4.2 Biological Resources

The proposed Project would involve drilling wells, producing oil and gas from the Project Site, road widening, and permanent fuel modification, with temporary and permanent effects upon more than 21 acres of undisturbed habitat owned by the City of Whittier (City) and located within the Puente Hills Landfill Native Habitat Preserve (Preserve). The City owns approximately 1,290 acres of former oil fields in the Preserve in the hills north of the developed areas of the City. This area was commonly known as the Whittier Main Field, an active oil field that produced oil for more than 100 years with approximately 500 drilled wells until the early 1990s. The majority of the land encompassing the oil field was purchased from Chevron and Unocal Corporation by the City of Whittier. The Preserve is currently managed for the City by the Puente Hills Landfill Native Habitat Preservation Authority (Habitat Authority), which was established in 1994. The western half of the Project Site has been closed to the public since the cessation of oil exploration. The City awarded a lease to Matrix Oil Corporation (Matrix) that would permit resumption of oil and gas extraction from the site. In exchange for these rights, the Project would generate a long-term income stream for the City and for the preservation, management, and enhancement of the Preserve's ecological resources and native habitat.

This section, describing the biological resources potentially affected by Project implementation, incorporates information from the following biological technical reports prepared in conjunction with this proposed Project:

- LSA Associates, Inc. 2008. Least Bell's Vireo and Coastal California Gnatcatcher Survey Results, Puente Hills Landfill Native Habitat Preservation Authority Lands, City of Whittier, Los Angeles County, California (LSA Project No. PUE0801). Letter report dated August 27, 2008, to Sandra Marquez, U.S. Fish and Wildlife Service. Report included in Appendix C.
- LSA Associates, Inc. 2009a. Focused Survey Results, Special status Plant Species, City of Whittier Oil Exploration (LSA Project No. PUE0901). Letter report dated August 4, 2009, to Andrea Gullo, Puente Hills Landfill Native Habitat Preservation Authority. Report included in Appendix C.
- LSA Associates, Inc. 2009b. Least Bell's Vireo and Coastal California Gnatcatcher Survey Results, Puente Hills Landfill Native Habitat Preservation Authority Managed Lands, City of Whittier, Los Angeles County, California (LSA Project No. PUE0901). Letter report dated August 4, 2009, to Sandra Marquez, U.S. Fish and Wildlife Service, and Lyann Comrack, California Department of Fish and Game. Report included in Appendix C.
- LSA Associates, Inc. 2009c. Summary of Focused Plant, Incidental and Protocol Survey Results (2008 and 2009), Puente Hills Landfill Native Habitat Preservation Authority Managed Lands, City of Whittier Oil Exploration (LSA Project No. PUE0901). Letter report dated August 4, 2009, to Andrea Gullo, Puente Hills Landfill Native Habitat Preservation Authority. Report included in Appendix C.
- LSA Associates, Inc. 2010. Focused Survey Results for Sensitive Plant Species, City of Whittier Oil Exploration (LSA Project No. PUE0901). Letter report dated July 19, 2010, to

Andrea Gullo, Puente Hills Landfill Native Habitat Preservation Authority. Report included in Appendix C.

- Glenn Lukos Associates. 2010. Results of Protocol Coastal California Gnatcatcher and Least Bell's Vireo Surveys for an Approximately 270-Acre Property Owned by the City of Whittier and Managed by the Puente Hills Landfill Native Habitat Preservation Authority, City of Whittier, Los Angeles County, California. Report dated July 26, 2010, to Sandra Marquez, U.S Fish and Wildlife Service, and Lyann Comrack, California Department of Fish and Game. Report included in Appendix C.

Project biologists, Robert A. Hamilton of Hamilton Biological, Inc. and Ted Mullen of Marine Research Specialists, accompanied by ecologist Shannon Lucas of the Puente Hills Landfill Native Habitat Authority, conducted a field visit on December 14, 2009, to view current Project Site conditions and to inspect the alignment of the Loop Road access that was not surveyed by LSA biologists in 2008 and 2009. Mr. Hamilton visited the site again with Ms. Lucas on the afternoon of February 17, 2010, and the morning of April 12, 2010, to search for amphibians in pools of water on the site. Mr. Hamilton again visited the site on April 30, 2010, to search for any pools of water that might provide habitat for amphibians. Dr. Emile Fiesler and Robert Hamilton surveyed the site on February 8, 2011, to search for sensitive terrestrial snails and other invertebrates potentially present on the site.

This section also incorporates information from the following published and unpublished biological reports describing and evaluating natural resources within the wider Puente-Chino Hills natural open space area:

- Bladh, A. E. 2004. Wildlife Associations with Guzzlers Provided in a Habitat Area Near an Urban Environment. Report prepared for Puente Hills Landfill Native Habitat Preservation Authority.
- Cooper, D. S. 2000. Breeding Landbirds of a Highly Threatened Open Space: The Chino-Puente Hills, California. Western Birds 31:213–234.
- Cooper, D. S. 2009. Coastal Cactus Wren Summary, Western Puente Hills, 2009. Report dated September 8, 2009, prepared by Cooper Ecological Monitoring, Inc., for Puente Hills Landfill Native Habitat Preservation Authority.
- Elliott, D., and Stapp, R. 2008. Effects of a Purpose-built Underpass on Wildlife Activity and Traffic-related Mortality in Southern California: The Harbor Boulevard Wildlife Underpass. Report dated February 26, 2008, prepared for Puente Hills Landfill Native Habitat Preservation Authority.
- Haas, C. , and Crooks, K. 1999. Carnivore Abundance and Distribution Throughout the Puente-Chino Hills, Final Report–1999. Report prepared for The Mountains Recreation and Conservation Authority and State of California Department of Transportation.
- Haas, C., and Turschak, G. 2002. Responses of Large and Medium-bodied Mammals to Recreation Activities: The Colima Road Underpass. Final report prepared by US Geological Survey for Puente Hills Landfill Native Habitat Preservation Authority.
- Haas, C. D., Backlin, A. R., Rochester, C., and Fisher, R. N. 2006. Monitoring Reptiles and Amphibians at Long-Term Biodiversity Monitoring Stations: The Puente-Chino Hills. Final

report prepared by US Geological Survey for Mountains Recreation and Conservation Authority, Puente Hills Landfill Native Habitat Preservation Authority, and California State Parks.

- LSA Associates, Inc. 2005. Rodent Survey of the Puente Hills Landfill Native Habitat Preservation Authority Lands. Report dated December 2005, prepared for Puente Hills Landfill Native Habitat Preservation Authority.
- LSA Associates, Inc. 2007. Resource Management Plan (RMP), Puente Hills Landfill Native Habitat Preservation Authority. Report dated July 26, 2007, prepared for Puente Hills Landfill Native Habitat Preservation Authority.
- Remington, S. 2006. Bat Surveys of the Puente Hills (Whittier Hills, Hacienda Heights, La Habra Heights, and Rowland Heights), Los Angeles County, California, June 2005 – May 2006. Final report dated July 14, 2006, prepared for Puente Hills Landfill Native Habitat Preservation Authority.
- Scott, T.A, and Cooper, D.S. 1999. Summary of Avian Resources of the Puente-Chino Hills Corridor. Los Angeles, Orange, San Bernardino, and Riverside Counties, California. Report dated January 1999 prepared by the Department of Earth Sciences, University of California, Riverside.
- Stapp, R., and Cashin, S. 2009. Final Report: Continued Monitoring of Harbor Boulevard Wildlife Underpass. Report dated December 10, 2009, prepared for Puente Hills Landfill Native Habitat Preservation Authority.

Lists of plant and wildlife species observed on the Project Site are included in Appendix C. Plant scientific names follow Hickman (1993); plant common names generally follow Roberts (1998). Taxonomy and nomenclature for vertebrates follow California Department of Fish and Game, Natural Diversity Database (2009a).

4.2.1 Environmental Setting

The Project Site lies along the central southern boundary of a 3,869-acre Preserve administered by the Habitat Authority. The Preserve supports mainly coastal sage scrub (845 acres), chaparral (976 acres), grassland (1,224 acres), oak and walnut woodlands (297 acres), and riparian woodland (144 acres) (LSA 2007). These lands lie within the Cities of Whittier and La Habra Heights and the unincorporated areas of Hacienda Heights and Rowland Heights, stretching from approximately Harbor Boulevard in the east to the intersection of Interstate 605 and State Route 60 in the west (see Figures 2-1 and 2-5).

Former oil roads that interlace the local area have deteriorated in recent decades, and the built infrastructure, including tanks and large pipes, has been removed. Much of the Preserve in the Project Area contains old oil field roads and pad sites in varying levels of regrowth. Habitat closest to roads, pad sites, and removed oil field facilities is dominated by non-native vegetation. Hikers currently access the eastern half of the Project Site from a trailhead and parking area along Colima Road. The only authorized human usage of the western part of the site (Core Habitat described in following text) consists of occasional patrols by rangers from the Mountains

Recreation and Conservation Authority and other authorized management-related functions of the Habitat Authority. A Ranger Residence is located at the southern edge of the site.

4.2.1.1 Plant Communities and Associated Wildlife Species

Figure 4.2-1 and Figure 4.2-2 show the plant communities identified and mapped on the Project Site by LSA and field-checked by the Project biologists (LSA 2007). The following descriptions of plant communities and associated wildlife are based upon the descriptions provided by LSA (2007). Please note that the plant-wildlife associations discussed are necessarily general, and that species associated with one community typically occur in others as well.

Coastal Sage Scrub

Coastal sage scrub communities consist primarily of low-growing, drought-tolerant native shrubs with an understory of grasses and herbs. These communities typically occur at lower, drier sites than chaparral assemblages. The Preserve's most extensive tracts of coastal sage scrub exist in portions of Turnbull and Sycamore Canyons north of the Project area and Arroyo Pescadero, La Cañada Verde, Arroyo San Miguel, and Powder Canyon (see Figure 4.2-3).

Coastal sage scrub within the Preserve consists of several different sub-types, and those near the Project area are classified as mixed sage scrub, coyote brush scrub, black sage scrub, and sagebrush scrub. Dominant shrubs characteristic of these communities within the Project area include California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), coyote brush (*Baccharis pilularis*), lax-flowered bushmallow (*Malacothamnus fasciculatus*), and coastal isocoma (*Isocoma menziesii* var. *vernonioides*). Grasses are typically non-native annual species, but the native giant wild rye (*Leymus condensatus*) occurs in this community on the Project Site.

Coastal sage scrub is a structurally diverse vegetation community where animals have numerous opportunities to find food and shelter. Birds associated with this community on the Project Site include the western scrub-jay (*Aphelocoma californica*), Bewick's wren (Thryomanes bewickii), northern mockingbird (*Mimus polyglottos*), spotted towhee (*Pipilo maculatus*), and rufous-crowned sparrow (*Aimophila ruficeps*). During spring 2010, a family group of the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) was recorded on the Project Site, within the upper La Cañada Verde watershed. In part because of its importance to the gnatcatcher, coastal sage scrub is regarded as a sensitive biological community.

Rodents can be especially common in coastal sage scrub, with the Botta's pocket gopher (*Thomomys bottae*), California pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), and deer mouse (*Peromyscus maniculatus*) among the most common local species. Two rodent species associated with coastal sage scrub in particular are the cactus mouse (*Peromyscus eremicus*) and the San Diego desert woodrat (*Neotoma lepida intermedia*), a California Species of Special Concern. The ornate shrew (*Sorex ornatus*) and desert cottontail (*Sylvilagus audubonii*) are often abundant in this habitat. A range of larger mammals, such as the mule deer (*Odocoileus hemionus*) and coyote (*Canis latrans*), roam here as well.

Reptiles are also well represented in coastal sage scrub, with species such as the western fence lizard (*Sceloporus occidentalis*), coastal western whiptail (*Aspidoscelis tigris multiscutatus*, a California Special Animal), southern alligator lizard (*Elgaria multicarinata*), California whipsnake (*Masticophis lateralis*), and gopher snake (*Pituophis catenifer*) among the most common in the Preserve. Although moisture is limited, the western toad (*Bufo boreas*) is among the amphibian species likely to be present, at least seasonally.

Chaparral

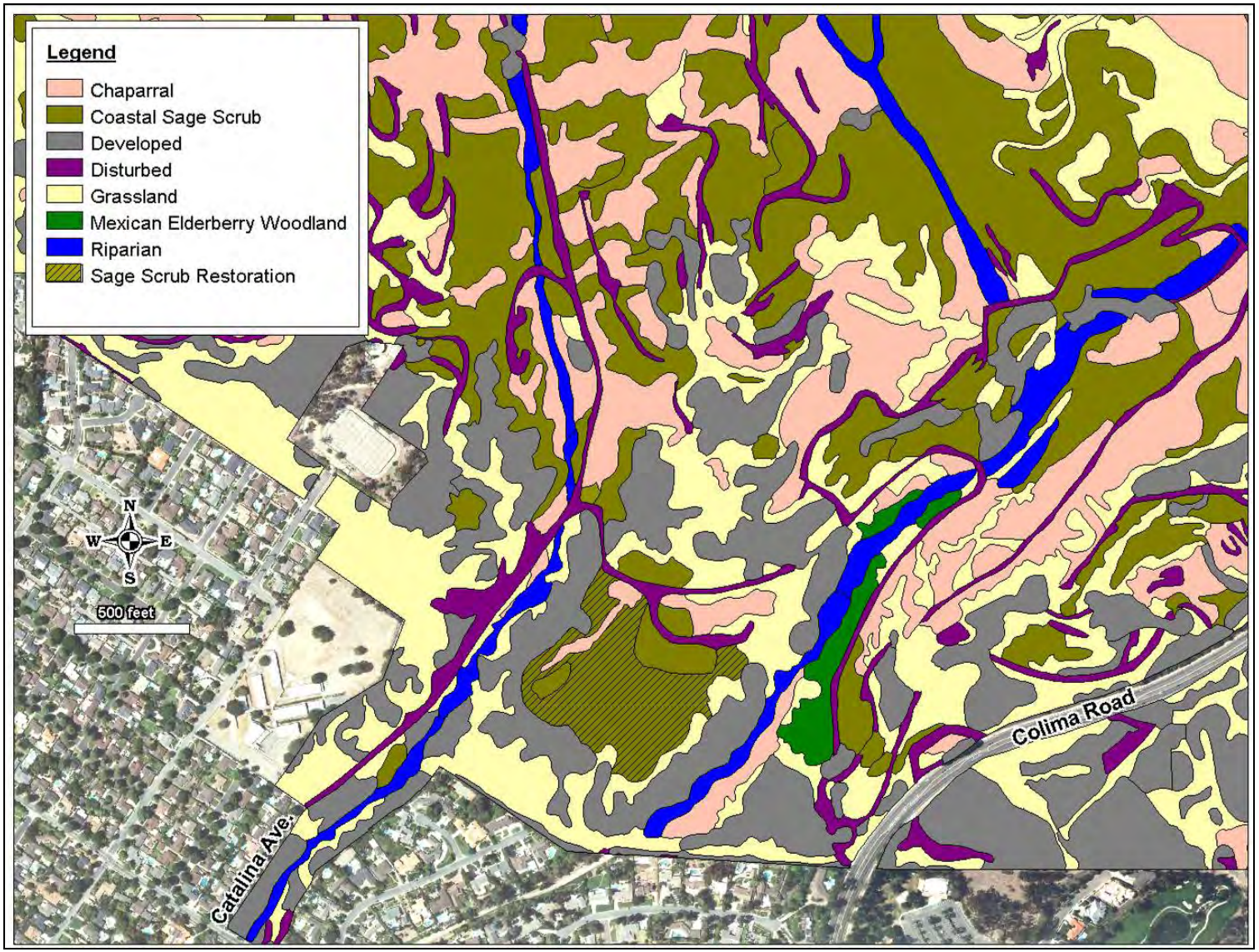
Chaparral is widespread on California foothills and often impacted by development. Chaparral vegetation is typically made up of large, dark-green sclerophyllous shrubs (i.e., adapted to dry conditions and typically having hard leaves with a short distance between leaves along the stem), which are usually 6 to 10 feet in height. This habitat type is found on steep north- and east-facing slopes in the vicinity of Whittier Hills and most of the steeper slopes in the vicinity of Turnbull Canyon. In some areas, chaparral exists in patchy association with coastal sage scrub. Large stands of chaparral are located near Powder Canyon and in close proximity to Arroyo San Miguel just east of Colima Road. Smaller stands of chaparral exist near Hacienda Heights.

Chaparral on the Project Site is classified as toyon/sumac chaparral/sagebrush scrub. Toyon-sumac chaparral is dominated by lemonadeberry (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*), and other characteristic species include toyon (*Heteromeles arbutifolia*), holly-leaved redberry (*Rhamnus ilicifolia*), and Mexican elderberry (*Sambucus mexicana*). It is not uncommon for poison oak (*Toxicodendron diversilobum*) to grow in dense thickets on these slopes. Other vines in this habitat type include man root (*Marah macrocarpa*) and pipestem (*Clematis lasiantha*). The sagebrush scrub component of this mixed community includes shrubs mentioned in the previous discussion of coastal sage scrub.

Chaparral is generally transitional between coastal sage scrub and woodland habitats in terms of structure and moisture content. Because of this, many of the bird species found in coastal sage scrub are also found here. The wrentit (*Chamaea fasciata*) and California thrasher (*Toxostoma redivivum*), a California Special Animal, reach maximum abundance in chaparral. The hermit thrush (*Catharus guttatus*), yellow-rumped warbler (*Dendroica coronata*), and golden-crowned sparrow (*Zonotrichia atricapilla*) are among the common species that migrate into the area for the non-breeding seasons.

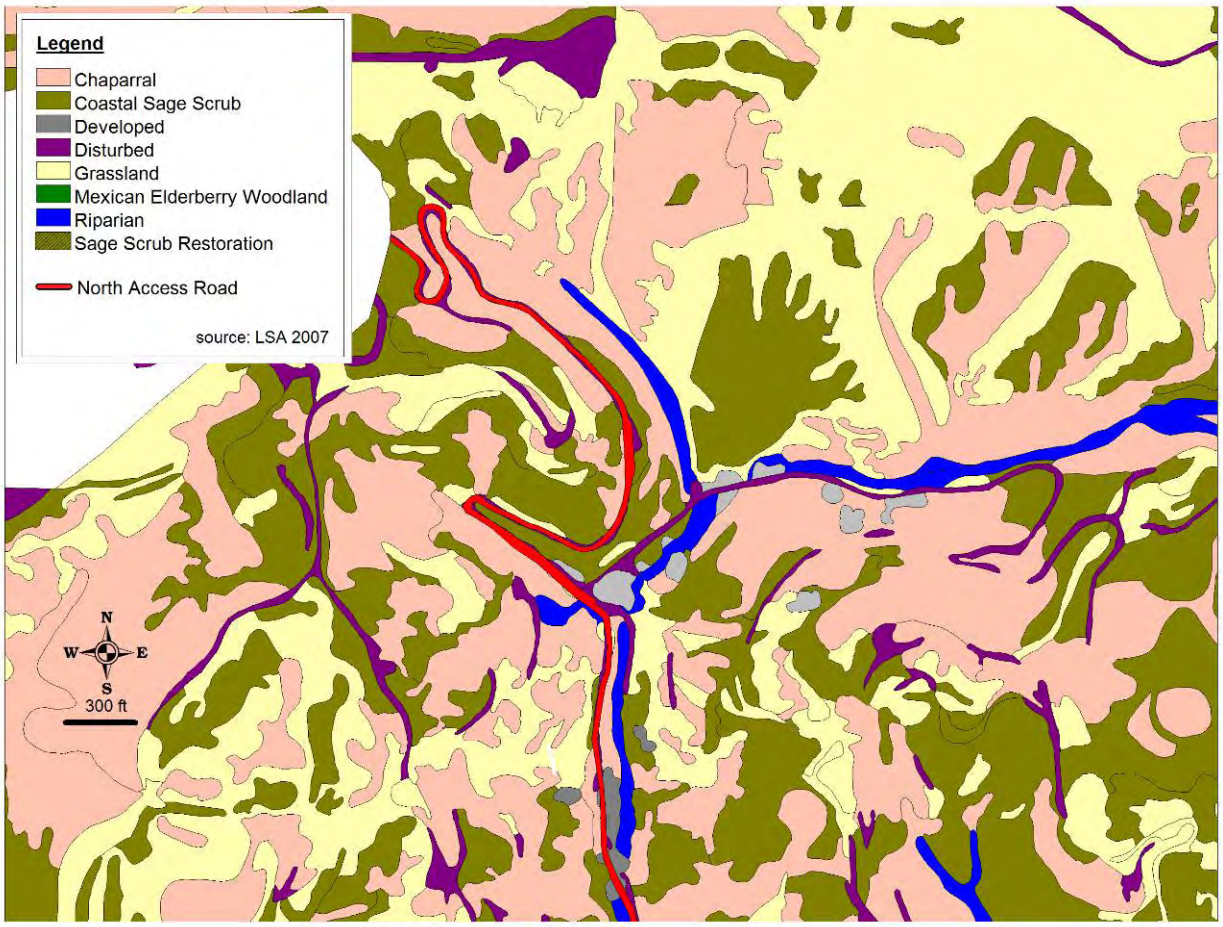
Rodents are common in chaparral, with species such as the California mouse (*Peromyscus californicus*) and dusky-footed woodrat (*Neotoma fuscipes*) especially numerous in the Preserve. Most of the larger, wide-ranging mammals also occur in chaparral, with species such as the bobcat (*Lynx rufus*) and gray fox (*Urocyon cinereoargenteus*) potentially reaching maximum densities. The habitat near the Project Site is known to provide some of the best habitat in the Preserve for the bobcat.

Figure 4.2-1 Plant Communities



Source: LSA 2007, Habitat Authority 2010

Figure 4.2-2 Vegetative Communities in Vicinity of the North Access Road



Reptiles and amphibians of the chaparral are similar to those of coastal sage scrub, with certain species more or less common depending on their preference for more or less cover. The garden slender salamander (*Batrachoseps major*) is often found under rotting wood and leaf litter, and the California whipsnake (*Masticophis lateralis*) is associated with this habitat.

Annual Grasslands, Disturbed and Developed Communities

The Project Site includes a limited amount of annual grasslands, which are principally characterized by nonnative annual grasses of exotic origin, but native species including wildflowers often mix with the dominant exotic grasses. These grasslands were created by disturbances such as farming, grazing, fire, or grading for firebreaks. The most common grass species include ripgut brome (*Bromus diandrus*), slender wild oat (*Avena barbata*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), red brome (*Bromus madritensis* ssp. *rubens*), soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), perennial wild rye (*Lolium perenne*), and foxtail fescue (*Vulpia myuros*).

In the Preserve, common native forbs that may be found in annual grasslands include miniature lupine (*Lupinus bicolor*), common fiddleneck (*Amsinckia menziesii*), weak-leaved burweed (*Ambrosia confertiflora*), narrow-leaved milkweed (*Asclepias fasciculatus*), fascicled tarweed (*Deinandra fasciculate*), arroyo lupine (*Lupinus succulentus*), dove weed (*Croton setigerus*),coyote melon (*Cucurbita foetidissima*), and big gumplant (*Grindelia robusta*). Nonnative exotic forb species are also represented in grassland habitat: summer mustard (*Hirschfeldia incana*), black mustard (*Brassica nigra*), bur clover (*Medicago polymorpha*), red-stemmed filaree (*Erodium cicutarium*), common sow thistle (*Sonchus oleraceus*), tocalote (*Centaurea melitensis*), white-stemmed filaree (*Erodium moschatum*), long-beaked filaree (*Erodium botrys*), and horehound (*Marrubium vulgare*).

Disturbed and developed vegetation communities, as these terms are used in the habitat classification system, collectively refer to the areas that have been modified by humans. These include urban, rural residential, and commercial and industrial landscapes at the periphery of the Preserve; roads and trails within the Preserve; and stands of ornamental trees and shrubs. Non-native woodlands dominated by eucalyptus (*Eucalyptus* spp.) are scattered throughout much of the Preserve, including the Project Site. Peruvian pepper tree (*Schinus molle*) is another ornamental species common on the Project Site. The Project Site also includes the remnants of old oilfield operations, such as building pads and roads.

Non-native trees can provide canopy structure that mimics native woodlands in some respects and is used as nest sites by some songbirds, such as Anna's Hummingbird (*Calypte anna*), and raptors such as the red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*).

