APPENDIX H:
BIOLOGICAL RESOURCES REPORTS

Zander Associates - Biological Resources Assessment
Stephen R. Staub, Forester & Environmental Consultant's Forest Management Plan

ZANDER ASSOCIATES
BIOLOGICAL RESOURCES ASSESSMENT

BIOLOGICAL RESOURCES ASSESSMENT
EAST GARRISON SPECIFIC PLAN

Monterey County, California

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1.0 INTRODUCTION

The County of Monterey is preparing a Specific Plan for the East Garrison Area of former Fort Ord. The Plan Area encompasses approximately 244 acres of what the Department of the Army refers to as "Track Zero at East Garrison" and it includes the portion of East Garrison containing older barracks, a parade ground, various buildings and other former military facilities (cantonment area). The biological resources in the East Garrison Area have been described in several documents, including the *Flora and Fauna Baseline Study of Fort Ord* (USACOE 1992b), *Installation-Wide Multispecies Habitat Management Plan for Fort Ord* (USACOE 1997), and the *Assessment, East Garrison-Parker Flats Land Use Modifications Fort Ord, California* (Zander Associates 2002). The purpose of this assessment is to provide current information and update the record as necessary with respect to existing biological resources in the proposed Specific Plan Area and to evaluate the effects of the proposed development and consistency with the assumptions of the Installation-Wide Multispecies Habitat Management Plan regarding habitat and species losses at East Garrison.

1.1 Description of Study Area

The Specific Plan Area encompasses approximately 244 acres within the Track Zero boundaries. However, additional areas outside of Track Zero will be impacted to accommodate infrastructure improvements associated with full build-out. Therefore, the study area for this report is expanded to include those areas beyond the Track Zero boundary but within the limits of grading as shown on the Vesting Tentative Map dated October, 2003 prepared by Carlson Barbee & Gibson. The study area is approximately 252 acres and includes all of Track Zero south of Reservation Road as well as areas west and south of the Track Zero boundaries that are within the limits of grading.

The study area is within East Garrison, a site at the easterly edge of former Fort Ord that housed troops and provided grounds for light-fighter training and Cold War activities and planning. The topography is mostly gently rolling except for the steep bluff areas south of Reservation Road and north of the eastern section of Watkins Gate Road. Approximately 108 acres of the area consists of previously developed sites with buildings, foundations, infrastructure and other facilities associated with the military activities that were conducted here. Outside of the developed sites there are grasslands and oak woodlands that have been subjected to varying degrees of disturbance. The areas north of Inter-Garrison Road contain relatively intact oak woodland and oak savanna habitat but south of Inter-Garrison the vegetation is primarily non-native grassland with scattered shrubs and oaks. Beyond the boundary of Track Zero, the habitat is less disturbed and consists of oak woodland and dense stands of central maritime chaparral. There are no ponds or drainages within Track Zero but there is a large fishing pond on the Youth Camp Property just to the south of Watkins Gate Road.

1.2 The HMP

The *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord* (HMP) establishes a habitat conservation area and corridor system and parcel-specific land use

categories and management requirements for all lands on former Fort Ord. Four general categories of parcel-specific land use are identified: habitat reserve, habitat corridor, development with reserve areas or restrictions, and development with no restrictions. Resource conservation and management requirements and responsible parties for each parcel or group of parcels with habitat designations are discussed in Chapter 4 of the HMP.

A general goal of the HMP is to promote preservation, enhancement and restoration of habitat while allowing implementation of a community-based reuse plan that supports economic recovery after closure of Fort Ord. The HMP assumes a reuse development scenario for the entire base that will result in the removal of up to 6,300 acres of existing vegetation and wildlife habitat. Losses to 18 special-status species (HMP Species) are also accounted for by the HMP. The establishment of approximately 16,000 acres of habitat reserves with about 400 additional acres of connecting habitat corridors is the primary measure to minimize the impacts of reuse on HMP Species. In addition, the HMP further conditions development on approximately 1,800 additional acres by requiring reserve areas or restrictions on those lands.

The HMP designates the East Garrison polygon as development with reserve areas or restrictions and allows for up to 200 acres of total development beyond 41 acres allowed on the former sewage treatment plant and for a proposed road corridor through the area. In May 2002, the Fort Ord Reuse Authority (FORA) and the County of Monterey (County) proposed boundary changes and other modifications to the HMP. The modifications were intended to resolve land use conflicts stemming from a long history of ordnance and explosives use of certain land areas along with parallel and competing conveyance requests for surplus property at the former base. The proposed modifications allow residential and commercial development at East Garrison on an additional 210 acres of oak woodland, maritime chaparral, and grassland communities that would have been conserved under the existing HMP. They designate as habitat reserve over 450 acres of land supporting these communities at Parker Flats that was previously designated for development, with no resource conservation requirements.

The proposed modifications were described in a document prepared by Zander Associates in 2002 (Land Swap Assessment) and were submitted to the Army for review and consideration. The Army determined that the goals and objectives of the HMP would be met through implementation of the modifications and requested concurrence from the U.S. Fish and Wildlife Service (Service) on that finding (USDOA 2002). The Service agreed that the proposed modifications were consistent with the resource protection goals of the HMP and concluded that the level of effects on HMP species would not exceed those already addressed in biological opinion 1-8-99-F/C-39R (USFWS 2002).

1.3 Study Methodology

Zander Associates reviewed all existing documents addressing the biological resources at East Garrison and conducted several field surveys to map and describe existing habitats, prepare a complete floristic list, search for special status plants and evaluate potential wildlife habitat within the study area. Staub Forestry & Environmental Consulting conducted a tree inventory of the study area to characterize existing stands, estimate tree removal and retention numbers and

identify the location and number of heritage trees. The results of that study are provided in a separate document.

Habitat types were described using information from previous documents and from field surveys conducted April 4 and 15, 2003. A current (2003) aerial photograph (scale 1" = 200') was used to map the boundaries and measure the extent of each habitat type within the study area. Floristic surveys were conducted from March 27th through August 22nd, 2003 and the entire area within the Track Zero boundary was revisited twice, at least three weeks apart to identify and record presence of plant species at the appropriate phenological time for positive identification using flowers or fruits. All plant species observed were recorded and where special status species were encountered, the numbers of plants or density estimates were noted.

Staub Forestry conducted an initial reconnaissance of the study area in April 2003 to identify sample stands based on stand history and structure, and to determine appropriate sampling procedures for each. Four general areas were identified and different sampling procedures were conducted in each area to best estimate tree densities and size class distribution.

2.0 SETTING

2.1 Plant Communities and Wildlife Habitats

Zander Associates identified five different plant communities/wildlife habitats within the study area: oak woodland, oak savanna, grassland, coastal scrub, and developed. Descriptions of each of these communities follows and their location and extent in the study area is depicted on Figure 1. A complete list of the plant species inventoried in the study area during floristic surveys is provided in Appendix A.

2.1.1 Oak Woodland and Oak Savanna

The oak woodland and oak savanna plant communities are similar in species composition in that the dominant canopy species is coast live oak (*Quercus agrifolia*). The communities differ in that tree density and canopy cover is greater in the oak woodland and the understory often has a higher diversity of shrubs and herbs. The oak savanna consists of scattered individuals or clusters of trees with an open canopy and an understory dominated by annual grasses. Typical understory species of the oak woodlands in the study area include coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), climbing bedstraw (*Galium porrigens* var. *porrigens*), and wood mint (*Stachys bullata*) combined with a variety of annual grasses. The oak savanna understory is primarily annual grasses with only scattered shrubs.

The oak woodland and oak savanna communities in the study area are relatively intact north of Inter-Garrison Road. South of Inter-Garrison, the oak woodlands are remnants of a larger area that was likely cleared during previous military operations. The oak savanna south of Inter-Garrison was designated as grassland in the *Flora and Fauna Baseline Study of Fort Ord* (ACOE 1992) but since that document was produced, oak trees have begun to recolonize the area and it is now more representative of a savanna. The grassland understory of the savanna south of Inter-Garrison Road contains more non-native annual species and fewer native wildflowers.

Staub estimated a total of about 5,100 oak trees in the study area within the oak woodland and savanna habitat as well as in and around existing development. The majority of the trees are within the 6-11" and 12-23" size classes with only about 177 trees in the greater than 24" size class. The largest trees were found in the developed areas, probably due to reduced competition and maintenance. The greatest number of smaller diameter trees was observed in the oak woodland north of Inter-Garrison Road.

Typically, oak woodlands provide good habitat for a variety of wildlife species. Oak trees serve as nesting sites and provide cover for many birds and mammals. Acorns are a valuable food source for several animal species, including the California quail, western gray squirrel and black-tailed deer. Other representative animal species of oak dominated forests include arboreal salamander, western screech owl, scrub jay, and Virginia opossum. The open canopy and grassy understory of oak savannas provide favorable conditions for many grassland-related species such as California ground squirrel, California vole and black tailed-hare. Red-tailed hawks and other

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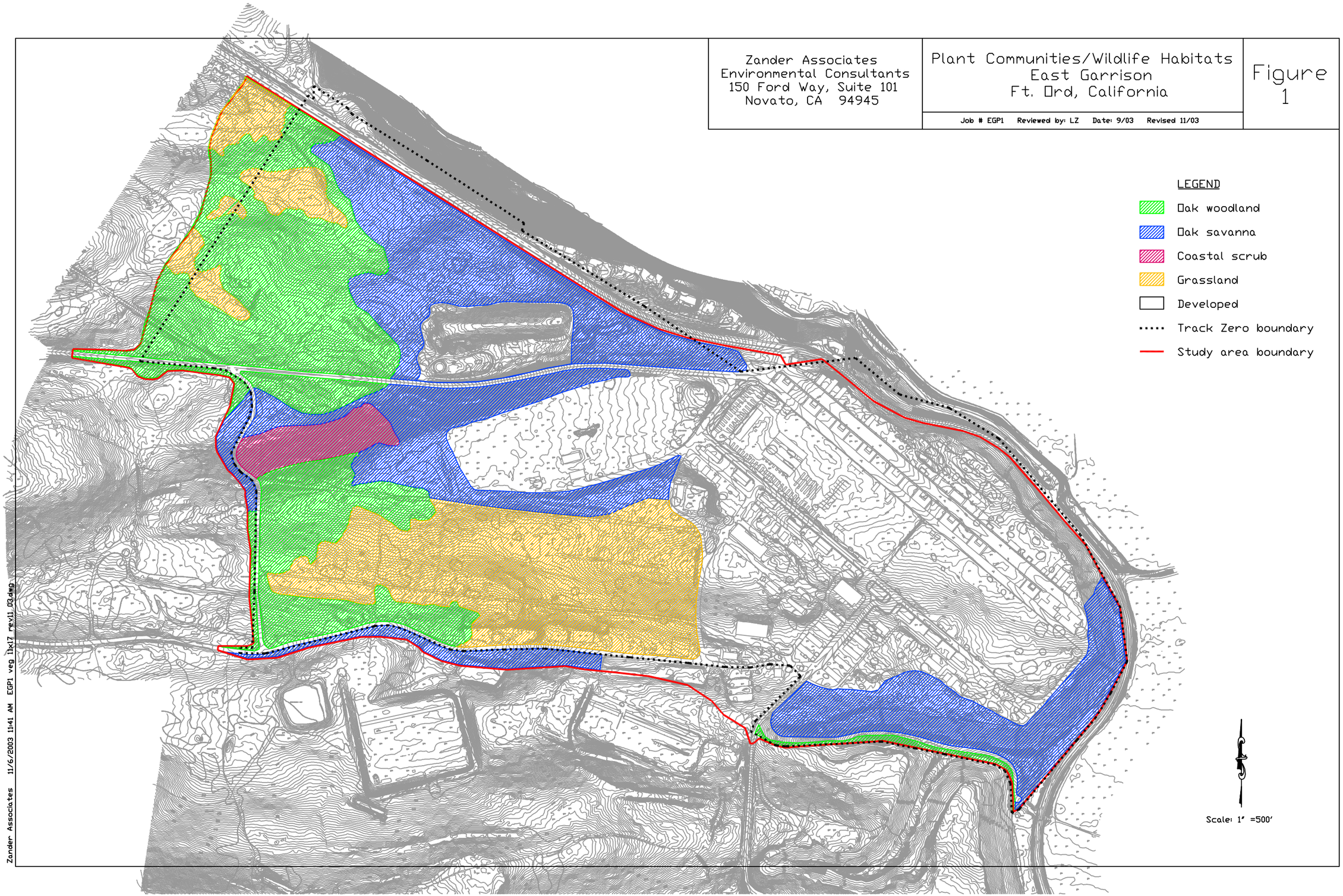
Plant Communities/Wildlife Habitats
East Garrison
Ft. Ord, California

Job # EGP1 Reviewed by: LZ Date: 9/03 Revised 11/03

Figure 1



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raptors use the scattered trees as perching and scanning points while hunting for these species. Western bluebird, mourning dove, and olive-sided flycatcher are also in the oak savannas.

