

**DETERMINATION OF BIOLOGICALLY EQUIVALENT
OR SUPERIOR PRESERVATION FOR RIPARIAN/RIVERINE HABITAT
FOR THE FOOTHILL PARKWAY EXTENSION PROJECT IN THE
CITY OF CORONA AND UNINCORPORATED RIVERSIDE COUNTY
CORONA SOUTH USGS 7.5-MINUTE SERIES MAP
Township 3, 4S, Range 7W, Sections 3, 4, 10, 33, 34**

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Surveys Conducted On:
Multiple Dates Between 1999 and 2007

Report Date:
February 14, 2008

CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: _____ SIGNED: _____

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1.0 INTRODUCTION

This Determination of Biologically Equivalent or Superior Preservation (DBESP) report is to satisfy requirements of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) for impacts on Riparian/Riverine resources as a result of the Foothill Parkway Extension project (hereafter referred to as the “proposed project”). A DBESP is required for the proposed project because it would result in impacts on Riparian/Riverine areas in the survey area. Due to the project design constraints (e.g., topography, property ownership, and connections to existing streets), there is no feasible alternative that would allow for the construction of a new road between Paseo Grande and Mangular Avenue while avoiding impacts on Riparian/Riverine habitat. The objective of this report is to demonstrate that the proposed mitigation would provide an equivalent or superior preservation of habitat function and value of Riparian/Riverine resources. This report is being submitted to the City of Corona and will be forwarded to the Western Riverside County Regional Conservation Authority (WRC RCA), which includes representatives from the County of Riverside, U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).

2.0 PROJECT LOCATION AND DESCRIPTION

2.1 PROJECT LOCATION

The proposed project is located in the southern portion of the City of Corona (Exhibit 1). The approximate 150-acre survey area is located along the northeastern base of the Santa Ana Mountains on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle (Exhibit 2). The proposed project transects both private and public properties within the City of Corona and County of Riverside; it is located immediately adjacent to the Cleveland National Forest (Exhibit 3). Existing and surrounding land uses consist of agriculture, residential, and open space, including the adjacent Cleveland National Forest.

The survey area includes the proposed alignment and a 100-foot buffer around the impact area of the proposed alignment. The proposed alignment generally traverses undeveloped terrain. Topography through the alignment generally ranges from gently sloping terraces (transected by ravines in the eastern and western portions of the alignment) to steep mountainous terrain in the central portion of the alignment. Portions of Wardlow Wash and Mabey Canyon drainage are in the survey area; multiple unnamed blue-line streams also enter the survey area from canyons to the west in the Cleveland National Forest. Elevations range from approximately 800 to 1,300 feet above mean sea level (msl).

Vegetation in the survey area generally consists of chaparral and coastal sage scrub on the steep hillsides, and riparian forest along Wardlow Wash. Riparian forest vegetation is variable in composition, but classifications were combined for the mapping to be consistent with the Western Riverside MSHCP classification system. In the survey area, riparian forest vegetation includes southern cottonwood-willow riparian forest, mule fat scrub, southern coast live oak riparian forest, and California sycamore-coast live oak riparian forest. Oak woodland occurs in drier upland areas



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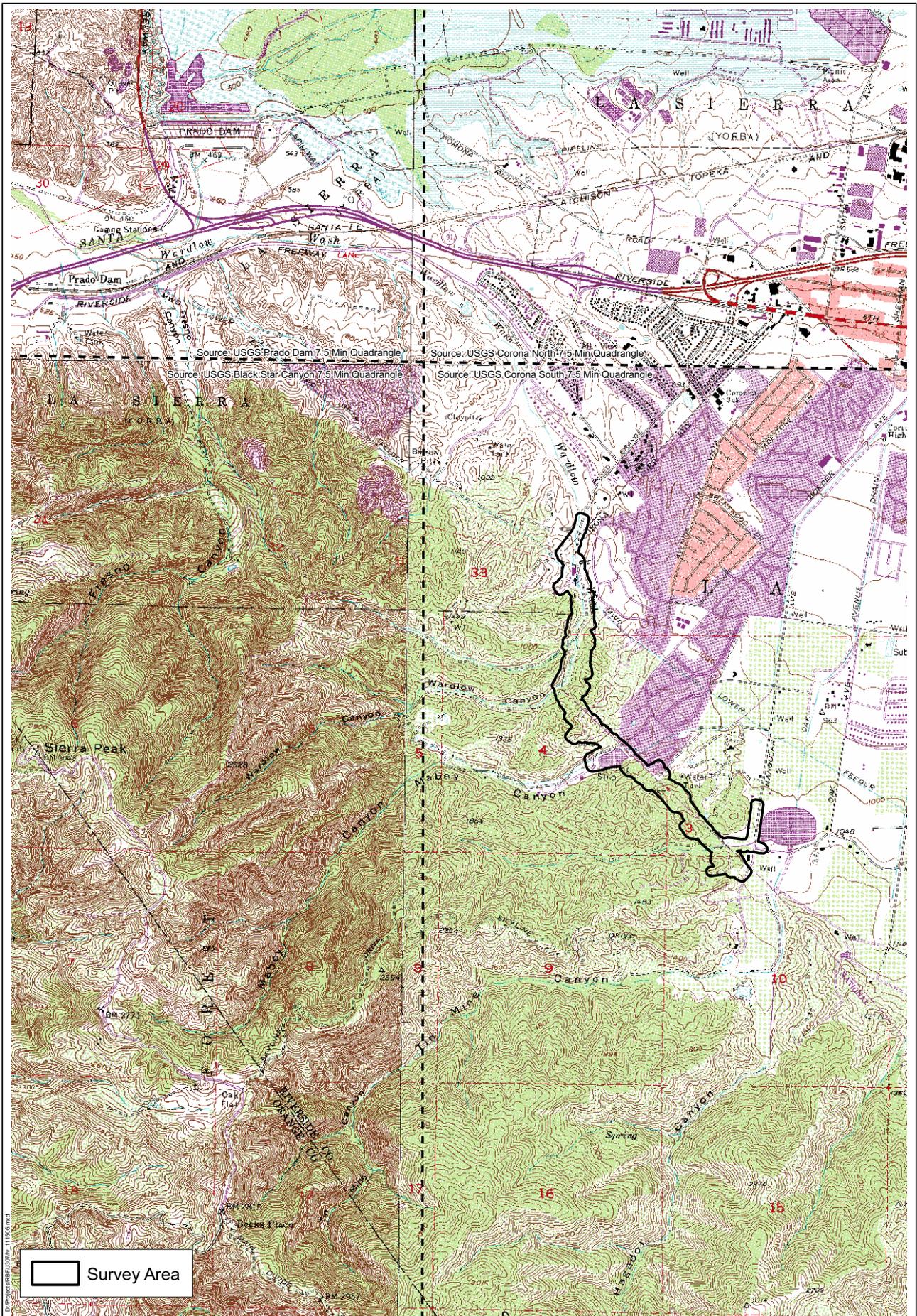
Regional Location

Exhibit 1

Foothill Parkway Extension, Riverside County, California



Bonterra
CONSULTING



 Survey Area

Local Vicinity
 Foothill Parkway Extension, Riverside County, California

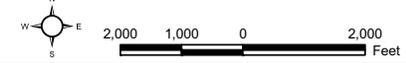


Exhibit 2





 Survey Area

Aerial Photograph
Foothill Parkway Expansion



Exhibit 3



adjacent to the riparian forest. The survey area also includes the Mabey Canyon Debris Basin, which consists of ruderal vegetation.

The 567,000-acre Cleveland National Forest is located immediately adjacent to the west of the survey area. Prado Flood Control Basin and the Santa Ana River are located approximately 1.5 miles north of the survey area. Chino Hills State Park is located approximately 1.9 miles northwest of the survey area. Fresno Canyon, within the Cleveland National Forest, is located approximately 1.5 miles west of the survey area. Sierra Peak, also within the Cleveland National Forest is located approximately 2 miles west of the survey area.

The survey area is located within the Temescal Canyon Area Plan of the Western Riverside MSHCP area; however, the survey area is not located in the designated Criteria Area.

2.2 PROJECT DESCRIPTION

The proposed project would involve the extension of Foothill Parkway as a 4-lane roadway, from its existing terminus (approximately 500 feet west of Skyline Drive) to Green River Road; a distance of approximately 2 miles. At Skyline Drive, the roadway would veer to the west into unincorporated Riverside County and continue in an east/west direction along the City/County boundary. The alignment would then curve to the north and connect with Green River Road in the vicinity of Paseo Grande. A structure is incorporated into the roadway design to protect the 108-inch Metropolitan Water District feeder line located southeast of Paseo Grande. The City is considering developing either two parallel bridge structures or one aboveground arch structure for protection of the Metropolitan Water District feeder line. Roadway improvements would require right-of-way acquisition for roadway improvements, slopes, and drainage facilities. The proposed project also includes three new signalized intersections. Green River Road (in the vicinity of Paseo Grande) is a paved, two-lane roadway that would be expanded to four lanes from Paseo Grande to Tanglewood Drive as part of the proposed project.