Riparian

Within the Preserve, this general category includes everything from riparian herb habitat to willow and mulefat scrub to sycamore riparian woodland and coast live oak riparian forest. Of the 143 acres identified as riparian in the Preserve, about half consists of coast live oak and sycamore woodland and forest, which do not occur on the Project Site; the rest consists of willow and mulefat scrub, the latter of which occurs in limited portions of the Project Site (LSA 2007). Because of seasonally available moisture, riparian habitats are especially valuable for many wildlife species and support one of the most diverse ecological communities of plants and animals. The amount of riparian habitat, as with wetland habitats in general, has been greatly reduced in California. Fortunately, due to strict wetland regulations and increased urban runoff, this trend has been reversed in southwestern California. In addition to supporting many nesting sensitive species, riparian habitat is heavily used by migrating songbirds.

Riparian habitat is found along the perennial or ephemeral stream channels within the Preserve and is characterized by dense tree cover or a lush growth of herbaceous plant species. On the Project Site, willow-riparian scrub vegetation dominated by arroyo willow (*Salix lasiolepis*) and mulefat (*Baccharis salicifolia*) occurs in the upper portion of La Cañada Verde. The lower reaches of this canyon are drier and vegetated with chaparral and coastal sage scrub species, as well as small amounts of southern California black walnut (*Juglans californica* var. *californica*). To the east, Pescadero Canyon supports a dense riparian community dominated by Mexican elderberry and mulefat; arroyo willow scrub occurs farther upstream. The riparian understory is

variable, but common elements include poison oak and such non-native annual grasses and forbs as ripgut brome, milk thistle (*Silybum marianum*), and poison hemlock (*Conium maculatum*).

Several bird species are associated with willow and mulefat scrub in southwestern California, but the expansive bottomland conditions they prefer are not present in the Preserve. Focused surveys of the Project Site failed to detect the state and federally listed least Bell's vireo (*Vireo bellii pusillus*), but the yellow-breasted chat (*Icteria virens*), a California Species of Special Concern, was found on the site. Other bird species largely restricted to riparian areas in the Preserve include the black-chinned hummingbird (*Archilochus alexandri*), downy woodpecker (*Picoides pubescens*), Pacific-slope flycatcher (*Empidonax difficilis*), and American goldfinch (*Carduelis tristis*).

Mammals of the riparian habitats in the Preserve include the raccoon (*Procyon lotor*) and Virginia opossum (*Didelphis virginiana*). The western red bat (*Lasiurus blossevillii*), a California Species of Special Concern, and various other bat species prefer these wetter habitats, where insects are often abundant. The Pacific chorus frog (*Pseudacris regilla*) and other amphibians also seek out the moist conditions along riparian corridors.

4.2.1.2 Sensitive Biological Resources and Processes

This section reviews issues of potential biological sensitivity relevant to the proposed Project.

Special Status Species

Special status species are plants and animals known to occur, or potentially occurring, on the Project Site that are endangered or rare, as those terms are used in the California Environmental Quality Act (CEQA) and its Guidelines, or that are of current local, regional, or state concern. Legal protection for special status species varies widely, from the relatively comprehensive protection extended to listed threatened or endangered species to no legal status at present.

In addition to the RMP and reports on focused surveys of the site (LSA 2007, 2008, 2009a, 2009b, 2009c, 2010; Glenn Lukos Associates 2010), the following sources were used to identify special status species potentially occurring in the Project vicinity:

- California Department of Fish and Game, Natural Diversity Database (CNDDB). 2009a. Special Animals. List dated July 2009.
- CNDDB. 2009b. Data base report for Whittier and eight surrounding US Geological Survey (USGS) quadrangles. Report dated December 30, 2009.
- CNDDB. 2010. Special Vascular Plants, Bryophytes, and Lichens List. List dated April 2010.
- California Native Plant Society (CNPS). 2010. Online Inventory of Rare and Endangered Plants v7-10a 1-19-10. http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi. Search on January 19, 2010, for plants known from Whittier and eight surrounding USGS quadrangles.
- Consortium of California Herbaria. 2010. Search on January 19, 2010, for special status plants collected in the Whittier area. http://ucjeps.berkeley.edu/consortium.

Special Status Plants

A literature review conducted by LSA Associates revealed no known locations for special status plants on the Project Site, but Plummer's mariposa lily (*Calochortus plummerae*), Catalina mariposa lily (*Calochortus catalinae*), and Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*) were known from the nearby vicinity (LSA 2009a; see Appendix C). Therefore, LSA's botanical surveys in 2008 and 2009 focused on searching for these species, but they also considered other species with potential to occur on the site. LSA botanists concluded that rainfall patterns in both years were conducive to detecting the target special status plant species during the survey periods. In both years, the first survey was conducted in the middle of April to observe plants that emerge in early spring. The second botanical survey was performed during early June to observe plants that emerge during late spring. These botanical surveys were conducted in accordance with the current CNPS Botanical Survey Guidelines dated June 2, 2001. The surveys were floristic in nature, and every species noted in the field was identified to the extent necessary to determine whether it was a special status plant species.

Table 4.2-1 lists and discusses each special status plant species known to occur on the Project Site or in adjacent areas, or that could occur in the local area. Most of the information in this table is summarized from the RMP and the reports discussing the recent focused plant surveys of the Project Site (LSA 2007, 2009a). Based upon the negative results of the focused surveys in 2008 and 2009, LSA concluded that the areas surveyed do not support Plummer's mariposa lily, Catalina mariposa lily, Robinson's peppergrass, or any other special status plants (LSA 2009a).

Table 4.2-1 Special Status Plants

Species	Status (Federal/State/CNPS)	Habitat/Occurrence
Listed Species		
Braunton's milkvetch *Astragalus brauntonii*	FE/—/1B	Recently burned or otherwise disturbed soil areas (e.g., firebreaks) below 640 meters; often in limestone deposits, marine terraces, and other calcareous soils; chaparral, coastal sage scrub, and other brushy habitats. Not observed during botanical surveys of site; potential for occurrence very low.
Thread-leaved brodiaea *Brodiaea filifolia*	FT/CE/1B	Clay soils below 1,220 meters; usually in annual grassland or vernal pools; often surrounded by shrubland habitat. Not observed during botanical surveys of site; potential for occurrence very low.
Unlisted Species		
Coulter's saltbush *Atriplex coulteri*	—/—/1B	Alkaline or clay soils below 460 meters; coastal sage scrub and grassland. Not observed during botanical surveys of site; potential for occurrence very low.
Catalina mariposa lily *Calochortus catalinae*	—/—/4	Heavy soils below 700 meters; open grassy slopes and openings in brush in chaparral, coastal sage scrub, grassland. Not observed during botanical surveys of site; potential for occurrence very low.
Plummer's mariposa lily *Calochortus plummerae*	—/—/1B	Dry, rocky places below 1,700 meters; usually on granitic soils; grassland, chaparral, coastal sage scrub, yellow pine forest. Has been found on other portions of the Preserve. Not observed during botanical surveys of site; potential for occurrence very low.
Intermediate mariposa lily *Calochortus weedii* var. *intermedius*	—/—/1B	Dry, rocky, slopes below 855 meters; chaparral, coastal sage scrub, grasslands. Has been found on other portions of the Preserve. Not observed during botanical surveys of site; potential for occurrence very low.
Southern tarplant *Centromadia parryi* ssp. *australis*	—/—/1B	Alkali meadows, grasslands, and riparian herb habitats below 430 meters. Not observed during botanical surveys of site; potential for occurrence very low.
Many-stemmed dudleya *Dudleya multicaulis*	—/—/1B	Clay soils and around granitic outcrops below 790 meters; chaparral, coastal sage scrub, and grasslands. Not observed during botanical surveys of site; potential for occurrence very low.
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	—/—/1B	Sandy or gravelly substrates below 810 meters; chaparral, cismontane woodland, coastal sage scrub. Not observed during botanical surveys of site; potential for occurrence very low.
Southern California black walnut *Juglans californica*	—/—/4	Woodlands, floodplains, and grasslands below 900 meters. Five trees occur in the Project vicinity, in the lower part of La Cañada Verde (Figure 4.2-3).
Robinson's pepper grass *Lepidium virginicum* var. *robinsonii*	—/—/1B	Dry soils below 885 meters; chaparral and coastal sage scrub. Has been found on other portions of the Preserve. Not observed during botanical surveys of site; potential for occurrence very low.
Orcutt's linanthus	—/—/1B	Disturbed areas, often in gravelly clearings, 915 to 2,145 meters; chaparral, lower montane coniferous forest. Not

Species	Status (Federal/State/CNPS)	Habitat/Occurrence
Linanthus orcuttii		observed during botanical surveys of site; potential for occurrence very low.
Small-flowered microseris *Microseris douglasii* var. *platycarpa*	—/—/4	Clay soils below 1,070 meters; vernal pools, grasslands, coastal sage scrub, cismontane woodland. Not observed during botanical surveys of site; potential for occurrence very low.
Golden-rayed pentachaeta *Pentachaeta aurea ssp. aurea*	—/—/4	Many plant communities up to 1,850 meters. Not observed during botanical surveys of site; potential for occurrence very low.
Brand's star phacelia *Phacelia stellaris*	—/—/1B	Open areas below 400 meters; coastal dunes, coastal scrub. Not observed during botanical surveys of site; potential for occurrence very low.
Coulter's matilija poppy *Romneya coulteri*	—/—/4	Open, often burned areas, below 1,200 meters; alluvial scrub, coastal sage scrub, chaparral. Not observed during botanical surveys of site; potential for occurrence very low.
Southern skullcap *Scutellaria bolanderi* ssp. *austromontana*	—/—/1B	Gravelly soils and streambeds, 425 to 2,000 meters; chaparral, woodland and coniferous forests. Not observed during botanical surveys of site; potential for occurrence very low.

Notes:
Federal
FE = Listed as endangered under the federal Endangered Species Act.
FT = Listed as threatened under the federal Endangered Species Act.
State
CE = Listed as endangered under the California Endangered Species Act
CNPS Lists
List 1B = Species considered by CNPS to be rare, threatened or endangered in California and elsewhere.
List 4 = A watch-list of plants with limited distributions.
Sources: LSA 2007, 2009a, 2009c; CNDDB 2009b, 2010; Consortium of California Herbaria 2010

Special Status Wildlife

Table 4.2-2 lists and discusses each special status wildlife species known to occur on the Project Site or in adjacent areas, or that could occur in the local area. Most of the information in this table is summarized from the RMP and the reports discussing the recent focused bird surveys of the Project Site, which included incidental surveys for the cactus wren (*Campylorhynchus brunneicapillus*) and western spadefoot toad (*Spea hammondii*) (LSA 2007, 2009b, 2009c; see Appendix C). The surveys also considered other special status species with potential to occur on the site. Additional special status animals could conceivably occur on the Project Site, but those occurrences would be exceptional or limited to the passage of migrants.

Figure 4.2-3 Observations of Listed Species and Species of Special Concern Within or Adjacent to the Site

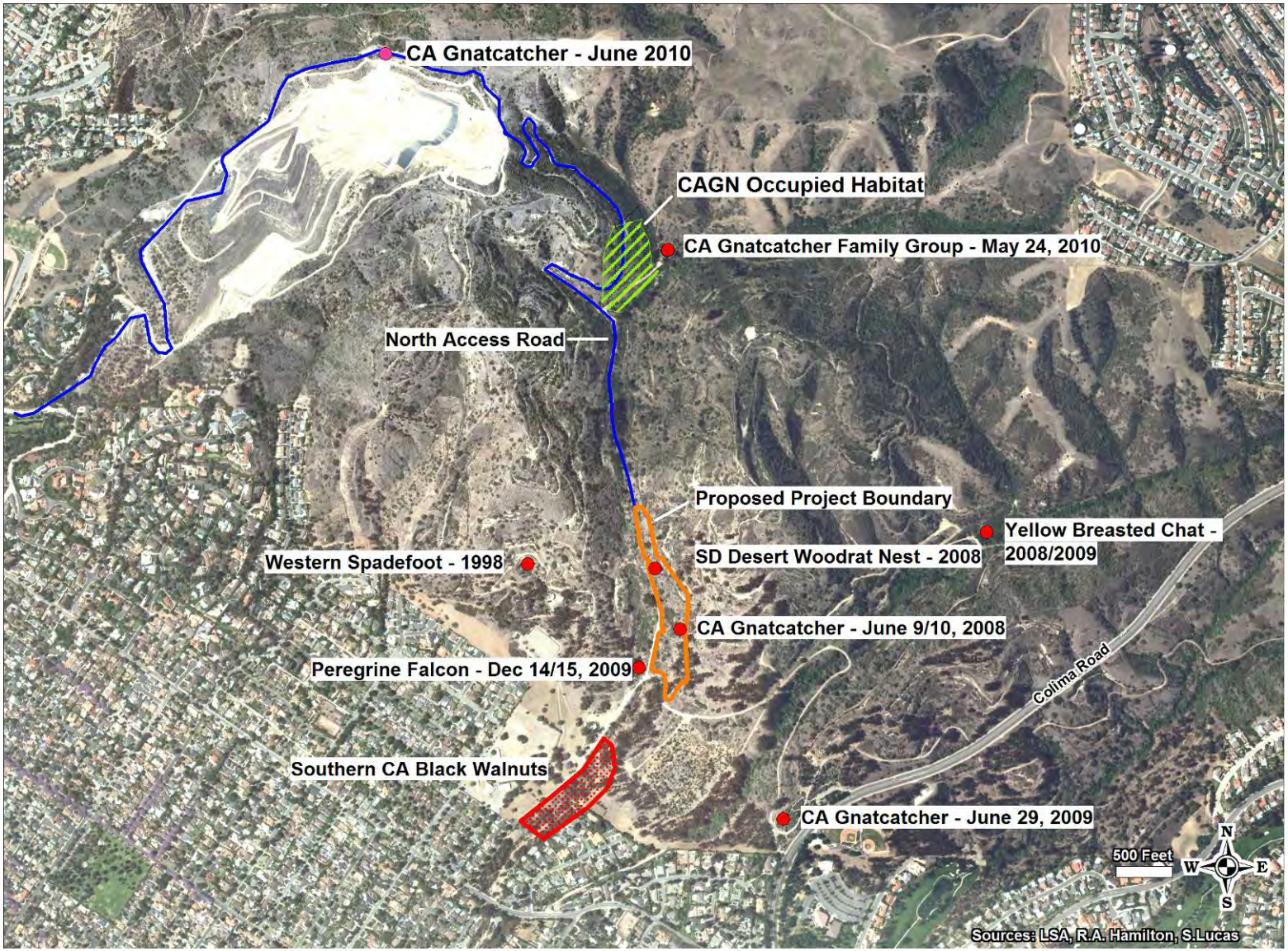


Table 4.2-2 Special Status Wildlife

Species	Status (Federal/State)	Habitat/Occurrence
Listed Species		
Birds		
American peregrine falcon *Falco peregrinus anatum*	FD/CD (nesting); CFP	Nests on buildings and bridges in the Los Angeles Basin; forages in many habitats. Recorded rarely in Preserve in fall and winter. An adult, apparently wintering locally, was perched and vocalizing in eucalyptus trees on the Project Site on December 14–15, 2009 (Figure 4.2-3). The species is unrecorded in the Preserve during the nesting season and likely nesting habitat is not present on or adjacent to the Project Site.
Southwestern willow flycatcher *Empidonax traillii extimus*	FE/CE	Breeds in expansive riparian woodlands, including very rarely in the Prado Basin. Willow flycatchers observed in the Preserve during migration periods probably represent the subspecies *E. t. brewsteri* (little willow flycatcher). No willow flycatchers observed on the Project Site during any surveys, and habitats in the Preserve appear to be unsuitable for nesting.
Coastal California gnatcatcher *Polioptila californica californica*	FT/CSC	Resident in coastal sage scrub, including in the Puente Hills. The USFWS has designated critical habitat for this species across the Project Site and most of the Preserve. A family group was recorded on several occasions on the Project Site, within the La Cañada Verde watershed, in May and June of 2010 (Figure 4.2-3). Individuals recorded on the Project Site in June 2008, and June 2009, (Figure 4.2-3) and in 2010 north of the city landfill were most likely juveniles dispersing from natal territories in the local area.
Least Bell's vireo *Vireo bellii pusillus*	FE/CE	Breeds in riparian woodlands; the regional population is increasing. Not recorded on the Project Site during focused surveys in 2008, 2009, or 2010. In light of these survey results, and considering the limited extent of willow-riparian habitat on the Project Site, the current potential for breeding appears to be low.
Unlisted Species		
Invertebrates		
Peninsular Range shoulderband snail *Helminthoglypta_traskii traskii*	—/CSA	Thirty live individuals observed by Emile Fiesler and Robert Hamilton on February 8, 2011, in several parts of the Project Site. Nearly half of the live snails were found beneath cut logs of non-native trees within the ruderal/grassland area in the southern part of the Project Site. Presumably, this species occurs throughout most of the Project Site and local area, but it is most readily found beneath downed wood, where conditions are relatively moist.
Amphibians		
Western spadefoot *Spea hammondii*	—/CSC	Grasslands and occasionally hardwood woodlands; largely terrestrial but for breeding requires rainpools or other ponded water for 3+ weeks; burrows in loose soils during dry season. One found near the Project Site in 1998 (Figure 4.2-3). Focused surveys by R. A. Hamilton and S. Lucas in February 2010 failed to detect ponded water or western spadefoots on or near the Project Site (including the location

Species	Status (Federal/State)	Habitat/Occurrence
		mentioned above) despite heavy rains earlier in the month. Additional focused surveys by these personnel in April 2010, also conducted within a few days of substantial rains, again found ponding to be very short-lived throughout the Project Site. Thus, the species is unlikely to occur on the site during normal or even relatively wet years. During very rare years with exceptional rainfall, this species could occur in low numbers if suitable ponds are present.
Reptiles		
San Diego banded gecko *Coleonyx variegatus abbotti*	—/CSA	Chaparral, coastal sage, and desert habitats, often with rocks. Unknown from the Puente-Chino Hills (Haas et al. 2002, LSA 2007). Low potential for occurrence.
San Diego horned lizard *Phrynosoma coronatum blainvillii*	—/CSC	Loose, sandy soils in various communities, including dunes, coastal sage scrub, chaparral, and grasslands. Habitats on Project Site appear suitable, but Haas et al. (2002) did not find this species in the Puente Hills, so the species is considered unlikely to be present.
Coronado skink *Eumeces skiltonianus interparietalis*	—/CSC	Grassland, woodlands, pine forests, chaparral, especially in open, rocky areas near streams. Haas et al. (2002) found this species throughout the Puente-Chino Hills, except for the Whittier Hills. Therefore, if present, the species likely occurs in low densities.
Coastal western whiptail *Aspidoscelis tigris stejnegeri*	—/CSA	Various communities, including coastal sage scrub, chaparral, and grasslands. This species has been documented on the Project Site and is expected to occur throughout much of the site.
Silvery legless lizard *Anniella pulchra pulchra*	—/CSC	Loose, sandy soils and humus in various communities, including dunes, coastal sage scrub, chaparral, and woodlands. Considered to have low to moderate potential for occurrence in the Puente-Chino Hills, including the Project Site (Haas et al. 2002, LSA 2007).
Coastal rosy boa *Lichanura trivirgata rosafusca*	—/CSC	Shrublands with rocky soils and rocky outcrops; apparently unknown from the Puente-Chino Hills (Haas et al. 2002, LSA 2007). Low potential for occurrence on the Project Site.
San Bernardino ringneck snake *Diadophis punctatus modestus*	—/CSA	Drainage courses, mesic chaparral, and oak and walnut woodlands. Documented from the Whittier Hills (Haas et al. 2002). Observed in leaf-litter beneath a eucalyptus tree near the end of Catalina Avenue, in the southern part of the project site on February 8, 2011. High potential for occurrence along streambeds and in other moist habitats on the Project Site.
Coast patch-nosed snake *Salvadora hexalepisvirgultea*	—/CSC	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains. Habitats on Project Site appear suitable, but Haas et al. (2002) did not find this species in the Puente Hills. Low potential for occurrence on the Project Site.
Two-striped garter snake *Thamnophis hammondii*	—/CSC	Requires permanent sources of water, such as streams, with rocky beds supporting willows or other riparian vegetation. Habitat on and near the Project Site is marginal for this species; low potential for occurrence.

Species	Status (Federal/State)	Habitat/Occurrence
Northern red diamond rattlesnake *Crotalus ruber ruber*	—/CSC	Rocky areas in coastal sage scrub, chaparral, oak and pine woodlands, grasslands, cultivated areas. Habitats on Project Site appear suitable, but Haas et al. (2002) did not find this species in the Whittier Hills, so the species is considered unlikely to be present.
Birds		
White-tailed kite *Elanus leucurus*	—/CFP	Nests in woodlands with open grasslands nearby for foraging. Winters in various open habitats. Known from Puente-Chino Hills, but few nesting pairs; habitats on Project Site only marginally suitable, so low potential for occurrence.
Northern harrier *Circus cyaneus*	—/CSC	Nests on or near ground in marshes, grasslands, and margins of coastal sage scrub. Winters in various open habitats. One seen flying near the Project Site on December 14, 2009. Species is likely to forage on the Project Site in winter, but nesting is unlikely due to marginally suitable habitat.
Cooper's hawk *Accipiter cooperi*	—/CSA (nesting)	Nests in woodlands, including eucalyptus stands, increasingly in and around residential areas. Observed on the Project Site during surveys in spring/summer 2008 and 2009; suitable nesting habitat occurs on the Project Site.
Ferruginous hawk *Buteo regalis*	—/CSA (wintering)	Winters in the region, typically in expansive grasslands. Not observed on Project Site but probably occurs very rarely in winter.
Golden eagle *Aquila chrysaetos*	—/CFP	Resident in the region, typically far from development, as close as the northern Santa Ana Mountains and Chino Hills. Not observed on Project Site, and suitable nesting habitat is not present, but the species may occur on the site very rarely in winter.
Merlin *Falco columbarius*	—/CSA	Winters in various habitats throughout the region. Not observed on Project Site but probably occurs rarely.
Prairie falcon *Falco mexicanus*	—/CSA	Nests in the region, but not in the Puente Hills; wintering birds found in open habitats, typically far from development, as close as the northern Santa Ana Mountains and Chino Hills. Not observed on Project Site but probably occurs very rarely in winter.
Burrowing owl *Athene cunicularia*	—/CSC	Nests and more commonly winters in grasslands and other open areas in the region. In the Puente Hills, the remains of two were found at a raptor nest in Sycamore Canyon in October 1999 and one was seen in Arroyo San Miguel in October 2006 (LSA 2007); the only other recent record involves one seen in a burrow near Hellman Wilderness Park, northwest of the Project Site, in January 2010. The Project Site contains only marginally suitable habitat, and the species is only expected to occur as a rare migrant.
Long-eared owl *Asio otus*	—/CSC (nesting)	Resident in woodlands of the region, but apparently unrecorded in the Puente Hills (LSA 2007). Occasional migrants or winter visitors are possible along the site's drainage courses.
Costa's hummingbird *Calypte costae*	—/CSA (nesting)	Summer resident in deserts, coastal sage scrub, and chaparral in the region. Widespread breeder in the Puente Hills, including the Project Site.