2.1.2 Developed

The developed portions of the study area include over seventy five buildings and structures, numerous concrete foundations, sidewalk, and tent pads, rock retaining walls, paved roads and fields. These areas were subject to past heavy disturbance such as grading, extensive soil compaction, construction, or topsoil removal, resulting in a poor substrate for most plants. They are typically inhabited by a variety of weedy, early successional plants, many of them non-native species. However, there are a few native trees and landscape species around the buildings and some of the largest individual oak trees are found in this community, probably because there is less competition. Developed areas typically do not support a diversity of wildlife due to the limited extent of native habitat. However, the large trees present in this habitat in the study area could provide perching and nesting sites for raptors and other bird species and the abandoned buildings may have suitable roosting sites for bats.

2.1.3 Grassland

The grasslands in the study area are dominated by annual non-native species with a mix of native and non-native forbs. Some areas are densely covered by weedy species that form a tall dense thatch that effectively excludes most low growing natives. Other grassland areas are dominated by lower growing species and provide more available habitat for a diversity of both native and non-native grasses and forbs. Four such grassland areas occur as open meadows within the oak woodland north of Inter-Garrison Road (Figure 1). These areas support native and non-native grasses and have a spring display of annual wildflower species including sky lupine (*Lupinus nanus*) tidytips (*Layia platyglossa*), California poppy (*Eschscholzia californica*), and baby blue-eyes (*Nemophila menziesii* var. *menziesii*). The grasslands south of Inter-Garrison Road have been subjected to more disturbance and do not support the same diversity of native wildflowers.

Grasslands provide habitat for common rodents such as the California vole, California ground squirrel, broad-footed mole and Botta's pocket gopher. These animals serve as prey for raptors such as red-tailed hawks, golden eagles, kestrels and owls that forage in the grasslands. Western meadowlarks, California horned larks and northern harriers nest in grassland habitats.

2.1.4 Coastal Scrub

There are elements of coastal scrub vegetation scattered throughout the study area but there is one intact stand of this plant community on the relatively steep south-facing slope above North Camp Street. The coastal scrub in this area is comprised of coyote bush, poison oak, California sage (*Artemisia californica*), and black sage (*Salvia mellifera*).

A diversity of wildlife species typically inhabit the coastal scrub community. Birds such as the orange-crowned warbler, rufous-sided towhee, California thrasher, California quail, and wrentit feed and nest in the scrub. Rodents such as the California mouse, brush rabbit, and Herman's kangaroo rat find forage and cover in the scrub and in turn serve as prey for gray fox, bobcat,

western skunk and western rattlesnake. The coastal scrub also provides important forage and cover for resident black-tailed deer.

2.2 Special-Status Species

For the purpose of this assessment, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Game (CDFG); plants occurring on lists 1B or 2 of the California Native Plant Society's *Inventory of Rare and Endangered Plants of California, Sixth Edition* (2001); animals designated as "Species of Special Concern" by the CDFG; all HMP species.

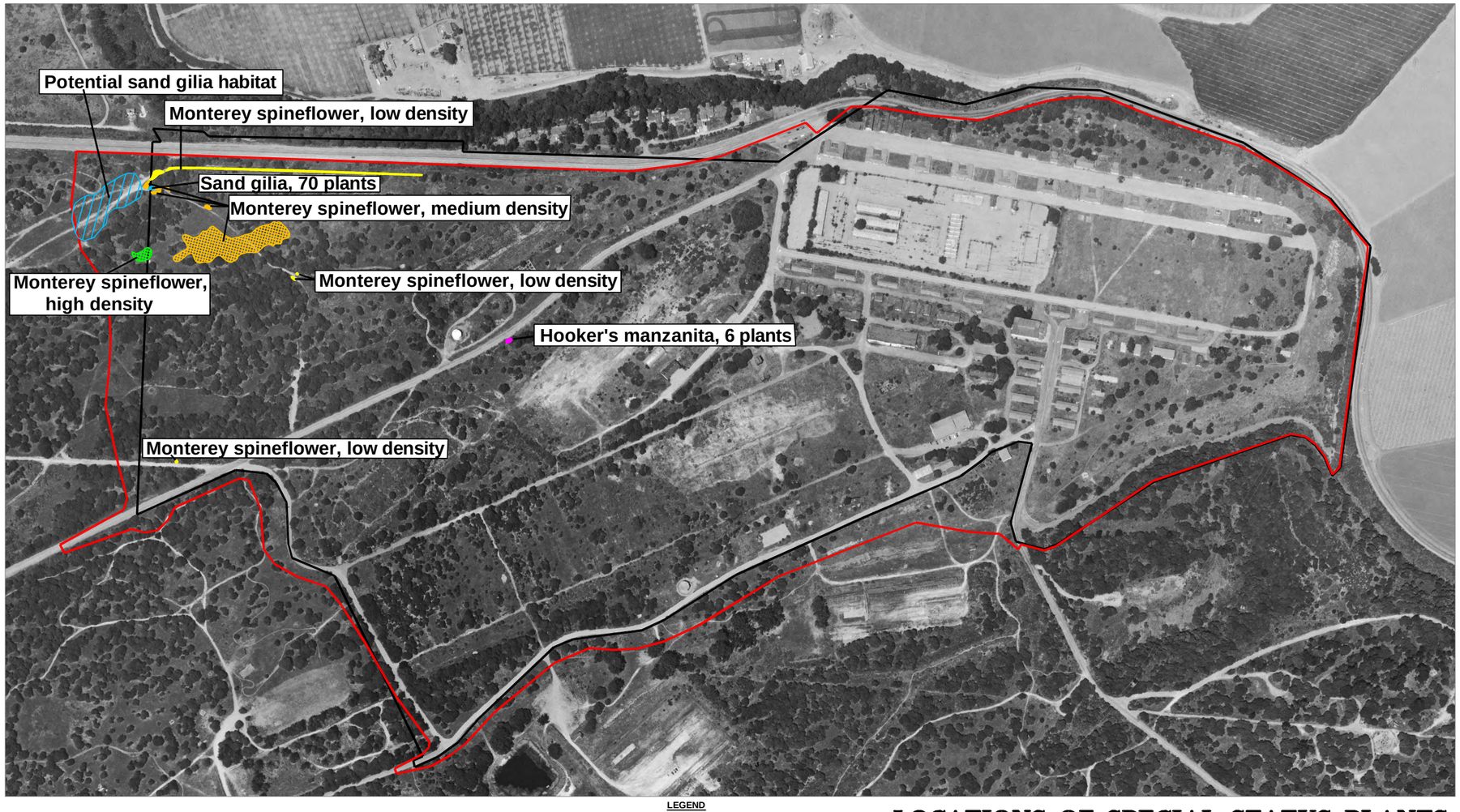
The *Flora and Fauna Baseline Study of Fort Ord* (USACOE 1992b) identifies two special-status plant species and eight special-status animals within the study area: Monterey spineflower, wedge-leaved horkelia, Monterey dusky-footed woodrat, Monterey ornate shrew, loggerhead shrike, California horned lark, Northern harrier, California burrowing owl, golden eagle, and prairie falcon. Two additional special-status plant species were observed on the site during recent surveys; sand gilia and Hooker's manzanita, and several other species were considered but dismissed due to lack of suitable habitat or the results of directed surveys. Following is a discussion of each of the special-status species known to occur or evaluated for their potential to occur in the study area.

2.2.1 Plants

Monterey spineflower (*Chorizanthe pungens* var. *pungens*)

Monterey spineflower is a federally listed threatened species, it is included on CNPS List 1B and it is an HMP species. It occurs on sandy soils within coastal dune, coastal scrub, grassland, and other plant communities from the Monterey Peninsula (Monterey County) northward along the coast to southern Santa Cruz County, and inland to the Salinas Valley. Monterey spineflower is a small, prostrate annual plant with white to rose colored flowers that typically bloom from April through June. The HMP maps low density Monterey spineflower in the portion of the study area north of Inter-Garrison Road. This is consistent with what we observed during our 2003 surveys, although the mapping was refined to identify specific locations of high, medium and low density occurrences of Monterey spineflower (Figure 2). No Monterey spineflower was observed in the study area south of Inter-Garrison Road during the 2003 surveys.

In May 2002, the USFWS designated critical habitat for Monterey spineflower, which included lands on former Fort Ord (Unit H). The USFWS designated critical habitat on lands specified as "Habitat Reserve," Habitat Corridor," and "Development with Reserve Areas or Development with Restrictions" as shown on the map and post-transfer modifications of the HMP. Not included were lands designated solely for development, with no accompanying resource conservation requirements. The critical habitat designation was published prior to final approval of the Land Swap Assessment and therefore portions of Track Zero are mapped as critical habitat for Monterey spineflower and none of Parker Flats is included in the designation. The area north



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LEGEND

- Hooker's manzanita
- Sand gilia
- Monterey spineflower low density
- Monterey spineflower medium density
- Monterey spineflower high density
- Potential sand gilia habitat
- Track Zero boundary
- Study area boundary

LOCATIONS OF SPECIAL STATUS PLANTS
EAST GARRISON

MONTEREY COUNTY CALIFORNIA

0' 200' 600' 800'

SCALE: 1"= 500' DATE: JULY 2, 2003

DATE: October, 2003
REVISED: November, 2003

Figure 2

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of Inter-Garrison Road within Track Zero and the areas outside of Track Zero included in this study are mapped as critical habitat for Monterey spineflower in the May 2002 Final Rule.

Sand gilia (*Gilia tenuiflora* ssp. *arenaria*)

Sand gilia is a federally listed endangered species, a state listed threatened species, it is on CNPS List 1 B and it is an HMP species. It occurs in sandy soils in open, wind-sheltered areas, most often on level ground or on shallow slopes with stabilized sand. Sand gilia is a small annual herb with bright pinkish lavender flowers and basal leaves. Its distribution is limited, extending from Moss Landing to Spanish Bay on the Monterey Peninsula. Former Fort Ord supports one of the largest populations of sand gilia known. No sand gilia was recorded in the study area in the 1992 flora and fauna baseline studies but site-specific surveys conducted in 1993 mapped sand gilia in polygons that extend into the northwestern portion of the study area. Zander Associates observed approximately 70 plants of sand gilia in an approximately 45 square foot area in this same portion of the study area during the 2003 spring surveys (Figure 2). However, because sand gilia is an annual plant and because there is additional suitable habitat for the species in the open grassland and trails just to the west of where the 70 plants were identified, we estimate that sand gilia could occupy up to 1.1 acres within the study area in any given year.

Kellogg's horkelia (*Horkelia cuneata* ssp *sericea*)

Kellogg's horkelia is a CNPS List 1B species. It is a low-growing perennial herb that occurs in sandy and gravelly soils in coastal scrub and closed cone pine forest near the coast, but it has also been observed in grasslands on former Fort Ord. It blooms from April through September and it is necessary to have the floral and seed characteristics in order to identify it to the particular subspecies. The flora and fauna baseline study for former Fort Ord identified low density Kellogg's horkelia in the portion of the study area north of Inter-Garrison Road. In focused surveys conducted April through June 2003, we did not observe any Kellogg's horkelia in the study area. Prior to conducting these surveys, we reviewed specimens on the UC South Reserve near Imjin Road to confirm that it was blooming and identifiable. No species of *Horkelia* were observed in the study area but we did find moderate numbers of California acaena (*Acaena pinnatifida* var. *californica*), which has very similar foliage to Kellogg's horkelia.

Hooker's manzanita (*Arctostaphylos hookeri*)

Hooker's manzanita is a CNPS List 1B species and an HMP species. It is a low-growing woody shrub (up to three feet high) that forms conspicuous mounds on sandy soils. It is a common component of the central coast maritime chaparral community at former Fort Ord. The HMP does not identify any Hooker's manzanita within the study area but it does map medium density occurrences within the maritime chaparral habitat in the southern portion of East Garrison. Approximately 6 plants of Hooker's manzanita were identified along Inter-Garrison Road in the study area during our 2003 surveys. These plants were in a small patch (about 30' by 6') right at the road edge and were associated with some shrubs of black sage (Figure 2).

Seaside bird's-beak (*Cordylanthus rigidus* var. *littoralis*)

Seaside bird's-beak is a state listed endangered species, it is included on CNPS List 1B and it is an HMP species. This is an annual herb with inconspicuous white flowers that blooms late in the season, typically May through September. It has a very limited distribution in Monterey County, found in coastal areas from Carmel to Elkhorn Slough. Seaside bird's-beak occurs on sandy soils in a variety of habitats ranging from dune to chaparral and coastal scrub and often is found at transitions between these vegetation types and grasslands. The HMP maps low density seaside bird's-beak within the maritime chaparral in the southern portion of East Garrison but not within the study area. No seaside bird's-beak plants were found within the study area during the 2003 floristic surveys.