The proposed project would complete a critical east/west connection from Foothill Parkway's current terminus, which is approximately 500 feet west of Skyline Drive to Green River Road. The roadway extension would alleviate existing traffic congestion on the local circulation network and accommodate traffic that would be generated by approved and planned development in southern Corona. The operation goal for the roadway is to achieve a level of service "D", which has been adopted by the City as the standard for local streets and arterial highways. It is the City's goal to identify the most cost-effective improvements that would be compatible with existing and future adjoining improvements along Foothill Parkway.

The following objectives were incorporated into the project design to minimize impacts on biological resources:

- Provide a roadway design that is sensitive to the environmental resources and minimizes (to the extent feasible) impacts to sensitive plant and wildlife species, while providing adequate geometric design to minimize safety hazards and maximize operational efficiency;
- Develop a roadway design that is compatible with the provisions of the Western Riverside MSHCP;
- Avoid impacts to the Cleveland National Forest.

3.0 INFESIBILITY OF AVOIDANCE AND/OR ALTERNATIVE

Although the Western Riverside MSHCP recommends avoidance of Riparian/Riverine resources in the survey area, this is not considered feasible for the proposed project. The proposed project design must work within several design constraints. The proposed roadway extension would connect Paseo Grande with Mangular Avenue and would provide connections to existing arterials (i.e., Border Avenue and Chase Road) and planned future developments; therefore, the project is constrained by the points where it must join with existing infrastructure and future planned developments. It was also designed to avoid impacts on an existing water tank, minimize impacts on the existing Mabey Canyon Debris Basin, and to minimize noise impacts on existing residential areas. The proposed alignment was also designed to avoid the Cleveland National Forest, which is located immediately adjacent to the west. The Cleveland National Forest would be preserved as part of the Western Riverside MSHCP. Using these design constraints, coupled with the need to balance earthwork (i.e., cut and fill), it is not feasible for the proposed alignment to avoid Riparian/Riverine resources in the survey area.

4.0 EXISTING BIOLOGICAL RESOURCES

4.1 BIOLOGICAL SURVEYS CONDUCTED FOR THE PROJECT

The data provided in this report is derived from general and focused surveys of all or portions of the survey area conducted by BonTerra Consulting in 1999, 2000, 2006, and 2007. All surveys referenced below are included in the Biological Technical Report for the proposed project (BonTerra Consulting 2007).

Vegetation mapping and general plant surveys were conducted in October and November 1999 by BonTerra Consulting Senior Botanist Sandra Leatherman and Senior Biologist Brian Daniels. These surveys were updated to reflect conditions in June 2006 by Ms. Leatherman and BonTerra Consulting Ecologist Amber Oneal. Additional mapping was conducted in August 2007, by Ms. Leatherman and Ms. Oneal to accommodate minor changes in project design. The purpose of the surveys was to describe the vegetation present in the survey area and evaluate the potential of the habitats to support special status species.

General wildlife surveys were conducted concurrently with the vegetation mapping in 1999. These surveys were updated to reflect conditions in May 2006 by Mr. Daniels and Ms. Oneal. General observations of wildlife were also noted during all focused surveys in 2000 and 2006 and during the additional vegetation mapping in August 2007.

Spring botanical surveys were conducted in the survey area in April and June 2000 by Ms. Leatherman and David Bramlet, Consulting Biologist. Spring botanical surveys were repeated in June 2006 by Ms. Leatherman and BonTerra Consulting Botanist Andrea Warniment.

Focused surveys for the arroyo toad (*Bufo californicus*) were conducted in the survey area from March to July 2000 by Consulting Biologist Brian Leatherman. These surveys were not updated because this species is covered by the Western Riverside MSHCP and the survey area is outside of the survey area for the arroyo toad.

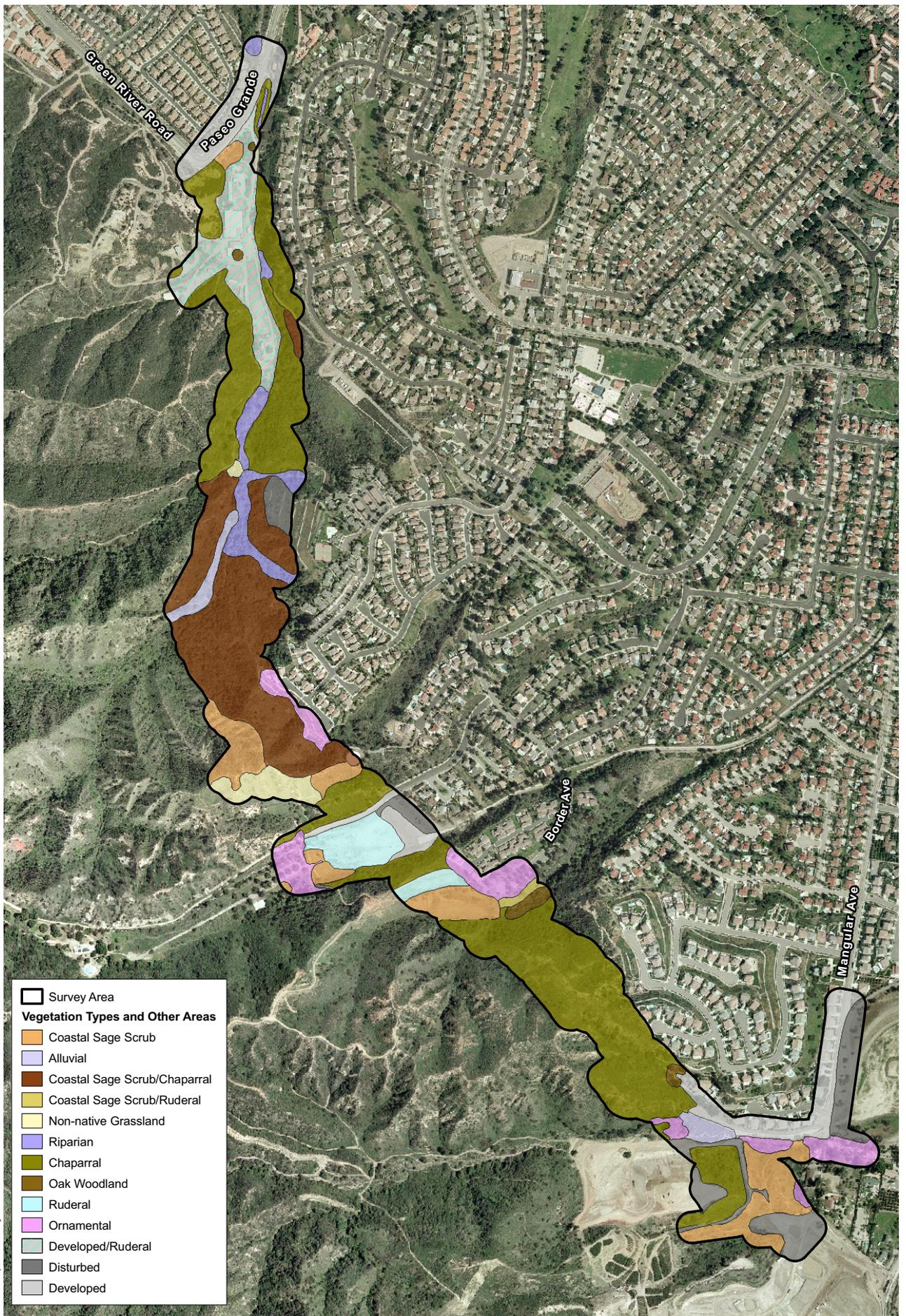
A habitat assessment for burrowing owl (*Athene cunicularia*) was conducted in May 2006 by Mr. Daniels and Ms. Oneal. A focused burrow survey within the area considered to be suitable for the species (i.e., Mabey Canyon debris basin) was conducted by Ms. Oneal and BonTerra Consulting Ecologist Allison Rudalevige in June 2006. Focused surveys were conducted within suitable habitat in the survey area in July and August 2006 by Ms. Oneal with assistance from Ms. Rudalevige, BonTerra Consulting Ecologist Jennifer Pareti, and Intern Beth Cecil. These surveys are tentatively planned to be repeated in Spring/Summer 2008.

Focused surveys for the least Bell's vireo (*Vireo bellii pusillus*) were conducted in the survey area from April to July 2000 by Mr. Leatherman. Surveys were repeated from May to July 2006 by Mr. Daniels and Ms. Oneal. These surveys are tentatively planned to be repeated in Spring/Summer 2008.

A Jurisdictional Delineation was conducted by RBF Consulting in 2006 and was updated in summer 2007 to reflect minor changes in project design.

4.2 VEGETATION

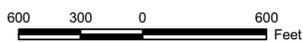
Thirteen vegetation types and other areas occur in the survey area (Exhibit 4; Table 1). Vegetation types and other areas mapped in the survey area include: coastal sage scrub, alluvial, coastal sage scrub/chaparral, coastal sage scrub/ruderal, chaparral, non-native grassland, riparian forest, oak woodland, ruderal, ornamental, developed/ruderal, disturbed, and developed areas. Soil types in the survey area include Cieneba sandy loam, Garretson gravelly very fine sandy loam, Soboba gravelly loamy sand, Yorba gravelly and cobbly sandy loam, Cortina gravelly coarse sandy loam, Perkins gravelly loam, and Terrace escarpments (Exhibit 5).