Species	Status (Federal/State)	Habitat/Occurrence
Allen's hummingbird *Selasphorus sasin*	—/CSA (nesting)	Resident subspecies *sedentarius* has been rapidly expanding in southern California for two decades and is now occupies many habitats, including residential neighborhoods. Presumably breeds on the Project Site, along drainage courses and in eucalyptus trees.
Nuttall's woodpecker *Picoides nuttallii*	—/CSA (nesting)	Resident in woodlands and chaparral, and in some residential areas, throughout the region. Presumably breeds on the Project Site, along drainage courses and in eucalyptus trees.
California horned lark *Eremophila alpestris actia*	—/CSA (nesting)	Resident in grasslands, agricultural areas, and other low, open habitats in the region; formerly in the Whittier Hills (Cooper 2000). Ten Horned Larks recorded flying over the Project Site on June 29, 2009, were believed to have come from a nearby baseball field (M. J. Billings pers. comm.). Nesting is not expected at the Project Site due to lack of potentially suitable habitat.
Coastal cactus wren *Campylorhynchus brunneicapillus*	—/—	Resident in cactus scrub on the coastal slope from southern Ventura County south to northern Baja California. Many regional populations in steep decline, but only subspecies *sandiegensis* of San Diego and southern Orange counties is a California Species of Special Concern. Limited cactus patches at Project Site are only marginally suitable, and this species has not been recorded on the site.
California thrasher *Toxostoma redivivum*	—/CSA	Resident in chaparral and other brushy habitats in the region; widespread in the Puente Hills. A common resident across most of the Project Site.
California yellow warbler *Dendroica petechia brewsteri*	—/CSC (nesting)	Summer resident in riparian woodlands in the region, possibly including the Puente Hills. Migrants, but not breeding birds, were detected during avian surveys of the Project Site in 2008, 2009, and 2010.
Yellow-breasted chat *Icteria virens*	—/CSC (nesting)	Summer resident in riparian woodlands and shrublands in the region, including the Puente Hills. During both 2008 and 2009, LSA recorded a territorial male singing in Arroyo Pescadero just outside of the Project Site, and on April 23, 2010, Glenn Lukos Associates recorded a pair in La Cañada Verde (Figure 4.2-3). The site contains suitable nesting habitat for this species and the species is considered to be present on the site.
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	—/CSA	Resident in coastal sage scrub/grassland habitats, typically with rocky outcrops, in the region, including the Puente Hills. This species occurs on the Project Site, and most of the site constitutes potentially suitable habitat for this sparrow.
Mammals		
Yuma myotis *Myotis yumanensis*	—/CSA	Summer resident in various communities, typically near permanent water. Documented in Arroyo Pescadero and presumed present on the Project Site.
Western red bat *Lasiurus blossevillii*	—/CSA	Resident in riparian woodlands; sometimes uses ornamental landscaping and orchards. Detected in La Cañada Verde and presumed present on the Project Site.
Western yellow bat *Lasiurus xanthinus*	—/CSA	Resident locally in palm trees. Detected in La Cañada Verde and presumed to forage over the Project Site.

Species	Status (Federal/State)	Habitat/Occurrence
Hoary bat *Lasiurus cinereus*	—/CSA	Winter resident and migrant; roosts in trees. Detected in La Cañada Verde and Arroyo Pescadero; presumed present on the Project Site.
Pallid bat *Antrozous pallidus*	—/CSC	Resident in various communities, foraging on the ground or on vegetation; many substrates used for roosting. Detected in Puente Hills in 2004, but not in the more detailed study in 2005/2006. Suitable habitat is present on the Project Site and the species is presumed to occur there.
Pocketed free-tailed bat *Nyctinomops femorosaccus*	—/CSC	Cliff-dwelling species found in various habitats. Detected in the Puente Hills, but not on the Project Site. Species potentially forages over the Project Site.
Southern grasshopper mouse *Onychomys torridus ramona*	—/CSC	Extremely rare resident in various arid scrublands and chaparral in the region. Not documented from the Puente Hills, but suitable habitat occurs on the Project Site. Potential for occurrence on site is considered low due to lack of captures and regional rarity.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	—/CSC	Richard A. Erickson (who worked on the 2007 Resource Management Plan as a senior biologist for LSA Associates) indicated that the Los Angeles pocket mouse has never been recorded in the Puente Hills and would not be expected to occur there. Not known or expected to occur on site.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	—/CSC	The range, habitat requirements, and known local occurrences for this species were discussed with biologists Richard A. Erickson and Daniel S. Cooper, both of whom have extensive experience in the Chino-Puente Hills. Neither of these local experts believed that this species persists in the Whittier Hills, based on a lack of records in recent decades. Not known or expected to occur on site.
Mountain lion *Puma concolor*	—/LC	Resident in brushy chaparral habitat maintains large home ranges in expansive open space areas throughout the region, including the Preserve. Observed in Project area many times throughout the Preserve, including in Arroyo Pescadero (Habitat Authority data). Home ranges of individual mountain lions expected to overlap Project boundary.
San Diego desert woodrat *Neotoma lepida intermedia*	—/CSC	Resident in poorly vegetated arid lands, especially those with cactus patches, throughout the region. A nest of this species was found on the Project Site in 2008 (Figure 4.2-3).
American badger *Taxidea taxus*	—/CSA	Various habitats with friable soils throughout the region, including the Puente Hills. One found dead on Colima Road on July 26, 2006 (Elliott and Stapp 2008) indicates the species may occur on the Project Site.

FD = Delisted as threatened or endangered under the federal Endangered Species Act.
FE = Listed as endangered under the federal Endangered Species Act.
FT = Listed as threatened under the federal Endangered Species Act.
CE = Listed as endangered under the California Endangered Species Act.
CD = Delisted as threatened or endangered under the California Endangered Species Act
CFP = California Fully Protected. This classification was the State's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts; white-tailed kite, golden eagle, trumpeter swan, northern elephant seal and ring-tailed cat are the exceptions.

CSA = California Special Animal. A general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species." The Department of Fish and Game considers the taxa on this list to be those of greatest conservation need.
CSC = California Species of Special Concern. Taxa identified by CDFG as being vulnerable to extinction because of declining population levels, limited ranges, and/or continuing threats. The goal of CDFG is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability. Not all "Species of Special Concern" have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a "Threatened" or "Endangered" species under the State and/or Federal Endangered Species Acts.'
LC = ; species of local concern (no agency-designated status).
Sources: Remington 2006; LSA 2007, 2008, 2009b, 2009c, 2010; Glenn Lukos Associates (2010); CNDDB 2009a, 2009b

Riparian, Aquatic, or Otherwise Sensitive Natural Communities

Seasonal drainages and other areas that fall under the jurisdiction of the California Department of Fish and Game (CDFG) or U.S. Army Corps of Engineers (USACE) are generally regarded as sensitive biological resources in the City of Whittier, regardless of whether the areas support plant communities that are specifically tracked by the CNDDB. In addition, riparian and wetland areas, which have undergone large-scale loss and degradation in the Puente Hills and elsewhere in the region, generally provide important water sources and limited habitat resources for wildlife in an arid landscape. On the Project Site, seasonal drainage courses within both the La Cañada Verde and Arroyo Pescadero watersheds are considered sensitive biological resources.

In part because of its importance to the federally threatened coastal California gnatcatcher and other species of limited distribution, and in part because of its limited global distribution, coastal sage scrub is regarded as a sensitive biological community. The U.S. Fish and Wildlife Service (USFWS) has designated critical habitat for the gnatcatcher across the Project Site and most of the Preserve.

The proposed Project is within Critical Habitat, Unit 9, East Los Angeles County-Matrix NCCP Sub-region of Orange County, which is described in the USFWS Final Rule:

> Unit 9 encompasses approximately 17,552 ac (7,103 ha) the majority of which is under private ownership within the Montebello Hills, Puente-Chino Hills, and West Coyote Hills areas. Core populations are known from the Montebello Hills, south slopes of the Puente-Chino Hills from Whittier east to Yorba Linda, and the East and West Coyote Hills. The Brea Canyon Landfill is not designated as critical habitat, but represents a significant potential restoration area to support these remaining populations and aid in recovery of the species. The unit also provides the primary connectivity between significant coastal California gnatcatcher populations and sage scrub habitat within the Orange County Central-Coastal NCCP (Unit 6), the Western Riverside County MSHCP (Unit 10) and the Bonelli Regional Park population within East Los Angeles (Unit 12). Habitat within this unit is being designated because it was occupied at the time of listing, is currently occupied, and contains all of the features essential to the conservation of the coastal California gnatcatcher (PCEs 1 and 2). Additionally, this unit provides for connectivity and genetic interchange among core populations and contains large blocks of high-quality habitat capable of supporting persistent populations of coastal California gnatcatchers. The PCEs contained within this unit may require special management considerations or protection to minimize impacts associated with habitat type conversion and degradation occurring in conjunction with urban and agricultural development.

Noise Issues

In preparing this CEQA document, the EIR biologists reviewed the following articles from scientific literature:

- Barber, J. R., K. R. Crooks, and K. M. Fristrup. 2009. The costs of chronic noise exposure for terrestrial organisms. Trends in Ecology and Evolution 25:180-189.

- Fuzessery, Z. M., P. Buttenhoff, B. Andrews, and J. M. Kennedy. 1993. Passive sound localization of prey by the pallid bat (*Antrozous p. pallidus*). Journal of Comparative Physiology A 171:767-777.
- Dooling, R. J., and A. N. Popper. 2007. The Effects of Highway Noise on Birds. Report prepared by Environmental BioAcoustics LLC for The California Department of Transportation, Division of Environmental Analysis, Sacramento, CA. http://www.caltrans.ca.gov/hq/env/bio/files/caltrans_birds_10-7- 2007b.pdf
- Bayne, E. M., L. Habib, and S. Boutin. 2008. Impacts of chronic anthropogenic noise from energy-sector activity on abundance of songbirds in the boreal forest. Conservation Biology 22:1186-1193.
- Schaub, A., J. Ostwald, and B. M. Siemers. 2008. Foraging bats avoid noise. Journal of Experimental Biology 211:3174-3180.
- Francis, C. D., C. P. Ortega, and A. Cruz. 2009. Noise pollution changes avian communities and species interactions. Current Biology 19:1415-1419.

As summarized by Barber and colleagues, "Chronic noise exposure is widespread. Taken individually, many of the papers cited here offer suggestive but inconclusive evidence that masking is substantially altering many ecosystems. Taken collectively, the preponderance of evidence argues for immediate action to manage noise in protected natural areas." The evaluation of potential noise impacts upon wildlife is confounded by varying and oppositional responses of different species to chronic noise. For example, the study by Francis and colleagues, listed above, found that "noise can have an indirect positive effect for individuals nesting in noisy areas" resulting from a decrease in nest predation due to avoidance of noisy areas by the Western Scrub-Jay, a major nest-predator. Nevertheless, their study also found that most bird species responded negatively to noise (e.g., three species nested only in loud sites and 14 species nested only in quiet, control sites). Their study provided "the strongest evidence to date that noise negatively influences bird populations and communities, and acoustic masking may be a dominant mechanism precluding many birds from breeding in noisy habitats."

Another important study, by Bayne and colleagues, found that areas near noiseless energy facilities had a total passerine density 1.5 times higher than areas near noise-producing energy sites. Among bats, Fuzessery et al. found that the pallid bat relies upon prey-generated movement sounds to localize its terrestrial prey. The later study by Schaub and colleagues, which focused on another gleaning bat, the greater mouse-eared bat, concluded, "Our experimental data suggest that foraging areas very close to highways and presumably also to other sources of intense, broadband noise are degraded in their suitability as foraging areas for such 'passive listening' bats."

In Irvine, Orange County, LSA Associates conducted noise level surveys in the Bonita Reservoir wildlife habitat area during each year from 1996 through 2000 (LSA Associates, Inc. 2001. Final Report on Bonita Canyon Road Wildlife Studies. Report dated 19 November 2001 prepared for the San Joaquin Hills Transportation Corridor Agency, Irvine, CA.), concluding that "[California] Gnatcatchers can live and reproduce successfully in close proximity to both Bonita Canyon Road and the San Joaquin Hills Transportation Corridor" (p. 59).

The same LSA report found:

> Although it is difficult to directly relate the effects of noise on breeding birds, no adverse effects were observed during periods of noise levels higher than 60dBA Leq (i.e., during periods of construction activity) as evidenced by the number of California gnatcatchers and least Bell's vireos remaining in this area. In fact, in 2000, a least Bell's vireo pair successfully nested in the portion of Bonita Reservoir that was nearest to the construction activity (p. 17).

The following summary is contained in the Birds of North America species account for the California gnatcatcher (Atwood, J. L. and D. R. Bontrager. 2001. California Gnatcatcher [Polioptila californica]. The Birds of North America Online [A. Poole, ed.]. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/574):

> Loud construction noise also seems to have minimal effect. Successful nests located 100 m from pile driver (Chambers Group, Inc. 1995. Gnatcatcher monitoring report. Unpubl. report. Prepared for Sverdrup Corp. Irvine, CA.), and <5 m from 2 dirt roads regularly traveled by heavy earth-moving equipment (R. A. Erickson unpubl., D.R. Bontrager). Of 91 nests found at heavily used state park, 13% were <3 m from paved roads or trails; no evidence that such nests failed more frequently than those in less disturbed sites (Miner, K. L., A. L. Wolf, and R. L. Hirsch. 1998. Use of restored coastal sage scrub habitat by California gnatcatchers in a park setting. West. Birds 29:439-446.).

Wildlife Movement and Habitat Linkage Issues

Constricting the movement of wildlife and plant seeds increases the risk of local extinctions. Habitat fragmentation consequently threatens the viability of these remaining natural resources. Large areas of habitat, or narrower linkages of habitat between large areas, provide movement opportunities for wildlife. Movement serves to facilitate the geographic distribution of genetic material, thus maintaining a level of variability in the gene pool of an animal population. Influxes of animals from nearby larger populations contribute to the genetic diversity of a local population, helping to ensure the population's ability to adapt to changing environmental conditions. This is mainly accomplished through the dispersal of juveniles from their natal territories, but may also involve movements in response to drought or other adverse environmental conditions, or emergencies such as wildfires. Many plant species that depend on relatively sedentary insects for pollination also benefit from habitat linkages that allow for genetic exchange and dispersal. Reduced insect movement due to habitat fragmentation results in reduced genetic vigor in those plants. Likewise, plant seeds and propagules can be transported via the feces, fur, or feathers of birds or mammals. Fragmentation effects are not limited to the physical severing of movement routes, such as through the construction of a road or housing development, but include such "edge effects" as increases in night lighting and noise, which may potentially disrupt the movement patterns of species not well-adapted to such effects.

The Puente-Chino Hills Wildlife Corridor constitutes one of the most-studied wildlife corridors in North America (LSA 2007). As shown in Figure 4.2-4, this corridor extends approximately 31 miles south from the San Gabriel River to the Cleveland National Forest in the Santa Ana Mountains. Increased development surrounding and within the wildlife corridor has increasingly fragmented the area, resulting in isolated islands of habitat. Maintaining the corridor's ecological

integrity and bolstering the functionality of its constituent linkages are widely regarded as important conservation objectives within the densely urbanized Los Angeles Basin (Conservation Biology Institute 2005).

The Puente-Chino Hills Wildlife Corridor is crossed by eleven roadways, each representing a potential barrier to the movement of terrestrial wildlife. Lisa Lyren's 2001 California State Polytechnic University, Pomona, California. Master's Thesis, "Movement Patterns of Coyotes and Bobcats Relative to Roads and Underpasses in the Chino Hills Area of Southern California," identified collisions with vehicles as the primary cause of coyote mortality in the Chino Hills/Prado Basin area (Lyren 2001). The responses of wildlife to the provision of road undercrossings, and to other efforts undertaken to facilitate wildlife movement, have been studied on the Preserve by Haas and Crooks (1999), Haas and Turschak (2002), Elliott and Stapp (2008), and Stapp and Cashin (2009).

Wildlife Movement Issues of Concern at the Project Site

Wildlife can currently move freely throughout the Project Site, the western portion of which is closed to the public. Two movement issues are of concern with respect to the proposed Project:

- Preservation of adequate movement opportunities, and avoidance of vehicle collisions, for wildlife within the Project Site; and
- Preservation of adequate movement opportunities, and avoidance of vehicle collisions, for wildlife moving between the Project Site and other areas, particularly across or under Colima Road, which runs along the eastern Project boundary.

Wildlife can cross Colima Road at grade (with risk of automobile collisions) or utilize one of the two road undercrossings (i.e., tunnels) shown in Figure 4.2-5:

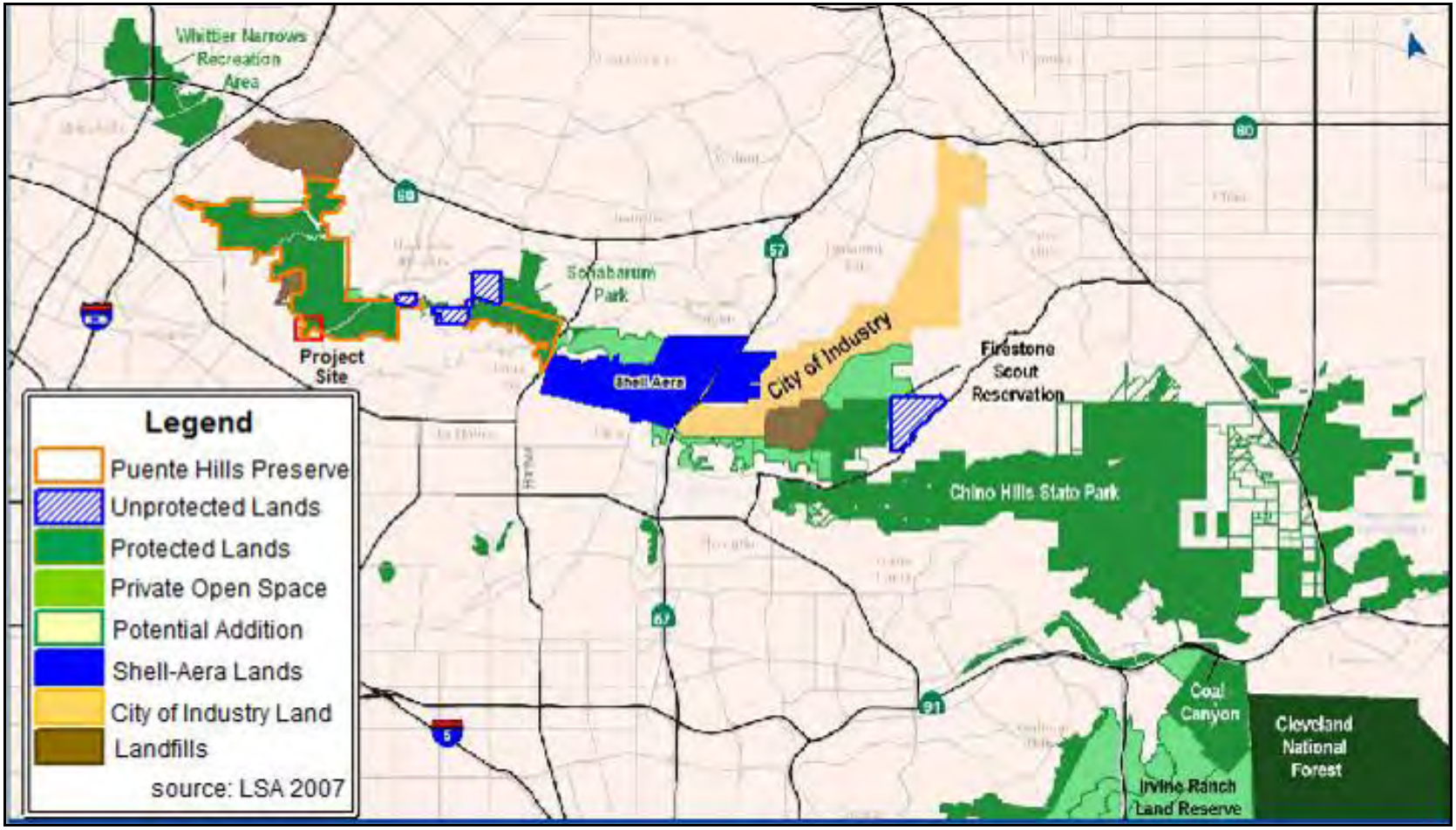
- The Service Tunnel is an undercrossing that connects wildlife on the Project Site to an open space area undergoing habitat restoration on the east side of Colima Road.
- The Skyline Trail Equestrian Tunnel is 1 mile north of the Service Tunnel. Since the west side of this tunnel only leads to a small, fenced-in area of open space, this tunnel does not effectively facilitate the movement of wildlife through the Puente-Chino Hills Wildlife Corridor.

The following species, in decreasing order, showed the highest levels of use recorded at the Service Tunnel: Bobcat, mule deer, gray fox, Virginia opossum, and striped skunk (*Mephitis mephitis*). The Skyline Trail Equestrian Tunnel was found to receive much less use by wildlife, especially those species most sensitive to human disturbance; bobcats, mule deer, and gray foxes went unrecorded at this northerly undercrossing.

Haas and Crooks (1999) stated the following with regard to opening of the lands around the Service Tunnel to human recreational activity:

> Not only would human activity interfere with current relatively undisturbed conditions throughout this property, it would disrupt wildlife movement through the Service Tunnel underpass as animals attempt to cross beneath Colima Road. Since this underpass is the only link between habitat to the east (San Miguel Canyon) and habitat to the west (Arroyo Pescadero Canyon), human disturbance should be kept to a minimum. We strongly recommend that all efforts to allow human activity to occur throughout this area be stopped.

Figure 4.2-4 Chino Puente Hills Wildlife Corridor



Nevertheless, the area in question (the eastern portion of the current Project Site) was opened to the public for recreation purposes in March 2002. As part of this process, from August 2001 to July 2002, wildlife movement across Colima Road and through the Service Tunnel was studied (Haas and Turschak 2002). During this period, vehicles on Colima Road killed four coyotes, two striped skunks, and one mule deer. Human use of the tunnel was found to have increased from being undetectable in the late 1990s to a fairly high level of use in 2001, and the level of human use doubled again when the tunnel was opened to the public the following year. Bobcat, coyote, domestic dog, and mule deer showed the highest levels of activity through the Service Tunnel during this study. Researchers did not document any human-related decrease in wildlife use of the tunnel after it was opened to public use, but noted that "the impacts of human activity on wildlife may have occurred prior to the onset of this survey, as previous data (1997–1999) documented no human or dog use of the tunnel." Wildlife utilizing the service tunnel are most active during the night when recreational use of the tunnel is unlikely, therefore reducing the human impact on the tunnel's use as a wildlife corridor.

Figure 4.2-5 shows roadkill data collected from 2004 through 2009 along Colima Road as part of the Habitat Authority's large-mammal sighting data. Several vehicle collisions involving deer, coyote, and other mid-sized mammals along Colima Road indicate that wildlife species attempt to cross Colima Road (with uncertain success) in addition to travelling under this road via the Service Tunnel. Figure 4.2-6 shows in red two old oilfield roads that provide the least-constrained routes for wildlife moving east/west across the Arroyo Pescadero to and from the Service Tunnel. Using these routes is less costly energetically than moving through dense vegetation and over the steep ridge west of the Service Tunnel and therefore, it has been observed that some larger terrestrial wildlife species, such as coyotes and bobcats, routinely use these routes to access the Service Tunnel. Deer have also been observed to use these routes but recent remote camera data also show westbound deer emerging from the tunnel and traversing the steep slope located north and west of the tunnel (Habitat Authority data).

Elliott and Stapp (2008) conducted roadkill surveys on 37.8 kilometers (km) of roads in the Puente Hills between July 2004 and June 2007, including Workman Mill Road (4.8 km), Turnbull Canyon Road (6.4 km), Colima Road (3.7 km), Hacienda Boulevard (4.8 km), Fullerton Road (2.7 km), and Harbor Boulevard (3.2 km):

> Of all the roads surveyed, Harbor Boulevard and Colima Road had the highest frequency of roadkills. All but one of the coyote roadkills was recorded on Harbor Boulevard and Colima Road, and the two dead bobcats spotted were both on Harbor Boulevard. Only four deer were recorded as roadkill, but all were on Colima Road. Both roads had high posted speed limits ($\geq$ 45 mph) and relatively high daily traffic volumes (> 30,000 vehicles per day on average), and cross considerable amounts of open space. Roadkills were highest on Harbor Boulevard, followed by Colima Road, Hacienda Boulevard, Workman Mill Road, Fullerton Road, and Turnbull Canyon Road.