2.2.2 Animals

Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*)

The Monterey dusky-footed woodrat is a California Species of Special Concern (CSC). It is restricted to western and central Monterey County and northwestern San Luis Obispo County. This subspecies is typically found within dense chaparral or oak woodland habitats with moderately dense understory growth and abundant dead wood for nest construction. The flora and fauna baseline study identified potential habitat for Monterey dusky-footed woodrat in the oak woodlands north of Inter-Garrison Road in the study area. Woodrat nests were observed west of West Camp Road and in the oak woodland north of Inter-Garrison Road in the study area during the 2003 surveys.

Monterey ornate shrew (*Sorex ornatus salerius*)

Monterey ornate shrew is a CSC species and an HMP species. It occupies a variety of mostly moist riparian woodland habitats but is also found in upland communities where there is thick duff or downed logs. Little is known about this species, since it is difficult to locate and does not survive well in traps due to very high metabolic rates. Shrews are often short-lived (less than a year), and several generations may occur in a single year. The HMP identifies the oak woodland north of Inter-Garrison Road and the woodland west of West Camp Road in the study area as potential habitat for the Monterey ornate shrew. No Monterey ornate shrews were observed on former Fort Ord during surveys conducted for the HMP and no shrews were observed in the study area during our recent surveys. However, this assessment assumes that the Monterey ornate shrew could inhabit the oak woodland north of Inter-Garrison Road and west of West Camp Road in the study area.

California tiger salamander (*Ambystoma californiense*)

The Central California population of California tiger salamander (CTS) was proposed for federal listing as threatened by the U.S. Fish and Wildlife Service on May 16, 2003. The animal is also a CSC species and an HMP species. CTS breed in seasonal pools in grasslands and lowland hills, but spend most of their life in subterranean refugia in nearby upland habitat, commonly using small mammal burrows for that purpose. CTS are known to move long distances (± 1 km)

between aestivation sites and breeding pools. For successful breeding, CTS require seasonal pools that hold water for a minimum of four months, to allow CTS larval metamorphosis to occur. Because CTS adults may take 4 to 5 years to reach sexual maturity, during which time they are using upland habitat, 95-99% of their life cycle is spent on land, and suitable upland habitat is critical to the survival of the species. Presence of the species is most readily determined by springtime pond surveys or by rainy season drift fencing, pit traps and nighttime observations.

There is no suitable breeding habitat for CTS in the study area. The fishing pond on the Youth Camp property is approximately 150 feet south of the southwestern corner of the study area. It is an artificially created feature that was constructed and maintained by the Army for recreational use. It is fed by an artificial water source and has historically been stocked with fish. The pond is about 1.7 acres in extent and approximately 5 feet deep (Mitchell 2000). There is some emergent wetland vegetation established around the perimeter (cattails and bulrush) but the center is mainly open water. Sampling conducted in 2000 found a low diversity of crustaceans in the pond but many bullfrogs, fish and crayfish (Mitchell 2000). The presence of predatory game fish, bullfrogs and other predators preclude successful breeding of CTS in this water body.

There is a large vernal pool less than a mile south of Watkins Gate Road and near the western boundary of East Garrison that is known to provide breeding habitat for CTS. This pool is surrounded by suitable upland aestivation habitat to the south, east and west and there are also additional breeding pools located to the south and west. Even though Track Zero is within the range of movement for CTS, the area has been highly disturbed through previous land uses and there are no breeding pools on or north of the site. Consequently, the potential for CTS to aestivate on or travel through Track Zero is low.

California black legless lizard (*Aniella pulchra nigra*)

The black legless lizard is a CSC species and an HMP species. Legless lizards are fossorial animals that burrow in sand and leaf litter beneath plants and feed on insects and other invertebrates. The black legless lizard is found in loose, friable sandy soils in a variety of habitat types. At former Fort Ord, it is closely associated with the Baywood Sands and Oceano soils with native dune vegetation, coastal scrub, maritime chaparral, oak woodlands, oak savanna and grasslands. The HMP does not identify occupied or potential habitat for the black legless lizard in the study area but subsequent information regarding the distribution of this species indicates potentially suitable habitat because the area is underlain by Oceano soils. Therefore, it is possible that black legless lizards are present in the study area.

California horned lizard (*Phrynosoma coronatum frontale*)

This lizard is also a CSC species but is not an HMP species. California horned lizards inhabit open country, especially sandy areas, washes, flood plains, and wind-blown deposits in a wide variety of habitats, including shrublands, woodlands, riparian habitats and annual grassland. Warm, sunny, open areas are a main habitat requirement, along with patches of loose soil where the lizard can bury itself. The California horned lizard is known to occur in many habitat types

on former Fort Ord, and there is suitable habitat for this species within the study area. No horned lizards were observed during field surveys in 2003 but they could be present in the study area.

Special-status birds

The Migratory Bird Treaty Act (16 USC 703) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, and their eggs and nests. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." Most native bird species in the vicinity of the study area are covered by this act. The California Fish and Game Code (Section 3511) also provides protection for certain species as listed in the Section. Section 3503.5 of the Fish and Game Code specifically protects the nests and eggs of birds-of-prey and essentially overlaps with the Migratory Bird Treaty Act. In practice, abiding by the Migratory Bird Treaty Act and Section 3503.5 of the Fish and Game Code usually means to avoid removal of trees with active nests until such time as the young have fledged and the nest is abandoned.

Several special-status bird species suspected to occur in the vicinity could forage in the grasslands and could nest in the area. The California horned lark (*Eremophila alpestris actia*) is a ground-nester and the northern harrier (*Circus cyaneus*) nests on the ground in marsh vegetation or tall dense grass. The California burrowing owl *(Athene cunicularia)* nests in abandoned ground squirrel burrows. All of these birds are CSC species with their nesting habitat being of primary concern. The Fort Ord flora and fauna baseline studies (USACOE 1992b) identify the potential for each of these species to inhabit the grasslands in the study area but no nests of any of these species were observed during our 2003 surveys. Numerous surveys conducted subsequent to 1992 have not found burrowing owls or signs of burrowing owl activity in this portion of Fort Ord. Those results combined with our 2003 observations suggest that burrowing owls are not present in the study area.

The loggerhead shrike (*Lanius ludovicianus*) is a CSC species that prefers open woodland habitats with scattered trees, shrubs, posts, fences, or other perches. Nests are usually built in trees and shrubs; however, structures such as telephone poles and abandoned buildings are also used. The flora and fauna baseline study identifies potential habitat for loggerhead shrike in the grassland and oak savanna habitat south of Inter-Garrison Road (USACOE 1992b).

The golden eagle (*Aquila chrysaetos*) is a CSC species and a “fully protected” species under Section 3511 of the Fish and Game Code. Fully protected birds may not be taken or possessed except under specific permit. The golden eagle is also provided protection under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (16 USC 668). Golden eagles are uncommon permanent residents and migrants throughout California, except in the Central Valley. Eagles typically prefer rolling foothills, mountain areas, sage-juniper flats, or desert with available nest sites. Nests are usually constructed on cliffs or in large trees in open areas. The nests are large platforms, often 10 feet across and 3 feet high, of sticks, twigs, and greenery. Golden eagles are relatively site-faithful and often reuse old nests. They breed from late January through August with the peak period in March through July. Eggs are laid in early February to mid-May and the clutch size is usually two. One golden eagle was observed foraging in the

grasslands south of Inter-Garrison Road during the 2003 surveys but no active nests were identified. However, potentially suitable nesting habitat for this species is present in the study area.

The prairie falcon (*Falco mexicanus*) is a CSC species and its nesting habitat is of primary concern. Prairie falcons are scarce and local residents of open and dry interior country of southern and eastern Monterey County. They nest on cliffs, in rock fissures or crevices and forage in grasslands and oak savanna habitats. There is no suitable nesting habitat for the prairie falcon in the study area but the flora and fauna baseline study identifies potential foraging habitat in the grassland and oak savanna.

Jones and Stokes mapped potential wintering habitat for the sharp-shinned hawk (*Accipiter striatus*) in the oak woodland at East Garrison south of Watkins Gate Road (USACOE 1992b). The sharp-shinned hawk, a CSC species, typically nests in dense woodland or coniferous forests and no nests of this species have been observed at East Garrison.

Other birds that are not considered special-status but that are protected under the Fish and Game Code and Migratory Bird Treaty Act and could establish nests in the study area include the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and white-tailed kite (*Elanus leucurus*).

Special-status bats

There are four special-status bat species with ranges in Monterey County that are known to utilize buildings or trees for roosts. These species include: Townsend's western big-eared bat (*Plecotus townsendii*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis*), and long-legged myotis (*Myotis volans*). All of these bats are CSC species. The abandoned buildings and dense oak woodland within the study area could provide suitable roosting habitat for these bat species.

3.0 ASSESSMENT

3.1 Project Effects

The assessment of potential effects on biological resources presented in this section is based on the Vesting Tentative Map for East Garrison prepared by Carlson Barbee & Gibson dated October 2003.

3.1.1 Plant Communities and Wildlife Habitats

Development as proposed on the Vesting Tentative Map will result in the removal of approximately 44 acres of oak woodland, 41 acres of oak savanna, 40 acres of grassland, 2 acres of coastal scrub, and about 5,000 oak trees in varying size classes spread throughout these habitats. Some of the buildings within the 108 acres of previously developed areas will be retained but new buildings and infrastructure improvements are proposed for the majority of these areas. Most of the habitat impacts will occur within the Track Zero boundary but some will extend outside to accommodate roads and other infrastructure associated with the project. A specific discussion of where impacts will occur outside of the Track Zero boundary is included in Section 3.2. Table 1 provides a summary of the impacts on plant communities and wildlife habitats resulting from development as proposed in the East Garrison Specific Plan.

Table 1: Summary of Impacts on Habitats for the East Garrison Specific Plan

	Total Existing (acres)	Impacted (acres)
Habitats		
Oak Woodland	44.9	43.6
Oak Savanna	55	40.9
Developed	108	108
Grassland	39.6	39.6
Coastal Scrub	4.2	2.3
Total	251.7	234.4

3.1.2 Special-Status Plants

Individual plants of sand gilia, Monterey spineflower and Hooker's manzanita will be impacted by the project. Approximately 70 sand gilia plants, up to 1.1 acres of potential habitat for sand gilia, 6 Hooker's manzanita and 1.5 acres of varying densities of Monterey spineflower will be removed. Table 2 summarizes the estimated impacts on special-status plant species based on the 2003 survey results.

Table 2: Summary of Impacts on Special-Status Plant Species for the East Garrison Specific Plan

	Total Existing (acres)	Impacted (acres)
Species		
Sand Gilia	70 plants[1]	70 plants
Potential habitat	1.1	1.1
Monterey Spineflower		
High Density	0.08	0.08
Medium Density	1.19	1.19
Low Density	0.23	0.23
Total	1.5[1]	1.5
Hooker's manzanita	6 plants	6 plants

Identification of Monterey spineflower critical habitat excludes the areas designated for development by the HMP. Consequently, development within the East Garrison Specific Plan Area would not affect critical habitat for Monterey spineflower except where improvements to West Camp Road and Watkins Gate Road would extend into the Youth Camp parcel.

3.1.3 Special Status Animals

Habitat for the Monterey dusky footed woodrat and potential habitat for the Monterey ornate shrew will be lost with removal of the oak woodland and oak savanna habitats. The oak woodland and savanna plant communities also provide potential nesting habitat for a variety of special-status and migratory birds and potential roosting sites for special-status bats.
The grasslands in the specific plan area also could support ground-nesting birds such as the California horned lark and northern harrier, although evidence of these species was not observed during recent surveys of the site. Active nests of birds-of-prey and other migratory birds are protected under the Migratory Bird Treat Act and under Section 3503.5 of the Fish and Game Code. Construction activities within or adjacent to the oak woodland habitat could disturb active nests through direct removal (if trees are to be removed) or by causing abandonment by the adults. Established roosts of special-status bat species are of concern to CDFG and if active roosts are present in the oak woodlands or abandoned buildings, these could be disturbed during tree removal and/or building demolition.

The black legless lizard and California horned lizard may be present in the study area. The black legless lizard is not federally- or state-listed, but it is designated as a Species of Special Concern by CDFG. Loss of potential habitat for the black legless lizard is anticipated, and mitigation is provided through the set-aside and management of habitat reserve areas within the boundaries of the former Fort Ord as described in the April 1997 HMP. The California horned lizard can be relatively mobile, and as such is likely to avoid the construction areas and construction equipment. No substantial loss of habitat for this species is expected to result from implementation of the Specific Plan.

[1] Based on 2003 survey data. These are annual species and population numbers can fluctuate from year to year.

The project would not substantially reduce the amount of aestivation habitat available for CTS and it would not disrupt travel corridors between breeding sites because there are no pools on or within a reasonable distance north of Track Zero that are used by CTS. In the unlikely event that CTS were aestivating within the study area, construction activities could harm individual salamanders.