Biological Resources

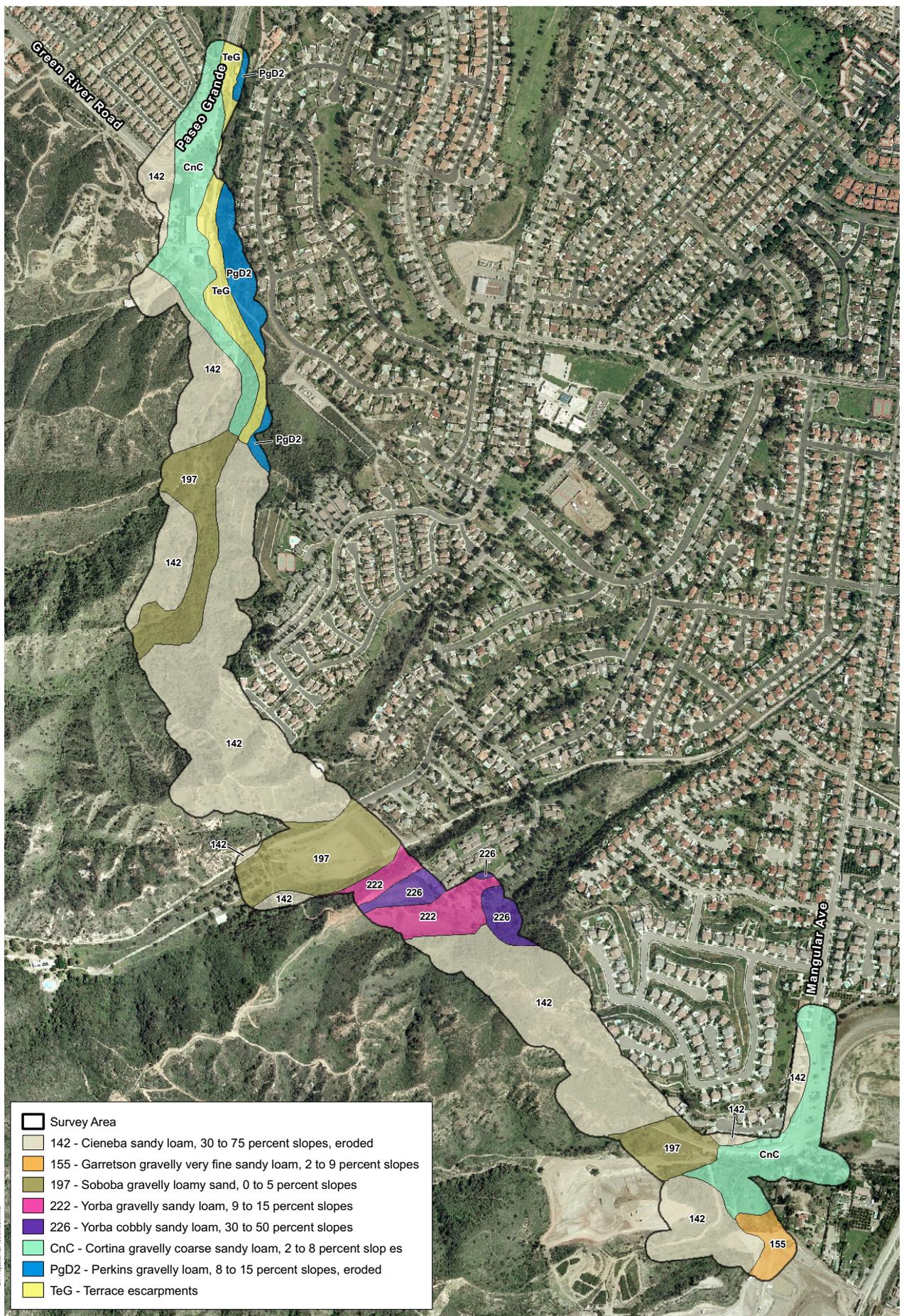
Foothill Parkway Extension, Riverside County, California

Exhibit 4



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- Survey Area
- 142 - Cieneba sandy loam, 30 to 75 percent slopes, eroded
- 155 - Garretson gravelly very fine sandy loam, 2 to 9 percent slopes
- 197 - Soboba gravelly loamy sand, 0 to 5 percent slopes
- 222 - Yorba gravelly sandy loam, 9 to 15 percent slopes
- 226 - Yorba cobbly sandy loam, 30 to 50 percent slopes
- CnC - Cortina gravelly coarse sandy loam, 2 to 8 percent slopes
- PgD2 - Perkins gravelly loam, 8 to 15 percent slopes, eroded
- TeG - Terrace escarpments

Soil Types

Foothill Parkway Extension, Riverside County, California



**TABLE 1
VEGETATION TYPES IN THE SURVEY AREA**

Vegetation Type	Existing (Acres)
Coastal Sage Scrub	14.00
Alluvial	2.67
Coastal Sage Scrub/Chaparral	24.65
Coastal Sage Scrub/Ruderal	0.47
Chaparral	49.36
Non-native Grassland	3.09
Riparian Forest	4.60
Oak Woodland	1.21
Ruderal	5.11
Ornamental	9.37
Developed/Ruderal	10.05
Disturbed	10.39
Developed	13.63
Total	148.60

4.2.1 Coastal Sage Scrub

Coastal sage scrub in the survey area consists of California sagebrush-California buckwheat sage scrub. This vegetation type occurs throughout the survey area in pockets in the chaparral and in isolated patches. This vegetation contains a mix of shrubs and herbaceous species. The dominant native perennial species in the survey area include: California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), orange-bush monkey flower (*Mimulus aurantiacus*), giant wild rye (*Leymus condensatus*), and deerweed (*Lotus scoparius*).

4.2.2 Alluvial

Alluvial areas occur in the middle of the northern half of the survey area and in the southern portion of the survey area. The disturbed Riversidian alluvial fan sage scrub occurs adjacent to the debris basin at the end of Mabey Canyon in the survey area. This area has been previously disturbed by fire suppression and debris basin maintenance. This area is dominated by scale-broom (*Lepidospartum squamatum*) and California buckwheat.

4.2.3 Coastal Sage Scrub/Chaparral

Coastal sage scrub/chaparral vegetation occurs in the northern half of the survey area. The coastal sage scrub/chaparral is a mixture of chaparral with pockets of sage scrub species that are too small to delineate on the vegetation map. This vegetation type includes chamise (*Adenostoma fasciculatum*), hoaryleaf ceanothus (*Ceanothus crassifolius*), laurel sumac (*Malosma laurina*), scrub oak (*Quercus berberidifolia*), California sagebrush, and California buckwheat.

4.2.4 Coastal Sage Scrub/Ruderal

Coastal sage scrub/ruderal vegetation occurs in the central portion of the survey area. This area is directly adjacent to a road and residences; it contains a mixture of sage scrub species, ornamental species and ruderal species. This area is dominated by California sagebrush, rock rose (*Cistus purpureus*), tocalote (*Centaurea melitensis*), and ripgut brome (*Bromus diandrus*).

4.2.5 Chaparral

Chaparral vegetation occurs throughout the survey area, covering much of the southern half of the survey area. This vegetation type is a mix of chaparral species including chamise, hoaryleaf ceanothus, laurel sumac, scrub oak, hairy lilac (*Ceanothus oliganthus*), toyon (*Heteromeles arbutifolia*), sugar bush (*Rhus ovata*), and Our Lord's candle (*Yucca whipplei*).

4.2.6 Non-native Grassland

Non-native grasslands occur in the central and northern portions of the survey area. These areas are dominated by black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), and red brome (*Bromus madritensis*).

4.2.7 Riparian Forest

Riparian forest vegetation occurs in two areas in the northern half of the survey area. These areas include southern cottonwood-willow riparian forest, mule fat scrub, southern coast live oak riparian forest, and California sycamore-coast live oak riparian forest. These vegetation types were combined for the mapping to be consistent with the Western Riverside MSHCP classification system.

The southern cottonwood-willow riparian forest occurs on the western portion of the survey area in Wardlow, Mabey, and Tin Mine canyons. These canyons contain high quality habitat and are contiguous with the Cleveland National Forest property. This vegetation type is co-dominated by Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), narrow-leaved willow (*Salix exigua*), lance-leaved willow (*Salix lucida*), mule fat (*Baccharis salifolia*), and western false indigo (*Amorpha fruticosa*). The active stream channel in this vegetation type is rocky with little vegetation.

Mule fat scrub occurs in the drainage adjacent to the U.S. Forest Service (USFS) road that goes up Tin Mine Canyon in the survey area. It also occurs adjacent to the horse stables in the northern portion of the survey area. This vegetation type is dominated by mule fat with scattered upland species including scale-broom, California sagebrush, and California buckwheat. The banks adjacent to this vegetation type were burned during the fire in fall 1999.