Figure 4.2-5 Trails, Oil Field Roads, and Wildlife Roadkill Data

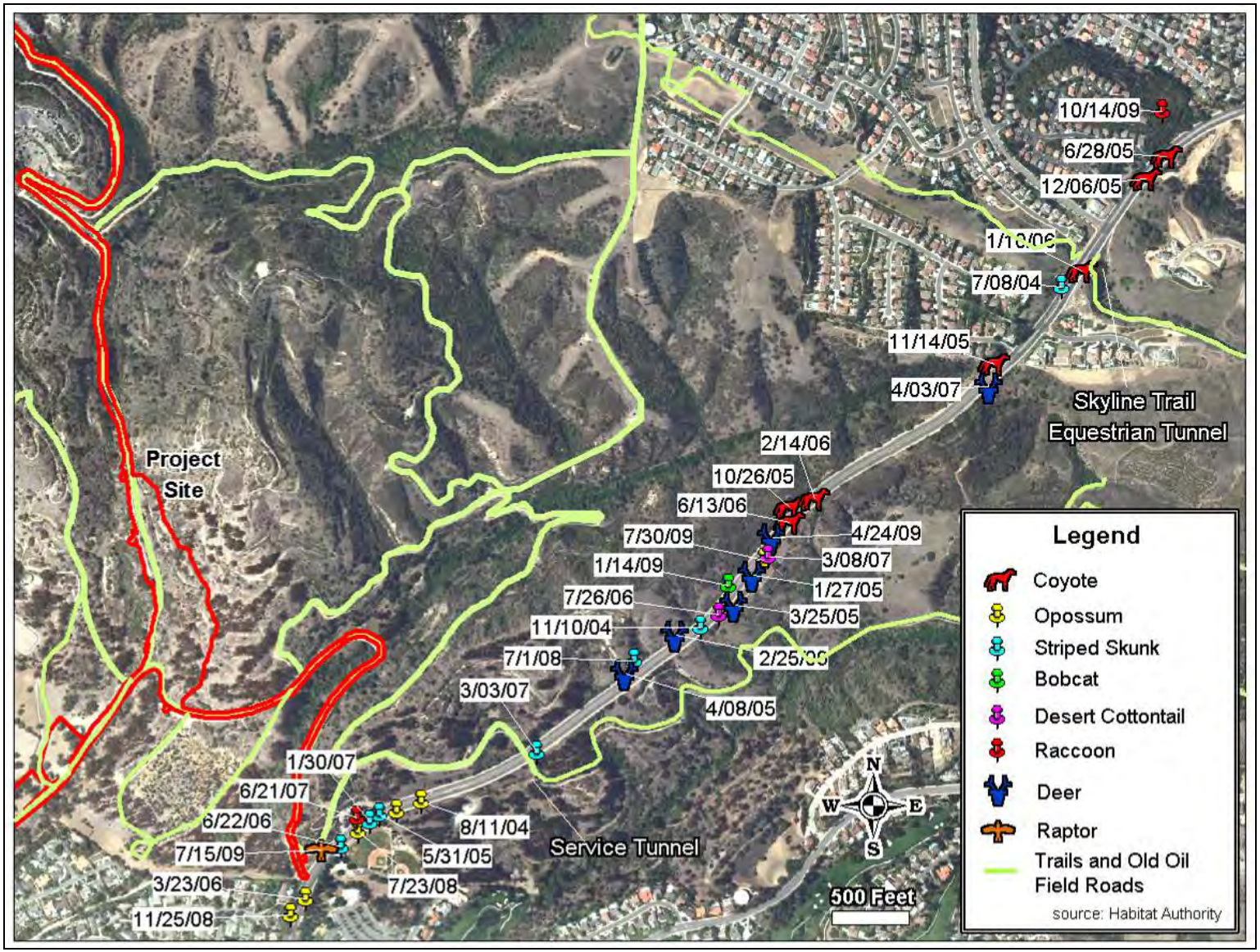


Figure 4.2-6 Existing Trails and Oil Field Roads Leading to the Service Tunnel

Section 6.2.9 of the RMP provides a series of recommendations for "wildlife corridor maintenance," including four directed toward improving wildlife movement opportunities across Colima Road in the Project vicinity:

- Add screening vegetation around the Colima Service Tunnel.
- Limit disturbances in the vicinity of the tunnel (e.g., artificial lighting or recreation uses) between sunset and sunrise, when wildlife utilizes this corridor the most.
- Consider the construction of a wildlife overpass (a vegetated wildlife bridge) over the road to utilize the steep slopes on either side.
- Explore other alternative measures to avoid, minimize, or reduce wildlife roadkill (LSA 2007).

The first three points are self-explanatory, but the last point warrants further discussion. When a proposed project has potential to adversely affect movement of terrestrial wildlife through an area that is, or that is proposed to be, bisected with roads, the establishment or redesign of

roadway fencing is an "alternative measure to avoid, minimize, or reduce wildlife roadkill" frequently considered as part of CEQA review.

4.2.2 Regulatory Setting

The proposed Project is subject to state and federal regulations associated with several regulatory programs, such as the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), the Federal Clean Water Act, and various provisions of the state Fish and Game Code. These programs were developed to protect natural resources, including (1) state- and federally listed plants and animals, (2) special status species that are not listed as threatened or endangered by state or federal governments, and (3) and aquatic resources, such as rivers, streambeds, ephemeral wetlands, and riparian habitat areas.

4.2.2.1 Federal Resource Regulations

Federal Endangered Species Act (16 United States Code 153 et seq.)

The FESA of 1973 provides for (1) the conservation of plant and animal species that are listed by the federal government as endangered or threatened with extinction throughout all or a significant portion of their range and (2) the conservation of the ecosystems on which they depend. A federally listed species is protected from unauthorized "take" pursuant to Section 9 of FESA. "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt to engage in such conduct. Persons are prohibited from taking a federally listed species unless and until (1) the appropriate Section 10(a) Permit has been issued by the USFWS or (2) an Incidental Take Statement is obtained as a result of formal consultation between a federal agency and the USFWS pursuant to Section 7 of FESA and the implementing regulations that pertain to it (50 Code of Federal Regulations [CFR] 402). The FESA defines "person" as an individual, corporation, partnership, trust, association, or any private entity; any officer, employee, agent, department or instrumental of the federal government; any state, municipality, or political subdivision of the state; or any other entity subject to the jurisdiction of the United States.

Critical habitat is a term defined in the FESA that identifies a specific geographic area or areas that contain features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after the USFWS publishes a proposed and federal regulation in the Federal Register and then considers public comments on the proposal. The final boundaries of the critical habitat area are then published in the Federal Register.

Sections 404 and 401 of the Clean Water Act of 1972 (33 United States Code 1251 et seq.)

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into "waters of the United States," including adjacent "wetlands" that are subject to the USACE jurisdiction. Project proponents must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Before any

actions that may affect surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed, following USACE protocols, in order to determine whether the Project area encompasses wetlands or other waters of the United States that qualify for Clean Water Act protection. These include (1) areas within the ordinary high water mark of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, and (2) seasonal and perennial wetlands.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3).

Section 404 Permits may be issued only for the "least environmentally damaging practicable alternative." That is, authorization of a proposed discharge is prohibited if there is a practicable alternative that would have less adverse impacts and lacks other significant adverse consequences.

Under Section 401 of the Clean Water Act, applicants for a federal license or permit such as a Section 404 Permit must obtain certification from the state, or a waiver of certification, that the activity would not adversely affect water quality. The Project Site lies within jurisdiction of Los Angeles Regional Water Quality Control Board (RWQCB; Region 4).

Migratory Bird Treaty Act (16 United States Code 703–711)

The Migratory Bird Treaty Act (MBTA) of 1918, as amended in 1972, makes it unlawful, unless permitted by regulations, to "pursue; hunt; take; capture; kill; attempt to take, capture or kill; possess; offer for sale; sell; offer to purchase; purchase; deliver for shipment; ship; cause to be shipped; deliver for transportation; transport; cause to be transported; carry or cause to be carried by any means whatever; receive for shipment, transportation, or carriage; or export, at any time, or in any manner, any migratory bird for the protection of migratory birds or any part, nest, or egg of any such bird" (16 USC 703).

4.2.2.2 State Resource Regulations

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

Pursuant to the CESA and Section 2081 of the Fish and Game Code, an incidental take permit from the CDFG is required for Projects that could result in the take of a state-listed Threatened or Endangered species. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species. An incidental take permit authorized by CDFG under Section 2081(b) of the California Fish and Game Code would be required where a Project could result in the taking of a state-listed threatened or endangered species. The application for an incidental take permit under Section 2081(b) requires the preparation of a conservation plan, generally referred to as a Habitat Conservation Plan.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy; a threatened species as one present in such small

numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management; and a rare species as one present in such small numbers throughout its range that it may become endangered if its present environment worsens. The rare designation applies only to California native plants. Under CESA, CDFG is authorized to issue permits authorizing incidental take of threatened and endangered species.

California Species of Special Concern is a designation that CDFG uses for some declining wildlife species that are not candidates for state listing. This designation does not provide legal protection, but signifies that CDFG recognizes that populations of these species are declining in the state and may be worthy of targeted conservation efforts to prevent their eventual listing.

California Fish and Game Code (Sections 1600–1616)

Pursuant to California Fish and Game Code Section 1600, CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife or riparian vegetation. Activities conducted by private parties that involve such alterations (i.e., diversions, obstructions, or changes) to natural streambeds or lakes that support fish or wildlife require authorization from CDFG by means of entering into a streambed alteration agreement pursuant to Section 1602.

California Fish and Game Code (Sections 1900 et seq.; Native Plant Protection Act)

This section lists rare, threatened, and endangered plants designated by the California Fish and Game Commission.

California Fish and Game Code (Sections 3511, 4700, 5050, 5515)

These sections provide for the protection of bird, mammal, reptile, amphibian, and fish species that are "fully protected." Fully protected animals may not be harmed, taken, or possessed.

California Fish and Game Code (Sections 3503, 3503.5, 3513)

These sections makes is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 explicitly provides protection for all birds of prey, including their eggs and nests. Section 3513 makes it unlawful to take or possess any migratory non-game bird as designated in the federal MBTA.

California Fish and Game Code (Title 14, California Code of Regulations, Sections 670.2, 670.5)

These sections list animals designated as threatened or endangered in California. CDFG designates species considered to be indicators of regional habitat changes, or potential candidates for future state listing, as California Species of Special Concern.

California Porter-Cologne Water Quality Control Act

Pursuant to the California Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (SWRCB) and the nine RWQCB may require permits ("waste discharge

requirements") for the fill or alteration of "Waters of the State." The term "Waters of the State" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). Although "waste" is partially defined as any waste substance associated with human habitation, the SWRCB interprets this to include fill discharge into water bodies. The SWRCB and the RWQCB have interpreted their authority to require waste discharge requirements to extend to any proposal to fill or alter "Waters of the State," even if those same waters are not under the jurisdiction of the USACE.

Pursuant to this authority, the SWRCB and the RWQCB may require the submission of a "report of waste discharge" under Water Code Section 13260, which is treated as an application for a waste discharge requirement.

4.2.2.3 Local Resource Regulations

City of Whittier General Plan

Section 5 of the General Plan is the Environmental Resource Management Element (ERME):

> The ERME of the Whittier General Plan identifies environmental resources within the City and establishes a plan for their conservation, management, or preservation. The ERME promotes the management of natural resources to prevent the neglect, destruction, or disturbance of sensitive resources. The Element establishes a long-range program for the preservation of open space areas in the City and for the provision of recreation areas and facilities to serve the needs of residents. The Element includes an inventory of both public and private open space and a plan for continued protection of these areas and enhancement of opportunities for recreation (Page 5-1).

The General Plan recognizes the Project Site as open space:

> Open space areas refer to any parcel or area of land or water that is essentially unimproved and is devoted to an open space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety. The preservation of existing open space would promote conservation of these resources and help maintain the quality of the environment. The policies below emphasize the City's concern for the availability of open space areas in the community (Page 5-4).

Exhibit 5-1 in the EMRE Conservation Plan identifies the Project Site as an area of high sensitivity:

> Areas with ecologically sensitive resources are those areas where studies or activities have uncovered a significant or important natural resource areas [*sic*] currently used for the extraction of resources, or undisturbed areas that have a very high potential for the presence of natural resources. These areas have *high sensitivity* and are the priority targets for conservation and preservation. They include the canyons which serve as water recharge areas; the hillside with sensitive plant and animal habitats, oil resource areas where drilling is ongoing; and other areas where resources would be uncovered in the future (Page 5-15).

The following Development Standards apply to areas of high sensitivity:

- Field surveys and investigations must be made to identify potential natural resources prior to development approval.
- Brush control programs for fire prevention should be sensitive to natural vegetation and animal habitats.
- Trustee agencies and local environmental groups should be consulted to insure the environmental review is thorough.
- Development should be sensitive to significant natural resources onsite or in nearby areas.
- Limit off-road vehicle use in the hillsides which may destroy existing resources.
- Prevent development in areas with geologic and seismic hazards where risk cannot be eliminated by construction methods.

Various other portions of the EMRE relate in some way to the Project Site and proposed Project, but most relevant are the five policies listed under Goal 3, which is to "secure a safe, healthful, and wholesome environment through careful planning and preservation of open space resources":

- Policy 3.1. Protect existing wildlife habitats through the preservation of open space.
- Policy 3.2. Future hillside development would be permitted or approved only if it involves minimal adverse effects on the environment and natural topography.
- Policy 3.3. Participate with the County of Los Angeles, the Southern California Association of Governments, and other responsible agencies on all open space planning matters to the extent necessary to implement the City's General Plan policies regarding open space, housing production goals, and wildlife preservation within its sphere of influence.
- Policy 3.4. Continue to enforce mitigation measures for Projects which have the potential for significant and irreversible adverse environmental effects.
- Policy 3.5. Work with other agencies and organizations to identify potential strategies and funding sources for the acquisition of open space within the Puente Hills and other areas of the City and encourage flexibility in the planning of any development in the Puente Hills, to allow innovative planning designs that preserve open space and reduce potential environmental impacts.

The EMRE acknowledges the City's intent to continue pursuing a balanced mix of oil drilling and open space preservation in the local hills:

> The Puente Hills contain the oil resources in the area. At the same time, they are the only remaining areas with native vegetation and wildlife habitats. The balance between oil drilling activities and the protection of plant and animal communities in the hillsides must be established. The City would actively support ecologically sound practices related to oil well closure and abandonment in the Puente Hills (Page 5-16).

City of Whittier Municipal Code

The Project Site is zoned as open space (OS) under the City of Whittier Municipal Code, and so the following sections apply to the proposed Project.

Section 18.09.010

"The purpose of the OS zone and provisions of this chapter is the delineation of wildlands, wildlife and wildlife habitat. Restoration and protection of such areas provides valuable resources for the community, and surrounding communities, through conservation and integrated use. The OS zone standards shall endeavor to continuously provide appropriate access to open space areas while minimizing visitor impact on preserve resources, and avoiding conflicts between various activities" (Ordinance 2694 Section 2 [part], 1996).

Section 18.09.020

"Extremely limited development and disturbance of natural features within designated OS areas would be permitted, and only in the interest of public use, safety, or welfare shall such modifications occur" (Ordinance 2694 Section 2 [part], 1996).

Section 18.09.030

"Land shall be essentially unimproved and devoted, used or utilized for the preservation of natural resources, plant and animal life, and low impact recreational uses. The following uses shall be permissible in the OS zone, specifically when deemed necessary for public safety, welfare or interest:

- Water facilities, reservoirs, flood control facilities, debris basins, and any use common and appurtenant to the containment, control, storage or distribution of water;
- Electrical transmission substations, communications equipment, microwave radio and telephone transmission facilities necessary for the operation of public utility functions and/or easements thereto; and
- Fire control measures, including vegetation clearance and management, where necessary to ensure public safety and welfare**"** (Ordinance 2694 Section 2 [part], 1996).

Section 18.52.030 Article II (Conditional Use Permits)

- The purpose of any conditional use permit shall be to insure that the use for which the same is required would be rendered compatible with other existing and permitted uses located in the general area of the same. The following uses, each of which possesses characteristics of such unique and special form as to render impractical their operation without specific approval, shall be permitted in the zones as hereinafter set forth, provided that a conditional use permit is first obtained pursuant to the provisions of this chapter, unless such use is designated as a permitted use in a particular zone.

- Uses conditionally permitted in all zones:
    - Cemeteries;
    - Dump, inert solid-fill; and
    - Oil, gas, or other hydrocarbon substances, the drilling and production thereof, including but not limited to exploratory borehole operations.

Puente Hills Landfill Native Habitat Preservation Authority

The Project Site lies within lands administered by the Habitat Authority, which was established in 1994 as a joint powers authority with a Board of Directors representing the City of Whittier, the County of Los Angeles, the Sanitation Districts of Los Angeles County, and the Hacienda Heights Improvement Association. The agency was formed as a condition of approval for the operation of the Puente Hills Landfill. The purpose of the Habitat Authority is to acquire, restore, and maintain open space in the Puente Hills as permanent protection for the native habitat with special consideration given to the community of Hacienda Heights. The Habitat Authority's lands (Preserve) consist of 3,869 acres of undeveloped land that supports coastal sage scrub, chaparral, grassland, oak woodland, walnut woodland, and riparian woodland. The Habitat Authority currently owns 1,865 acres, and the remainder of the land is owned by the City of Whittier (which owns the Project Site) and the Sanitation Districts of Los Angeles County.

Solid waste disposal fees from the Puente Hills Landfill provide the primary funding for the Habitat Authority. For every ton of trash deposited into the landfill, one dollar of the tipping fee is dedicated to the Habitat Authority. The funding thus generated was reported as approximately $3.5 million per year (LSA 2007) but the amount fluctuates and currently is below this figure. This funding would continue through the remaining life of the landfill, currently scheduled to close in November 2013. After this date, a future management endowment established by the Board of Directors would preserve and manage the open space lands in perpetuity. The Habitat Authority's endowment would also stand to benefit from funds generated from the proposed Project.

The primary focus of the Habitat Authority is to acquire and preserve the remaining natural areas within its jurisdiction, with special consideration given to the Hacienda Heights area. The Habitat Authority also engages in many other important activities such as Preserve management and natural resource management and provides valuable services such as public outreach, as well as hiking, biking, and equestrian trails. Land use on Preserve lands is guided by the RMP, which in turn is guided by the Habitat Authority's Vision Statement and Mission Statement, both adopted on August 25, 2005:

- Vision Statement: "The Puente Hills region has unique, irreplaceable natural resources with vibrant and diverse wildlife. The Puente Hills Landfill Native Habitat Preservation Authority is a public agency created to protect and preserve the native habitat in the Puente Hills for the benefit of our natural resources."
- Mission Statement: "The Puente Hills Landfill Native Habitat Preservation Authority is dedicated to the acquisition, restoration, and management of open space in the Puente Hills

for preservation of the land in perpetuity, with the primary purpose to protect the biological diversity. Additionally, the agency would endeavor to provide opportunities for outdoor education and low-impact recreation.

Allowable actions within the Preserve are guided by a current RMP (LSA 2007), which describes the Preserve as "an ecologically significant area that supports a wide diversity of species and native vegetation communities." The following paragraphs discuss several sections of the RMP that are relevant to the proposed Project.

Preservation Management Zone

Section 5.1.1 of the RMP designates most of the Preserve as a Preservation Management Zone:

> A Preservation Management Zone preserves habitat values along with compatible recreational and access uses. This designation would allow for existing passive, low-impact recreation. Within this zone, some trails may be designated or signed for specific uses such as hiking only, or excluding other uses such as dogs, horses, or bikes. All recreational uses are limited to trails unless specifically signed or otherwise designated. In addition, areas labeled as Preservation would, under uncommon circumstances, be closed to the public for safety issues (landslides, threat of wildfire, or other health and safety issues) or seasonal closures for sensitive, threatened, endangered, or locally rare breeding birds or other wildlife. These seasonal closures may consist of limiting dog, horse, bike, or hiking activities. Seasonal closures would be determined by reasonable biological information or natural events that are not within the Habitat Authority's control.

Those portions of the Project (Loop Road, metering station, and underground oil and gas production pipelines) within the Arroyo Pescadero watershed are within a designated Preservation Management Zone.

Core Habitat Management Zone

Section 5.1.2 of the RMP defines the Core Habitat Management Zone for the Preserve (see Figure 4.2-7) as follows:

> A Core Habitat Management Zone includes, but is not limited to, those areas that have not been opened to the public, and would generally remain off-limits for the sole purpose of providing undisturbed habitat for wildlife, which contributes to sustaining the overall ecological health of the Habitat Authority's jurisdiction. Core habitat is generally defined as an area that can sustain a population of plants or animals. These areas provide food, shelter, a place to safely reproduce, and depending on how large the habitat, a place for young to disperse. Other areas that could be considered core habitats are those that support listed species, riparian areas, or other specifically designated areas. Permissible activities include authorized biological survey and some restoration and/or invasive species removal, but no unsupervised public access.
>
> The designated Core Habitat is an area called La Cañada Verde, which is north and west of the Arroyo Pescadero Trailhead. This area currently provides undisturbed breeding habitat for wildlife and native vegetation, which is recovering in the absence of human disturbance (LSA 2007).

As shown in Figure 4.2-7, the Project Site and the North Access Road (general location outlined in red) are located in the Core Habitat Management Zone. Although heavily disturbed historically through oil operations, the Core Habitat Management Zone has largely recovered

through such management actions as native plant community restoration and restrictions to public access. This Zone constitutes the largest contiguous area in the Preserve that is well-buffered from such "edge effects" as lighting, noise, and intrusions by humans and domestic animals. As a result, this Zone is considered to be an important wildlife nursery site for such species as the bobcat and mule deer. A Preserve-wide carnivore study conducted between 1997 and 1999 found that bobcats use the Project Site (i.e., the area west of Colima Road) in the highest density found in the Preserve and that mule deer have the highest activity in this area over the entire Puente-Chino Hills (Haas and Crooks 1999).

Research indicates that bobcats, known breeders in the Core Habitat Management Zone, are among the species known to avoid urban edges. The following recent studies, among others, have demonstrated that bobcats tend to avoid urban edges:

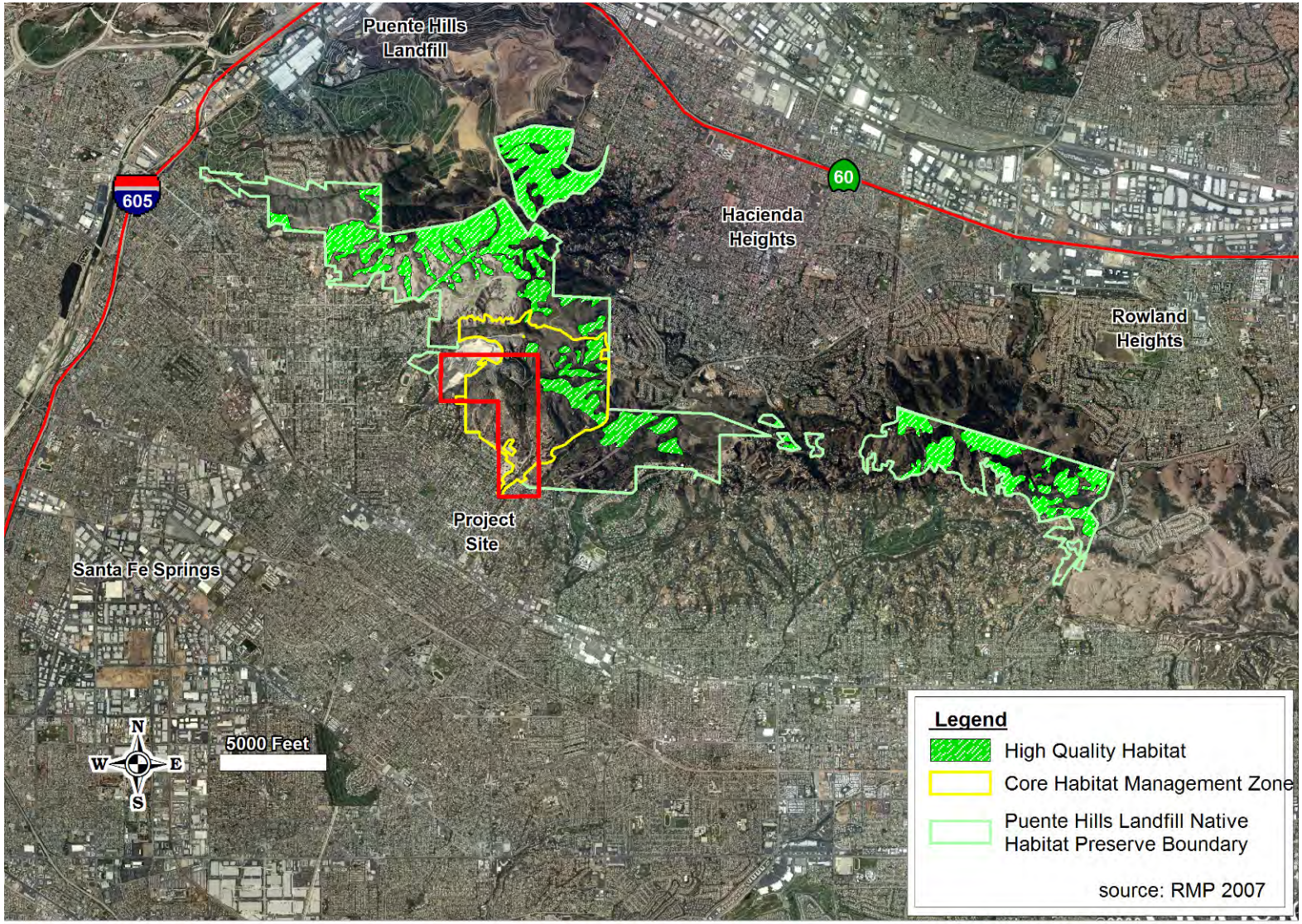
> Riley, S. P. D. 2006. Spatial Ecology of Bobcats and Gray Foxes in Urban and Rural Zones of a National Park. Journal of Wildlife Management 70:1425-1435.
>
> Ordeñana, M. A., K. R. Crooks, E. E. Boydston, R. N. Fisher, L. M. Lyren, S. Siudyla, C. Haas, S. Harris, S. A. Hathaway, G. M. Turschak, A. K. Miles, and D. H. Van Vuren. 2010. The effects of urbanization on carnivore species distribution and richness. Journal of Mammalogy 91:1322-1331.