3.2 Consistency with the HMP

The proposed development within Track Zero is consistent with the HMP as modified through the Land Swap Assessment. Approximately 126 acres of habitat and 108 acres of developed areas would be lost/converted by the project and this is within the range assumed in the Land Swap Assessment. The loss of Monterey spineflower (about 1.5 acres), and sand gilia (about 1.1 acre) are also anticipated by the HMP as modified which assumed that up to 36 acres of low-density Monterey spineflower habitat and about 5 acres of sand gilia would be removed. Hooker's manzanita was not previously mapped within Track Zero but it is a component of the maritime chaparral in East Garrison south of the Track Zero boundary and in the several thousand acres of reserve lands established on former Fort Ord by the HMP.

The proposed development outside of Track Zero consists of the future road corridor linking Reservation Road and East Garrison, widening and realignment of West Camp Road and improvements to Watkins Gate Road. The HMP allows for the future road corridor through habitat reserve lands west of the Track Zero boundary and the conditions included in the Land Swap Assessment state that the Fort Ord Reuse Authority (FORA) and the County shall make all reasonable efforts to realign this corridor to avoid isolating habitat reserve lands. The area included in the future road corridor through Monterey County's habitat parcel at East Garrison as illustrated in the HMP totals approximately 7.5 acres. The road alignment indicated on the Vesting Tentative Map linking Reservation Road with East Garrison through the habitat reserve would impact approximately 7.5 acres of habitat and it realigns the road to avoid isolating habitat reserve lands. Therefore, the proposed road alignment is consistent with what was assumed in the HMP and it meets the conditions in the Land Swap Assessment.

Improvements to West Camp Road and Watkins Gate Road shown on the Vesting Tentative Map extend slightly beyond the Track Zero boundary into the Monterey County Youth Camp parcel. The HMP allows development in this parcel (L20.2.2) within the existing campground and also allows potential future expansion of the campground. Monterey County Parks, the entity expected to receive the property, supports the road improvements because they will occur within the area of the existing campground, they will provide better access to the camping facility and they will serve as a barrier and fire buffer between residential and recreational uses. Approximately 1.7 acres of oak woodland and 2.7 acres of oak savanna on the Youth Camp parcel would be impacted for these road improvements but some of the area within the limit of grading could be replanted with oak trees once construction is completed.

Table 3 summarizes the habitat impacts anticipated within and outside Track Zero for development as proposed in the East Garrison Specific Plan.

Table 3: Habitat Impacts Inside and Outside of the Track Zero Boundary

	W/in Track Zero		Outside of Track Zero (by feature)					
Habitat			Inter-Garrison Road		West Camp Road		Watkins Gate	
	Existing	Impacted	Existing	Impacted	Existing	Impacted	Existing	Impacted
OW	39.2	37.9	4.0	4.0	1.7	1.7		
OS	50.7	36.6			1.2	1.2	3.1	3.1
D	103.7	103.7					4.3	4.3
G	36.1	36.1	3.5	3.5				
CS	4.2	2.3						
	233.9[2]	216.6	7.5	7.5	2.9	2.9	7.4	7.4

3.3 Mitigation

3.3.1 Land Swap Assessment

With the Land Swap Assessment, habitat and species losses at East Garrison are offset by equivalent or better gains in kind at Parker Flats. The revised development footprint at Parker Flats would result in the preservation of about 249 acres of oak woodland, 196 acres of maritime chaparral and 18 acres of grassland habitats that were previously slated for development in the HMP. Three federally and/or state listed plant species, Monterey spineflower, sand gilia and seaside bird's beak have been recorded from the Parker Flats area, and Hooker's manzanita is also present in the maritime chaparral habitat. There is potential habitat for numerous other special-status species at Parker Flats, including Monterey dusky-footed woodrat, Monterey ornate shrew, black legless lizard, California horned lizard and several bird and bat species. Parker Flats was not included in the designation of Monterey spineflower critical habitat because it was identified as a development polygon in the HMP. With the Land Swap Assessment, the reserve areas would be considered critical habitat, following the methods employed by the USFWS in identifying habitat at former Fort Ord, and would offset losses at East Garrison.

The Land Swap Assessment included a set of conditions that provide the necessary assurances to the Service that the proposed modifications will not compromise the overall goals of the Fort Ord HMP or result in a net loss of HMP Species or habitat. The assessment, along with the concurrence letter from the Service to the Army dated May 28, 2002 is the basis for modifications to the April 1997 HMP. A copy of the conditions is provided in Appendix B of this report. Appendix C summarizes the status of compliance with the General Conditions and East Garrison Conditions included in the Land Swap Assessment.

Assuming that all of the conditions in the Land Swap Assessment are met, the designation of habitat reserve areas at Parker Flats effectively mitigates for the habitat and species losses that will occur with development as proposed in the East Garrison Specific Plan. However, neither the HMP nor the Land Swap Assessment provide formal authorization for "incidental take" of

[2] Approximately 9 acres north of Reservation Road but within Track Zero boundary not included in the study area.

state or federally listed species that may result from development at East Garrison or elsewhere on the base. The incidental take coverage provided to the Army through the HMP does not extend to other parties. Consequently, the principal parties that have or will be acquiring land at former Fort Ord are in the process of preparing a Habitat Conservation Plan (HCP) and Implementing Agreement (IA), which will provide the basis for issuance of basewide incidental take authorizations from both the Service and CDFG.[3] Until such basewide authorizations are granted, incidental take of state or federally listed species must be addressed on a project-by-project basis.

The loss of sand gilia would require project-specific incidental take authorization from CDFG if basewide authorization is not granted prior to initiation of project construction. The incidental take authorization would likely require mitigation beyond that provided by the HMP for the loss of at least 70 sand gilia plants and approximately 1.1 acres of potential habitat. Mitigation could be accomplished through seed and seedbank salvage, and restoration or creation of habitat of an appropriate size and character at a suitable location on former Fort Ord (e.g. the landfill or Parker Flats).

Independent take authorization from the Service would not be required for the removal of Monterey spineflower plants. However, if there is a federal nexus (e.g. Army granting of Right of Entry in areas occupied by spineflower) to actions that might affect spineflower or critical habitat for spineflower, the federal entity involved would likely need to consult (Section 7) with the Service to comply with the federal Endangered Species Act (ESA). In similar situations on development parcels at Fort Ord in the past, the consultation process is a formality that does not result in additional mitigation requirements.

Even though the potential for CTS to be present in the study area is low, if the species is listed as threatened and the HCP/IA are not completed and executed, East Garrison Partners may elect to obtain separate incidental take authorization. The Land Swap Assessment acknowledged the presence of CTS in the area and included measures in the conditions (specifically conditions 3 and 4) to minimize and mitigate impacts to this species resulting from development at East Garrison.

3.3.2 Additional Measures Recommended

Much of the existing native vegetation within Track Zero will be removed for development of the site. However, there are a few open space areas where native vegetation will be retained and other open space areas where there may be opportunities to replant with native species. To maintain the native habitats that remain, the landscape palette should exclude non-native invasive plant species such as acacia (*Acacia* spp), French broom (*Genista monspessulana*), pampas grass (*Cortaderia jubata*), and eucalyptus (*Eucalyptus* spp.). The landscape palette should be developed in consultation with a biologist or landscape architect familiar with the local flora and habitats. Maintenance programs developed for the open space areas should address the control of non-native invasive species to protect the native habitat.

[3] Federal entities would still be required to consult with the USFWS under Section 7 of the ESA, but such consultation would be streamlined.

To comply with the Fish and Game Code and the Migratory Bird Treaty Act, pre-construction surveys for active bird nests are recommended as follows:

> California horned lark and northern harrier: To avoid disturbance of an active nest, ground-disturbing activities should be initiated between August and January. If these activities are initiated after January and before August, a qualified biologist should conduct a survey for active nests within a certain radius around the area that will be disturbed. The survey area should be determined by the biologist considering the nature of the activity and the site characteristics. If active nests are found and the biologist determines that construction activities would remove the nest or have the potential to cause abandonment, then those activities should be avoided until the young have fledged as determined through monitoring of the nest. Once the young have fledged, construction activities can resume in the vicinity
>
> Migratory birds: If construction activities are initiated after August 1 and before January 15 (outside of the typical nesting season for the birds-of-prey and migratory birds that may nest in the study area), then pre-construction surveys for active nests should not be necessary. If activities are initiated before August or after January, then pre-construction surveys for active nests within a certain radius of proposed activities are recommended. If active nests are found and the biologist determines that construction activities would remove the nest or have the potential to cause abandonment, then those activities should be avoided until the young have fledged as determined through monitoring of the nest. Once the young have fledged, construction activities can resume in the vicinity.

To avoid disturbance of special status bat species that may roost in the area, a pre-construction survey and habitat assessment is recommended as follows:

> Prior to building demolition or tree removal, a qualified biologist should survey the buildings and trees for presence of roosting bats. If special-status bat species are present, the following measures should be implemented:
>
> - Building removal and/or tree removal should not occur if maternity bat roosts are present (between April 15 and August 1) in the building or tree.
> - No building or tree removal should occur within 300 feet of the maternity roost until all young bats have fledged – as determined by a qualified biologist.
> - If special-status bats are present but there is not an active maternity roost, a Memorandum of Understanding (MOU) with the CDFG should be obtained in order to remove the animals prior to building demolition and/or tree removal. Alternate habitat may need to be provided if bats are to be excluded from maternity roosts. A roost with comparable spatial and thermal characteristics should be constructed as directed by a qualified biologist. In the event that adult bats need to be handled and relocated, a qualified biologist should prepare and implement a relocation plan subject to approval by CDFG that includes relocating all bats found on-site to an alternate suitable habitat. A Mitigation and Monitoring Plan that mitigates for loss of bat roosting habitat should be prepared by a qualified biologist and approved by CDFG prior to building/tree removal.

To minimize harm to wildlife that may be within the construction area, a qualified biologist should be designated to monitor construction activities and to inform construction personnel of the potential biological issues associated with development of the site. The biological monitor can provide on-site direction for addressing specific species if they are encountered during grading. If as a result of pre-construction surveys exclusion zones are established to protect nesting birds or roosting bats, the biological monitor can advise the construction crews of those areas and of the importance of respecting and maintaining those zones.

Loss of habitat for Monterey dusky-footed woodrat, Monterey ornate shrew and California black legless lizard will be compensated at Parker Flats. Based on consultations with CDFG (Cann 2003), we do not recommend directed pre-construction surveys and salvage of these animals because loss of individuals of these species in the study area will not substantially reduce their respective populations at Fort Ord and we cannot predict what effect the transplanted species will have on populations at the receiver site. As individuals of these species are encountered during construction, the biological monitor could move the animal out of harms way or otherwise consult with CDFG on the most appropriate action to take.

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APPENDIX A

LIST OF VASCULAR PLANTS
IN EAST GARRISON TRACK ZERO PARCEL

APPENDIX A
LIST OF VASCULAR PLANTS IN EAST GARRISON TRACK ZERO PARCEL

(Survey of plant species was conducted from 27 March through 22 August, 2003)

Classification and nomenclature follow the Jepson Manual (Hickman 1993) except where noted. Common names are from a variety of sources. Rare and endangered status from California Dept of Fish and Game Natural Diversity Database.