The southern coast live oak riparian forest occurs in the central portion of the survey area in an unnamed drainage adjacent to development. This area is dominated by coast live oak trees

(*Quercus agrifolia*). Other species present in this area include toyon, laurel sumac, and poison oak (*Toxicodendron diversilobium*).

The California sycamore-coast live oak riparian forest occurs in Wardlow Wash in the western portion of the survey area. This vegetation type is adjacent to the intermittent stream that has a rocky bottom. The dominant species are coast live oak and western sycamore (*Platanus racemosa*). The understory is moderate in quality due to disturbance from mountain bikes and horseback riding; it contains western false indigo, mule fat, California brickellbush (*Brickellia californica*), thicketleaf yerba santa (*Eriodictyon crassifolium*), scale-broom, and tarragon (*Artemisia dracuncululus*).

4.2.8 Oak Woodland

Oak woodland vegetation occurs in two small patches in the northern and central portions of the survey area. These areas are dominated by coast live oak. The majority of the coast live oaks in the survey area occur in the riparian forest category (as listed above) per the Western Riverside County MSHCP classification system. The oaks in the oak woodland vegetation type occur in drier upland areas (such as in the stable area or adjacent to a riparian area), and are therefore not a component of the riparian forest described above.

4.2.9 Ruderal

Ruderal vegetation occurs in patches along the alignment, with the largest ruderal area being the existing Mabey Canyon Debris Basin. Species present in ruderal areas include non-native species and weedy native species. In the survey area, these species include tree tobacco (*Nicotiana glauca*), Bermuda grass (*Cynodon dactylon*), telegraph weed (*Heterotheca grandifolia*), black mustard, Russian thistle, red brome, and castor bean (*Ricinus communis*).

4.2.10 Ornamental

Ornamental vegetation occurs in three areas in the southern half of the survey area. These areas include residential areas, green belts, and nurseries. The species present include ornamental pines (*Pinus* sp.), crawling acacia (*Acacia redolens*), California fan palm (*Washingtonia filifera*), and hottentot fig (*Carpobrotus edulis*).

4.2.11 Developed/Ruderal

Developed/ruderal areas occur in the northern portion of the survey area and consist of the horse stable and associated facilities. These areas have permanent buildings, portable trailers, horse corrals, and dirt roads. There is scattered, non-native, weedy vegetation throughout this area. Common species include tree tobacco, telegraph weed, and non-native grasses (*Bromus* spp.).

4.2.12 Disturbed

The area mapped as disturbed occurs at the southern end of the survey area. This area was being graded at the time of the 2006 vegetation mapping. No vegetation was present in these areas during the vegetation mapping.

4.2.13 Developed

Developed areas occur in the central and southern portions of the survey area. These areas consist of the concrete areas in the Mabey Canyon Debris Basin, a concrete-lined channel, existing paved roads, and residential and water district structures.

4.3 WILDLIFE

Wildlife species observed or expected to occur in the survey area are discussed below.

4.3.1 Fish

Most creeks and waterways in southern California are subject to periods of high water flow in winter and spring, while experiencing little to no flow during late summer and fall. The streams in the survey area are ephemeral and flow primarily after periods of rain. No running water and no substantial ponding was observed in the survey area; therefore, no fish species are expected to occur in the survey area.

4.3.2 Amphibians

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Terrestrial species may or may not require standing water for reproduction. These species are able to survive in dry areas by aestivating (i.e., remaining beneath the soil in burrows or under logs and leaf litter, and emerging only when temperatures are low and humidity is high). Many of these species' habitats are associated with water and they emerge to breed once the rainy season begins. Soil moisture conditions can remain high throughout the year in some habitat types, depending on factors such as the amount of vegetation cover, elevation, and slope aspect.

No amphibian species were observed during the surveys. However, the ephemeral streams in the survey area have the potential to support species such as the western toad (*Bufo boreas*) and Pacific treefrog (*Pseudacris [Hyla] regilla*).

4.3.3 Reptiles

Reptilian diversity and abundance typically varies with vegetation type and character. Many species prefer only one or two vegetation types; however, most species will forage in a variety of habitats.

Most species occurring in open areas use rodent burrows for cover, protection from predators, and refuge during extreme weather conditions.

Reptile species observed or expected to occur in most habitats in the survey area include: western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western skink (*Eumeces skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), California whipsnake (*Masticophis lateralis*), gopher snake (*Pituophis catenifer*), common kingsnake (*Lampropeltis getula*), and western rattlesnake (*Crotalus oreganus*).

4.3.4 Birds

A variety of bird species are expected to be residents in the survey area, using the habitats throughout the year. Other species are present only during certain seasons. For example, the white-crowned sparrow (*Zonotrichia leucophrys*) is expected to occur in the survey area during the winter season and will then migrate north in the spring to breed during the summer.

The coastal sage scrub and chaparral vegetation types in the survey area support an avifauna that is comprised of species adapted to dense, low vegetation. Although large numbers of individuals can often be found inhabiting these vegetation types, species diversity is usually low to moderate (depending on the season). A relatively high proportion of the birds breeding in these habitats are year-round residents. Bird species that are common residents of coastal sage scrub and chaparral habitats observed in the survey area include: California quail (*Callipepla californica*), Bewick's wren (*Thryomanes bewickii*), wrenit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), spotted towhee (*Pipilo maculatus*), and California towhee (*Pipilo crissalis*). During the winter months, coastal sage scrub and chaparral vegetation provides habitat for a variety of species that migrate from breeding grounds further north. Winter residents of coastal sage scrub and chaparral habitats observed in the survey area include hermit thrush (*Catharus guttatus*) and white-crowned sparrow.

Riparian habitats are extremely important to birds; these habitats provide food, cover, and breeding habitat for a wide variety of species throughout the year. Species observed that are residents of this habitat in the survey area include mourning dove (*Zenaida macroura*), black-chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltiriparus minimus*), and song sparrow (*Melospiza melodia*). Riparian areas provide important foraging habitat for a large number and variety of passerines (song birds) during spring and fall migration. Migrating passerine species observed in the survey area include Pacific-slope flycatcher (*Empidonax difficilis*), black-throated gray warbler (*Dendroica nigrescens*), Townsend's warbler (*Dendroica townsendi*), and Wilson's warbler (*Wilsonia pusilla*).

The turkey vulture (*Cathartes aura*), a scavenger, was observed in the survey area. Raptors (birds of prey) observed in the survey area include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). These raptors may also nest in the survey area.

4.3.5 Mammals

As with other taxonomic groups, the presence of different vegetation types in the survey area offers mammals a variety of habitats. This variety of habitats, in turn, is expected to support a relatively high diversity and abundance of mammals in the survey area.

Small, ground-dwelling mammals observed in the survey area include California ground squirrel (*Spermophilus beecheyi*) and desert cottontail (*Sylvilagus audubonii*). Other small mammals expected to occur in the survey area include deer mouse (*Peromyscus maniculatus*), California pocket mouse (*Perognathus californicus*), woodrat (*Neotoma* sp.), and pocket gopher (*Thomomys bottae*).

Bats occur throughout most of southern California and may use any portion of the survey area as foraging habitat. The riparian forest and oak woodland vegetation types in the survey area provide potential roosting opportunities. Most of the bats that could potentially occur in the survey area are inactive during the winter and either hibernate or migrate, depending on the species. Bats were incidentally observed foraging over the Mabey Canyon Debris Basin during the burrowing owl evening surveys. Identification of bat species requires equipment to measure the frequency of the calls; therefore, the bats were not identified. However, several bat species would be expected to occur in the survey area including big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), and hoary bat (*Lasiurus cinereus*).

The only large mammal observed in the survey area was mule deer (*Odocoileus hemionus*). Other large mammals, including both herbivores and carnivores, that are expected to occur in the survey area include the coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), common raccoon (*Procyon lotor*), bobcat (*Felis rufus*), and mountain lion (*Puma [Felis] concolor*).

4.3.6 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species (especially the larger and more mobile mammals) will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990). Corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events, such as fire or disease, will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges

in search of food, water, mates, and other necessary resources (Noss 1983; Farhig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

It is important to note that, in a large open space area in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles such as roads and highways, the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

The survey area is bordered to the south and west by the Cleveland National Forest. The areas to the north and east of the proposed road extension are developed. The survey area itself is primarily undeveloped; thus, all drainages (i.e., Wardlow, Mabey, and Tin Mine canyons) and ridgelines would be expected to function as local travel routes for wildlife.

Wardlow Wash would also be expected to function as a regional wildlife corridor between the Cleveland National Forest and Prado Basin. In the survey area (i.e., upstream of Paseo Grande), Wardlow Wash has a wide, uninterrupted connection with the Cleveland National Forest. Downstream of the survey area, the drainage continues north and west until it comes to State Route 91 (SR-91) and State Highway 71 (Corona Expressway). SR-91 is a significant barrier to wildlife movement, but there are two locations where functional wildlife crossings may exist. The first location is the railway crossing that passes under SR-91 where the drainage bends to the west, while the second is near the Corona Expressway. The railway crossing under SR-91 is fairly wide and open, with open space surrounding both sides of the crossing with limited obstruction (i.e., barbed wire fence) on the north side of the freeway and no obstructions on the south. As a result, this railroad undercrossing may serve as a wildlife crossing (especially for some of the larger mammal species).