Ordeñana and colleagues found bobcats at 74% of “camera traps” (161 of 217) spread across 11 locations in coastal southern California, and they stated, “Coyotes and bobcats were distributed widely across southern California, suggesting their behavioral plasticity and adaptability relative to other large carnivore species.” Their Figure 2, a logistic regression model plotting “probability of occurrence” against “distance to urban edge,” shows that the probability of bobcat occurrence decreases from approximately 80% at 1500 m from the edge to approximately 70% at the urban edge itself (i.e., a moderate negative response of bobcats to urbanization).

High Quality Habitat Areas

During preparation of the RMP, LSA Associates surveyed the Preserve on foot and identified blocks of habitat containing very little non-native vegetation. Sites and vegetation clusters were evaluated according to criteria including signs of good plant diversity, few exotic weeds, no signs of recent disturbance, and good overall habitat and community structure and sustainability. The fewer the weeds, the more intact the plant community is judged to be, since exotic weeds are an indication of past disturbance. The lack of weeds in the interstitial spaces between the large scrub plants is a good indication of the habitat’s health and vigor, including its ability to withstand further invasion by exotic weeds. In most of the disturbed habitat throughout the Preserve, the interstitial spaces have a great deal of weeds present. In the healthier habitats that are more stable and diverse, there are very few to no weeds present in the interstitial spaces of the habitat. As shown in Figure 4.2-7, the Project Site does not include any of the designated High Quality Habitat areas.

Figure 4.2-7 Core Habitat Management Zone and High Quality Habitat Areas



The RMP also includes a biological constraints map, which provides "an overview of the relative value and importance of the biological resources within the Preserve, grouped loosely by watershed." Watersheds were ranked by sensitivity after taking into account the location of sensitive plant and animal species, sensitive habitats, and the presence of "indicator species" that "help to identify the overall condition of a habitat and other species utilizing that habitat." More specifically, watersheds were ranked by "species count," which is the sum of the total number of sensitive species and the total number of different indicator species. The higher the number, the greater the number of sensitive and indicator species present, and therefore the more critical the area is to preserve or manage. The La Cañada Verde watershed, which includes the western portion of the Project Site, was identified as supporting 16 to 18 sensitive or indicator species (third most-sensitive out of six total rankings), and the Arroyo Pescadero watershed, which includes the eastern portion of the Project Site, was identified as supporting 19 to 22 sensitive or indicator species (second most-sensitive of six total rankings).

Resource Management Goals and Objectives Specified in the RMP

Section 5.3 of the RMP sets forth goals and objectives in a management framework designed to protect and restore the Preserve's natural resources. The following numbered goals and objectives may pertain to resources on the Project Site:

- Goal BIO-3 Maintain all populations of native plants and wildlife with special emphasis on management of locally uncommon, sensitive, federally-threatened or endangered species and other sensitive resources.
- Objective BIO-3.1 Protect and maintain coastal sage scrub breeding habitat for the federally-threatened coastal California gnatcatcher and other scrub species.
- Objective BIO-3.3 Protect and maintain populations of sensitive, threatened, or endangered plant species.
- Objective BIO-3.4 Protect and maintain nesting and foraging habitat for sensitive, threatened, or endangered raptor species.
- Objective BIO-3.6 Protect and maintain all native vegetation communities paying special attention to sensitive vegetation types such as walnut woodland, oak woodland, coastal sage scrub, riparian communities, and native grassland.
- Objective BIO-3.7 Encourage new development adjacent to the Preserve to provide an appropriate buffer zone on the development site to minimize edge effects. Promote additional methods to minimize potential edge effects with new and existing urbanization.
- Objective BIO-4.2 Abandon all unauthorized trails and roads within the Preserve to improve the quality of habitat for wildlife.

4.2.3 Significance Criteria

Consistent with Appendix G of the state CEQA Guidelines, an impact would be considered significant (before considering offsetting mitigation measures) if the lead agency determines that Project implementation would result in one or more of the following:

- Substantial adverse effects, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Substantial adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Substantial adverse effects on federally protected aquatic resources as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or interference with the use of native wildlife nursery sites;
- A conflict with any local policy or ordinance protecting biological resources, such as a tree preservation policy or ordinance; or
- A conflict with the provisions of an adopted Habitat Conservation Planning program, Natural Community Conservation Planning program, or other approved local, regional, or state Habitat Conservation Planning program.

The following impact discussions are organized according to these specified thresholds, acknowledging that certain Project actions fall under more than one threshold (e.g., impacts to a riparian area that may support sensitive species).

4.2.4 Project Impacts and Mitigation Measures

Project implementation would include vegetation removal for Well Pad construction, Processing Pad construction, road widening and realignment, vegetation clearing on the sides of facilities and roads for fire requirements, the construction of new underground oil and gas production pipelines along the Loop Road, and the installation of an underground electrical power line along the main access road from the Project Site to the tie-in of the SCE Line at Ocean View Ave.

The immediate biological effects of grading of roads and building pads associated with the Project would be the permanent and essentially total loss of the plants and wildlife that exist within most of the graded areas. The more mobile wildlife species may be able to escape immediate mortality, but in most cases the long-term effect of increased competition for resources in nearby preserved areas would be a net loss of the number of individuals of each species displaced from the area of grading. The loss of habitat would also reduce foraging habitat for species with larger home ranges. Table 4.2-3 quantifies the maximum area of each plant community that would be subject to (a) permanent grading impacts, (b) permanent clearing of vegetation to comply with applicable fuel modification requirements, and (c) temporary grading impacts associated with construction that would be subject to restoration. Figure 4.2-8 shows the plant communities along with the proposed Project grading limits. Additional impacts to biological resources, including new and increased usage of the roads and disturbances from noise, lighting, and increased human presence, would also cause avoidance of an area and would affect movement. These effects are discussed in impacts BIO-4 and BIO-5.

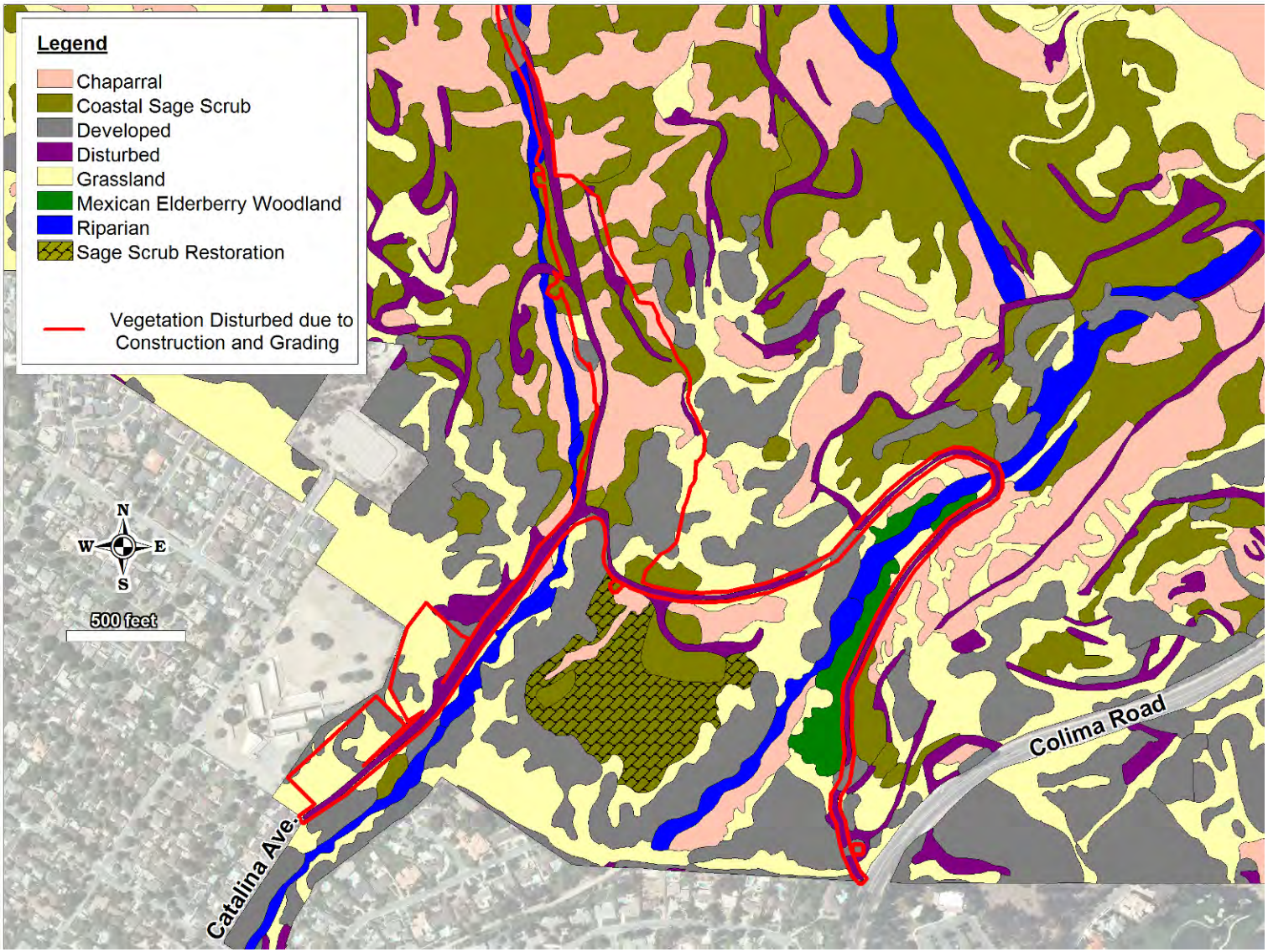
Table 4.2-3 Areas of Project Impacted Plant Communities Summary, acres

Vegetative Type	Pad Areas and Roads		Permanent FMZ		Temporary Construction Grading (outside FMZ)		Temp. Constr. Parking, etc.	Loop Road Fire Access		Pad Oper. Noise Contour >60 dBA	North Access Road Contr. Noise Contour > 60 dBA
	Pad	Roads	Pad	Roads	Pad	Roads		Road Area	Perm. FMZ		
Coastal Sage Scrub											
Mixed Sage Scrub	-	0.06	0.06	-	0.08	-	-	0.01	0.05	0.04	0.32
Encelia Scrub	1.19	-	0.18	0.01	0.31	0.06	-	-	-	0.44	0.21
Black Sage Scrub	0.29	0.02	0.06	0.02	0.12	-	-	-	-	4.55	0.39
Sagebrush Scrub	0.10	0.08	-	0.07	-	-	-	-	0.10	-	
Coyote Brush Scrub	0.75	0.33	-	0.20	0.21	-	-	-	-	0.46	0.05
Mixed Sage Scrub/Grassland Ecotone	-	0.03	-	0.27	-	0.04	-	-	0.04	-	0.82
Sagebrush-monkey Flower Scrub	-	0.05	-	0.12	-	0.01	-	-	-	-	0.05
Purple Sage Scrub/Toyon-Sumac Chaparral	-	0.01	-	0.03	-	0.03	-	-	-	-	
Sage Scrub Restoration	-	-	-	-	-	-	-	-	-	-	
Total Coastal Sage Scrub	2.33	0.60	0.31	0.73	0.72	0.14	-	0.01	0.18	5.49	1.83
Chaparral											
Toyon-Sumac Chaparral	2.37	0.62	0.17	0.88	1.06	0.36	-	0.02	0.22	2.43	4.66
Toyon-Sumac Chaparral/Annual Grassland	0.28	-	0.08	-	0.02	-	-	-	-	-	-
Total Chaparral	2.65	0.62	0.25	0.88	1.09	0.36	-	0.02	0.22	2.43	4.66

Vegetative Type	Pad Areas and Roads		Permanent FMZ		Temporary Construction Grading (outside FMZ)		Temp. Constr. Parking, etc.	Loop Road Fire Access		Pad Oper. Noise Contour >60 dBA	North Access Road Contr. Noise Contour > 60 dBA
	Pad	Roads	Pad	Roads	Pad	Roads		Road Area	Perm. FMZ		
Annual Grassland											
Annual Grassland	0.14	0.29	0.04	0.42	0.82	0.03	2.74	0.07	0.49	0.30	0.06
Ornamental Plantings	0.01	0.07	-	0.14	0.08	-	1.30	-	-	0.08	0.13
Eucalyptus Woodland/Forest	1.04	0.32	0.45	0.19	0.54	0.09	-	0.20	0.38	0.37	0.46
Ruderal	-	0.18	-	0.08	-	0.10	-	-	-	-	-
Total Annual Grassland	1.19	0.87	0.49	0.83	1.44	0.22	4.04	0.27	0.87	0.75	0.65
Riparian											
Mulefat Scrub	-	0.07	-	0.12	0.03	-	-	-	0.01	0.75	1.26
Riparian Habitats (Streambed)	-	0.01	-	0.01	-	-	-	-	-	-	
Total Riparian	-	0.08	-	0.13	0.03	-	-	-	0.01	0.75	1.26
Total Vegetative Communities Disturbed	6.17	2.17	1.05	2.58	3.27	0.72	4.04	0.30	1.28	9.42	8.40
Disturbed	0.73	4.38	0.07	1.44	0.39	0.03	0.06	1.44	0.47	0.44	0.25
Total Area Disturbed	6.90	6.55	1.12	4.02	3.65	0.75	4.10	1.74	1.75	9.86	8.65

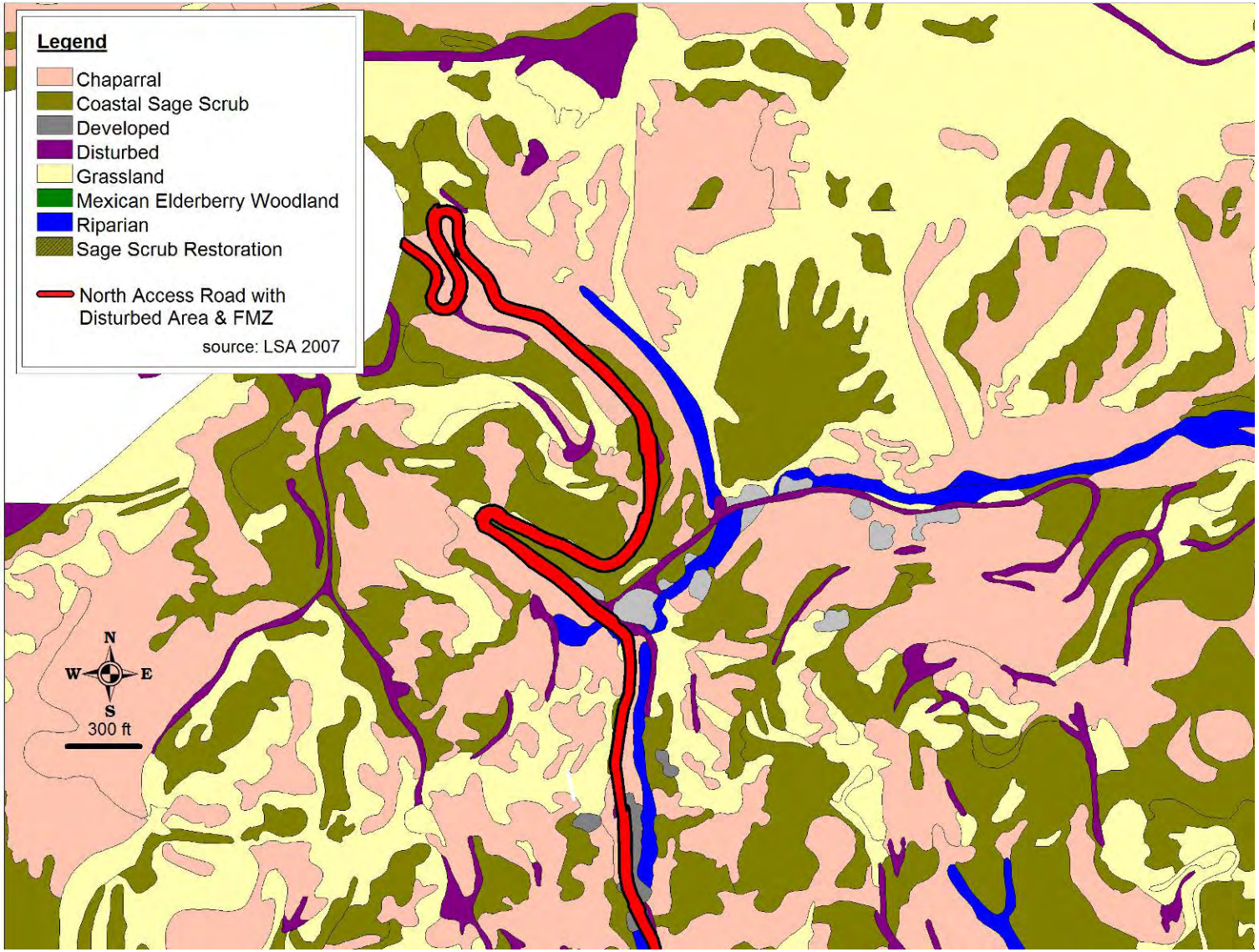
Note: Data in all tables is based on Habitat Authority Vegetative layers as provided by the Habitat Authority
Noise contour >60 dBA refers to noise contour that includes noise reduction mitigation proposed in Section 4.5.

Figure 4.2-8 Plant Communities and Grading Areas



Source: LSA 2007, Habitat Authority 2010

Figure 4.2-9 North Access Road Habitat Disturbances



Source: LSA 2007, Habitat Authority 2010

Impact #	Impact Description	Phase	Residual Impact
BIO.1	Project grading and vegetation clearing for fuel modification, and increased noise, would result in adverse effects, either directly or through habitat modifications, on sensitive wildlife species.	Construction	Less Than Significant With Mitigation

The USFWS designates the Project Site as critical habitat for the federally threatened coastal California gnatcatcher. Two individual gnatcatchers and one family group have been observed within the Project Area boundaries during protocol surveys conducted in coastal sage scrub and riparian scrub on the Project Site. Project implementation would entail permanent loss of 4.16 acres of coastal sage scrub and 0.22 acres of riparian scrub for grading and clearing for fuel modification. Another 0.86 acres of coastal sage scrub and 0.03 acres of riparian scrub would be temporarily impacted by grading and then restored. These represent potentially significant adverse effects upon this listed species and its required habitat.

Figures 4.5-6 and 4.5-8 in the DEIR indicate the "maximum hour noise contours" for the proposed project during operations, after noise mitigations are applied. These figures show that required mitigation measures will generally reduce noise in the project area to levels between 40 and 60 dBA, although levels up to 70dBA are expected in zones extending up to approximately 200 feet from the edges of drilling pads. Noise levels below the level of 60 dBA are not expected to be adverse.

As discussed in Section 4.2.1.2, LSA Associates conducted noise-level surveys in the Bonita Reservoir wildlife habitat area during each year from 1996 through 2000 (LSA Associates, Inc. 2001). The Final Report concluded that California gnatcatchers can live and reproduce successfully in close proximity to roads and that "no adverse effects were observed during periods of noise levels higher than 60dBA Leq (i.e., during periods of construction activity)."

The limited area where levels are expected to increase to 60-70 dBA could be avoided by some special-status species, among them the coastal California gnatcatcher, a listed species known to occur within coastal sage scrub and riparian habitats in the local area. Therefore, increasing noise levels above 60 dBA within 5.49 acres of preserved coastal sage scrub habitat and 0.75 acres of preserved riparian habitat are identified as a potentially significant, adverse effect on the gnatcatcher and its habitats.

Hauling activities during the construction phase, which includes up to 84 round trip truck trips per day during the construction phase, have the potential to disturb nesting birds including nesting California gnatcatchers and wildlife movement. The noise contour analysis describes noise levels higher than 60dBA on 8.4 acres of native or naturalized habitats located along the North Access Road. This is identified as a temporary but potentially significant impact.

One other listed species, the American peregrine falcon, has been recorded on the Project Site, but its occurrence appears to be limited to only occasional visitation during fall and winter. Project implementation would have adverse, but less-than-significant, effects upon this listed species.

As specified in Table 4.2-2, several additional "special status" species that are not listed as threatened or endangered are present, or could be present, on the Project Site. The silvery legless lizard, yellow-breasted chat, pallid bat, and San Diego desert woodrat are California Species of Special Concern that are known or presumed to occur on the site (chats occur mainly in riparian areas but also utilize adjacent brushy habitats). The Project's permanent grading impacts to approximately 13.54 acres and temporary impacts to approximately 8.03 acres of native upland habitats used by these species would be potentially less than significant with mitigation.

The remaining "special status" species in Table 4.2-2 either have only limited potential for occurrence on the Project Site (this includes the Los Angeles pocket mouse and black-tailed jackrabbit) or are "California Special Animals" that are widespread in the Puente-Chino Hills and elsewhere in the region. Impacts to these species are considered to be potentially adverse, but less than significant.

Mitigation Measure

Mitigation measure BIO-2 addresses grading impacts to riparian scrub and potential noise impacts to sensitive species in riparian scrub.

BIO-1a To mitigate the Project's permanent loss of 4.16 acres of coastal sage scrub, the Applicant shall provide minimum 3:1 areal replacement. To mitigate the loss of habitat value due to the Project's noise impacts affecting 5.49 acres of coastal sage scrub, the Applicant shall provide minimum 1:1 areal replacement. In total, the Applicant shall restore 17.97 acres of degraded habitats in the La Cañada Verde and Arroyo Pescadero watersheds to coastal sage scrub communities, or as otherwise agreed to by the appropriate resource agencies and the City. No additional grading or habitat disturbance shall occur along the North Access Road beyond what is currently designated in the Road Improvement Plan included in Appendix A. All aspects of the restoration effort shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following shall apply:

- *All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *The restoration specialist shall work with the Habitat Authority to select restoration sites in the Habitat Authority's Whittier Management Unit, preferably in the La Cañada Verde and Arroyo Pescadero watersheds.*
- *A conservation easement shall be placed over any site restored under this mitigation measure. This easement will be submitted to the USFWS for review and approval.*
- *Mandatory components of any restoration plan shall include, but not be limited to, a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures*

(in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority, the City, USFWS, and CDFG prior to implementation.

- *Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. Restoration efforts shall be scheduled to start at the same time as construction activities to reduce the temporal loss of habitat. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years.*
- *Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority.*
- *If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan shall be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).*

BIO-1b To prevent erosion and invasion by non-native weeds, and to help offset the Project's overall biological impacts including the temporal loss of habitat, the Applicant shall provide minimum 2:1 areal replacement of all graded slopes outside of permanent impact areas (approximately 8.03 acres; restoration shall be revegetated exclusively with appropriate, locally indigenous plant species and will incorporate non-flammable species as appropriates. To mitigate the permanent disturbance to 12.34 acres of native habitats (7.07of chaparral and 5.27 acres of annual grassland), the Applicant shall provide minimum 1:1 areal replacement. To mitigate the temporary impacts to native and naturalized habitats due to noise impacts associated with truck hauling on the North Access Road, the Applicant shall provide minimum 1:1 areal replacement of 8.4 acres of native habitat. In total, the Applicant shall restore 36.8 acres of degraded habitats in the La Cañada Verde and Arroyo Pescadero watersheds to native communities, as agreed to by the appropriate resource agencies and the City. All contractors involved in the revegetation effort, including the revegetation specialist and landscape contractor, shall be reviewed and approved by the City and

Habitat Authority. Revegetation efforts shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following shall apply:

- *All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *Mandatory components of any restoration plan shall include, but not be limited to, a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority the City, USFWS, and CDFG prior to implementation.*
- *Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. Restoration efforts shall be scheduled to start at the same time as construction activities to reduce the temporal loss of habitat. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years.*
- *Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time.*
- *The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority.*
- *If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan shall be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).*

BIO-1c Restoration and revegetation efforts shall include the salvage and stockpile of weed-free topsoil (upper 12 inches of soil) from any and all areas of intact (non-weedy) native communities that are graded for Project implementation, as determined by the site monitor described in required by mitigation measure BIO-1 b, so that the soil can later be spread over graded slopes to increase native plant species diversity in the restored areas. Mature coast prickly pear, dudleya, and other translocatable species will be transplanted as feasible in the revegetation and fuel modification zones. Such salvage may also be appropriate for revegetation areas.

