activities would expose soil to water runoff and entrain sediment in the runoff.

Dewatering and use of a geotextile layer<sup>3</sup> may be required for base stability where excavations extend to near the shallow water table. Should dewatering be necessary during construction, the water could contain sediments and may require settling before discharge to San Francisco Bay receiving water. Sediment in discharge water as well as soil and debris on the haul truck tires, which in turn can be deposited on local streets, could cause increased sediment to be carried off site into the storm drain/sewer, potentially clogging inlets and reducing the functional capacity of the pipes to convey flows. In addition, such mobilized sediment could accumulate in new locations as runoff occurs and result in blockage of stormwater flows, potentially resulting in increased localized ponding or flooding.

The delivery, handling, and storage of construction materials and waste, as well as the use of construction equipment, might introduce stormwater contamination. Spills or leaks from heavy equipment and machinery could also affect water quality through oil, grease, and hydrocarbon contamination. The on-site construction

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<sup>3</sup> Geotextile layers are made of synthetic fibers manufactured in a woven or loose nonwoven blanket-like manner and are used for erosion control.

staging area could also be a source of pollution because paints, solvents, concrete, cleaning agents, and metals would be used during construction. If improperly handled, these pollutants could be transported in stormwater runoff that ultimately leads to San Francisco Bay and/or groundwater.

In order to avoid any potential stormwater adverse impacts, construction stormwater runoff will be managed in accordance with the requirements set forth in the State-wide NPDES Construction General Permit (Order 2009-0009-DWQ). Order 2009-0009-DWQ requires that project applicants (or its contractor, on the applicant's behalf) develop and implement a SWPPP to reduce/eliminate surface water pollution throughout the project's construction period. The SWPPP would include, at a minimum, specific and detailed management measures designed to mitigate construction-related pollutants. The SWPPP typically includes the following specific information:

- The pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- The means of waste disposal;
- Spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- Personnel training requirements and procedures that must be used to ensure that workers are aware of permit requirements and proper installation methods for management measures specified in the SWPPP;
- The appropriate personnel responsible for supervisory duties related to implementation, inspection, and maintenance of management measures; and
- The effective combination of erosion- and sediment-control management measures and construction techniques accepted by the Alameda County Clean Water Program, Alameda County Public Works Agency's Clean Water Division, or other applicable local jurisdictions for use in the VA Development Area during construction that would reduce the potential for runoff and the release, mobilization, and exposure of pollutants from Proposed Action-related construction sites. These may include temporary erosion-control and soil stabilization measures, coir logs, sedimentation ponds, stormwater inlet protection, and silt fences. Drainage swales, ditches, and/or earth dikes/berms would be used to control erosion and runoff by conveying surface runoff down sloping land, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.

Should dewatering be necessary during construction, the effluent may require on-site treatment before being discharged to San Francisco Bay. The Construction General Permit requires that any discharge resulting from dewatering activities be impounded in a sediment retention basin or other holding facility to settle the solids and provide treatment before discharge to receiving water to meet effluent limits for priority pollutants. Dewatering holding and/or treatment facilities will be located within the VA Development Area and will be operated throughout construction, as required and in compliance with applicable regulations. As stated in the Construction General Permit, all dewatering effluent must:

- Be filtered or treated, using appropriate technology;
- Meet the numeric effluent limitations and numeric action levels for pH and turbidity; and
- Not cause or contribute to a violation of water quality standards.

Although authorized non-stormwater discharges are allowed under the NPDES Construction General Permit from uncontaminated groundwater dewatering (SWRCB, 2010), it is unknown at this time whether dewatering effluent would be uncontaminated. If dewatering effluent is contaminated, the San Francisco Bay RWQCB may require an individual NPDES permit for dewatering effluent discharges.

Potential construction impacts also would be minimized by implementing the requirements for protection of land resources outlined in VA Specification Section 015719, "Temporary Environmental Controls." These include requirements such as setting work area limits, protecting the landscape, reducing exposure of unprotected soils, protecting disturbed areas, installing erosion- and sediment-control devices, managing spoil areas, and following good-housekeeping procedures.