Barriers to wildlife movement along Wardlow Wash are present north (i.e., downstream) of the survey area. Three streets (Paseo Grande, Serfas Club Drive, and Palisades Drive) cross the wash. All three streets are fairly small and may allow some movement of wildlife over them, although Palisades Drive is substantially elevated. Wardlow Wash crosses under each of these three roads and is open to accommodate wildlife movement. The crossings under Paseo Grande and Serfas Club Drive are six-foot diameter culverts that are probably not large enough for the larger mammal

species such as mountain lion and deer. The adjacent developments may also decrease use of this wash by some wildlife species. Open space along Wardlow Wash is very narrow in stretches, and indirect effects of urban habitats (e.g., night lighting, noise, and general human activity) may reduce the quality of the habitat for wildlife movement.

The Western Riverside MSHCP has not identified Wardlow Wash as a “linkage” for long-term preservation. Fresno Canyon (approximately 1.5 miles west of the survey area) is the closest linkage (Proposed Constrained Linkage 2) identified for preservation in the Western Riverside MSHCP. Fresno Canyon provides a riparian connection between the Prado Basin/Santa Ana River (Existing Core A) and the Cleveland National Forest (Existing Core B).

4.4 SUMMARY OF MSHCP FINDINGS

The MSHCP requires that survey areas be evaluated for a number of factors in order to assess how they meet the criteria identified for conservation in the Western Riverside MSHCP. The survey area is not located within a Cell and is, therefore, not proposed to comprise part of the MSHCP Criteria Area. The Riverside County Integrated Project (RCIP) Report Generator indicated that the survey area must be assessed for other issues, which are addressed below.

4.4.1 Criteria Area/Cores and Linkages

The survey area is not located in an area identified as part of the MSHCP Criteria Area or any areas identified as providing for wildlife movement. The project site is adjacent to the Cleveland National Forest, which is part of the MSHCP Criteria Area.

4.4.2 Riparian/Riverine and Vernal Pools

Riparian/Riverine areas, as defined in Section 6.1.2 of the MSHCP, are “dominated by trees, shrubs, and other vegetation which depend upon soil moisture from a nearby freshwater source.” The survey area contains Riparian/Riverine habitat that would meet this definition.

Vernal pools, also defined in Section 6.1.2 of the MSHCP, are “seasonal wetlands that occur in depression areas that have soils, vegetation and hydrology that would support a vernal pool during the wetter portion of the year, but lack hydrology and/or vegetation during the drier portion of the year.” No areas suitable for vernal pools were observed during the surveys; no soils typical of vernal pools occur in the survey area.

4.4.3 Special Status Plant Species Not Fully Covered by the MSHCP

The RCIP Summary Report Generator indicates that focused plant surveys are not required for Narrow Endemic or Criteria Area plant species. Although special status plant surveys are not currently required, the intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) and Coulter’s matilija poppy (*Romneya coulteri*) were detected during previous survey efforts. Four small populations (between two and nine individuals) of intermediate mariposa lily and a few populations

of matilija poppy were observed in the survey area in 2006 (Exhibit 6). These species are not covered by the MSHCP until their species-specific objectives are met. These objectives include preservation of a certain number of localities of these species.

4.4.4 Special Status Riparian/Riverine Bird Species

Suitable habitat for the least Bell's vireo is present in the survey area; however, habitat is not considered extensive enough to support the southwestern willow flycatcher (*Empidonax traillii extimus*). Focused surveys for the least Bell's vireo were conducted in spring/summer 2006 and the species was determined to be absent from the survey area. Therefore, the least Bell's vireo and southwestern willow flycatcher are absent from the survey area. A focused survey for least Bell's vireo is tentatively scheduled for Spring/Summer 2008 to confirm the absence of this species.

4.4.5 Additional Survey Needs Species

The survey area is located within the additional survey area for the burrowing owl. Suitable habitat for burrowing owl is present within the Mabey Canyon Debris Basin portion of the survey area. Focused surveys for burrowing owl were conducted in spring/summer 2006 and determined that burrowing owl was absent from the survey area. This survey is tentatively scheduled to be repeated in Spring/Summer 2008 to confirm the absence of this species. A pre-construction survey will also be conducted prior to project construction to confirm the absence of this species.

4.4.6 Urban/Wildlands Interface

The Cleveland National Forest is adjacent to the western boundary of the survey area. Potential indirect impacts are discussed in Section 5.4 below. It should be noted that the proposed project will follow the guidelines discussed in Section 7.5.3 of the Western Riverside MSHCP in order to minimize indirect impacts on adjacent habitat areas during construction.

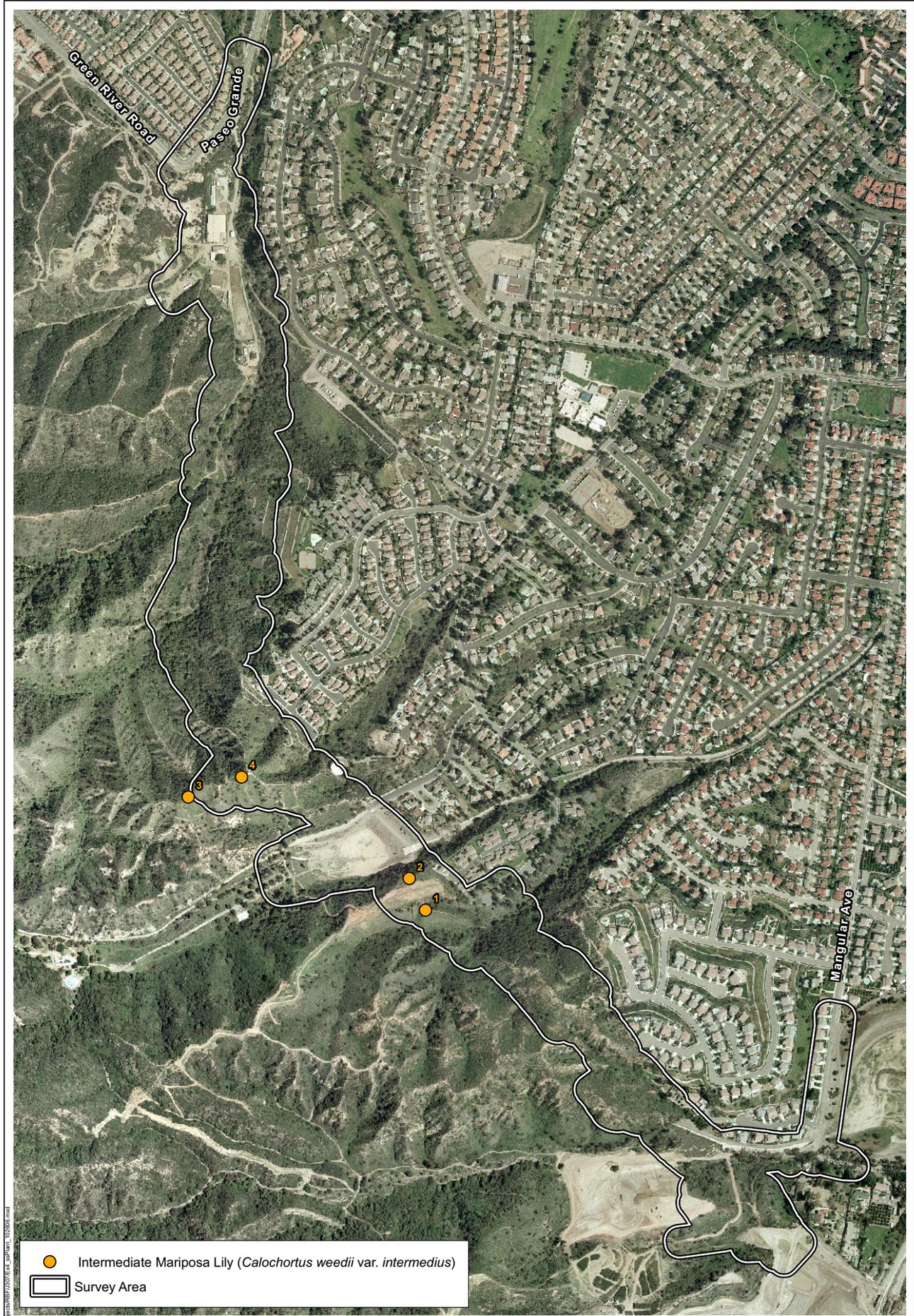
4.4.7 Public/Quasi-public Lands

The survey area includes public/quasi-public lands within the Mabey Canyon Debris Basin and Kroonen channel, which are owned by the Riverside County Flood Control and Water Conservation District.