BIO-1d The Applicant or US Army Corps of Engineers shall consult with the US Fish and Wildlife Service to obtain an Incidental Take Statement, if needed, pursuant to Section 7 or Section 10 of the federal Endangered Species Act to cover the Project's potential "take" (which includes the permanent and temporary loss of approximately 5 acres of critical habitat and 5.49 acres of noise-related disturbance) of the coastal California gnatcatcher, a federally listed species.

Residual Impacts

The use of the North Access Road would entail some widening and would require fuel modification clearance of 10 feet on either side. Impacts to coastal sage scrub and riparian habitats would be mitigated through 3:1 restoration of degraded areas; temporary impacts to habitats would be mitigated at a 2:1 replacement ratio to reduce the level of the temporal loss of habitat. Noise impacts associated with hauling activities on the North Access Road will be mitigated at a 1:1 replacement ratio. All areas temporarily impacted would be replanted with appropriate native habitats as designated by the HA guidelines. The existing North Access Road already passes through habitat of the federally listed California gnatcatcher. Due to the small amount of coastal dune scrub habitat (0.6 acres) that would be disturbed for all road improvements (with an additional 0.73 disturbed for fuel modification zone) and the high tolerance for noise this species has been shown to exhibit, the improvement of the road would have a negligible effect upon the local area's suitability for the continued occurrence of the gnatcatcher. Although the final geotechnical report has not been completed for the North Access Road, no new grading would be permitted along the North Access Road beyond the current grading boundaries (as depicted in the Road Improvement Plan including in Appendix A). The habitat disturbance values included in Table 4.2-3 and habitat disturbance depicted in Figure 4.2-9 already include an anticipated 20-foot setback for retaining wall installation; no additional grading or vegetation removal beyond this 20-foot setback (and 10-foot fuel modification zone) would be permitted.

As stated in section 4.2.1.2, "noise negatively influences bird populations and communities, and acoustic masking may be a dominant mechanism precluding many birds from breeding in noisy habitats" (Barber et al. 2009). The temporary impacts to sensitive nesting habitats resulting from construction and drilling noise would be offset by a 1:1 habitat replacement ratio.

Replacement ratios for grading of sensitive coastal sage scrub typically requires greater than 1:1 replacement. The proposed mitigation included in this analysis requires a 3:1 replacement for coastal scrub because: (1) the CDFG requested a replacement ratio of 3:1 for this Project during the Comment Phase of the previous Draft EIR; (2) the habitat loss would be located within a

habitat preserve, with all this implies about existing habitat values and the sensitivity of this location in terms of being well-buffered against human intrusions and other constraints from surrounding development; (3) there would be impacts to preserved habitats that lie outside of limits of disturbance from "edge effects" that can't be completely eliminated through mitigation; (4) there would be temporal losses that would occur before the restoration efforts provide functioning habitat; and (5) ecological systems that are already under stress from surrounding intensive development exhibit a compromised capacity to rebound from disruptive processes, such as fire and human intrusion.

Implementing mitigation measures BIO-1a through BIO-1d would offset the proposed grading and noise impacts to coastal sage scrub and would reduce impacts to the coastal California gnatcatcher, silvery legless lizard, yellow-breasted chat, pallid bat (foraging), and San Diego desert woodrat, as well as any other special status species with potential to occur on the site, to less than significant with mitigation.

Impact #	Impact Description	Phase	Residual Impact
BIO.2	The proposed Project would result in the permanent and temporary loss of 1.0 acre of mulefat scrub riparian habitat, a federally protected aquatic resource as defined by Section 404 of the Clean Water Act, and increased noise could temporarily inhibit wildlife use of preserved riparian habitat.	Construction	Less Than Significant With Mitigation

Project implementation would include road widening and vegetation clearing on the sides of roads, including Catalina Road, the construction of new underground oil and gas production pipelines along the Loop Road, and the installation of an underground electrical power line along the main access road from the Project Site to the tie-in of the SCE Line at Ocean View Avenue that would result in the permanent loss of 0.08 acres of mulefat scrub and riparian habitats and the temporary loss of 0.03 acres of mulefat scrub riparian habitat. Fuel modification would consume an additional 0.14 acres of this habitat, which is federally protected as defined by the USACE Section 404 of the Clean Water Act. The loss of this habitat would adversely affect these regulated and biologically sensitive resources and the special status species that depend on them, such as the yellow-breasted chat, which would be a less than significant impact with mitigation.

As discussed in Impact BIO-1 and in section 4.2.1.2, the area where noise levels are expected to increase to 60-70 dBA could be avoided by some special-status species, among them the coastal California gnatcatcher, a listed species known to occur within both coastal sage scrub and riparian habitats in the local area. Therefore, increasing noise levels above 60 dBA within 0.75 acres of preserved riparian habitat are identified as a potentially significant, temporary adverse effect on this habitat.

Mitigation Measures

BIO-2a To mitigate the Project's permanent loss of 0.22 acre of riparian habitat, the Applicant shall provide minimum 3:1 areal replacement. To mitigate the Project's noise impacts affecting 0.75 acres of riparian habitat, the Applicant shall provide minimum

1:1 areal replacement. In total, the Applicant shall restore 1.41 acres of degraded areas within the La Cañada Verde and Arroyo Pescadero watersheds, or as otherwise agreed to by the appropriate resource agencies and the City. The 0.12 acre of temporary grading impact would be mitigated through the 1:1 revegetation specified in BIO-1.b. All aspects of this restoration shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following points shall apply:

- *All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*
- *Mandatory components of any restoration plan shall include, but not be limited to, a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority the City, USFWS, and CDFG prior to implementation.*
- *Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. Restoration efforts shall be scheduled to start at the same time as construction activities to reduce the temporal loss of habitat. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years.*
- *Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time.*
- *The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority.*
- *If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan shall be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., CDFG, USACE, U.S. Fish and Wildlife Service).*
- *The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).*

- *Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).*

BIO-2b The Project proponent shall be required to obtain all applicable federal and state permits and agreements, including: (1) a Section 404 Permit from the US Army Corps of Engineers; (2) certification, or a waiver of certification, from the Los Angeles Regional Water Quality Control Board that the activity would not adversely affect water quality; and (3) a Streambed Alteration Agreement from the California Department of Fish and Game.

Residual Impacts

Replacement ratios for grading sensitive riparian habitats typically require greater than 1:1 replacement depending on the quality and quantity of disturbance. The proposed mitigation included in this analysis requires 3:1 replacement for impacts to riparian habitat because: (1) the habitat loss would be within a habitat preserve, with existing habitat values and the sensitivity of this location in terms of being well-buffered against human intrusions and other constraints from surrounding development; (2) impacts to preserved habitats that lie outside of limits of disturbance from "edge effects" cannot be completely eliminated through mitigation; (3) temporal losses would occur before the restoration efforts provide functioning habitat; and (4) ecological systems already under stress from surrounding intensive development exhibit a compromised capacity to rebound from disruptive processes, such as fire and human intrusion.

The temporary impacts to sensitive nesting habitats resulting from construction and drilling noise would be offset by a 1:1 habitat replacement ratio. Implementation of mitigation measure BIO-2 would offset and reduce impacts to streambeds and riparian habitat areas to levels less than significant with mitigation.

Impact #	Impact Description	Phase	Residual Impact
BIO.3	A rupture or leak from oil wells, pipelines, or exposure to materials from other oil field-related infrastructure has the potential to result in a substantial adverse effect on native species and habitats, sensitive species, sensitive species habitat, and sensitive habitats including riparian and coastal sage scrub.	Construction and Operation	Less Than Significant With Mitigation

Oil field operations could result in spills due to geologic hazards, mechanical failure, structural failure, corrosion, or human error during drilling, hauling, piping, or processing operations. The most likely spills from the facility would involve crude oil and/or produced water. Such spills or cleanup activities could potentially result in impacts to biological resources onsite or offsite. Small leaks or spills, which are contained and remediated quickly, may have minor or negligible impacts to biological resources. In contrast, large spills or pipeline or tank ruptures, could spread into sensitive habitats (i.e., riparian or coastal sage scrub habitats) and substantially degrade their value, with potential long-term impacts to biological resources. Future oil development increases the potential for leaks or spills, and associated impacts to biological resources.

Depending on the location of the infrastructure rupture or failure, such a spill could flow into the riparian drainages near the Project Well Site, the proposed oil and gas pipelines running along the Loop Road, and/or the proposed access roads which will be used to haul product in haul trucks. Spills and associated contaminated storm water runoff reaching any of these waterways could have significant and widespread impacts to water quality and, consequently, to sensitive biological resources associated with this habitat. Impacts to biological resources from a potential oil spill associated with the future oil development would be potentially significant, but mitigable.

In addition, the Applicant maintains an Emergency Response Action Plan (PXP 2007b), which includes Specific Incident Response Checklists for potential piping rupture or leak, valve rupture or leak, manifold failure, and storage tank leaks This plan prioritizes procedures for facility personnel to mitigate or prevent any discharge resulting from facility operations. Spill mitigation procedures and response guidelines are provided for discharges of crude oil and produced water that could result from such leaks or failures.

Mitigation Measure

The potential for oil spills and associated impacts to biological resources is limited by mitigation measures developed in Section 4.3, Risk of Upset, Hazards, and Hazardous Materials, and Section 4.8, Hydrology and Water Resources. Mitigation developed in Section 4.8 includes secondary containment around tanks; design of retention basins; Spill Prevention, Control and Countermeasure Plan; a Pipeline Management Plan; and the requirement of an Emergency Response Action Plan; all of which would act to limit the potential for onsite spills and associated significant impacts. Where a spill or cleanup could impact sensitive species, or the loss of habitat for sensitive species, implementing the following measure would further reduce impacts on biological resources.

BIO-3a The applicant shall prepare an Emergency Response Action Plan that would address protection of sensitive biological resources and revegetation of any areas disturbed during an oil spill or cleanup activities. The Emergency Response Action Plan shall, at a minimum, include specific measures to avoid impacts to native vegetation and wildlife habitats, plant and animal species, and environmentally sensitive habitat areas during response and cleanup operations. The Emergency Response Action Plan shall include provisions for containment and cleanup within 2 miles downstream of the Project Site. The plan shall contain detailed descriptions of various containment and cleanup alternatives for each segment of the streambed. Selection of a containment alternative would be made during an emergency event, but the approach and plan shall be reviewed by the California Division of Fish and Game, the Los Angeles Regional Water Quality Control Board, and Los Angeles County Flood Control District.

Where feasible, low-impact, site-specific techniques such as hand-cutting contaminated vegetation and using low-pressure water flushing shall be specified to remove spilled material from particularly sensitive wildlife habitats, such as riparian woodlands, because procedures such as shoveling, bulldozing, and raking can cause more damage to a sensitive habitat than the oil spill itself. The Emergency Response

Action Plan shall evaluate the non-cleanup option for ecologically vulnerable habitats.

When habitat disturbance cannot be avoided, the Emergency Response Action Plan shall provide stipulations for development and implementation of site-specific habitat restoration plans and other site-specific and species-specific measures appropriate for mitigating impacts to local populations of special-status wildlife species and to restore native plant and animal communities to pre-spill conditions. Access and egress points, staging areas, and material stockpile areas that avoid sensitive habitat areas shall be identified. The Emergency Response Action Plan shall include species- and site-specific procedures for collection, transportation and treatment of oiled wildlife, particularly for sensitive species.

The Emergency Response Action Plan shall include procedures for timely re-establishment of vegetation that replicates the habitats disturbed (or, in the case of disturbed habitats dominated by non-native species, replaces them with suitable native species).

The Emergency Response Action Plan shall be approved by the City and Habitat Authority prior to commencing any construction activities.

BIO-3b To reduce exposure risks to wildlife in the Project Site area, all open basins containing any Project-related fluids shall either be emptied at the end of each day or fenced and covered to exclude all wildlife, including birds, bats, and amphibians. Drilling muds, concrete waste, and truck washing water shall be contained within closed Baker-style tanks or collected by a vacuum truck before the end of each day and shall not be stored overnight in open pits.

Residual Impacts

Implementing several mitigation measures, as well as infrastructure preventative maintenance, structural integrity tests, and routine inspections (as described Section 4.8, Hydrology and Water Resources), would reduce the likelihood and severity of potential spill and exposure impacts to sensitive biological resources to less than significant with mitigation. Typically oil spills that occur on land are easily contained and impacts are minimized. Section 4.8 identifies potential long-term significant impacts to biological resources from a potential spill from the facility involving crude oil or produced water. Such spills could potentially result in water quality impacts to creeks and shallow groundwater. Small leaks or spills,, which are contained and remediated quickly, may have minor or negligible impacts to water resources. In contrast, large spills, such as those from a tank rupture at the processing facility, well blow-out, or pipeline rupture, could spread to surface waters or groundwater and could substantially degrade water quality. However, the Project area presents limited riparian resources or sensitive species that could be affected by a substantial oil spill and this impact is considered significant and mitigable.

Impact #	Impact Description	Phase	Residual Impact
BIO.4	The proposed Project could substantially interfere with the movement of native resident or wildlife species or with established native resident or migratory wildlife corridors, or interfere with the use of native wildlife nursery sites.	Construction, Operations	Less Than Significant With Mitigation

The Project Site has been recognized as occupying an especially sensitive and important portion of both the Preserve and the greater Chino-Puente Hills region. Data collected during several studies on the preserve show evidence of large (coyote, bobcat, mule deer, and mountain lion) and mid-size (raccoon, possum, and skunk) mammals moving through the Project area, surrounding habitat, and residential areas. Land use policies in the Whittier Hills and in the wider Chino-Puente Hills region have been designed and implemented with an understanding that the lands that include the Project Site would be restored, maintained, and preserved consistent with their special land use designations. For these reasons, loss and degradation of habitats at the Project Site could be expected to have greater adverse effects upon ecological processes and native wildlife populations than would occur in an area with comparable natural communities that does not occupy such a sensitive location within a natural Preserve.

Core Habitat Impacts

The Project Site, pipeline routes, and access roads are predominantly located in the La Cañada Verde watershed, within the Preserve's designated Core Habitat Management Zone, an area currently set aside for the sole purpose of providing undisturbed habitat for wildlife. The North Access Road is located deepest within the Core Habitat. This is the largest contiguous area in the Preserve that is well-buffered from such "edge effects" as lighting, noise, and intrusions by humans and domestic animals. It is an area that biologists characterize as a "native wildlife nursery site" for such species as the mule deer and bobcat. During the 30-year life of the Project, levels of noise, light, human presence, and vehicle traffic would increase in all parts of the Project Site, including areas that serve as nursery sites and that have been purposefully set aside for the purpose of conservation of natural communities and their constituent species. The removal of native vegetation and non-native vegetation, including the removal of several eucalyptus trees required for the Processing Facility, would result in the loss of important nesting habitat for songbirds and raptors. These represent potentially significant adverse effects upon wildlife populations in the Preserve. Noise impacts have already been addressed by impacts BIO.1 and BIO.2.

In the Puente Hills, the bobcat has been a focus of conservation concern, as it is a widely distributed top predator that exhibits some sensitivity to human activity. As discussed more fully in section 4.2.1, use of the Service Tunnel by bobcats and other native wildlife species has remained high following the tunnel's opening to human use in 2002. Bobcats do show a negative response to urbanization. Research from across the region has demonstrated that other wildlife species including coyote, raccoon, and mule deer, exhibit only a moderately negative or positive response to urbanization. It is also relevant that, for many decades, extensive and unmitigated oil

operations took place across a much wider portion of the La Cañada Verde and Arroyo Pescadero watersheds than is currently being proposed, and wildlife species including bobcat continue to use, or have returned to the area to use, the resources that are currently present in the Preserve. For these reasons, the proposed actions are not anticipated to result in a long-term impact to that habitat that would substantially inhibit the bobcat, other larger mammal species, migratory bird nesting habitat, and bat species' use of the La Cañada Verde watershed, either as a nursery site or as a movement corridor. It is concluded that the Project's potential impacts on bobcats and other wildlife species will be adverse, but less than significant with provision of the required mitigation measures.

Vibration Impacts

Vibrations associated with drilling would vary over time. The highest vibration levels experienced by wildlife would most likely occur during the initial portion of drilling a well, during approximately the first 100 feet of drilling, and this would last a matter of hours when they are drilling close to the surface. The actual peak vibration levels during this period would be only for a sum total of a matter of minutes. One well would be drilled per month. Therefore, while it is possible that some wildlife in the vicinity of the drilling operation, such as bobcats, would experience anxiety due to vibrations produced during high-vibration periods, those periods would be rare and relatively short-lived, lasting for only a period of hours per month. Data on wildlife response to vibration impacts is not well documented; however, the typical response observed by the EIR preparers for most wildlife to a short-term, infrequent event, is short term avoidance, but if the abnormal condition (such as noise and vibration) ceases, wildlife species typically return to their normal behavior. Therefore, impacts to wildlife resulting from vibrations, expected to last only a few minutes for each well drilled, are considered to be adverse, but less than significant.

North Access Road Impacts

Use of the North Access Road would require road widening, the installation of retaining walls, clearance of 10 feet on either side for fuel modification, and would directly impact approximately 4.75 acres (Table 4.2-3) of vegetated habitats (not including the existing road area). In addition, noise impacts associated with hauling activities during the construction phase could impact and wildlife movement through the area. Hauling activities, which includes up to 84 round trip truck trips per day during the construction phase, have the potential to disturb nesting birds including nesting California gnatcatchers and wildlife movement. The noise contour analysis describes noise levels higher than 60dBA on 8.4 acres of native or naturalized habitats located along the North Access Road, which is identified as a temporary but potentially significant impact and mitigated with mitigation measure BIO-1b.

The North Access Road is located in the core habitat of the Preserve, which currently has minimal disturbances. This access road would increase pressure on an already constricted wildlife movement corridor and therefore, the overall effect would be an increase in impacts to biological resources. Installation of a k-rail wall (as depicted in Appendix A) could restrict wildlife movement on the road. Traffic impacts on the Landfill Road are discussed in the Section 4.6, Transportation and Circulation and in Appendix A, which states that the proposed Project would contribute an average additional 24 vehicles per day during operations and up to

84 truck trips during excavation activities that are anticipated to last 120 days during the construction phase. This additional Project-related traffic would result in an increased potential for mortalities and injuries to wildlife in the vicinity of the road and would also temporarily increase noise impacts from larger trucks utilizing the North Access Road. These impacts would be the most severe during the construction phase.

Wildlife Travel Corridor Impacts

Impacts to wildlife movement would be significant but mitigable in most areas of the proposed Project. However, increased levels of drilling operations and human activities in the Core Habitat, which currently has minimal disturbances, would result in substantial impacts to wildlife movement. The impacts would be most severe in those areas farthest away from existing human pressures. The increased levels of noise, light, human presence, and vehicle traffic, during both the construction and operational phases of the Project, could result in significant adverse effects upon a critical wildlife movement linkage.

The intersection of the Loop Road and Colima Road, a portion of the underground oil and gas production pipelines and metering station is located near the entrance, approximately 1,750 feet away from the Service Tunnel, which is an important region-wide linkage for terrestrial wildlife attempting to traverse Colima Road immediately east of the Project Site. It is expected that wildlife use of the Service Tunnel would be adversely affected by activities in the eastern portion of the project area. Figure 4.2-10 shows the existing old oilfield roads that provide pathways for terrestrial wildlife crossing the Arroyo Pescadero and moving from there to and from the Service Tunnel. The Service Tunnel has been identified as an important element of wildlife movements in the area and the impacts to wildlife movement would be significant. The Service Tunnel has also been utilized as a recreational resource as part of the Arroyo San Miguel trail, which passes through the tunnel and accesses the Preserve on the east side of Colima Road. However, the Habitat Authority indicates that this human presence has had some impacts to the movement of wildlife through the tunnel (Lucas 2010). Impacts from the Project could be partially mitigated by closing the Arroyo San Miguel trail that utilizes the tunnel to recreational use, at least during the most intensive activities, such as drilling or construction.

Figure 4.2-10 Service Tunnel Under Colima Road

As shown on Figure 4.2-6, various species of wildlife have been found along the shoulders of Colima Road in recent years due to vehicle-strikes, even though wildlife use of the Service Tunnel has also been heavy. It is expected that these patterns will not change substantially if drilling occurs approximately 1,850 feet west of the Service Tunnel, at the Project site. As shown in Figure 4.2-11, a network of old oilfield roads and trails feeds down to the lower Arroyo Pescadero watershed from the hills north of the proposed drilling area. Wildlife choosing to avoid the proposed drilling site by moving through the hills to the north would encounter two different roads that would provide an alternative route through the Arroyo Pescadero (which does not have any other easy crossing points except at its extreme southern edge, next to existing houses) and then proceed southeast to the Service Tunnel.

Figure 4.2-11 View Facing Southwest from Near Service Tunnel

Mitigation Measure

BIO-4a *Devices and measures shall be employed to minimize noise effects on wildlife. At a minimum, noise barriers shall surround the drill rig floor, mud mixers, cleaners, conveyers, shakers, pumps, and other oil development and operational facilities; construction activities shall be limited to daylight hours except for emergencies; construction machinery shall be operated per manufacture's specifications; and a Noise Reduction Plan and monitoring plan shall be implemented to ensure that Project activities are operating within the ranges included in mitigation measure N-4.*

BIO-4b *All Project lighting shall be designed and shielded with the intent of preventing spillage of light into adjacent preserved open space areas. Outdoor lighting shall be*

restricted to lights required by code for lighting building exteriors and for safety and security needs. All Project lighting shall be fully shielded and designed to prevent spillage of light into adjacent preserved open space areas. Lighting shall be constructed so that all light emitted by the fixture, either directly from the lamp or from a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding shall be permanently affixed. Light standard heights shall distribute light at ground level consistent with light levels for security, spill-over effects, and efficiency. After initial installation of Project lighting, a biological monitor acceptable to the City and Habitat Authority shall conduct a field inspection to confirm that the proper lamps have been installed and that light spillage into the Preserve has been minimized to the maximum extent feasible without compromising safety or other critical night-lighting requirements.

BIO-4c To minimize the potential for road mortality of wildlife, all roads <u>within the Preserve boundary</u> used to access onsite oil facilities shall have enough traffic calming devices, appropriately sized and spaced, to limit traffic to a maximum speed of 10 miles per hour. All nighttime traffic shall be minimized during the construction and operational phases and permitted only for activities required for safety reasons or emergencies; all hauling activities shall be restricted to daylight hours<u>, defined as the hours after sunrise and before sunset. This restriction shall be in addition to any others placed on the Project, including by mitigation measure N-4, which is intended mainly to limit noise impacts upon neighboring residential communities, consistent with the City Municipal Code. No permanent solid walls or k-rail walls shall be placed along the North Access Road. The use of k-rails in this area would require wildlife passages placed every 20 feet to allow wildlife to move freely off the road.</u>

BIO-4d Any project landscaping shall consist entirely of species native to the Project Site and surrounding areas within the Preserve and approved by the County of Los Angeles Fire Department and the Habitat Authority. Any irrigation provided shall be limited to that required to initially establish the native plants; no permanent irrigation shall be permitted.