Therefore, through compliance with these requirements and regulations, construction-related impacts of Alternative 1 on water quality would not be significant.

### **Groundwater**

Groundwater at the VA Development Area has been encountered at a depth of between 1 foot and 4.5 feet below the ground surface. Subsurface exploration was conducted using 25 borings over approximately 80 acres within the VA Development Area (AG, 2012:Figure 1). Should groundwater be encountered during construction, temporary dewatering would be necessary to keep the work area dry. Dewatering could lower local groundwater levels, but any changes in groundwater levels would be temporary and minimal. In addition, groundwater would not be used as a water supply during construction activities (e.g., for potable uses, or for dust suppression or other non-potable uses). Construction activities would not result in groundwater extraction for consumptive uses. Therefore, Alternative 1 construction-related impacts on groundwater would not be significant.

### **Floodplains**

Parts of the former NAS Alameda are located below the FEMA base 100-year flood elevation of 7 feet above msl (Navy, 1999). FEMA has not included areas of the former NAS Alameda within a FIRM. FEMA mapping completed for areas adjacent to the site indicates that portions of Alameda Point may be susceptible to inundation during the 100-year flood. In addition, if sea level rises as predicted (see Section 3.8 [Greenhouse Gas Emissions and Climate Change]), flood magnitude and frequency at the site could increase with time, exposing people and property to unacceptable flood-related hazards in the future. Although unlikely, a tsunami run-up of more than 2 feet coincident with high tides could inundate the western portion of the VA Transfer Parcel (ARRA, 2005).

Approximately 440,000 cubic yards of fill material would be used to prepare for Alternative 1 construction, which would include the VHA OPC, VBA Outreach Office, Conservation Management Office, approximately 20 acres of cemetery area, and associated infrastructure. Additional fill would be imported for the remaining cemetery area during later phases of development. The proposed final elevation for the developed areas would be 13.6 feet above msl. Roadways and parking areas would be constructed at 12.6 feet above msl. Thus, the finished elevation of the project facilities would be located above the FEMA base 100-year flood elevation of 7 feet above msl. Therefore, the operational impact of Alternative 1 associated with flooding would not be significant.

### **Coastal Resources**

The VA Transfer Parcel (i.e., federally owned lands) are outside the coastal zone, but federal activities on land outside the coastal zone that potentially affect resources of the coastal zone must be consistent to the maximum extent practicable with the provisions of the federally approved state coastal management program, which includes the Bay Plan and related Seaport Plan. The Proposed Action is consistent with the provisions of the Bay Plan and Seaport Plan. The VA is coordinating with BCDC and the Final EA will include a description of the outcome of this coordination. No significant adverse impact would be expected.

### ***Operation***

#### **Downstream Flooding Resulting from Alteration of Drainage Patterns or Increase in Impervious Surfaces**

Implementing Alternative 1 would not alter the course of a stream or river, because none are present at or near the VA Transfer Parcel. As a result, potential flooding hazards caused by alteration of a watercourse would not be an issue under Alternative 1.

Implementing this alternative would reduce the amount of paved (i.e., impervious) surface within the VA Development Area from approximately 70 acres to 60.5 acres, a difference of approximately 9.5 acres. Because the overall impervious surface would be reduced, no increase in stormwater runoff and possible resultant flooding would be expected.

Under Alternative 1, VA would be required to comply with Section 438 of the EISA because construction at these federal facilities would have a footprint greater than 5,000 gsf. It is anticipated that 9 months of mass grading and soil import would be necessary for initial project construction, and final drainage patterns could result in flooding. Grading and alteration of drainage patterns might result from implementing Alternative 1.