FERNS AND ALLIES

Pteridaceae

Pentagramma triangularis – Goldback fern

Dennstaedtiaceae

Pteridium aquilinum – Western bracken

GYMNOSPERMS

Cupressaceae

Cupressus macrocarpa - Monterey cypress **(1B) (Note: Most likely planted)**

Pinaceae

Pinus coulteri – Coulter pine

Pinus radiata - Monterey pine **(1B) (Note: Most likely planted)**

DICOTYLEDONS

Aizoaceae

*Carpobrotus edulis** - Hottentot fig

Anacardiaceae

Toxicodendron diversilobum - Poison oak

Apiaceae

*Anthriscus caucalis** - Bur-chervil

Apiastrum angustifolium - Wild celery

*Conium maculatum** - Poison hemlock

*Foeniculum vulgar*e* - Fennel

Sanicula arctopoides - Footsteps of spring

Sanicula crassicaulis – Pacific sanicle

Asteraceae

Achillea millefolium - Common yarrow

Agoseris heterophylla - Annual dandelion

Anisocarpus madioides (was *Madia madioides*) - Woodland madia

Artemisia californica - California sagebrush

Artemisia douglasiana - Mugwort

Baccharis pilularis var. *consanguinea* – Coyote brush
(var. *consanguinea* included in sp. in Jepson)

*Carduus pycnocephalu*s* - Italian thistle

*Centaurea melitensi*s* - Tocalote

*Chamomilla suaveolen*s* - Pineapple weed

Corythrogyne filaginifolia (was *Lessingia filaginifolia* ssp. *filaginifolia*) – Sand aster

Deinandra corymbosa ssp. *corymbosa* (was Hemizonia corymbosa ssp. corymbosa) – Coast tarweed
Eriophyllum confertiflorum var. *confertiflorum* –Golden yarrow
*Filago gallica** - Narrow-leaved filago
Gnaphalium californicum - California everlasting
Gnaphalium canescens ssp. *beneolens* – Fragrant everlasting
*Gnaphalium luteo-album** - Weedy cudweed
Gnaphalium purpureum - Purple cudweed
Gnaphalium stramineum - Cotton-batting plant
Heterotheca grandiflora - Telegraph weed
*Hypochaeris glabra** - Smooth cat's ears
*Hypochaeris radicata** - Hairy cat's ears
Layia hieracioides - Tall layia
Layia platyglossa - Tidy tips
Lessingia filaginifolia var. *filaginifolia* –Sand aster
Madia exigua – Small tarweed
Madia gracilis - Slender tarweed
Madia madioides (see *Anisocarpus madioide*s)
Madia sativa – Coast tarweed
Psilocarphus brevissimus var. *brevissimus* – Dwarf woolly-heads
*Silybum marianu*m* - Milk thistle
Sonchus asper ssp. *aspe*r* - Prickly sow thistle
*Sonchus oleraceus** - Common sow thistle

Boraginaceae

Amsinckia menziesii var. *intermedia* – Common fiddleneck
Amsinckia menziesii var. menzesii – Harvest fireweed
Pectocarya penicillata - Winged pectocarya
Plagiobothrys species -
?Plagiobothrys canescens - Valley popcorn flower

Brassicaceae

*Barbarea verna** - Winter cress
*Brassica nigra** - Black mustard
Cardamine oligosperma - Bitter cress
*Hirschfeldia incana** - Summer mustard
*Raphanus sativus** - Wild radish
Thysanocarpus curvipes - Hairy fringe pod

Caprifoliaceae

Sambucus mexicana - Blue elderberry

Caryophyllaceae

Cardionema ramosissimum - Sand mat
Cerastium arvense - Field chickweed
*Petrorhagia prolifera** - Petrorhagia
*Silene gallica** - Windmill pink
Spergula arvensis ssp. *arvensis** - Spurry, stickwort, starwort
*Stellaria media** - Common chickweed

Chenopodiaceae

Chenopodium californicum - California goosefoot

Cistaceae

*Cistus creticus** - Rock-rose

Convolvulaceae

Calystegia subacaulis ssp. *subacaulis* – Hill morning-glory

Crassulaceae

Crassula connata - Sand pigmyweed
Dudleya caespitosa - Sea lettuce

Cucurbitaceae

Marah fabaceus - Man-root, wild cucumber

Ericaceae

Arctostaphylos hookeri ssp. *hookeri* - Hooker's manzanita **(1B)**
Arctostaphylos tomentosa ssp. ? - Shaggy- barked manzanita

Euphorbiaceae

Croton californicus - Croton

Fabaceae

Acacia sp. - Acacia
Astragalus gambelianus – Gambel's dwarf locoweed
*Genista monspessulan*a* - French broom
Lotus heermannii var. *orbicularis* - Woolly lotus
Lotus humistratus – Short-podded lotus
Lotus scoparius var. *scoparius* - Deerweed
Lotus strigosus - Bishop's lotus
Lotus wrangelianus - Chile lotus
Lupinus albifrons var. *albifrons* - Silver bush lupine
Lupinus arboreus - Yellow bush lupine, tree lupine
Lupinus bicolor - Lindley's annual lupine
Lupinus nanus - Sky lupine, Douglas' annual lupine
*Medicago polymorph*a* - Bur clover
*Melilotus alb*a* - White sweetclover
*Melilotus indic*a* - Indian melilot, sourclover
Trifolium albo-purpureum – Rancheria clover
*Trifolium angustifolium** - Narrow-leaved clover
*Trifolium campestr*e* - Hop clover
Trifolium ciliolatum - Tree clover
Trifolium depauperatum var. *truncatum* – Red sack clover
*Trifolium dubium** - Shamrock, little hop clover
Trifolium gracilentum var. *gracilentum* –Pinpoint clover
*Trifolium hirtu*m* - Rose clover
*Trifolium incarnatu*m* - Crimson clover
Trifolium macraei – Double-headed clover
Trifolium microcephalum - Maiden clover
*Trifolium pratense** - Red clover
*Trifolium subterraneum** - Subterranean clover
Trifolium willdenovii - Tomcat clover
Vicia sativa ssp. *nigra** - Smaller common vetch, narrow-leaved vetch
Vicia sativa ssp. *sativ*a* - Common vetch, spring vetch
Vicia villosa ssp. *vari*a* - Woolly vetch

Fagaceae

Quercus agrifolia var. *agrifolia* - Coast live oak

Geraniaceae

*Erodium botrys** - Long-beaked filaree
*Erodium cicutarium** - Red-stemmed filaree
*Geranium dissectu*m* - Cut-leaved geranium
*Geranium molle** - Dove's foot geranium
*Geranium bicknellii** - Bicknell's geranium

Grossulariaceae
Ribes speciosum - Fuchsia-flowered gooseberry
Hydrophyllaceae
Nemophila menziesii var. *menziesii* – Baby blue-eyes
Phacelia distans - Wild heliotrope
Phacelia douglasii – Douglas' phacelia
Phacelia malvifolia - Stinging phacelia
Pholistoma auritum var. *auritum* - Blue fiesta flower
Pholistoma membranaceum - White fiesta flower
Lamiaceae
Salvia mellifera - Black sage
Scutellaria tuberosa - Dannie's skullcap
Stachys bullata - Wood mint, hedge-nettle
Malvaceae
*Malva parviflora** - Cheeseweed
Sidalcea malvaeflora ssp. *malvaeflora* – Checker bloom
Myrtaceae
Eucalyptus sp. – Eucalyptus
Onagraceae
Camissonia contorta – Contorted primrose
Camissonia micrantha - Small primrose
Camissonia ovata - Sun cups
Clarkia purpurea ssp. *purpurea* - Winecup clarkia
Clarkia purpurea ssp. *quadrivulnera* - Four-spot clarkia
Oxalidaceae
Oxalis albicans ssp. *pilosa* - Hairy wood-sorrel
*Oxalis pes-caprae** - Bermuda buttercup
Papaveraceae
Eschscholzia californica var. *california* –California poppy
Eschscholzia californica var. *maritima* –California beach poppy
(vars. of *Eschscholzia* not in Jepson)
Platystemon californicus - Cream cups
Plantaginaceae
*Plantago coronopus** - Cut-leaved plantain
Plantago erecta - California plantain
*Plantago lanceolata** - English plantain
Polemoniaceae
Gilia clivorum - Purplespot gilia
Gilia tenuiflora spp. arenaria – Sand gilia
Navarretia atractyloides – Holly-leaved navarretia
Navarretia hamata – Hooked navarretia
Polygonaceae
Chorizanthe angustifolia – Narrow-leaved spine-flower
Chorizanthe pungens var. *pungens* – Monterey spine-flower **(1B)**
(var. *pungens* not recognized in Jepson)
Eriogonum nudum – Naked eriogonum
Lastarriaea coriacea – Lastarriaea
Pterostegia drymarioides – Pterostegia
*Rumex acetosella** - Sheep sorrel
*Rumex crispus** - Curly dock
Portulacaceae

Calandrinia honolo – Red maids
Claytonia perfoliata ssp. *perfoliata* – Miner's lettuce

Primulaceae
*Anagallis arvensis** - Scarlet pimpernel
Dodecatheon clevelandii ssp. *sanctarum* – Padre's shooting star

Ranunculaceae
Ranunculus californicus – California buttercup

Rhamnaceae
Rhamnus californica ssp. *californica* –California coffeeberry

Rosaceae
Acaena pinnatifida var. *californica* – California acaena
Aphanes occidentalis – Lady's mantle
Fragaria chiloensis – Beach strawberry
Heteromeles arbutifolia – Toyon, Christmas berry
Rubus ursinus – California blackberry

Rubiaceae
Galium aparine – Goose-grass
Galium porrigens var. *porrigens* – Climbing bedstraw

Salicaceae
Salix lasiolepis – Arroyo willow

Saxifragaceae
Lithophragma affine – Woodland star
Saxifraga californica – California saxifrage

Scrophulariaceae
Castilleja exserta ssp. *exserta* – Owl's clover
Castilleja affinis – Coast paintbrush
Collinsia heterophylla – Chinese houses
Mimulus aurantiacus – Sticky monkey flower
Triphysaria pusilla – Dwarf owl's clover

Solanaceae
Solanum umbelliferum – Blue witch

Valerianaceae
Plectritis congesta – Pink plectritis

Verbenaceae
Verbena lasiostachys var. *lasiostachys* – Western vervain

Violaceae
Viola pedunculata – Johnny jump-up

MONOCOTYLEDONS

Cyperaceae
?Carex barbarae – Santa Barbara sedge

Iridaceae
Sisyrinchium bellum – Blue-eyed grass

Juncaceae
Luzula comosa – Common wood rush

Liliaceae
Chlorogalum pomeridianum var. *pomeridianum* –Soap plant, amole
Dichelostemma capitatum ssp. *capitatum* – Blue dicks
Muilla honolog – Common muilla

Poaceae

*Aira caryophyllea** - Silvery hair-grass
*Avena barbata** - Slender wild oat
*Avena fatua** - Wild oat
*Briza maxima** - Rattlesnake grass
*Briza minor** - Little quaking grass
Bromus carinatus var. *carinatus* – California brome
*Bromus diandrus** - Ripgut grass
*Bromus hordeaceus** - Soft chess
Bromus madritensis ssp. *rubens** - Red brome
?*Bromus stramineum** -
*Cortaderia jubata** - Pampas grass, jubata grass
Danthonia californica var. *californica* –California oat-grass
Distichlis spicata – Salt grass
Elymus glaucus ssp. *glaucus* – Blue wildrye, western ryegrass
Hordeum murinum ssp. *leporinum** - Barnyard foxtail
Koeleria macrantha – June grass
*Lolium multiflorum** - Italian ryegrass
Melica imperfecta – Coast-range melica
Nassella cernua – Nodding needlegrass
*Pennisetum clandestinum** - Kikuyu grass
Poa secunda ssp. *secunda* – Pine bluegrass
Poa unilateralis – San Francisco bluegrass
Vulpia myuros var. *myuros** - Fescue

Key

* = Non-native
(1B) = Plants rare, threatened, or endangered according the California Native Plant Society.
(4) = Plants of limited distribution – CA watch list
? This is closest identification. Not confirmed.

APPENDIX B

CONDITIONS INCLUDED IN ASSESSMENT EAST GARRISON – PARKER FLATS LAND USE MODIFICATIONS FORT ORD, CALIFORNIA

(From Zander 2002)

CONDITIONS

Based on this assessment and on initial coordination among resource agencies and other interested parties including staff of the U.S. Fish and Wildlife Service, U.S. Army, Bureau of Land Management, California Department of Fish and Game, Monterey Peninsula College, Fort Ord Reuse Authority and County of Monterey, the following conditions will provide the necessary assurances to the Service that the proposed modifications will not compromise the overall goals of the Fort Ord Habitat Management Plan or result in a net loss of HMP Species or habitat. The assessment presented in this report, along with signed agreement to these conditions and concurrence from the Service, shall be the basis for modifications to the April 1997 HMP and the Habitat Conservation Plan and Implementing Agreement currently in preparation through the Coordinated Resource Management Planning program at Fort Ord.

General

1. The County of Monterey shall sign the April 1997 HMP.

2. FORA, the County, BLM and MPC shall agree, through a Memorandum of Understanding or equivalent binding agreement, to the land use modifications at East Garrison, Parker Flats and the MOUT facility as described in this report.

3. FORA and the County shall revise the cost and funding estimates for habitat management, to include the additional costs associated with prescribed burning and monitoring in the new habitat areas at Parker Flats, in accordance with changed habitat management responsibilities resulting from the proposed modifications described in this report. Funds previously allocated for habitat management shall not be reallocated to accommodate new prescribed burning requirements.

East Garrison

1. Final development siting and boundary adjustments at East Garrison shall be coordinated with the Service, BLM and the CDFG based on a maximum development footprint, exclusive of existing roads, of 451 acres, approximating the limits of development illustrated on Figure 4 in this report. Borders between habitat areas and development areas shall be established to allow fire breaks, fire management access and adequate habitat setbacks, all of which shall occur within the developable footprint.

2. FORA and the County shall make all reasonable efforts to realign the HMP-designated *Future Road Corridor* (Figures 1, 3 and 8 of this report) linking Reservation Road with East Garrison to avoid isolating habitat reserve lands. If such realignment is not possible, the resulting isolated habitat reserve land acreage will be designated for development and developable land of comparable value and size, contiguous with other reserve lands shall be redesignated as habitat reserve.