5.0 QUANTIFICATION OF UNAVOIDABLE IMPACTS TO RIPARIAN/RIVERINE RESOURCES

5.1 APPROACH TO THE ANALYSIS

The determination of impacts in this analysis is based on a comparison of maps depicting project grading limits and maps of biological resources in the survey area. All construction activities, including staging and equipment areas, are assumed to be within the limits of grading identified on Exhibit 7. Should any of the impact areas extend beyond the limits shown, additional analysis would be required. Both direct and indirect impacts on biological resources have been evaluated. Direct

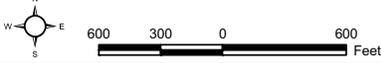


Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*)
 Survey Area

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Special Status Plant Species Locations
 Foothill Parkway Extension, Riverside County, California

Exhibit 6



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impacts are those that involve the initial loss of habitats due to grading, construction, and construction-related activities. Indirect impacts are those that would be related to impacts on the adjacent remaining habitat due to construction activities (e.g., noise, dust) or operation of the project (e.g., human activity, indirect lighting).

Biological impacts on Riparian/Riverine resources were evaluated with respect to the requirements of Section 6.1.2 of the Western Riverside MSHCP. The proposed project's impact on U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFG jurisdictional resources was also evaluated.

5.2 DIRECT IMPACTS

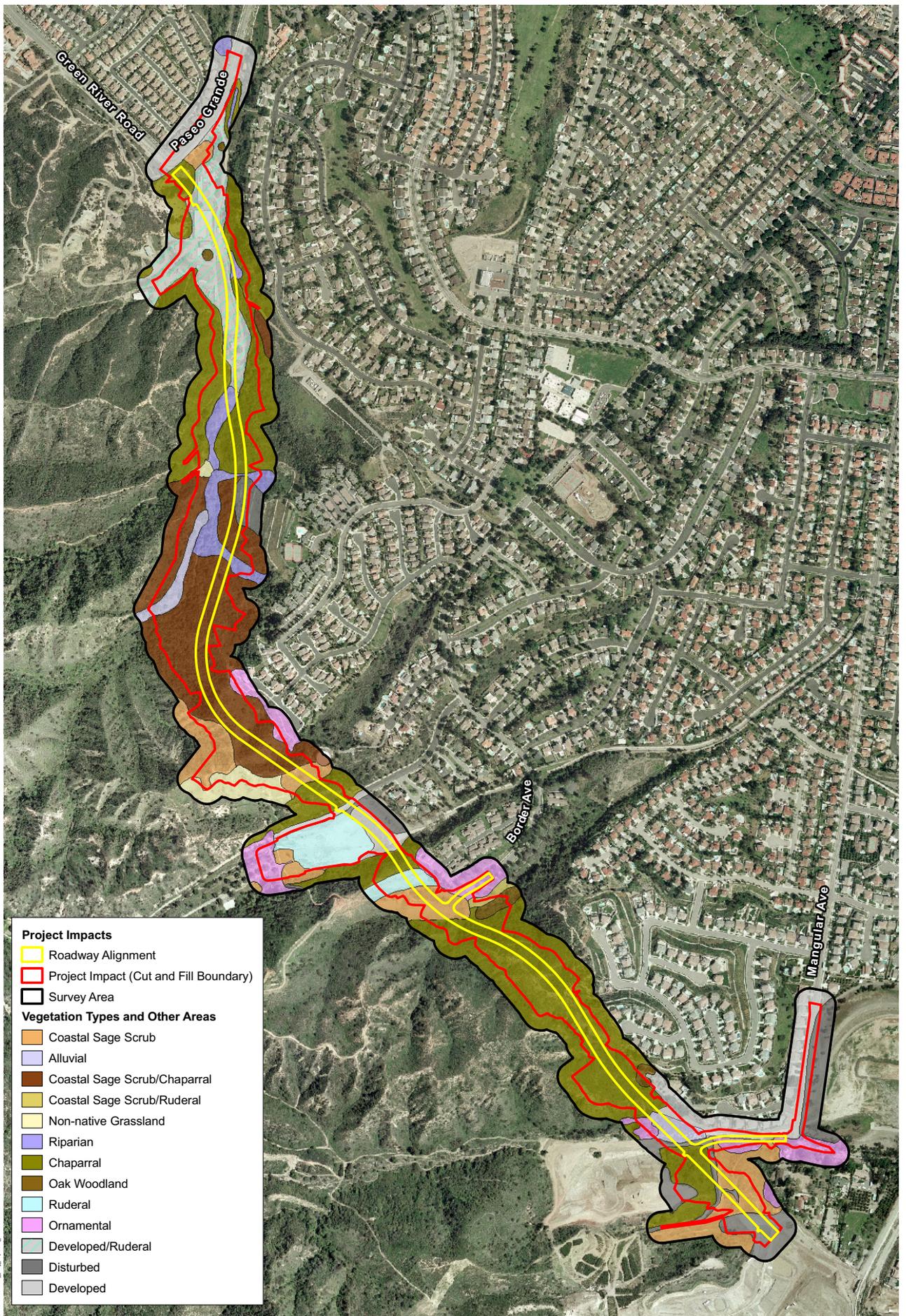
Approximately 79.38 acres of native and non-native vegetation types and other areas would be impacted by the proposed project (Table 2, Exhibit 7). Only Riparian/Riverine areas will be discussed in this report. A complete discussion of impacts on other vegetation types and associated resources is included in the Biological Technical Report (BonTerra Consulting 2007).

**TABLE 2
VEGETATION IMPACTS OF THE PROPOSED PROJECT**

Vegetation Type	Existing (Acres)	Impact (Acres)	Remaining (Acres)
Coastal Sage Scrub	14.00	7.25	6.75
Alluvial	2.67	2.42	0.25
Coastal Sage Scrub/Chaparral	24.65	15.89	8.76
Coastal Sage Scrub/Ruderal	0.47	0.15	0.32
Chaparral	49.36	24.17	25.19
Non-native Grassland	3.09	1.21	1.88
Riparian Forest	4.60	3.62	0.98
Oak Woodland	1.21	0.66	0.55
Ruderal	5.11	4.81	0.30
Ornamental	9.37	2.71	6.66
Developed/Ruderal	10.05	7.83	2.22
Disturbed	10.39	3.96	6.43
Developed	13.63	4.70	8.93
Total	148.60	79.38	69.22

5.2.1 Riparian/Riverine Vegetation Types

The proposed project would impact 3.62 acres of riparian forest vegetation, which is 79 percent of the riparian forest vegetation present in the survey area. Riparian vegetation is generally considered a special status vegetation type because it provides high quality habitat for many native plant and wildlife species. In addition, it provides functions and values that contribute to habitat quality downstream that may be occupied by special status species. Impacts on riparian vegetation would be considered significant. Riparian areas and their associated streambeds are also under the jurisdiction of the USACE, RWQCB, and CDFG. A total of 4.63 acres (3.01 acres temporary; 1.62



Project Impacts

- ▬ Roadway Alignment
- ▬ Project Impact (Cut and Fill Boundary)
- Survey Area

Vegetation Types and Other Areas

- Coastal Sage Scrub
- Alluvial
- Coastal Sage Scrub/Chaparral
- Coastal Sage Scrub/Ruderal
- Non-native Grassland
- Riparian
- Chaparral
- Oak Woodland
- Ruderal
- Ornamental
- Developed/Ruderal
- Disturbed
- Developed

Project Impacts
 Foothill Parkway Extension, Riverside County, California



acres permanent) of “waters of the U.S.” under the jurisdiction of USACE would be impacted by the proposed project (RBF Consulting 2007). A total of 4.66 acres (3.01 acres temporary; 1.65 acres permanent) under the jurisdiction of the RWQCB would be impacted by the proposed project (RBF Consulting 2007). A total of 9.77 acres (3.01 acres temporary; 6.76 acres permanent) of streambeds under the jurisdiction of CDFG would be impacted by the proposed project (RBF Consulting 2007). Implementation of Mitigation Measure #1 from the Biological Technical Report would reduce impacts on riparian vegetation to a less than significant level.

Impacts on native trees within the riparian forest vegetation type would be considered significant. Implementation of Mitigation Measures #1 and #2 from the Biological Technical Report would reduce the impact on native trees to a less than significant level.

5.2.2 General Habitat Loss and Wildlife Loss

Construction of the proposed project would result in the loss of approximately 54.16 acres of native habitat that provide valuable nesting, foraging, roosting, and denning opportunities for a wide variety of wildlife species. In addition, implementation of the proposed project would result in the loss of 20.52 acres of non-native habitats that provide lower quality wildlife habitat. However, these non-native habitats provide nesting, foraging, roosting, and denning opportunities for some species.

Removing or altering habitats in the survey area would result in the loss of small mammals, reptiles, amphibians, and other slow-moving animals that live in the proposed project’s direct impact area. More mobile wildlife species that are now using the project site would be forced to move into the remaining areas of open space, which would consequently increase competition for available resources in those areas. This situation would result in the loss of individuals that cannot successfully compete.