Therefore, VA would implement LID techniques (e.g., bioretention, permeable pavements, green roofs, cisterns) to mimic the site's predevelopment stormwater runoff conditions, along with measures to store, infiltrate, evaporate, and detain runoff to reduce the impacts of stormwater runoff associated with new construction. To comply with Section 438 of the EISA, VA would also conduct hydrologic and hydraulic analyses following one of the two options:

- *Option 1*—Design, construct, and maintain stormwater management practices that control rainfall on site and prevent runoff from all precipitation events less than or equal to the 95th-percentile rainfall event to the “maximum extent technically feasible.”
- *Option 2*—Use site-specific hydrologic conditions and investigations to design, construct, and maintain stormwater management practices that preserve predevelopment runoff conditions after construction.

Under Alternative 1, VA also would be required to conduct a hydrologic assessment for the 2-, 5-, 10-, 50-, and 100-year storm events in accordance with VA's *Site Utility Design Manual* (VA, 2010) and size the proposed drainage system for a minimum 10-year, 1-hour storm event.

Water use and efficiency management outlined in the *Department of Veterans Affairs Strategic Sustainability Performance Plan* would also require efficient use of outdoor irrigation water, requiring a 20 % reduction in

water use by 2020 compared to the 2010 base year. This performance standard would reduce nuisance runoff associated with irrigation.

Although approval of drainage plans by Alameda County would not be required for this federal project located in the county's unincorporated area, Alameda County would likely review and comment on the drainage plans. It is assumed that final drainage plans would comply with VA's *Site Utility Design Manual* (VA, 2010) and Section 438 of the EISA. Therefore, operational impacts of Alternative 1 related to downstream flooding resulting from alteration of drainage patterns or increases in impervious surfaces would not be significant.

### **Water Quality**

Implementing Alternative 1 would not substantially degrade water quality or contaminate the public water supply. All sanitary wastewater from the proposed buildings would flow into the sewer system, to be treated at EBMUDs main wastewater treatment plant before discharge into San Francisco Bay. Treatment would be provided pursuant to the effluent-discharge limitations set by the plant's NPDES permit, and thus, VA would comply with all local wastewater-discharge requirements.

Vehicle traffic and parking could increase in the VA Development Area with project operation under Alternative 1, which could, indirectly, result in increased pollutant concentrations in stormwater in the long term. Leaks of fuel or lubricants, tire wear, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff. Runoff from common landscaped areas and turf grass areas of the proposed NCA Cemetery may contain residual pesticides and nutrients used during regular maintenance operations, which could introduce contaminants into the Oakland Estuary and San Francisco Bay. Surface water and runoff that infiltrates at the project site could contaminate groundwater if it were to contain any hazardous materials or high concentrations of constituents such as fertilizers or pesticides.

Implementing Alternative 1 would reduce the amount of impervious surface on the site by approximately 9.5 acres, creating additional opportunities for infiltration of stormwater runoff on site. Stormwater runoff from the VA Development Area that does not infiltrate into the ground would flow into a new storm drain network, which is included as part of Alternative 1. This network is not yet fully designed; the intent, however, is for the storm drain network to have three new outfalls upon final project buildout—two to the north into the Oakland Estuary and a third to the west into San Francisco Bay. Runoff would be treated through bioswales or other stormwater quality measures before entering the new storm drain network.

The project would be designed to meet the requirements of Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," and Section 438 of the EISA. These requirements include the implementation of sustainable stormwater design management measures (e.g., green roofs, vegetated swales, stormwater detention) that would provide on-site stormwater treatment prior to off-site discharge. In addition, the project would be required to use the *Department of Veterans Affairs Sustainable Design and Energy Reduction Manual* (VA, 2010b) to comply with VA Directive 0055. VA Directive 0055, "VA Energy and Water Management Program" (January 15, 2010), establishes comprehensive water management policies to comply with federal mandates and achieve internal goals at all VA facilities. The *Sustainable Design and Energy Reduction Manual* describes techniques that can be used to treat stormwater on site, such as reducing source contaminants; using bioswales, vegetated filter strips, and green roofs; and using stormwater retention tanks that could also be used for rainwater harvesting and water reuse. None of these specific management measures have been committed

to at this time, but the Proposed Action ultimately would be designed to meet the requirements of the Alameda Countywide Clean Water Program.