3. FORA and the County recognize the potential impacts to California tiger salamander and other HMP Species that could result from increased use of minor roads leading out of East

Garrison into habitat reserve areas. The disposition and use of these roads shall be addressed through the CRMP program, and appropriate habitat protection measures shall be incorporated into the HCP prepared through CRMP.

4. A low wall or other suitable barrier to migration of California tiger salamanders shall be constructed along the development/reserve boundary to the east of the vernal pool illustrated on Figure 3 of this report when development occurs in that area. Such a barrier is intended to discourage movement of California tiger salamanders into developed areas, thereby reducing the potential for harm to the species.

Parker Flats

1. Borderland requirements between the development and habitat reserve areas and suitable management entities for the new habitat reserve areas at Parker Flats shall be established in coordination with the Service, CDFG and BLM through the CRMP program.

2. BLM and MPC shall agree on an appropriate perimeter area around Range 45 that will provide for public safety and also allow for habitat protection and management. The party responsible for the management of this perimeter area shall also be identified.

3. The area proposed for use as the Monterey Horse Park, as illustrated on Figure 5 in this report, shall be designated as development with reserve area and restrictions with requirements to maintain an aggressive non-native plant species eradication program and preserve a 70-acre oak woodland habitat area approximating the boundaries of the Oak Woodland Habitat Reserve illustrated on Figure 5. An approximately 150-foot wide section of a proposed cross-country course shall be allowed through the eastern end of oak woodland reserve, or possibly through the oak woodlands and grasslands to the east of the Horse Park area, but shall be sited and designed to minimize vegetation removal and maintain wildlife movement corridors between habitat reserves. Any other trails and courses through habitat reserves shall use existing or realigned roads and trails. No buildings, grandstands, corrals, parking areas or other developments shall be allowed in designated habitat reserves. The siting and design of Horse Park trails and courses through habitat reserves shall be approved by the Service, CDFG and BLM through the CRMP program.

4. Habitat management requirements in the new habitat reserve areas shall be the same as those specified for the NRMA, except that there shall be no 2%development allowance in the new reserve areas. All parties recognize the need for the use of prescribed fire to restore habitat values in the mechanically cleared chaparral areas at Parker Flats shown on Figure 5 of this report.

5. The County and/or FORA shall submit an application for a prescribed burn in the mechanically cleared chaparral areas at Parker Flats within six months of the date determined by a designated burn specialist and the CRMP biological working group to be most beneficial for a burn (e.g. the site can carry a fire, smoke impacts would be minimized, species would still have restoration potential).

6. The County and/or FORA shall quantitatively characterize the condition of the HMP Species in the mechanically cleared areas by September 1, 2003 and prior to an actual burn of the area to adequately establish a pre-burn monitoring baseline to assist the CRMP in addressing success criteria and prescribed burn goals.

7. The County and/or FORA shall monitor the results of the prescribed burn in the mechanically cleared areas following procedures and a schedule established in coordination with a designated burn specialist and the CRMP biological working group. Success criteria established in coordination with the CRMP program shall be used to determine if habitat restoration goals are met through the prescribed burn.

8. If FORA and/or the County are unable to perform the prescribed burn or if restoration goals are not met following a burn, FORA and/or the County shall inform the Service, the Army, BLM, CDFG and others through the CRMP program that they shall either: 1.) Complete a series of habitat restoration projects on eroded, unused trails, roads or other degraded sites on other lands transferred or to be transferred as habitat reserve that support appropriate HMP Species; or 2.) Comply with existing resource conservation requirements of the executed HMP for East Garrison if development has not yet proceeded beyond the allowances of those requirements, effectively abandoning the proposed exchange of development acreage between Parker Flats and East Garrison, but retaining the modifications to Range 45 and the MOUT facility, including the establishment of new reserve lands adjacent to both areas as described in this report.

MOUT

1. BLM and MPC shall review the proposed boundary modifications at the MOUT facility described in this report and agree (through the MOU or equivalent binding agreement referenced above) that both habitat management and safe operation of the facility can be achieved with the proposed modifications.

2. BLM, MPC, FORA and the County shall agree on the ultimate disposition and management of the MOUT facility in accordance with the MOU or equivalent binding agreement referenced above.

APPENDIX C

STATUS OF COMPLIANCE WITH GENERAL AND EAST GARRISON CONDITIONS IN ASSESSMENT EAST GARRISON – PARKER FLATS LAND USE MODIFICATIONS FORT ORD, CALIFORNIA

STATUS OF COMPLIANCE WITH GENERAL AND EAST GARRISON CONDITIONS LAND SWAP ASSESSMENT

In a letter dated May 28, 2002 to the Installation Commander at the Presidio of Monterey, the U.S. Fish and Wildlife Service concurred with the land use modifications proposed in a May 2002 report entitled, *Assessment, East Garrison - Parker Flats Land Use Modifications, Fort Ord, California (Land Swap Assessment).* The *Land Swap Assessment* includes a set of general and East Garrison-specific conditions (Appendix C of the *Assessment*) that must be met for the proposed modifications to be implemented. Following is a list of both sets of conditions and the current status of compliance with each:

General Conditions

4. The County of Monterey shall sign the April 1997 HMP.

On July 29, 2003, the Board of Supervisors of the County of Monterey authorized County signature of the April 1997 HMP.

5. FORA, the County, BLM and MPC shall agree, through a Memorandum of Understanding or equivalent binding agreement, to the land use modifications at East Garrison, Parker Flats and the MOUT facility as described in this report.

On September 23, 2003, the Board of Supervisors of the County of Monterey approved and authorized the Chair to sign a Memorandum of Understanding on behalf of the County with FORA, BLM, MPC and the Army. All parties, with the exception of the Army, have signed the MOU. The MOU is currently under review for signature by the Army.

6. FORA and the County shall revise the cost and funding estimates for habitat management, to include the additional costs associated with prescribed burning and monitoring in the new habitat areas at Parker Flats, in accordance with changed habitat management responsibilities resulting from the proposed modifications described in this report. Funds previously allocated for habitat management shall not be reallocated to accommodate new prescribed burning requirements.

Representatives of the County and FORA are involved in ongoing discussions with the U.S. Fish and Wildlife Service and others through CRMP regarding the appropriate procedures for prescribed burning and monitoring at Parker Flats. Until the issues regarding prescribed burning are resolved, costs estimates cannot be accurately revised.

East Garrison Conditions

1. Final development siting and boundary adjustments at East Garrison shall be coordinated with the Service, BLM and the CDFG based on a maximum development footprint, exclusive of existing roads, of 451 acres, approximating the limits of development illustrated on Figure 4 in this report. Borders between habitat areas and development areas shall be established to

allow fire breaks, fire management access and adequate habitat setbacks, all of which shall occur within the developable footprint.

This condition refers to the final development siting and boundary designations for full buildout of the 451 acres that were identified for development at East Garrison in the Land Swap Assessment. The current development footprint accounts for approximately 240 acres, largely within the existing developed areas of the East Garrison polygon, and does not extend into the southern area of the polygon where there are higher densities of maritime chaparral and other HMP species. The primary purposes of this condition are to assure that the effects of development do not extend beyond the limits presented in the Land Swap Assessment for the East Garrison polygon and that the interface between development and habitat meets standards acceptable to USFWS, BLM and CDFG. A meeting was held November 19, 2003 with the USFWS and BLM to preview the development siting and boundary adjustments for the East Garrison Specific Plan. Ongoing coordination with these agencies and with CDFG and the Army will continue prior to final approval of the project by Monterey County.

2. FORA and the County shall make all reasonable efforts to realign the HMP-designated *Future Road Corridor* (Figures 1, 3 and 8 of this report) linking Reservation Road with East Garrison to avoid isolating habitat reserve lands. If such realignment is not possible, the resulting isolated habitat reserve land acreage will be designated for development and developable land of comparable value and size, contiguous with other reserve lands shall be redesignated as habitat reserve.

The "Future Road Corridor" shown in the HMP has been realigned in the East Garrison Specific Plan so that habitat reserve lands are not isolated and no additional land area, beyond that anticipated by the HMP, will be required to link Reservation Road with East Garrison. A concept of this realignment was discussed with USFWS and BLM in a meeting held November 19, 2003.

3. FORA and the County recognize the potential impacts to California tiger salamander and other HMP Species that could result from increased use of minor roads leading out of East Garrison into habitat reserve areas. The disposition and use of these roads shall be addressed through the CRMP program, and appropriate habitat protection measures shall be incorporated into the HCP prepared through CRMP.

No minor roads leading out of East Garrison into habitat reserve areas (e.g. Watkins Gate Road) are proposed for improvement or active use as part of the Track 0 project. Inter-Garrison Road and Reservation Road are expected to be the primary travel routes servicing East Garrison. Barloy Canyon Road provides access to Laguna Seca raceway during events but is otherwise gated to through traffic at Eucalyptus. BLM manages the gate closure on Barloy Canyon Road and has considered moving the gate to the southern end of the East Garrison polygon when development occurs there. The ultimate disposition and use of minor roads leading out of East Garrison into habitat reserve areas will be addressed through CRMP as the HCP is revised.

4. A low wall or other suitable barrier to migration of California tiger salamanders shall be constructed along the development/reserve boundary to the east of the vernal pool illustrated on Figure 3 of this report when development occurs in that area. Such a barrier is intended to discourage movement of California tiger salamanders into developed areas, thereby reducing the potential for harm to the species.

This condition applies to development that would occur in subsequent phases beyond the Track Zero project. The subject vernal pool is located to the southwest of the Track Zero development area.

STEPHEN R. STAUB, FORESTER & ENVIRONMENTAL CONSULTANT'S FOREST MANAGEMENT PLAN

FOREST MANAGEMENT PLAN

FOR

EAST GARRISON PROJECT/WOODMAN DEVELOPMENT COMPANY, INC.

Owner: United States Army

Applicant: East Garrison Partners-1, LLC
24571 Silver Cloud Court, Suite 101
Monterey, CA 93940

Introduction

This Forest Management Plan is prepared for East Garrison Partners-1, LLC, by Stephen R. Staub, Registered Professional Forester #1911 and Cheyenne Borello, Associate Forester and Certified Arborist #WE-6695. A 244-acre portion ("Track Zero") of Fort Ord is scheduled to be transferred from the Department of the Army to the County of Monterey to be developed in accordance with the East Garrisoon Specific Plan. The property, known as "Track Zero at East Garrison", is located immediately south of Reservation Road at its junction with Inter-Garrison Road. In April through July 2003, a tree inventory of the study area was conducted in order to characterize existing stands, estimate tree removal and retention numbers, and identify the location and number of landmark trees (trees which are 24 inches or more in diameter when measured two feet above the ground). The scope of this plan covers the trees on the entire property with particular emphasis on trees that will be impacted by construction activities.

Site Description

Assessor's Parcel Numbers: Not currently applicable as property is still owned by the US Army.

Location: Located within the former Fort Ord immediately south of Reservation Road at its junction with Inter-Garrison Road.

Parcel Size: +/- 252 acres. The study area for the project is comprised of 233.9 acres within Track Zero at East Garrison and 17.8 acres adjoining it that will be impacted by development. 9 acres within the Track Zero but north of Reservation Road are not included in this total because they will not be impacted. .

Existing Land Use: Former Fort Ord military base with abandoned buildings and infrastructure with surrounding undeveloped oak woodland and grassland. The East Garrison area is one of three major developed areas within the former Fort Ord.

Slope: Slopes within proposed development areas are generally less than 15%, although slopes are variable and clearly exceed 30% on some perimeter sections not subject to development that adjoin Reservation Road and in the southeast corner of Track Zero.

Soils: The Soil Survey of Monterey County, California (USDA, 1978.) maps the majority of the property as Oceano loamy sand with a small inclusion of Xerorthents, dissected, located within the steep slopes along the eastern portion of the parcel. Oceano series consists of excessively drained soils that formed in aeolian sands on old stabilized dunes. Xerorthents are steep to extremely steep soils on bluffs along major rivers and on steep escarpments of alluvial fans and terraces. Outside developed areas, soils have been affected by varying degrees of past equipment use.

Vegetation: Vegetation on the site has been well described and mapped in *Biological Resources Assessment: East Garrison Specific Plan* prepared by Zander Associates, December 2003. As reported in Table 2 of the Zander Assessment, acreages by vegetation type within the East Garrison Specific Plan are: 44.9 acres oak woodland, 55 acres oak savanna, 39.6 acres grassland, 4.2 acres coastal scrub and 108 acres disturbed/ruderal. Oak woodland, oak savanna, grassland and coastal scrub are the dominant vegetation communities on gentle to moderate slopes with oak and/or scrub types dominant on moderate and steeper slopes. For more detailed descriptions of these vegetation types and characteristic species, see the Zander report.