The loss of native and non-native habitats that provide wildlife habitat is considered an adverse impact. However, the project site has not been identified as an area to be conserved by the MSHCP (i.e., it is not located within the MSHCP Criteria Area). Therefore, impacts resulting from the loss of wildlife habitat are considered adverse, but fully mitigated by the City of Corona’s participation in the MSHCP and no mitigation would be required.

5.2.3 Wildlife Movement and Habitat Fragmentation

The project site is bordered to the south and west by the Cleveland National Forest. The areas to the north and east of the proposed road extension are developed. The proposed project would extend a road along the edge of existing and proposed development. The proposed project would remove local travel routes within the direct impact area; however, few native habitat areas would be located northeast of the proposed alignment. Therefore, the proposed project would not be expected to substantially impact wildlife movement along local travel routes. In addition, there are several local travel routes remaining to the southwest of the alignment. Therefore, impacts on local wildlife movement would be considered less than significant and no mitigation would be required.

Wardlow Wash is expected to function as a regional wildlife corridor between the Cleveland National Forest and Prado Basin. The Western Riverside MSHCP has not identified Wardlow Wash for long-term preservation as a “linkage.” Therefore, impacts on wildlife movement along Wardlow Wash are considered adverse, but fully mitigated by the City of Corona’s participation in the MSHCP. Therefore, no mitigation would be required. However, it is recommended that the culvert conveying water from Wardlow Wash under Paseo Grande remain large enough to allow for the continued movement of wildlife species. The existing eight-foot culvert is sufficient for the movement of medium-sized wildlife. This recommendation is included as Recommendation #1 from the Biological Technical Report.

5.2.4 Special Status Plant Species Not Fully Covered by the MSHCP

The intermediate mariposa lily was observed during the 2000 and 2006 focused surveys. Four small populations (between two and nine individuals) of intermediate mariposa lily were observed in the survey area in 2006. Impacts on this California Native Plant Society (CNPS) List 1B species would be considered significant under the California Environmental Quality Act (CEQA). This species is not covered by the MSHCP until its species-specific objectives are met. These objectives include preservation of a certain number of localities of this species, which includes the populations known from the Sierra Peak area (Dudek 2003). Implementation of Mitigation Measure #3 from the Biological Technical Report would reduce impacts on intermediate mariposa lily to a less than significant level.

A few populations of Coulter’s matilija poppy were observed in the central portion of the project site. Although it is considered a special status species (CNPS List 4), impacts on this species often do not typically meet the significance criteria under CEQA. However, this species is not covered by the MSHCP until its species specific objectives are met; therefore, the City of Corona considers impacts on this species significant (Coletta per. comm. 2006). Impacts on Coulter’s matilija poppy would be reduced to a less than significant level with the implementation of Mitigation Measure #3 from the Biological Technical Report.

5.2.5 Special Status Riparian/Riverine Bird Species

Southwestern willow flycatcher is not expected to occur in the survey area because the riparian forest habitat is not extensive enough to support this species. Therefore, there would be no impact on this species and no mitigation would be required.

Although suitable habitat is present in the survey area, least Bell’s vireo would not be expected to occur in the survey area due to lack of detection during the 2000 and 2006 focused surveys. If this species is not detected during the 2008 focused surveys there would be no impact on these species and no mitigation would be required. If the least Bell’s vireo is detected during the 2008 surveys, the impact on this species would be considered significant. Implementation of Mitigation Measure #4 from the Biological Technical Report would reduce this impact to a less than significant level.

5.2.6 Additional Survey Needs Species

Although suitable habitat is present, burrowing owl was determined to be absent from the survey area because it was not detected during the 2006 focused surveys. However, the survey area is located within the additional survey area for this species and suitable habitat is present; therefore, burrowing owl may move into the survey area prior to the start of construction. Any impact on an active burrowing owl burrow would be considered a potentially significant impact. Therefore, focused surveys for this species are tentatively scheduled to be repeated in Spring/Summer 2008 to confirm the absence of this species. In addition a survey for burrowing owl would be required to confirm absence of this species from the project impact area prior to construction. Implementation of Mitigation Measure #5 from the Biological Technical Report would be required to reduce this potential impact to a less than significant level.

5.3 IMPACT ON RIPARIAN/RIVERINE FUNCTIONS AND VALUES

Portions of Wardlow Wash and Mabey Canyon drainage are in the survey area; multiple unnamed blueline streams also enter the survey area from canyons to the west in the Cleveland National Forest. Drainage from upland areas east of the survey area are almost entirely from residential development, while drainage from upland areas west of the survey area are almost entirely from natural areas within the Cleveland National Forest. In general, the drainages in the survey area are located within a natural setting, though the Mabey Canyon Debris Basin has been disturbed by flood maintenance activities. Downstream of the survey area, Wardlow Wash is natural, though it is constrained by development to both the east and west. The drainage in Mabey Canyon ends at the debris basin, with development downstream of the survey area. Areas downstream of Kroonen Channel would also be characterized as developed. Wardlow Wash is the only drainage in the survey area that provides a continuous aboveground connection to the Santa Ana River.

The proposed project includes a substantial amount of grading and recontouring of the topography that would substantially alter the hydrology of the survey area. Following project implementation, the drainage for the proposed road would be located under a trail to the west of the proposed road. A low-flow swale will follow the trail at the base of the fill slope. The swale will be approximately ten feet wide and would be vegetated with native species.

The drainages in the survey area are ephemeral, carrying water only after rain events. Currently, the drainages function to provide storage for flood waters. The proposed project would remove the natural drainage and place it in a storm drain system. Project design would retain the flood capacity of the drainages. Mabey Canyon Debris Basin would remain in the survey area; thus, the sediment retention capacity of the survey area would be expected to remain at its current capacity. Therefore, the project's impact on flood flow is expected to be less than significant.

The existing riparian forest vegetation currently provides nutrient and toxic trapping that improves water quality. The removal of 3.62 acres of riparian forest vegetation would permanently reduce the nutrient and toxic-trapping functions within the drainage. Some of the nutrient and toxic-trapping

functions would be restored with the installation of native vegetation along the swale at the base of the road. However, the loss of riparian forest vegetation is considered significant.

Currently, there is a trail along Wardlow Wash allowing public access to Wardlow Canyon and the Cleveland National Forest. The proposed project includes trail improvements to allow continued access to Wardlow Canyon.

The proposed project would remove 3.62 acres of riparian forest vegetation that provides valuable nesting and foraging habitat for native wildlife species. However, riparian bird species listed in Section 6.1.2 of the MSHCP are considered absent from the survey area at this time. The least Bell's vireo is currently considered absent due to lack of detection during focused surveys and the southwestern willow flycatcher is not expected to occur because the riparian habitat is not extensive enough to support this species.

5.4 URBAN/WILDLANDS INTERFACE (INDIRECT IMPACTS)

Indirect impacts are addressed by guidelines in Section 6.1.4 of the Western Riverside MSHCP. Development in proximity to the Western Riverside MSHCP Criteria Area may result in edge effects that could adversely affect biological resources acquired to assemble the MSHCP Reserve. To minimize these edge effects, the Western Riverside MSHCP provides guidelines for these indirect impacts. The Cleveland National Forest is located adjacent to the survey area to the west and south of the survey area. This natural open space provides habitat for plant and wildlife species that may be indirectly impacted by the proposed project. Indirect impacts on biological resources are discussed below.

5.4.1 Urban and Stormwater Runoff (Drainage)

Impacts on biological resources in the vicinity of the survey area could occur as a result of changes in water quality. During construction, runoff carrying excessive silt or petroleum residues from construction equipment could potentially impact water quality and, in turn, affect plant and wildlife species using the habitats adjacent to the proposed project. During operation, runoff carrying petroleum residues from vehicles using the proposed alignment could also potentially impact water quality and associated species. Impacts on drainage would be considered potentially significant. These impacts would be reduced to a less than significant level with incorporation of Mitigation Measure #7 of the Biological Technical Report.

5.4.2 Toxic Material

The proposed project would not use toxic chemicals or generate toxic byproducts. Therefore, there would be no impacts as a result of the proposed project, and no mitigation would be required.

5.4.3 Lighting

Lighting of the proposed alignment would be limited to proposed intersections. Some night lighting may also be used during construction of the proposed project. This lighting would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife adjacent to these areas. Of greatest concern are the effects on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. In addition, night lighting could deter wildlife movement adjacent to the proposed alignment and could inhibit wildlife from using the habitat adjacent to lighted areas. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #8 of the Biological Technical Report would reduce this impact to a less than significant level.

5.4.4 Noise

Noise levels on the project site would substantially increase over present levels during construction of the proposed project. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. In addition, noise impacts would also increase over present levels when the land use is converted from open space to a road. Wildlife species stressed by noise may disperse from the habitat in the vicinity of the proposed alignment. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #9 of the Biological Technical Report would reduce this impact to a less than significant level.

5.4.5 Trash/Debris

Construction activities could introduce trash or other construction material debris into the survey area. Construction Minimization Measures (Section 7.5.3 of the Western Riverside MSHCP; Mitigation Measure #12 of the Biological Technical Report) prohibit depositing trash on native habitat.