The project would be required to pursue the commitment to pollution prevention and water use efficiency described in the *Department of Veterans Affairs Strategic Sustainability Performance Plan* (VA, 2011). VA Directive 0057 includes a policy to reduce or eliminate the quantity of toxic and hazardous chemicals and materials acquired, generated, used, and/or disposed, to the extent possible (VA, 2010a). VA Handbook 0057.2, *Chemicals Management and Pollution Prevention*, would be used to ensure compliance with VA Directive 0057, thereby reducing the potential for water quality impacts associated with operating the proposed VA facilities.

Overall, operation of the facilities proposed under Alternative 1 would not provide substantial additional sources of polluted runoff or otherwise degrade water quality. It is assumed that facility operation would comply with Section 438 of the EISA and VA Directives 0055 and 0057. Therefore, the operational impact of Alternative 1 related to water quality degradation would not be significant.

### **Depletion of Groundwater Resources**

The former NAS Alameda contains impervious paved runway surfaces, which effectively prevent surface water from infiltrating into the soil. Approximately 70 acres (63 %) of the VA Development Area for Alternative 1 is currently paved. With implementation of Alternative 1, the amount of impervious surfaces would decrease from 70 acres to 60.5 acres; approximately 54.5 % of the total VA Development Area for Alternative 1. The remaining 50.5 acres would be planted as either shrubs/ground cover or maintained lawn areas.

The decrease in impervious surface on the site either would have a neutral effect or would serve to increase overall infiltration and groundwater recharge quantities at Alameda Point, because areas of infiltration would increase over current levels. In addition to the decrease in impervious surface, permanent management measures would be implemented to infiltrate, evaporate, and detain stormwater before it enters the new storm drain network. Implementing these management measures to achieve compliance with Section 438 of the EISA may also serve to increase groundwater recharge quantities. Thus, no measurable change in infiltration characteristics would result from implementation of Alternative 1.

In addition, groundwater would not be used as a water supply during operation of the Proposed Action (e.g., for potable uses or other nonpotable uses), so Alternative 1 would not result in groundwater extraction for consumptive uses. Therefore, operational impacts on groundwater would not be significant under Alternative 1.

### **Flooding as a Result of Location within a Floodplain**

Parts of the former NAS Alameda are located below the FEMA base 100-year flood elevation of 7 feet above msl (Navy, 1999). FEMA has not included areas of the former NAS Alameda within a FIRM. FEMA mapping completed for areas adjacent to the site indicates that portions of Alameda Point may be susceptible to inundation during the 100-year flood. In addition, if sea level rises as predicted by EPA, flood magnitude and frequency at the site could increase with time, exposing people and property to unacceptable flood-related hazards in the future. Although unlikely, a tsunami runup of more than 2 feet coincident with high tides could inundate the western portion of the VA Transfer Parcel (ARRA, 2005).

Approximately 440,000 cubic yards of fill material would be used to prepare for Alternative 1 construction, which would include the OPC area, Conservation Management Office, access road, and approximately 20 acres of cemetery area. Additional fill would be imported for the remaining cemetery area. The proposed final elevation for the OPC, the Conservation Management Office, and the plazas would be 13.6 feet above msl. Roadways and parking areas would be constructed at 12.6 feet above msl. Thus, the finished elevation of the project facilities would be located above the FEMA base 100-year flood elevation of 7 feet above msl. Therefore, the operational impact of Alternative 1 associated with flooding risk would not be significant.

Refer to Section 3.8 (Greenhouse Gas Emissions and Climate Change) for discussion regarding flooding associated with climate change and sea level rise.