Forest Condition and Health: Native tree cover on the property is almost exclusively coast live oak (*Quercus agrifolia*) with a few patches of Arroyo willow (*Salix lasiolepis*). Planted or naturalized trees observed on the site are scattered, are a low percentage (approximately 4%) of overall cover, and include: eucalyptus (*Eucalyptus* sp.), coulter pine (*Pinus coulteri*), Monterey cypress (*Cupressus macrocarpa)*, Monterey pine (*Pinus radiata*) and acacia (*Acacia* sp.). As noted in the *Biological Resources Assessment*, distribution and stocking of oaks in the project area can usefully be divided into woodland and savanna areas where the woodland type has greater tree density and canopy cover and the savanna type consists of scattered trees or clusters occurring in predominantly grassland cover with only scattered shrubs. In both oak types, small trees (less than 12 inches in diameter) are the most numerous. Higher percentages of larger trees are restricted to relatively infrequent patches where stand history (usually clearing within developed areas) and soil depth and moisture are favorable. In a number of areas, especially previously disturbed but not heavily developed areas, there are numbers of smaller trees (less than 6 inches in diameter) and seedlings, suggesting a slow trend of increasing oak forest cover, especially in recent years as frequency and extent of military operations on the site have decreased. Across the property, tree sizes, densities and ages are quite variable, reflecting differences both in local site conditions and in past land use history.

Health of oaks on the property can be rated as fair to good. In general, foliage color is good with good foliage retention. Individual tree health within denser stands tends to vary with the relative dominance of a tree's crown relative to neighboring trees. Some tree mortality has been occurring as is to be expected in stands of mixed ages and densities. Common oak pathogens and decay and cavity features were also observed at more or less normal background levels. Such features offer useful niche habitats. At this time, no visible symptoms of sudden oak death caused by the pathogen *Phytophthora ramorum* were observed.

Project Description

The project proposes a comprehensive development plan that will have extensive residential and commercial use combined with a community center, post office annex, police sub-station and a fire station. Reservation Road and Inter-Garrison Road (both existing county roads) will be the two primary access routes. As noted in Zander's Biological Resources Assessment, proposed development is projected to impact nearly 234 acres, of which some 108 acres were previously developed for military use and facilities.

Estimated Native Oak Population and Removals

Zander Associates mapped vegetation types as part of their *Biological Resources Assessment* of the project. Because oak densities and sizes are highly variable both within and across the oak woodland and oak savanna vegetation types at East Garrison, however, it is difficult to use the vegetation mapping to assess forest stand structure and dimension. To generate more direct estimates of tree cover and tree numbers for this Forest Management Plan, we worked with Zander Associates to map only the areas directly covered by tree canopies as shown on recent aerial photography. Each mapped area of tree canopy cover was designated as a numbered polygon within the Track Zero boundary and as a lettered polygon in development areas outside the Track Zero perimeter. In order to evaluate potential project impacts on trees within the project area including estimates of removal and retention, the project area was subdivided into four areas based on stand history, density, and structure. Tree sampling methods appropriate for each area were then applied. All tree cover polygons are shown on the attached Tree Reference Map, Plate 1, dated 10/03, prepared collaboratively with Zander Associates.

Descriptions of the site and the sampling procedure for each of the four sampling areas are listed below. All polygons were either visited and measured during field reconnaissance or evaluated using aerial photos. The entire project area was reviewed in the field specifically for the presence of landmark trees. In sample areas, all trees 6 inches in diameter and greater were measured to the nearest inch at two feet above ground or the closest representative diameter measuring point. Multiple-stemmed trees, sharing a common basal crown at ground level, were considered one tree but all stem diameters were recorded.

The four stratified areas are not mapped separately but are shown below in Tables 1 and 2 by listing the polygons comprising each area.

Area 1

Located along the eastern boundaries of the project and bordered by Chapel Hill Road on the west, Area 1 contains approximately 7.6 acres of coast live oak cover on the most developed portion of the project site. Characteristically, larger diameter oaks with fewer trees per cluster are located adjacent to abandoned buildings and roads in this type. Trees within this area have larger diameters and dense, hemispherical crowns with wide spreading limbs that are characteristic of coast live oaks that have had more available growing space and less competition from neighboring trees. The average diameter of coast live oaks within Area 1 is 17 inches. Almost all of the individual trees were measured within this type (88% sample size).

Area 2
Located within the western central portion of the project, this area consists of oak woodland, oak savanna, grassland and coastal scrub, and is comprised of approximately 21.3 acres of coast live oak cover. Area 2 is variably disturbed with heaviest use at its eastern edge along Chapel Hill Road and the highly developed facilities in Area 1. Disturbance of remnant jeep trails and training grounds diminishes moving west through the area. The outermost edges of Area 2, along West Camp Road and Watkins Gate Road, contain the least disturbed areas with somewhat larger diameter oaks and more continuous canopy cover. Approximately 15% of this area was sampled. In order to estimate tree inventory for the remaining area, trees per acre by diameter class were extrapolated from comparable measured polygons with known numbers of stems and measured diameters then applied to the unsampled acreages.

Area 3
Area 3 consists of intact, largely undisturbed oak woodland and is comprised of approximately 27.93 acres of coast live oak cover located in the northwestern portion of the project area. Small to medium diameter oaks, closely spaced, with higher densities over an undeveloped area are characteristic of this relatively homogeneous type. The high tree densities restrict average diameter of the coast live oaks within Area 3 to 10 inches. No trees 24+" trees were observed in a full reconnaissance of the area. To inventory oak stocking and diameters here, a grid of nine sample plots was laid out over the full extent of oak cover in the area. In order to estimate tree inventory for the remaining area, trees per acre by diameter class were extrapolated from the sample and expanded over the remaining acres of tree cover.

Area 4
Area 4 consists of four distinct oak stands located along the northeastern project boundary directly adjacent to Reservation Road and another stand along the southern edge of the old road that used to connect to Reservation Road at Track Zero's southeastern corner. All stands are largely undisturbed and total some 5.79 acres. The oak woodland above Reservation Road occurs on steep slopes up to 75% while the oaks just south of the old road are growing on more moderate slopes. Approximately 11% of this area was sampled. In order to estimate tree inventory for the remaining area, trees per acre by diameter class were extrapolated from comparable measured polygons.

Perimeter Outside Track Zero
Proposed roads providing access along the western and southern sides of the project require grading and tree removal just outside the perimeter of Track Zero. Tree cover in these areas tends to be quite similar to adjacent areas within Track Zero. Lettered polygons A-F along the northwest edge of the project have stocking and stand characteristics comparable to those found in Area 3 while polygons G-S along the southwestern and southern edges are more like adjoining polygons in Area 2. Estimates of trees per acre by diameter class were derived from tree measurements taken in comparable polygons within Track Zero. The limits of grading define these polygons so all trees within them are proposed for removal.

Because of the intensive nature of the proposed development and the extensive grading required for infrastructure and drainage, this FMP assumes that all trees within the limits of grading

shown on the Tree Reference Map will have to be removed. Following this assumption, almost all of the trees in Areas 1, 2 and 3 and all trees in the developed perimeter adjoining Track Zero are proposed for removal. As noted above, a number of trees not native to the site (which is not within the native range of Monterey pine or Monterey cypress) are scattered individually or in small groups across the site. Since most of these trees also occur within proposed limits of grading, they are also proposed for removal. Because these trees are not protected under the tree protection ordinance that applies in this part of the County, these trees were identified only by polygon and no sampling or inventory estimates were made. It is possible that tree retention might be increased slightly if review and adjustments to final grading and construction plans can be made as recommended below in #8 in the Tree Care During Construction section below.

Estimated removal and retention of coast live oaks associated with the project are shown by sampling area, polygon number and diameter class in Tables 1 and 2 below. To avoid confusion when looking at the Tree Reference Map, polygons with non-oak species or where oak is mixed with other species are identified in notes below the tables.

Table 1: East Garrison Specific Plan – Estimated Oak Tree Removals by Area.

		Oak Tree Removals by Diameter Class			
Area	***Constituent Polygons***	***6-11"***	***12-23"***	***24"+***	***Total***
1	4, 5, 8-15, 18, 24-26, 29, 33-42, 44-49, 58-73, 83, 96-99, 104, 105, 107, 111-114	105	152	58	315
2	116-165, 167-173, 178, 184, 185, 187-190, 192-221	546	552	63	1161
3	222	1508	1424	0	2932
4	87 (partial)	14	13	0	27
Edge	A-F, G-S	296	286	6	588
Total		2469	2427	127	5024

Note: No live trees occurred in polygons 27, 84, and 108 that are designated for removal. Polygons 28, 87, 110, 182, and 186 are designated for removal and contain a few oaks included in the above totals but they were mixed with other species so those polygons were not listed. Polygons 43, 100-103, 106, 109, 115, 182, 183, 191 are to be removed but contain only unprotected species not native to the site and no coast live oaks 6" or larger.

Retained Trees Within the Project Area

Because of the intensive nature of the development, trees will be retained principally on steeper slopes along the northeastern and southeastern perimeter and along a low ridge in the west-central portion of the site. Retained tree cover is extensive along the steep escarpments on the northeastern portion of the project boundary, directly adjacent to Reservation Road. The west-central ridge retention area is oak savanna of predominantly smaller trees. At its eastern limit, there are some small, planted coulter pines of relatively low vigor. Table 2 shows estimated tree retention by sampling area, polygon number. To avoid confusion when looking at the Tree

Reference Map, retained polygons with non-oak species or where oak is mixed with other species are identified in the note below the table.

Table 2: East Garrison Specific Plan – Estimated Tree Retention by Area.

Area	*Constituent Polygons*	*Tree Removals by Diameter Class*			**Total**
		6-11"	*12-23"*	*24"+*	
1	3, 6, 7, 16, 19-23, 30-32, 50-57, 74-79, 81, 82, 85, 86, 88-93.	37	68	10	115
2	159 (partial), 160, 162, 163, 166, 174 (partial), 175-178, 179 (part)	20	52	4	76
4	1, 2, 80, 87 (mostly retained), 223	161	154	44	359
Total		218	274	58	550

Note: Polygon 94 being retained contains Monterey pine, not coast live oak. Polygon 95 is not within the Track Zero boundary but is composed of coast live oaks that are projected to be retained. A strip within the Track Zero boundary but located north of Reservation Road (outside of the East Garrison Specific Plan) contains approximately 9 acres of predominantly coast live oak cover. Based on our knowledge of the general area and acreages involved, we estimate that this roadside strip combined with polygon 95 may contain as many as 500 or more additional coast live oaks that are projected to be retained after project development. However, no samples were taken from nor detailed reconnaissance made of the 9 acre strip.

Condition of Retained Trees

Oaks to be retained are roughly comparable in health and size with the trees proposed for removal. Sampling and reconnaissance on the steeper retention slopes found a surprisingly high percentage of larger diameter trees. Condition of individual trees in both removal and retention areas varies considerably, as it does in most native oak forests where tree density and past events have strongly influenced tree health and form. Measures to maximize tree retention and to protect retained trees during construction are included below in the section Tree Care During Construction.

Tree Replacement: County regulations require replanting on a 1:1 basis for all protected trees removed, except where this would result in an overcrowded or unhealthy environment. Due to the extent of grading and development, all protected trees that must be removed to construct proposed facilities cannot be replaced on a 1:1 basis within the project area. Outside the preliminary limits of grading shown on the attached Tree Reference Map, we estimate that there may be sufficient growing space to plant some 500 to 1000 coast live oaks, depending on the visual and landscape objectives for these areas. Prior to development of final site, grading, and landscape plans, it is premature to estimate how many coast live oaks might be planted within developed areas of the project. Engineering compaction requirements and vertical and horizontal clearance needs may limit the number of areas where coast live oaks can reasonably be planted in intensively developed sites. In spite of these uncertainties, it seems reasonable to estimate potential to replant in suitable locations within the project area somewhere in the range of 700 to 1200 oaks for the project for purposes of general impact evaluation at this point.

The *Biological Resources Assessment* (November 2003 revision) for the project prepared by Zander Associates notes that loss of oak woodland habitat associated with project development has previously been reviewed and accounted for in both the *Installation-Wide Multispecies Habitat Management Plan for Fort Ord* and *Assessment, East Garrison-Parker Flats Land Use Modifications Fort Ord, California*. In those documents, oak habitat loss resulting from this project was primarily mitigated by permanent set-asides of oak habitat elsewhere at the former Fort Ord, including Parker Flats. For a more detailed description and explanation of off-site mitigation refer to Zander Associates report.