BIO-4e To minimize potential impacts to nesting <u>native bird</u> species, and in compliance with the federal Migratory Bird Treaty Act and Sections 3503, 3503.5, or 3513 of the California Fish and Game Code, initial construction of the pad sites and facilities <u>involving vegetation removal,</u> and annual fuel modifications involving vegetation removal/trimming shall be done outside the breeding season (February 15 through August 31). If construction <u>involving vegetation removal</u> must be completed during this period, then surveys for nesting birds must be conducted within 3 days prior to vegetation removal or other construction-related disturbances. USFWS protocol surveys for listed avian birds (California gnatcatcher and least Bell's vireo) shall be conducted if disturbances occur in coastal sage scrub or riparian habitats. If nesting birds are observed within the vicinity, then a minimum 100-foot buffer from the nest would be established. The buffer would be delineated by orange construction fencing and signage and would remain in place until the nest is abandoned or the young have

fledged. The nest monitor would be present when any buffer fencing is established. Alternatively, the Project proponent may retain a biologist acceptable to the City and Habitat Authority to monitor the nest and to ensure that Project activities do not violate the Migratory Bird Treaty Act or the California Fish and Game Code. At minimum, the biologist would check for new active nests, and determine the status of ongoing active nests, weekly during the specified nesting season. The biologist would ensure that all fencing and signage was properly maintained, and would provide weekly e-mail updates on the status of all monitored nests to the City, Habitat Authority, CDFG, and USFWS. If the biologist determines that California gnatcatcher nesting is being disrupted, the construction activities will cease and wait until the young have fledged or the nest is determined to have failed.

BIO-4f Hawks and owls nest earlier than most other native birds. If initial construction activities, drilling, re-drilling, ground disturbance, or vegetation clearing, or annual fuel modification involving vegetation removal/trimming occurs from December 1 through August 31, the nest monitor would conduct a pre-construction survey within 3 days prior to vegetation removal or other construction-related disturbances focused on actively nesting hawks or owls. If any actively nesting hawks or owls are found, a 300-foot buffer would be established around the nest tree to help ensure that nesting is not disrupted. If any active songbird nests are found, a 100-foot buffer would be established as described in BIO-4e. The buffer would be delineated by orange construction fencing and signage and would remain in place until the nest is either abandoned or the young have fledged. The nest monitor would be present when any buffer fencing is established. Alternatively, the Project proponent may retain a biologist acceptable to the City and Habitat Authority to monitor the nest and to ensure that Project activities do not violate the Migratory Bird Treaty Act or the California Fish and Game Code. At a minimum, the biologist would check for new active nests, and determine the status of ongoing active nests, weekly during the specified nesting season. The biologist would ensure that all fencing and signage was properly maintained, and would provide weekly e-mail updates on the status of all monitored nests to the City, Habitat Authority, CDFG, and USFWS.

BIO-4g To avoid the direct loss of special-status bats that that could result from removal of trees that may provide maternity roost habitat (e.g., in cavities or under loose bark), the following steps shall be taken:

- *Tree removal or relocation shall be scheduled between October 1 and February 28, outside of the maternity roosting season.*
- *If trees must be removed during the maternity season (March 1 to September 30), a qualified bat specialist (i.e., a person holding a California Department of Fish and Game collection permit and a memorandum of understanding allowing the handling and collection of bats) shall conduct a pre-construction survey to identify those trees proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats.*

- *Each tree identified as potentially supporting an active maternity roost shall be closely inspected by the bat specialist a maximum of 7 days prior to tree disturbance to more precisely determine the presence or absence of roosting bats.*
- *Immediately after completion of the pre-construction surveys, and prior to any tree removals, the bat specialist will prepare a report providing the results of these surveys and identifying actions to be taken to avoid or minimize potential impacts to roosting bats due to authorized tree removal or other potential bat roosting habitats.*
- *The pre-construction report shall be provided to the City and the Habitat Authority prior to any tree removal.*
- *If bats are not detected, but the bat specialist determines that roosting bats may be present, it is preferable to push the tree down using heavy machinery rather than felling it with a chainsaw.*
- *Maternity season lasts from March 1 to September 30. Trees determined to be maternity roosts shall be left in place until the end of the maternity season.*
- *A 250-foot buffer, in which no construction activities are permitted, shall be established around any tree, rock outcrop, or other occupied roost habitat until bats have left the maternity site or the end of the maternity season (<u>whichever is later</u>).*
- *The bat specialist shall document all monitoring activities, and shall prepare a summary report upon completion of tree disturbance activities. Reports would include the following:*
  - *the number and type of affected trees determined to support or potentially support roosting bats prior to disturbance;*
  - *any actions undertaken to safely exclude roosting bats prior to disturbance and the results of those actions;*
  - *trees temporarily avoided to protect roosting bats; and*
  - *roosting bats found (alive or dead) after trees were removed or relocated.*
- *This report shall be provided to the City and Habitat Authority within 30 days following completion of tree removals.*

BIO-4h To reduce impacts to wildlife movement corridors and to provide protective cover for wildlife using the Service Tunnel, and consistent with the Resource Management Plan recommendations, the Applicant shall be required to install appropriate native screening vegetation around the western terminus of the Service Tunnel (LSA 2007). The Applicant shall consult with the Habitat Authority to identify the appropriate limits of screening vegetation. The plantings installed as screening shall comply with the Habitat Authority's Restoration Guidelines. All contractors involved in the native screening effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City and Habitat Authority.

BIO-4i Consistent with the Resource Management Plan recommendations, Project lighting shall not be directly visible from the western terminus of the Service Tunnel.

BIO-4j Consistent with the Resource Management Plan recommendations, the Project proponent shall be required to consult with the Habitat Authority to develop and implement signage explaining the importance of limiting human disturbances in the vicinity of the Service Tunnel between sunset and sunrise.

BIO-4k A qualified biological monitor approved by the City, USFWS, CDFG, and the Habitat Authority shall be onsite during all vegetation removal and initial ground disturbance activities to ensure the compliance with all permit conditions protecting biological resources. The biological monitor shall be present to salvage wildlife species that may be otherwise killed or injured by heavy equipment and vegetation clearing. All salvaged wildlife shall be relocated to suitable adjacent habitat within the Preserve. The biological monitor shall have the authority to temporarily halt activities if permit requirements and conditions are not being met. The biological monitor shall conduct annual site inspections of the facilities, roads, and operations activities to ensure that all applicable mitigation measures are being enacted. The biological monitor shall prepare an annual summary report describing site visit observations and shall provide this report to the City, Habitat Authority and regulatory agencies (including CDFG, US ACE, and USFWS) for review.

BIO-4l The Applicant shall fund and implement a biological resources training program for all construction workers, oilfield workers, and their contractors. Training shall occur annually and as needed for new workers. Training program shall be reviewed and approved by the HA and shall include a description of important biological resources within the Preserve and all applicable conditions, permit requirements, and protection measures implemented to protect those resources.

BIO-4m All grading limits shall be delineated by orange construction fencing and permanent signage every 50 feet along the fence stating "No Entry — Sensitive Habitat." The City and the Habitat Authority shall approve the fencing prior to commencement of grading activities (including clearing and grubbing).

BIO-4n Recreational access to the Arroyo San Miguel Trail shall be closed during construction or drilling activities at the Drill Pad Site. To continue providing recreation access to the Arroyo San Miguel Trails (on the east side of Colima Road), the Applicant shall develop additional recreational access, in coordination with the Habitat Authority, to the Arroyo San Miguel Trail by any of the following or equivalent: (1) enhancing the parking area on the east side of Colima Road; (2) developing the parking area along La Flore Drive, approximately 1 mile east of Colima Road; or (3) developing pedestrian access along Colima Road from the Preserve parking area (on the west side of Colima Road) utilizing the new signalized intersection.

Residual Impacts

The Project would result in impacts on individual animals; most of the direct loss or injuries would be expected for the smaller, wildlife species such as rodent species, lizards, snakes, and amphibians, all of which have small home ranges. The removal of both native and non-native

vegetation, including the removal of several eucalyptus trees would impact nesting habitat; however the RMP does target eucalyptus trees for removal as part of the exotic plant control program and restoration of areas with native vegetation would replace the loss of nesting habitat. Impacts to wildlife movement are expected; however, impacts are not expected to be catastrophic, or lead to the loss of an entire species from the area. Improvements on the North Access Road, which include grading and installing retaining walls and traffic barriers (k-rails, depicted in Appendix A) on steeper slopes are not expected to substantially affect wildlife movement on the access road because the retaining walls are located in areas with steeper slopes adjacent to cuts along the existing roads (which are already less likely to be used for wildlife access) and mitigation measure BIO-4b, which restricts permanent solid walls or requires the placement of wildlife passage corridors, will provide wildlife with access off of the road. Most wildlife species living in the open spaces in the project area are accustomed to some level of human disturbance; the Preserve has experienced years of previous oil development and is surrounded by a densely populated residential area, and yet, wildlife still persist. Implementing mitigation measures recommended in Section 4.5, Noise and Vibration, would reduce impacts to wildlife inhabiting the Project area and species migrating through the area. Mitigation measure N-1a limits the construction activities to daylight hours and the Traffic Section mitigation now limits all truck travel from 8 a.m. to 3 p.m. due to the parking limitations along Penn Street; mitigation measure N-1b requires that all construction machinery operate according to the manufacture's specifications. Mitigation measure N-2a requires a Noise Reduction Plan for all drilling operations that requires appropriate noise levels, 30-foot high enclosures around drill rigs, soundproofing around other facilities and machinery, barrier composition and design, and backup indicators. Mitigation measure N-2b requires a quiet mode for facility operations at night. Mitigation measure N-2c requires a noise abatement study to monitor noise levels at specific sensitive resources and includes shut-down authority if noise criteria are exceeded. Mitigation measure N-4 requires a Noise Reduction Plan for all operational activities to ensure that all Project activities operate within the dB range defined in mitigation measure N-4.

Implementing the proposed mitigation described in the text, including minimizing noise impacts (BIO-4a); designing project lighting to be shielded and directed away from open space areas (BIO-4b); reducing speed limits and night driving (BIO-4c); installing native screening around the existing Service Tunnel (BIO-4h); requiring a biological monitor onsite during ground disturbance activities to ensure protection measures are being implemented (BIO-4k); and implementing a biological resources training program (BIO-4l), would reduce impacts to wildlife nursery sites and wildlife corridors and linkages to less than significant.

Impact #	Impact Description	Phase	Residual Impact
BIO.5	The proposed Project would conflict with local policies and ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Construction, Operations	Less Than Significant With Mitigation

Section 4.11, Land Use and Policy Consistency Analysis, discusses the proposed Project's conflicts with existing ordinances, plans, and permit requirements. These inconsistencies include conflicts with the City of Whittier's General Plan and Municipal Code and with the Preserve's

RMP. Section 4.11 identifies inconsistencies with local policies and ordinances. These conflicts relevant to biological resources are discussed in the following paragraphs, but Section 4.11, Land Use and Policy Consistency Analysis, identifies the inconsistency analysis.

The General Plan designates the Project Site as open space of "high sensitivity." Whereas many of the General Plan's open space policies identify the need to preserve and carefully manage such areas, the Plan also calls for a "balance between oil drilling activities and the protection of plant and animal communities in the hillsides."

The Project Site is zoned as OS under the Municipal Code. Therefore, reintroduction of oil exploration to the Project Site would conflict with Sections 18.09.010, 18.09.020, and 18.09.030 of the Whittier Municipal Code (see Section 4.2.2.3, Local Resource Regulations). However, oil and gas exploration and production are also allowed with a conditional use permit under Section 18.52.030.

Project implementation would conflict with various goals and objectives of the RMP, especially concerning activities identified as permissible within the Core Habitat Zone of the Preserve (including the western half of the Project Site), which the RMP limits to "authorized biological survey and some restoration and/or invasive species removal, but no unsupervised public access." A portion of the proposed project is located within the RMP Preservation Management Zone, which allows for "existing passive, low-impact recreation." The RMP as approved is not directly consistent with the overarching City of Whittier General Plan for the areas within the City of Whittier that, as previously noted, allows for oil and gas production activities to occur within the open space zone district. In addition, there are existing oil and gas production activities ongoing within the Preserve as part of the Matrix Sycamore Canyon oil production operations that are not described as part of the RMP.

However, Project implementation would also contribute funding for the Habitat Authority's management and restoration activities within the Preserve, enabling the implementation of local land-protection policies that would otherwise be expected to be unfunded or underfunded as landfill fees and other revenue sources become depleted. As described under the Project Description in the DEIR:

> Solid-waste disposal fees from the Puente Hills Landfill provide the primary funding for the Habitat Authority. This funding will continue through the remaining life of the landfill, currently scheduled to close in November 2013. The Puente Hills Landfill is owned by the County of Los Angeles and is managed by the Sanitation District of the Los Angeles County Solid Waste Management Department. The Oil and Gas Lease between the City of Whittier and Matrix provides for continuing funding for the Habitat Authority with annual administrative fees and mitigation fees upon issuance and acceptance of a CUP. A successful Project would provide a stable source of funding for the Habitat Authority for as long as the wells produce oil and gas.

As noted above, without the approval of the Project and the lack of funding that would occur after 2013, the Preserve may have inadequate funding to continue current levels of restoration and preservation of the site, which in turn would prevent the Preserve of meeting the goals and objectives of the RMP.

Mitigation Measure

Implementing mitigation measures BIO-1a through BIO-1d, BIO-2a and BIO-2b, BIO-3a and BIO-3b, and BIO-4a through BIO-4n would reduce the proposed Project's conflicts with local policies and ordinances protecting biological resources.

Residual Impacts

Implementation of mitigation measures BIO-1a through BIO-1d, BIO-2a and BIO-2b, BIO-3a and BIO-3b, and BIO-4a through BIO-4n would reduce impacts to biological resources to levels less than significant with mitigation.

4.2.5 Other Issue Area Mitigation Measure Impacts

Mitigation measures proposed for other issues areas could increase impacts to biological resources if they are implemented. This section discusses those potential mitigation measure impacts.

Section 4.6, Aesthetic and Visual Resources, calls for the use of berms (in combination with landscaping) so as to reduce aesthetics impacts. The mitigation also requires preparation of a Landscaping Plan that would include berms, screening, irrigation, and planting protocols. The Plans and vegetation selection would be reviewed, approved, and monitored by the City and the Habitat Authority. Impacts to any native habitats resulting from installing these berms would be mitigated with the same mitigation replacement ratios described in mitigation measures BIO-1 and BIO-2 and would require the same wildlife protection measures described for mitigation measure BIO-4 and would require a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement. Therefore, this mitigation measure would not result in additional significant impacts, and additional analysis or mitigation is not required.

Mitigation measure N-1 requires relocating the construction parking and staging area farther from the school and residences on Catalina Avenue to an area north of the Ranger Residence or equivalent. This relocation would result in the same acres of disturbance and would remain in non-sensitive habitats; impacts to wildlife movement and corridor issues would be similar to the original Project configuration. Impacts to any native habitats resulting from relocating the parking and staging area would be mitigated with the same mitigation replacement ratios described in mitigation measures BIO-1 and BIO-2 and would require the same wildlife protection measures described for mitigation measure BIO-4 and would require a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement. Therefore, this mitigation measure would not result in additional significant impacts, and additional analysis or mitigation is not required.

Mitigation measures GR-1c and GR-1d require that all conceptual geotechnical recommendations provided in the geotechnical study be followed during grading and construction at the Project Site and that all proposed slope construction, roadways, and work pads be properly engineered, in accordance with appropriate requirements and codes. Although the final area of disturbance and habitat loss by specific community may change in the final

footprint, impacts to any native habitats resulting from implementing the geotechnical recommendations would be mitigated with the same mitigation replacement ratios described in mitigation measures BIO-1 and BIO-2 and would require the same wildlife protection measures described for mitigation measure BIO-4 and would require a pre- and post construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement. Therefore, these mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

Mitigation measure WR-1b requires implementing onsite detention facilities to reduce storm water runoff. The onsite detention facilities would be designed as a dry system, required to reduce the threat of standing water, fenced, and remove vegetation and sediment biannually, all of which would reduce potential attractive nuisance issues with wildlife, therefore not requiring any additional mitigation.

Mitigation measures FP-1a, requires as mitigation that additional firewater supplies be developed including the possibility of installing a connection to the Ocean View reservoir. This would require trenching across an area of the Preserve which would result in a marginal increase in the amount of disturbed area and is already accounted for in the disturbed areas calculated as part of the staging and parking areas. This disturbance would be located exclusively in disturbed and non-native grassland habitats and would not increase the severity of existing impacts. Mitigation measure FP-1a requires that any non-native grassland in which new pipeline installations are placed shall be returned to its original state after pipeline installation.

No other mitigation measures would impact biological resources. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

4.2.6 Cumulative Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
CUMULATIVE BIO.1	The proposed Project could result in adverse effects on biological resources that are cumulatively considerable when evaluated in conjunction with other past or present projects in the vicinity.	Construction, Operations	Less Than Significant With Mitigation

The Preserve represents a limited area of natural open space surrounded by intensive urban development and crossed by numerous roads. Much of the Preserve is already subject to noise impacts from existing land uses, including the existing Matrix Oil drilling operation in lower Sycamore Canyon, in the Whittier Hills. Project implementation would increase noise levels within one of the quieter parts of the Preserve. As discussed in BIO.1, increased noise associated with the implementation of the proposed project, or any alternative, would represent a cumulatively considerable increase in the level of noise in the Preserve.

Most of the cumulative projects listed in Section 3.0, Cumulative Projects Description, involve infill or modifications to existing developments outside of locations where sensitive biological resources have been recorded. It is unlikely that such projects would disturb sensitive habitats that potentially support special-status plant or wildlife species, or constrain the movement of wildlife through the local area.

The Matrix Cit of La Habra Heights project is a proposed oil development Project south of the Preserve in the City La Habra Heights. Since the development is proposed for an existing oil development area, impacts on biological sensitive habitats that potentially support special-status plant or wildlife species, or constrain the movement of wildlife through the local area, would be less than significant.

The following projects do have potential to contribute to cumulatively considerable adverse effects upon biological resources in the local area, including increasing pressures on general wildlife movement in the area:

- La Habra Heights Trail Connectors Plan. This proposed Project would plan for the removal of numerous sick and dying trees; replanting of native species; leveling of turf along trail at Oak Creek Park; revegetation of additional areas; rebuild of amphitheater at Creek Park; installation of interpretive signage regarding the wildlife and native vegetation in the area; replacement of two bridges damaged by previous storms; repair of horse trail paths and planting native vegetation along the sides; re-sloping the path to the public restroom facilities; and installation of three "stormceptor" devices along La Mirada Creek to keep pollutants from entering the stream.

- Southern California Edison's Tehachapi Renewable Transmission Project (TRTP), Segments 4 through 11, comprises approximately 173 miles of new and upgraded transmission infrastructure for new wind generation development projects. The TRTP transmission route extends south from Kern County through Los Angeles County and east to San Bernardino County. Segment 8A of this project passes through the Chino-Puente Hills open space, generally following the right-of-way of an existing transmission line. As summarized by Aspen Environmental Group (2010), the Draft EIR/EIS and Final EIR for this Project identifies the following potential impacts to biological resources that exist in Chino-Puente Hills (prior to avoidance and/or mitigation):
    - Construction activities would result in temporary and permanent losses of native vegetation;
    - Loss of wetland and riparian habitats;
    - Establishment and spread of noxious weeds;
    - Construction activities, including the use of access roads and helicopter construction, would result in disturbance to wildlife and may result in wildlife mortality;
    - Construction activities conducted during the breeding season would result in the loss of nesting birds or raptors;
    - Loss of foraging habitat for wildlife;

- Disturbance to nesting least Bell's vireos or their habitat;
- Loss of coastal California gnatcatchers;
- Loss of critical and/or occupied habitat of the coastal California gnatcatcher;
- Possible electrocution of state and/or federally protected birds;
- Possible collisions with overhead wires by state and/or federally protected birds;
- Loss of candidate, Forest Service Sensitive, or special-status plant species;
- Possible mortality or injury of, and loss of nesting habitat for, southwestern pond turtles;
- Possible injury or mortality of, and loss of habitat for, two-striped garter snakes and south coast garter snakes;
- Possible injury or mortality of, and loss of habitat for, Coast Range newts;
- Possible injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern and Forest Service Sensitive amphibian and reptile species;
- Loss of occupied burrowing owl habitat;
- Possible disturbance of nesting avian Species of Special Concern;
- Possible mortality of, and loss of habitat for, special-status bat species;
- Possible transmission line strikes by special-status bat species;
- Possible mortality of, and loss of habitat for special-status mammals;
- Possible interference with established bird and bat migratory corridors; and
- Corona noise could result in disturbance to wildlife.

These projects would be or have been subject to CEQA review and would incorporate mitigation measures, as appropriate. Nevertheless, natural open space lands in the Project vicinity are highly constrained by surrounding intensive development, and the habitat that is preserved is fragmented by numerous existing roads. Ecological systems placed under such stresses exhibit a compromised capacity to rebound from disruptive processes, such as fire and human intrusion (e.g., Rapport et al. 1985, Rapport and Whitford 1999). For this reason, concerns about the cumulative impacts of multiple projects are greatest in already-stressed systems.

The mitigation measures identified in this report are designed to bolster the ecological resilience of the Preserve in the Project vicinity, counteracting the adverse effects of the proposed Project, both considered alone and in the context of contributions to cumulatively considerable impacts of other planned Projects. Specifically, measures BIO-1a through BIO-1e and BIO-2a and BIO-2b require greater than equal-area replacement of sensitive habitat types that would be permanently impacted by grading; BIO-1a through BIO-1e would also result in revegetation of temporarily graded slopes, some which consist of disturbed and predominantly non-native vegetation in the existing condition. Otherwise, this report has identified a variety of feasible measures designed to avoid or minimize the Project's potential adverse effects upon special-status species and the natural ecological systems that support them.

The mitigation program specified in this report effectively addresses the anticipated effects of the proposed Project in the context of past and planned future projects in the Project vicinity, and therefore the Project's contributions to cumulatively considerable biological impacts are deemed less than significant with mitigation. The cumulative projects (see Section 3.0, Cumulative Projects Description) will result in increased infill of open areas, increased human presence, and temporary and permanent loss of habitat in the general area that is already under extreme pressure from surrounding residential and urban areas. These results will increase impacts to established wildlife migratory corridors in the general area. Cumulative impacts to wildlife movement in the general area would be significant.

If test-drilling, construction, or redrilling of wells for the proposed project or project alternatives conducted simultaneously with, and within the same watershed as, construction work on the Tehachapi Renewable Transmission Project, could result in cumulatively considerable effects on biological resources in the local area.

Mitigation Measures

The following measures are identified to eliminate the potential for cumulatively considerable impacts.

CUMULATIVE BIO-1a The applicant shall ensure, and shall demonstrate to the City of Whittier and Habitat Authority, that the existing Matrix Oil drilling operation in lower Sycamore Canyon, in the Whittier Hills, complies with Chapter 12.08.390 of the County of Los Angeles Code (Exterior Noise Standards). Compliance includes achieving an exterior noise standard of 45 dBA (L50) applicable at the property boundary (i.e., the Preserve's property boundary) of all noise-sensitive areas and residential areas, any time of the day. All Preserve areas shall be regarded as "noise-sensitive areas" for purposes of the County of Los Angeles Code and this mitigation measure.

CUMULATIVE BIO-1b No test-drilling, construction, or redrilling of wells shall be conducted simultaneously with, and within the same watershed as, construction work on the Tehachapi Renewable Transmission Project. The Applicant shall provide the City and Habitat Authority with written evidence of having coordinated construction schedules with Southern California Edison prior to commencing any construction activities.

In addition to the above mentioned mitigation measures, the following mitigation measure is provided for consideration as a recommended mitigation measure that is not required, but would nevertheless provide some benefit to the overall knowledge of wildlife movement within the larger Preserve area.

CUMULATIVE BIO-1c To provide land managers at the Preserve (and those in the general area of the Chino-Puente Hills) data to better understand and manage wildlife movement conflicts and issues, the Applicant shall provide the Habitat Authority funds to conduct a multi-year, scientific study to evaluate the wildlife movement patterns of bobcats and other wildlife species utilizing the Preserve. The extent and cost of this study shall be designed, reviewed, and approved by the City, the Applicant, and the Habitat Authority prior to issuance of grading permits.

Residual Impacts

The recommended scientific study of the movement of wildlife through the Project area would benefit land managers in the Project area tasked with evaluating and managing wildlife movement issues in the Puente Hills. Existing conditions in the Puente Hills open space, with or without the proposed Project, would benefit from increased levels of study so that managers may better understand local wildlife corridor issues and more effectively allocate their resources. The purpose of such a study would not be to provide corrective action for the proposed Project, or to alleviate any possible impacts that might be identified through the study. Rather, funding of such a study would represent an appropriate and beneficial use of City proceeds generated by the proposed Project.

With implementation of mitigation measures CUMULATIVE BIO-1 and CUMULATIVE BIO-2, the Project's potential cumulatively considerable impacts would be less than significant.