### **Coastal Resources**

The VA Transfer Parcel (i.e., federally owned lands) are outside the coastal zone, but federal activities on land outside the coastal zone that potentially affect resources of the coastal zone must be consistent to the maximum extent practicable with the provisions of the federally approved state coastal management program, which includes the Bay Plan and related Seaport Plan. The Proposed Action is consistent with the provisions of the Bay Plan and Seaport Plan. The VA is coordinating with BCDC and the Final EA will include a description of the outcome of this coordination. No significant adverse impact would be expected.

## **Alternative 2**

### ***Construction***

#### **Water Quality**

Alternative 2 would involve the same project components as Alternative 1; however, under Alternative 2, the VA Development Area would be located farther north. Therefore, the construction-related impacts of Alternative 2 would be the same as those described for Alternative 1. Compliance with regulatory/administratively required stormwater requirements throughout construction, construction-related impacts of Alternative 2 on water quality would not be significant.

#### **Groundwater**

Like Alternative 1, any dewatering that would take place during construction of Alternative 2 would be temporary and would not deplete groundwater resources. Groundwater also would not be used as a source of drinking water or consumptive water supply during construction. Therefore, construction-related impacts of Alternative 2 on groundwater resources not be significant.

### **Coastal Resources**

The VA Transfer Parcel (i.e., federally owned lands) are outside the coastal zone, but federal activities on land outside the coastal zone that potentially affect resources of the coastal zone must be consistent to the maximum extent practicable with the provisions of the federally approved state coastal management program, which includes the Bay Plan and related Seaport Plan. The Proposed Action is consistent with the provisions of the Bay

Plan and Seaport Plan. The VA is coordinating with BCDC and the Final EA will include a description of the outcome of this coordination. No significant adverse impact would be expected.

## **Operation**

### **Downstream Flooding Resulting from Alteration of Drainage Patterns or Increase in Impervious Surfaces**

Like Alternative 1, Alternative 2 would not alter the course of a stream or river, because none are present at or near the VA Transfer Parcel. Implementing this alternative would reduce the amount of paved (i.e., impervious) surface within the VA Development Area from approximately 68.5 acres to 47.7 acres, a difference of approximately 20.8 acres (Pahed, pers. comm., 2012). Because the overall impervious surface would be reduced, no increase in stormwater and possible resultant flooding would be expected.

Grading and alternation of drainage patterns, however, might result from implementing Alternative 2. Under Alternative 2, VA would be required to comply with Section 438 of the EISA because construction at this federal facility would have a footprint greater than 5,000 gsf. VA also would be required to conduct a hydrologic assessment for the 2-, 5-, 10-, 50-, and 100-year storm events in accordance with VA's *Site Utility Design Manual* (VA, 2010c) and size the proposed drainage system for a minimum 10-year, 1-hour storm event. Existing seasonal flooding problems caused by deteriorating storm drains would be reduced by installing new storm drainage infrastructure, which would be sized to the specifications set out by VA in its *Site Utility Design Manual*.

Implementing the requirements of the Section 438 of the EISA in the VA Development Area would ensure that infrastructure would be properly sized to handle stormwater and wastewater flows to protect from down-gradient flooding hazards. VA would also be required to use LID techniques for infiltration, evaporation, and detention of stormwater to comply with Section 438 of the EISA; using such techniques would preserve pre-development stormwater runoff conditions. Thus, with implementation of the requirements of Section 438 of the EISA, Alternative 2 would not substantially contribute to downstream flooding. Therefore, operational impacts related to downstream flooding resulting from alteration of drainage patterns or increases in impervious surfaces would not be significant.

### **Water Quality Degradation Caused by Changes in Intensity of Land Use and Increases in Impervious Surface**

As under Alternative 1, wastewater from the buildings proposed as part of Alternative 2 would flow into the sewer system and would be treated at East Bay Municipal Utility District's main wastewater treatment plant before discharge into San Francisco Bay, pursuant to the effluent discharge limitations set by the plant's NPDES permit. Thus, VA would comply with all local wastewater-discharge requirements.