Native coast live oaks should be incorporated into final landscape designs and the number and location of coast live oaks required to be planted coast live oaks should be specified in the Landscape Plan. As noted above, coast live oak may not be the most suitable tree for specific planting areas or landscape purposes. It is very important for oaks to have appropriate soil (not too compacted) and water (droughty summers where the soil dries out between waterings, limited watering of root zones only, no watering that splashes the trunk) for them to grow well and become a valuable landscape feature. In some locations in recent years, many seedling to sapling size oaks have become established on formerly cleared areas. The feasibility of cost-effectively transplanting these small trees should be evaluated because they might provide suitable replacement planting stock of known local origin. Boxing and storage of transplants rather than immediate replanting greatly increases costs, however. If oak replanting stock is not transplanted from on-site sources, it should be grown from local native seed stock in sizes not greater than 5 gallons, with one gallon or smaller being preferred as studies have repeatedly shown that small planted trees are likely to adapt to the site better and grow larger over the longer term. The root condition of all container grown trees planted on the site should be closely inspected and handled properly to promote good tree growth on the site after development

Tree Care During Construction

To protect trees during construction activities, the following general measures should be adhered to:

1) Around each tree or group of trees to be preserved in or next to a construction area, metal link fencing supported by wood or metal stakes shall be erected along the approximate driplines of such protected trees to define the construction project boundary and create a tree protection zone for its trunk and roots. Where guidance of a tree professional is used to evaluate conditions and establish the location of protective fencing, encroachment within the dripline of retained trees may occur in order to minimize tree removals. (See related recommendation under #8 below) Where construction activities cannot avoid encroachment within oak driplines, the following general guidelines should be kept in mind. Oaks will usually survive the loss of up to one-half of their root feeding zone, which is roughly defined as the outer two-thirds of the root radius extending to the dripline. Oaks may even stand the loss of more roots but a portion of the crown may die and need to be pruned out as the more limited root system finds a rough balance between its roots and foliage. When cutting roots, especially roots greater than three inches in diameter, it is important to consider the potential loss of security and stability of the tree.

2) No storage of equipment or construction materials, or parking of vehicles is permitted within the tree rooting zone defined by the fencing of the construction boundary in #1 above.

3) No soil may be removed from within the dripline of any tree and no fill of additional soil should exceed two inches (2") within the driplines of trees, unless it is part of approved construction and is reviewed by a qualified forester, certified arborist, or other tree professional. Oaks are particularly sensitive to increases in soil depth. If part of the feeding zone is buried, it should be considered to be at least partly lost. Under no circumstances should any fill be allowed to rest against the base of any tree. Oaks are especially susceptible because oak root fungus is encouraged. As long as a permanent well is constructed at original grade out from the trunk a minimum distance of one foot, there is not likely to be a problem.

4) Bark injury to any tree from equipment or materials is not acceptable and is prevented by scrupulously avoiding areas protected by exclusionary fencing and by properly trimming in advance selected limbs that extend into areas of equipment operation.

5) No native tree may be removed or trimmed unless authorized under this Management Plan or County regulation.

6) Roots of retained trees that are exposed by excavation should be pruned cleanly and promptly to promote callusing, closure and regrowth. Until these roots are recovered with soil, they should be covered with temporary materials and kept moist.

7) All tree work shall be monitored by a qualified forester, certified arborist, or tree professional and work completed by qualified tree service personnel.

8) Project Specific Recommendations: To enhance tree protection, the following measures are recommended:

   a) To maximize tree retention and protection, a forester, arborist or other tree care professional should be involved in review and development of final grading and construction plans where trees occur either at project/grading margins. In such locations, it may be possible to incorporate special retention or other construction methods that will permit safe and healthy retention of existing trees. Examples of such areas near grading limits shown on the Tree Reference Map include polygons 24, 34, 94, 159, 174, 179, 181, and most of lettered polygons where road construction will occur along the western and southern project boundaries. Similar review of areas within the project where grade changes will be two feet or less from existing ground surfaces might permit retention of existing individual specimens that have significant landscape value.
   b) In the northeast corner of the project, removal of existing facilities, installation of a detention basin, and site landscaping beyond shown grading limits could adversely affect trees to be retained. On-site consultation with a forester or other tree professional should occur to establish operating parameters and protective measures including exclusionary fencing whenever operations commence and occur in this area.

c) Pruning is likely to be necessary to permit construction in some places because limbs of retained trees extend into construction areas. Before commencement of construction, a qualified arborist or other tree professional should identify trees where significant pruning will be necessary and make recommendations. Coast live oak generally responds well planned pruning, even when it is extensive.
d) Property owners, developers and contractors should stay current on trends in oak mortality and handling of oak materials potentially infected with Sudden Oak Death (SOD) caused by the *Phytophthora ramorum* pathogen. Because this disease complex is so new, current information may be outdated in a short time so the web site of the California Oak Mortality Task Force (COMTF) is recommended as a resource (http://www.suddenoakdeath.org). Proper handling of materials infected with this pathogen is required by State quarantine and is necessary to minimize spread of the disease. The Monterey County Agricultural Commissioners office should be consulted immediately prior to any work that requires cutting and removal of oak materials from the site so that current requirement can be followed and enforced.
e) Non-native trees near retained oak woodland areas, such as the eucalyptus in polygon 31, should be eradicated.

Project Assessment

Potential for adverse environmental impacts due to proposed tree removals in the following subject areas:

Soil Erosion: Due to the scale of tree removal and grading proposed, potential for soil erosion is high unless properly mitigated by comprehensive erosion control measures and revegetation and landscaping plans.

Water Quality: Potential is moderate as no watercourses occur within the project area. Appropriate erosion control as noted above is critical to mitigate potential impacts.

Ecological Impacts: Potential is low to moderate. Permanent reduction of oak woodland and oak savanna will occur with compensatory habitat set-asides documented as proposed mitigation. Location of development on already impacted site at extreme northern edge of Fort Ord minimizes ecological impacts, including fragmentation, to a significant degree.

Noise Pollution: Potential is moderate to high due to increase in developed hardscape and decrease in tree cover. Appropriate landscaping and perimeter tree retention and planting can mitigate noise impacts to some degree.

Air Movement: Potential is low to moderate. Existing oak trees are relatively low growing and closely conform to general topography.

Wildlife Habitat: As noted above for ecological impacts, potential is low to moderate due to permanent loss of some oak habitat. Past use and edge location minimize potential impacts as do permanent compensatory habitat set-asides

Forest Management Agreement

The following standard conditions are required by the Monterey County Planning Department in Forest Management Plans:

Definitions

Forest Management Area (FMA). That portion of the subject property which is presently forested and lies beyond the immediate vicinity of the permitted building envelopes within this parcel.
Landmark tree. Any native tree more than 24" in diameter.
Significant tree. Any protected tree more than 6" in diameter.
Retained tree. Any significant tree not shown for removal on an approved final site plan.
Diameter (dbh). Thickness of main trunk of tree as measured 4'6" above the average ground surface at base of tree ("diameter at breast height").
Dripline. The outer edge of the area beneath the crown of a tree.
Greenbelt. An area around the construction zone which, for purposes of fire protection, is kept free of highly flammable vegetation and is stabilized with green, growing plants.

Management Objectives

1) Minimize erosion (in order to prevent soil loss and siltation).

2) Preserve natural habitat (includes native oak forest, understory vegetation, and associated wildlife on site).

3) Prevent forest fire (i.e., uncontrolled fires.)

4) Preserve scenic forest canopy as located within any Critical Viewshed.

5) Preserve landmark trees.

Management Measures

Tree Removal. Tree removal is subject to the requirements of Zoning Ordinance #21.64.260. No protected tree shall be removed without a Tree Removal Use Permit per the ordinance unless diseased or hazardous, as designated by a qualified forester, or exempt from the provisions of the ordinance. Per Section 21.64.260.F.3, "tree removal for construction of structures, roads and other site improvements included in an approved subdivision, Use Permit, or similar discretionary permit" are exempt.

Application Requirements. Where a Tree Removal Permit is required, trees proposed for removal will be conspicuously marked by flagging or paint. A site plan showing the location of each significant tree to be removed will accompany the application. If a substantial number of trees are requested for removal, they will generally be distributed over a wide area so that the overall unbroken appearance of the forest canopy is not altered.

Waiver of Permit Requirements. It is understood that the Director of the Monterey County Planning Department may waive the requirement to obtain a Tree Removal Permit in the following instances:

1) removal of diseased tree(s) which threaten to spread contagion to nearby healthy trees;
2) removal of dangerous tree(s) which present a clear and imminent threat to human life or property;
3) outside the FMA, removal of tree(s) where needed to allow construction of approved structures or roads.

Landmark Trees. All landmark trees will be protected from damage if not required to be removed under the above instances.

Dead Trees. Because of their great value for wildlife habitat (particularly as nesting sites for birds), large dead trees beyond the greenbelt will normally be left in place. Smaller dead trees will normally be removed in order to reduce fire hazard. Dead trees may be removed at the convenience of the owner, provided such removal is otherwise in conformance with this plan and designated by a qualified forester. Large dead trees may be removed from the greenbelt upon a finding of hazard or sufficient presence of this habitat element by a qualified forester. Dead trees, limbs, and other highly flammable material may be removed if required by Agency fire Officials, or as part of an approved Defensible Space Plan.

Thinning. Non-significant trees, where weak, diseased, or overcrowded, may be thinned to promote the growth of neighboring trees. Subject to the above permit requirements, significant trees may be removed for the same purpose. In a number of places, stands of oaks are overcrowded with smaller trees. In such stands, thinning of trees up to 12" in diameter as recommended by a qualified forester is encouraged and considered consistent with this FMP in order to promote growth of larger trees, increase understory diversity, and reduce fire hazard. Prior to any such work, the forester should provide the owner with a written record of the areas where such thinning is recommended and mark the individual trees to be removed.

Replacement Trees. Where tree replacement is required, the appropriate replacement trees shall be planted in an area where they are free to grow, generally a clearing or gap between trees (preferably 30 feet or more between trunks), except where existing clearings are to be maintained. Exceptions will be made where a suitable seedling already exists, and in unforested garden and lawn areas. Every effort will be made to secure native seedlings rather than nursery stock of unknown origin. Coast live oak replacement trees should generally not be larger than 5 gallon size with one gallon preferred. Occasional use of larger planting stock, however, is acceptable to provide both visual and age diversity.

Protection of Trees. All significant and replacement trees, other than those approved for removal, shall be retained and maintained in good condition. Trimming, when not injurious to the health of the tree(s), may be performed wherever necessary in the judgment of the owner, particularly to reduce personal safety and fire hazards.

Retained trees which are located close to the construction site shall be protected from inadvertent damage by construction equipment through wrapping of trunks with protective materials, bridging or tunneling under major roots where exposed in the foundation or utility trenches, and other measures appropriate and necessary to protect the well-being of the retained trees (See Tree Care During Construction above).

Fire Prevention. In addition to any measures required by local of California Department of forestry fire authorities, owner will:

a. maintain spark arrester screen atop chimney;
b. maintain spark arresters on gasoline-powered equipment;
c. establish "greenbelt" by keeping vegetation around structure to a distance of 50 feet in a green, growing condition, and or controlling fuel accumulation in drought tolerant landscapes.
d. break up and clear away any dense accumulations of dead or dry underbrush or plant litter, especially near landmark trees and within greenbelt.

Use of Fire (for Clearing, Etc.). Open fires will be set or allowed within the FMA only as a forest management tool under the direction of Department of Forestry authorities, pursuant to local fire ordinances and directives.

Clearing Methods. Outside development areas, brush and other undergrowth, if removed, will be cleared through method(s) which will not materially disturb the ground surface. Hand grubbing, crushing, and mowing will normally be the methods of choice. Use of fire and herbicides will be subject to the limitations listed elsewhere in this Plan.
Areas laid bare by clearing, other than firebreaks, will be sown with a suitable erosion mix utilizing native grass and forb seeds as suitable and appropriate (if nothing else is to be planted in the area). Sowing of cleared areas will be completed prior to the onset of the winter rainy season.

Irrigation. In order to avoid further depletion of groundwater resources, prevent root disease, and otherwise maintain favorable conditions for the native oak forest, the FMA will not be irrigated except within the greenbelt area. Caution should be exercised to avoid overwatering around oak trees within the greenbelt.

Exotic Plants. Care will be taken to eradicate, and to avoid introduction of, the following pest species: a) Pampas grass, b) Genista (Scotch broom, French broom), c) Eucalyptus (large types).

Amendments. It is understood that the Director of the Monterey County Planning Department, in consultation with the California Department of Forestry, may approve amendments to this Plan, provided that such amendments are consistent with the provisions of the County Development Permit.

Compliance. It is further understood that failure to comply with this Plan will be considered failure to comply with the conditions of the County Development Permit.

Transfer of Responsibility. This Plan is intended to create a permanent forest management program for the site. It is understood, therefore, that in the event of change in ownership this Plan shall be as binding on the new owner(s) as it is upon the present owner. To this end, this Plan will be conveyed to the future owner upon sale of the property.

Forest Management Plan Prepared by:

Stephen R. Staub	Date

Owner's Agreement to Provisions of the Plan:

	Date

Forest Management Plan Approved by:

Director of Planning of County of Monterey	Date