4.2.7 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
BIO-1a To mitigate the Project's permanent loss of 4.16 acres of coastal sage scrub, the Applicant shall provide minimum 3:1 areal replacement. To mitigate the loss of habitat value due to the Project's noise impacts affecting 5.49 acres of coastal sage scrub, the Applicant shall provide minimum 1:1 areal replacement. In total, the Applicant shall restore 17.97 acres of degraded habitats in the La Cañada Verde and Arroyo Pescadero watersheds to coastal sage scrub communities, or as otherwise agreed to by the appropriate resource agencies and the City. No additional grading or habitat disturbance shall occur along the North Access Road beyond what is currently designated in the Road Improvement Plan included in Appendix A. All aspects of the restoration effort shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following shall apply: - All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - The restoration specialist shall work with the Habitat Authority to select restoration sites in the Habitat Authority's Whittier Management Unit, preferably in the La Cañada Verde and Arroyo Pescadero watersheds. A conservation easement shall be placed over any	Restore coastal sage scrub habitat	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and restoration prior to construction; restoration planting shall occur in the Fall.	Habitat Authority and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
site restored under this mitigation measure. This easement will be submitted to the USFWS for review and approval. - Mandatory components of any restoration plan shall include, but not be limited to, a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority, the City, USFWS, and CDFG prior to implementation. - Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. Restoration efforts shall be scheduled to start at the same time as construction activities to reduce the temporal loss of habitat. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years. - Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority. - If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan shall be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service).				

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
- Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).				
BIO-1b To prevent erosion and invasion by non-native weeds, and to help offset the Project's overall biological impacts including the temporal loss of habitat, the Applicant shall provide minimum 2:1 areal replacement of all graded slopes outside of permanent impact areas (approximately 8.03 acres; restoration shall be revegetated exclusively with appropriate, locally indigenous plant species and will incorporate non-flammable species as appropriates. To mitigate the permanent disturbance to 12.34 acres of native habitats (7.07of chaparral and 5.27 acres of annual grassland), the Applicant shall provide minimum 1:1 areal replacement. To mitigate the temporary impacts to native and naturalized habitats due to noise impacts associated with truck hauling on the North Access Road, the Applicant shall provide minimum 1:1 areal replacement of 8.4 acres of native habitat. In total, the Applicant shall restore 36.8 acres of degraded habitats in the La Cañada Verde and Arroyo Pescadero watersheds to native communities, as agreed to by the appropriate resource agencies and the City. All contractors involved in the revegetation effort, including the revegetation specialist and landscape contractor, shall be reviewed and approved by the City and Habitat Authority. Revegetation efforts shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following shall apply: - All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - Mandatory components of any restoration plan shall include, but not be limited to, a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be	Revegetate graded slopes with, locally indigenous plants	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and revegetation during planting season after grading	Habitat Authority, and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
reviewed and approved by the Habitat Authority, the City, USFWS, and CDFG prior to implementation. - Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. Restoration efforts shall be scheduled to start at the same time as construction activities to reduce the temporal loss of habitat. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years. - Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. - The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority. - If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan shall be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).				
BIO-1c Restoration and revegetation efforts shall include the salvage and stockpile of weed-free topsoil (upper 12 inches of soil) from any and all areas of intact (non-weedy) native communities that are graded for Project implementation, as determined by the site monitor described in required by mitigation measure BIO-1 b, so that the soil can later be spread over graded slopes to increase native plant species diversity in the restored areas. Mature coast prickly pear, dudleya, and other translocatable	Salvage and spread weed-free topsoil	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and salvage prior to grading	Habitat Authority, and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
species will be transplanted as feasible in the revegetation and fuel modification zones. Such salvage may also be appropriate for revegetation areas.				
BIO-1d The Applicant or US Army Corps of Engineers shall consult with the US Fish and Wildlife Service to obtain an Incidental Take Statement, if needed, pursuant to Section 7 or Section 10 of the federal Endangered Species Act to cover the Project's potential "take" (which includes the permanent and temporary loss of approximately 5 acres of critical habitat and 5.49 acres of noise related disturbance) of the coastal California gnatcatcher, a federally listed species.	Incidental Take Statement	Agency consultation	Prior to permit issuance	City
BIO-2a To mitigate the Project's permanent loss of 0.22 acre of riparian habitat, the Applicant shall provide minimum 3:1 areal replacement. To mitigate the Project's temporary noise impacts affecting 0.75 acres of riparian habitat, the Applicant shall provide minimum 1:1 areal replacement. In total, the Applicant shall restore 1.41 acres of degraded areas within the La Cañada Verde and Arroyo Pescadero watersheds, or as otherwise agreed to by the appropriate resource agencies and the City. The 0.12 acre of temporary grading impact would be mitigated through the 1:1 revegetation specified in BIO-1.b. All aspects of this restoration shall comply with the Habitat Authority's Restoration Guidelines, as specified in Appendix N of the RMP (LSA 2007, Pages 251-372). The following points shall apply:- All contractors involved in the restoration effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - Mandatory components of any restoration plan shall include, but not be limited to, a pre- and post-construction survey to describe the final, full extent of disturbance area to determine habitat loss and replacement, Site Preparation, Implementation Specifications, Maintenance Methods, Performance Standards, Monitoring Methods, Documentation and Reporting, and Contingency Measures (in case performance standards are not met in any area). All components of any restoration plan prepared in satisfaction of this mitigation measure shall be reviewed and approved by the Habitat Authority, the City, USFWS, and CDFG, prior to implementation.	Create riparian habitat	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to permit issuance and restoration prior to grading; restoration planting shall occur in the Fall.	Habitat Authority, and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
- Maintenance of all plantings will be the Applicant's responsibility, and shall include any activities required to meet the performance standards set for the restoration program. Restoration efforts shall be scheduled to start at the same time as construction activities to reduce the temporal loss of habitat. A minimum of 5 years of maintenance shall be required unless the plan's long-term performance standards are judged by the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) to be satisfied in less than 5 years. - Monitoring all restoration sites will be the Applicant's responsibility for a minimum of 5 years, or until the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service) judge all of the Project's long-term performance standards to be satisfied. The site monitor shall be a biologist, native landscape horticulturist, or other professional qualified to: (1) assess the performance of the planting effort; (2) recommend corrective measures, if needed; and (3) document wildlife use of planting areas over time. The site monitor shall be selected by the Applicant and approved by the City and the Habitat Authority. - If performance standards are not achieved in any restoration area, an alternative or auxiliary mitigation plan shall be submitted to the City, the Habitat Authority, and appropriate resource agencies (e.g., CDFG, USACE, U.S. Fish and Wildlife Service). - The monitoring results shall be reported at least annually to the City, the Habitat Authority, and appropriate resource agencies (e.g., U.S. Fish and Wildlife Service). - Additionally, all mitigation must comply with the Restoration Plans for Mitigation and Monitoring Plans found on the Habitat Authority's web page (http://www.habitatauthority.org/devdedmit.shtml).				
BIO-2b The Project proponent shall be required to obtain all applicable federal and state permits and agreements, including (1) a Section 404 Permit from the US Army Corps of Engineers, (2) certification, or a waiver of certification, from the Los Angeles Regional Water Quality Control Board that the activity would not adversely affect water quality, and (3) a Streambed Alteration Agreement from the California Department of Fish and Game.	State and federal permits	Agency consultation	Permit prior to issuance of grading permits	City
BIO-3a The applicant shall prepare an Emergency Response Action Plan that would address protection of sensitive biological resources and revegetation of	Emergency Response Action Plan	Emergency Response Action Plan	Prior to issuance of grading	Habitat Authority, and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
any areas disturbed during an oil spill or cleanup activities. The Emergency Response Action Plan shall, at a minimum, include specific measures to avoid impacts to native vegetation and wildlife habitats, plant and animal species, and environmentally sensitive habitat areas during response and cleanup operations. The Emergency Response Action Plan shall include provisions for containment and cleanup within 2 miles downstream of the Project Site. The plan shall contain detailed descriptions of various containment and cleanup alternatives for each segment of the streambed. Selection of a containment alternative would be made during an emergency event, but the approach and plan shall be reviewed by the California Division of Fish and Game, the Los Angeles Regional Water Quality Control Board, and Los Angeles County Flood Control District. Where feasible, low-impact, site-specific techniques such as hand-cutting contaminated vegetation and using low-pressure water flushing shall be specified to remove spilled material from particularly sensitive wildlife habitats, such as riparian woodlands, because procedures such as shoveling, bulldozing, and raking can cause more damage to a sensitive habitat than the oil spill itself. The Emergency Response Action Plan shall evaluate the non-cleanup option for <u>environmentally sensitive habitat</u>. When habitat disturbance cannot be avoided, the Emergency Response Action Plan shall provide stipulations for development and implementation of site-specific habitat restoration plans and other site-specific and species-specific measures appropriate for mitigating impacts to local populations of special-status wildlife species and to restore native plant and animal communities to pre-spill conditions. Access and egress points, staging areas, and material stockpile areas that avoid sensitive habitat areas shall be identified. The Emergency Response Action Plan shall include species- and site-specific procedures for collection, transportation and treatment of oiled wildlife, particularly for sensitive species. The Emergency Response Action Plan shall include procedures for timely re-establishment of vegetation that replicates the habitats disturbed (or, in the case of disturbed habitats dominated by non-native species, replaces them with suitable native species). The Emergency Response Action Plan shall be approved by the City and Habitat Authority prior to commencing any construction activities.			permits	

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
BIO-3b To reduce exposure risks to wildlife in the Project Site area, all open basins containing any Project-related fluids shall either be emptied at the end of each day or fenced and covered to exclude all wildlife, including birds, bats and amphibians. Drilling muds, concrete waste, and truck washing water shall be contained within closed Baker-style tanks or collected by a vacuum truck before the end of each day and shall not be stored overnight in open pits.	No overnight storage of open fluids	Construction plans and site inspections	Prior to issuance of grading permits	City
BIO-4a Devices and measures shall be employed to minimize noise effects on wildlife. At a minimum, noise barriers shall surround the drill rig floor, mud mixers, cleaners, conveyers, shakers, pumps, and other oil development and operational facilities; construction activities shall be limited to daylight hours except for emergencies; construction machinery shall be operated per manufacture's specifications; and a Noise Reduction Plan and monitoring plan shall be implemented to ensure that Project activities are operating within the ranges included in mitigation measure N-4.	Minimize noise	Noise mitigation plan	Prior to issuance of grading permits	Habitat Authority, and City
BIO-4b All Project lighting shall be designed and shielded with the intent of preventing spillage of light into adjacent preserved open space areas. Outdoor lighting shall be restricted to lights required by code for lighting building exteriors and for safety and security needs. All Project lighting shall be fully shielded and designed to prevent spillage of light into adjacent preserved open space areas. Lighting shall be constructed so that all light emitted by the fixture, either directly from the lamp or from a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding shall be permanently affixed. Light standard heights shall distribute light at ground level consistent with light levels for security, spill-over effects, and efficiency. After initial installation of Project lighting, a biological monitor acceptable to the City and Habitat Authority shall conduct a field inspection to confirm that the proper lamps have been installed and that light spillage into the Preserve has been minimized to the maximum extent feasible without compromising safety or other critical night-lighting requirements.	Shield lighting and prevent spillage	Lighting plan	Prior to issuance of grading permits	Habitat Authority, and City
BIO-4c To minimize the potential for road mortality of wildlife, all roads within the Preserve	Control traffic speed	Traffic speed control plan	Prior to issuance of	Habitat Authority

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
boundary used to access onsite oil facilities shall have enough traffic calming devices, appropriately sized and spaced, to limit traffic to a maximum speed of 10 miles per hour. All nighttime traffic shall be minimized during the construction and operational phases and permitted only for activities required for safety reasons or emergencies; all hauling activities shall be restricted to daylight hours, defined as the hours after sunrise and before sunset. This restriction shall be in addition to any others placed on the Project, including by mitigation measure N-4, which is intended mainly to limit noise impacts upon neighboring residential communities, consistent with the City Municipal Code. No permanent solid walls or k-rail walls shall be placed along the North Access Road. The use of k-rails in this area would require wildlife passages placed every 20 feet to allow wildlife to move freely off the road.			grading permits	and City
BIO-4d Any project landscaping shall consist entirely of species native to the Project Site and surrounding areas within the Preserve and approved by the County of Los Angeles Fire Department and the Habitat Authority. Any irrigation provided shall be limited to that required to initially establish the native plants; no permanent irrigation shall be permitted.	Native species landscaping	Landscaping plan	Prior to issuance of grading permits	Habitat Authority and City
BIO-4e To minimize potential impacts to nesting native bird species, and in compliance with the federal Migratory Bird Treaty Act and Sections 3503, 3503.5, or 3513 of the California Fish and Game Code, initial construction of the pad sites and facilities involving vegetation removal, and annual fuel modifications involving vegetation removal/trimming shall be done outside the breeding season (February 15 through August 31). If construction involving vegetation removal must be completed during this period, then surveys for nesting birds must be conducted within 3 days prior to vegetation removal or other construction-related disturbances. USFWF protocol surveys for listed avian birds (California gnatcatcher and least Bell's vireo) shall be conducted if disturbances occur in coastal sage scrub or riparian habitats. If nesting birds are observed within the vicinity, then a minimum 100-foot buffer from the nest would be established. The buffer would be delineated by orange construction fencing and signage and would remain in place until the nest is abandoned or the young have fledged. The nest monitor would be	Seasonal restrictions for construction and surveys to protect native birds	City and Habitat Authority shall review and approve biologist	Mitigation measure applies to construction work between February 15 and August 31	Habitat Authority and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
present when any buffer fencing is established. Alternatively, the Project proponent may retain a biologist acceptable to the City and Habitat Authority to monitor the nest and to ensure that Project activities do not violate the Migratory Bird Treaty Act or the California Fish and Game Code. At minimum, the biologist would check for new active nests, and determine the status of ongoing active nests, weekly during the specified nesting season. The biologist would ensure that all fencing and signage was properly maintained, and would provide weekly e-mail updates on the status of all monitored nests to the City, Habitat Authority, CDFG, and USFWS. If the biologist determines that California gnatcatcher nesting is being disrupted, the construction activities will cease and wait until the young have fledged or the nest is determined to have failed.				
BIO-4f Hawks and owls nest earlier than most other native birds. If initial construction activities, drilling, , re-drilling, ground disturbance, or vegetation clearing, or annual fuel modification involving vegetation removal/trimming occurs from December 1 through August 31, the nest monitor would conduct a pre-construction survey within 3 days prior to vegetation removal or other construction-related disturbances focused on actively nesting hawks or owls. If any actively nesting hawks or owls are found, a 300-foot buffer would be established around the nest tree to help ensure that nesting is not disrupted. If any active songbird nests are found, a 100-foot buffer would be established as described in BIO-4e. The buffer would be delineated by orange construction fencing and signage and would remain in place until the nest is either abandoned or the young have fledged. The nest monitor would be present when any buffer fencing is established. Alternatively, the Project proponent may retain a biologist acceptable to the City and Habitat Authority to monitor the nest and to ensure that Project activities do not violate the Migratory Bird Treaty Act or the California Fish and Game Code. At a minimum, the biologist would check for new active nests, and determine the status of ongoing active nests, weekly during the specified nesting season. The biologist would ensure that all fencing and signage was properly maintained, and would provide weekly e-mail updates on the status of all monitored nests to the City, Habitat Authority, CDFG, and USFWS.	Seasonal Restrictions for Construction and surveys to protect hawks	City and Habitat Authority shall review and approve biologist	Mitigation measure applies to construction work between December 1 and August 31.	Habitat Authority and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
BIO-4g To avoid the direct loss of special-status bats that that could result from removal of trees that may provide maternity roost habitat (e.g., in cavities or under loose bark), the following steps shall be taken: - Tree removal or relocation shall be scheduled between October 1 and February 28, outside of the maternity roosting season. - If trees must be removed during the maternity season (March 1 to September 30), a qualified bat specialist (i.e., a person holding a California Department of Fish and Game collection permit and a memorandum of understanding allowing the handling and collection of bats) shall conduct a pre-construction survey to identify those trees proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats. - Each tree identified as potentially supporting an active maternity roost shall be closely inspected by the bat specialist a maximum of 7 days prior to tree disturbance to more precisely determine the presence or absence of roosting bats. - Immediately after completion of the pre-construction surveys, and prior to any tree removals, the bat specialist will prepare a report providing the results of these surveys and identifying actions to be taken to avoid or minimize potential impacts to roosting bats due to authorized tree removal or other potential bat roosting habitats. - The pre-construction report shall be provided to the City and the Habitat Authority prior to any tree removal. - If bats are not detected, but the bat specialist determines that roosting bats may be present, it is preferable to push the tree down using heavy machinery rather than felling it with a chainsaw. - Maternity season lasts from March 1 to September 30. Trees determined to be maternity roosts shall be left in place until the end of the maternity season. - A 250-foot buffer, in which no construction activities are permitted, shall be established around any tree, rock outcrop, or other occupied roost habitat until bats have left the maternity site or the end of the maternity season (whichever is later). - The bat specialist shall document all monitoring activities, and shall prepare a summary report upon completion of tree disturbance activities. Reports would include the following: - the number and type of affected trees determined to support or potentially support roosting bats prior to disturbance;	Seasonal restrictions for construction and surveys to protect bats	Retain a qualified bat specialist to implement the required survey and documentation	Mitigation measure applies to construction work between March 1 and September 30.	Habitat Authority and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
- any actions undertaken to safely exclude roosting bats prior to disturbance and the results of those actions; - trees temporarily avoided to protect roosting bats; and - roosting bats found (alive or dead) after trees were removed or relocated. - This report shall be provided to the City and Habitat Authority within 30 days following completion of tree removals.				
BIO-4h To reduce impacts to wildlife movement corridors and to provide protective cover for wildlife using the Service Tunnel, and consistent with the Resource Management Plan recommendations, the Applicant shall be required to install appropriate native screening vegetation around the western terminus of the Service Tunnel (LSA 2007). The Applicant shall consult with the Habitat Authority to identify the appropriate limits of screening vegetation. The plantings installed as screening shall comply with the Habitat Authority's Restoration Guidelines. All contractors involved in the native screening effort, including the restoration specialist and landscape contractor, shall be reviewed and approved by the City and Habitat Authority.	Screening vegetation around Service Tunnel	Comply with the Habitat Authority's Restoration Guidelines	Plans prior to issuance of grading permits and planting prior to grading	Habitat Authority and City
BIO-4i Consistent with the Resource Management Plan recommendations, Project lighting shall not be directly visible from the western terminus of the Service Tunnel.	Limit lighting	Lighting plan	Prior to issuance of grading permits	Habitat Authority and City
BIO-4j Consistent with the Resource Management Plan recommendations, the Project proponent shall be required to consult with the Habitat Authority to develop and implement signage explaining the importance of limiting human disturbances in the vicinity of the Service Tunnel between sunset and sunrise.	Signs limiting human disturbances near the Service Tunnel	Consult with the Habitat Authority	Prior to issuance of grading permits	Habitat Authority and City
BIO-4k A qualified biological monitor approved by the City, USFWS, CDFG, and the Habitat Authority shall be onsite during all vegetation removal and initial ground disturbance activities to ensure the compliance with all permit conditions protecting biological resources. The biological monitor shall be present to salvage wildlife species that may be otherwise killed or injured by heavy equipment and vegetation clearing. All salvaged wildlife shall be relocated to suitable adjacent habitat within the Preserve. The biological monitor shall have the authority to temporarily halt activities if permit requirements and conditions are not being met. The biological monitor shall conduct annual	Biological monitor	Consult with the Habitat Authority, review design plans for new recreation access to Arroyo san Miguel	Prior to issuance of grading permits for Well Site activities	Habitat Authority and City

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
site inspections of the facilities, roads, and operations activities to ensure that all applicable mitigation measures are being enacted. The biological monitor shall prepare an annual summary report describing site visit observations and shall provide this report to the City, Habitat Authority and regulatory agencies (including CDFG, US ACE, and USFWS) for review.				
BIO-4l The Applicant shall fund and implement a biological resources training program for all construction workers, oilfield workers, and their contractors. Training shall occur annually and as needed for new workers. Training program shall be reviewed and approved by the HA and shall include a description of important biological resources within the Preserve and all applicable conditions, permit requirements, and protection measures implemented to protect those resources.	Training Program implemented by Biological Monitor	City and Habitat Authority shall review and approve biologist providing training	Prior to the onset of construction activities and then annually and as needed with new employees	Habitat Authority and City
BIO-4m All grading limits shall be delineated by orange construction fencing and permanent signage every 50 feet along the fence stating "No Entry — Sensitive Habitat." The City and the Habitat Authority shall approve the fencing prior to commencement of grading activities (including clearing and grubbing).	Approve fencing of work area with construction fencing	Visual inspections by Biological Monitor and Habitat Authority	The City and the Habitat Authority shall approve the fencing prior to commencement of grading activities	Habitat Authority and City
BIO-4n Recreational access to the Arroyo San Miguel Trail shall be closed during construction or drilling activities at the Drill Pad Site. To continue providing recreation access to the Arroyo San Miguel Trails (on the east side of Colima Road), the Applicant shall develop additional recreational access, in coordination with the Habitat Authority, to the Arroyo San Miguel Trail by any of the following or equivalent: (1) enhancing the parking area on the east side of Colima Road; (2) developing the parking area along La Flore Drive, approximately 1 mile east of Colima Road; or (3) developing pedestrian access along Colima Road from the Preserve parking area (on the west side of Colima Road) utilizing the new signalized intersection.	Close recreational use of San Miguel Trail during drilling activities.	City and Habitat Authority shall review and approve new recreational access prior to grading permits are issued.	Prior to issuance of grading permits	Habitat Authority and City
BIO-5 Implement mitigation measures BIO-1a through BIO-1d, BIO-2a and BIO-2b, BIO-3a and BIO-3b, and BIO-4a through BIO-4n.	See mitigation measures BIO-1a through BIO-1d, BIO-2a and BIO-2b,	See mitigation measures BIO-1a through BIO-	See mitigation measures BIO-1a through	See mitigation measures BIO-1a through

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
	BIO-3a and BIO-3b, and BIO-4a through BIO-4n.	1d, BIO-2a and BIO-2b, BIO-3a and BIO-3b, and BIO-4a through BIO-4n.	BIO-1d, BIO-2a and BIO-2b, BIO-3a and BIO-3b, and BIO-4a through BIO-4n.	BIO-1d, BIO-2a and BIO-2b, BIO-3a and BIO-3b, and BIO-4a through BIO-4n.
CUMULATIVE BIO-1a The applicant shall ensure, and shall demonstrate to the City of Whittier and Habitat Authority, that the existing Matrix Oil drilling operation in lower Sycamore Canyon, in the Whittier Hills, complies with Chapter 12.08.390 of the County of Los Angeles Code (Exterior Noise Standards). Compliance includes achieving an exterior noise standard of 45 dBA (L50) applicable at the property boundary (i.e., the Preserve's property boundary) of all noise-sensitive areas and residential areas, any time of the day. All Preserve areas shall be regarded as "noise-sensitive areas" for purposes of the County of Los Angeles Code and this mitigation measure.	Sycamore Canyon Drilling operations to comply with County Noise Code.	Applicant to demonstrate to Habitat Authority and City	Prior to issuance of grading permits	Habitat Authority and City
CUMULATIVE BIO-1b No test-drilling, construction, or redrilling of wells shall be conducted simultaneously with, and within the same watershed as, construction work on the Tehachapi Renewable Transmission Project. The Applicant shall provide the City and Habitat Authority with written evidence of having coordinated construction schedules with Southern California Edison prior to commencing any construction activities.	No drilling to occur concurrent with construction work on the Tehachapi Renewable Transmission Project	Applicant to demonstrate to Habitat Authority and City	Ongoing throughout drilling activities	Habitat Authority and City
CUMULATIVE BIO-1c To provide land managers at the Preserve (and those in the general area of the Chino-Puente Hills) data to better understand and manage wildlife movement conflicts and issues, the Applicant shall provide the Habitat Authority funds to conduct a multi-year, scientific study to evaluate the wildlife movement patterns of bobcats and other wildlife species utilizing the Preserve. The extent and cost of this study shall be designed, reviewed, and approved by the City, the Applicant, and the Habitat Authority prior to issuance of grading permits.	Wildlife movement study	Program design document	Previous to grading permits	Habitat Authority and City