Implementing Alternative 2 would reduce the amount of impervious surface on the site by approximately 20.8 acres, creating additional opportunities for infiltration of stormwater runoff on site. Stormwater runoff from the VA Development Area that does not infiltrate into the ground would flow into a new storm drain network, which is included as part of Alternative 2 and would be designed according to the VA's *Site Utility Design Manual*, as well as to meet the requirements of the Alameda Countywide Clean Water Program. Runoff would be treated through bioswales or other stormwater quality measures, as applicable. Incorporating LID or other techniques required by Section 438 of the EISA would also serve to protect water quality during project operation. As a result, operation of the facilities proposed under Alternative 2 would not provide substantial additional sources of

polluted runoff or otherwise degrade water quality. Therefore, the operational impact of Alternative 2 related to water quality degradation would not be significant.

### **Depletion of Groundwater Resources**

Similar to Alternative 1, the VA Development Area under Alternative 2 contains impervious paved runway surfaces, which effectively prevent surface water from infiltrating into the soil. Approximately 68.5 acres (61 %) of the VA Development Area for Alternative 2 is currently paved. With implementation of Alternative 2, the amount of impervious surface would decrease from 68.5 acres to 47.7 acres (approximately 42 % of the total VA Development Area for Alternative 2). The remaining 64.7 acres would be planted as either shrubs/ground cover or maintained lawn areas. Landscape planting within the VA Development Area would prioritize native shrub and herbaceous species over nonnative species, and none of the species would be invasive.

As described for Alternative 1, the decrease in impervious surface on the site should serve to increase overall infiltration and groundwater recharge quantities at Alameda Point. In addition to the decrease in impervious surface, permanent management measures would be implemented to infiltrate, evaporate, and detain stormwater before it enters the new storm drain network. Implementing these management measures to achieve compliance with Section 438 of the EISA may also serve to increase groundwater recharge quantities. Groundwater would not be used as a water supply during operation of Alternative 2. The operational impact of Alternative 2 on groundwater resources would not be significant.

### **Flooding as a Result of Location within a Floodplain**

As under Alternative 1, it is anticipated that approximately 440,000 cubic yards of fill material would be needed to prepare for construction under Alternative 2, which would include the OPC area, the Conservation Management Office, approximately 20 acres of cemetery development, and on-site access roads. Additional fill would be imported for the remaining cemetery area. As described for Alternative 1, the proposed final elevation for the OPC, the Conservation Management Office, and the plazas would be 13.6 feet above msl. Roadways and parking areas would be constructed at 12.6 feet above msl. Thus, the finished elevation of the project facilities would be located above the FEMA base 100-year flood elevation of 7 feet above msl (Navy, 1999). The operational impact of Alternative 2 associated with flooding risk would not be significant.

Refer to Section 3.8 (Greenhouse Gas Emissions and Climate Change) for additional discussion regarding flooding associated with sea level rise.

### **Coastal Resources**

The VA Transfer Parcel (i.e., federally owned lands) are outside the coastal zone, but federal activities on land outside the coastal zone that potentially affect resources of the coastal zone must be consistent to the maximum extent practicable with the provisions of the federally approved state coastal management program, which includes the Bay Plan and related Seaport Plan. The Proposed Action is consistent with the provisions of the Bay Plan and Seaport Plan. The VA is coordinating with BCDC and the Final EA will include a description of the outcome of this coordination. No significant adverse impact would be expected.

## No Action Alternative

### *Construction*

Under the No Action Alternative, the fed-to-fed transfer would not take place and the proposed development (e.g., VHA OPC, VBA Outreach Office, NCA Cemetery, etc.) would not be built. Therefore, no significant construction impacts on water resources would occur.

### *Operation*

Under the No Action Alternative, the fed-to-fed transfer would not take place and the proposed development would not be built. Therefore, no significant operational impacts on water resources would occur.

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