5.4.6 Exotic Plant and Animal Infestations

The proposed project includes landscaping adjacent to the proposed road and may include the planting of ornamental species, some of which are invasive. Seeds from invasive species may escape to natural areas and degrade the native vegetation. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #10 of the Biological Technical Report would reduce this impact to a less than significant level.

The proposed project would not create new areas of permanent water, therefore, it would not increase the likelihood of an exotic fish or amphibian infestation. The new roadway is an extension of existing development rather than an introduction of new development; therefore, it would not be expected to introduce non-native mammal or bird populations though it may bring them closer to the

natural areas in the Cleveland National Forest than they currently inhabit. This impact would be considered adverse, but is expected to be less than significant with the City's participation in the Western Riverside MSHCP. Therefore, no mitigation would be required.

5.4.7 Dust

Vegetation clearing activities, grading, and other construction activities may generate dust that could settle on the leaves of trees, shrubs, and herbs. The respiratory function of the plants in the adjacent areas could be impaired if dust accumulation is excessive. These impacts would be reduced to a less than significant level with incorporation of Construction Minimization Measures (Section 7.5.3 of the Western Riverside MSHCP; Mitigation Measure #12 of the Biological Technical Report).

5.4.8 Trampling and Unauthorized Recreational Use (Barriers)

The proposed project would increase human activity along the proposed road; this may include unauthorized public access to adjacent natural areas or illegal dumping. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #11 of the Biological Technical Report would reduce this impact to a less than significant level.

5.4.9 Grading/Land Development

The proposed project has been designed to avoid grading into the Cleveland National Forest (within the MSHCP Conservation Area). Therefore, there would be no impact as a result of grading and/or land development; no mitigation would be required.

5.4.10 Construction Impacts

Construction of the proposed project may result in several indirect impacts on biological resources. These impacts could include increased runoff that may: affect water quality, increase dust accumulation on surrounding vegetation, impact nesting birds, increase fire danger, and spread exotic species. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #12 of the Biological Technical Report would reduce this impact to a less than significant level.

5.4.11 Public/Quasi-public Lands

Public/quasi-public lands are lands within public or private ownership that are expected to be managed for open space value and/or in a manner that contributes to the conservation of covered species. The proposed project would impact 8.3 acres of public/quasi-public lands within the Mabey Canyon Debris Basin and Kroonen channel, which are owned by the Riverside County Flood Control and Water Conservation District. This impact would be considered a potentially significant impact on the assembly of the MSHCP Reserve, and would require purchase and dedication of an equivalent amount of land into the MSHCP Reserve per Section 7.2.2 of the MSHCP. Implementation of

Mitigation Measure #13 of the Biological Technical Report would reduce this impact to a less than significant level.

6.0 MITIGATION AND MINIMIZATION MEASURES

The City of Corona is a participant in the MSHCP. As such, impacts on special status species covered by the MSHCP are considered fully mitigated by the City's participation in the MSHCP. This section addresses mitigation that is not covered by the MSHCP and measures that are required by the MSHCP. The Mitigation Measures and Recommendation below are applicable measures from the Biological Technical Report that mitigate impacts on Riparian/Riverine resources and other resources not covered by the MSHCP. Numbering for mitigation measures follows numbering in the Biological Technical Report to facilitate cross-referencing.

Mitigation Measure #1 – Riparian

The City of Corona will obtain all appropriate permits for impacts on USACE and CDFG jurisdictional areas. Mitigation for the loss of jurisdictional areas will consist of restoration of riparian habitat at no less than a 2:1 ratio to ensure no net loss of habitat. Native trees within the riparian habitat will be replaced as follows per the City (Coletta 2008): coast live oak 4:1; sycamore 3:1; cottonwood 3:1; willow 2:1; and scrub oak 2:1. Prior to issuance of a grading permit, a detailed restoration program will be prepared for approval by the USACE and CDFG with the following items:

- ***Responsibilities and qualifications of the personnel to implement and supervise the plan.*** The responsibilities of the landowner, specialists, and maintenance personnel that would supervise and implement the plan will be specified.
- ***Site selection.*** The site for the mitigation will be determined in coordination with the City of Corona and the resource agencies. The site will either be located on the project site in a dedicated open space area or land will be purchased off the site.
- ***Site preparation and planting implementation.*** The site preparation will include: (1) protection of existing native species, (2) trash and weed removal, (3) native species salvage and reuse (i.e., duff), (4) soil treatments (i.e., imprinting, decompacting), (5) temporary irrigation installation, (6) erosion control measures (i.e., rice or willow wattles), (7) seed mix application, and (8) container species.
- ***Schedule.*** A schedule will be developed which includes planting to occur in late fall and early winter (between October 1 and January 30).
- ***Maintenance plan guidelines.*** The maintenance plan will include: (1) weed control, (2) herbivory control, (3) trash removal, (4) irrigation system maintenance, (5) maintenance training, and (6) replacement planting.
- ***Monitoring plan.*** The monitoring plan will include: (1) qualitative monitoring (i.e., photographs and general observations), (2) quantitative monitoring (i.e., randomly

placed transects), (3) performance criteria as approved by the resource agencies, (4) monthly reports for the first year and reports every other month thereafter, and (5) annual reports for five years, which will be submitted to the resource agencies on an annual basis. The site will be monitored and maintained for five years to ensure successful establishment of riparian habitat within the restored and created areas.

- **Long-term preservation.** Long-term preservation of the site will also be outlined in the conceptual mitigation plan to ensure the mitigation site is not impacted by future development.

In addition, the City of Corona will provide this DBESP Report to the (WRC RCA) for review. The WRC RCA will review the project for consistency with Section 6.1.2 of the MSHCP (i.e., Riparian/Riverine).

Mitigation Measure #2 – Native Trees

A native tree survey will be prepared to quantify the impacts on coast live oak trees that would be impacted by the proposed project as well as the impacts on native trees within riparian areas. A Native Tree Report with the health, diameter of breast height, and canopy diameter of each tree within the impact area will be submitted to the City of Corona prior to issuance of a grading permit. The report will also outline the mitigation requirements for removal of native trees. The mitigation plan will include the following measures:

- Prior to grading, orange snow fencing will be installed around trees (outside the dripline) that would not be impacted by construction. Fencing will be in place and inspected by a qualified Biological Monitor prior to commencement of grading. This fencing will remain in place throughout the entire period of construction and will be periodically checked by the Biological Monitor.
- For each native tree removed, trees will be replaced at a ratio determined by the City of Corona (Table 3).

**TABLE 3
NATIVE TREE MITIGATION REQUIRED BY THE CITY OF CORONA**

Species	Total
(<i>Quercus agrifolia</i>) Coast live oak	4:1
(<i>Quercus berberidifolia</i>) Scrub oak	2:1
(<i>Platanus racemosa</i>) California sycamore	3:1
(<i>Populus fremontii</i>) Fremont cottonwood	3:1
(<i>Salix goodingii</i>) Black willow	2:1

- c. The Landscape Architect will design the replacement trees into the riparian revegetation to replace the habitat value of the woodlands and trees removed by the proposed project. At least 4.28 acres of replacement habitat will be planted to compensate for the loss of riparian and oak woodland habitat. The planting plan will be reviewed by a qualified Biologist and to ensure that the replacement trees are located in such a way to provide comparable habitat quality.
- d. All replacement trees should be located in the riparian and oak woodland revegetation areas if possible. If spacing requirements cannot accommodate the number of replacement trees, the trees may be planted adjacent to the proposed road as a transition to open space.
- e. Planting specification will consider the following:
- Newly planted trees will be planted above grade and maintained for five years (including irrigation, weed control, herbivore protections, and replacement).
 - Amending the backfill soil with wood shavings, oak leaf-mold, etc. is not recommended when the existing soil is high in natural organic matter with a sandy loam texture.
 - Recommendations for the need of planting amendments and drainage systems will be based on soil tests of this project and approved by the City of Corona.
 - Any City-approved work within the driplines of saved trees, including branch removal, will be under the inspection of a qualified Arborist.
 - Landscaping requiring irrigation will not be planted within the dripline of oaks due to the susceptibility of native oaks to root rot caused by excessive unseasonable irrigation. The design and installation of landscape irrigation systems outside the dripline of the oaks will be such that the area within the dripline is not wetted during operation of the system. In addition, surface runoff from impermeable surfaces will be directed away from oaks; where natural topography has been altered, provisions should be made for drainage away from the trunks of oaks so that water will not pond or collect within the dripline of any oak.

Mitigation Measure #3 – Special Status Plant Species

A pre-construction survey during the peak flowering period for the intermediate mariposa lily and Coulter's matilija poppy (approximately March through June) will be conducted by the Project Biologist. The limits of each plant location within the impact area will be clearly delineated with lath and brightly colored flagging.

The plants will be will be mitigated by transplantation (for matilija poppy), bulb collection (for mariposa lily), and seed collection (for both matilija poppy and mariposa lily). The plants, seeds, or

bulbs will then be placed into a suitable mitigation site in the undeveloped portion of the project site or at an approved off-site location. A qualified Biologist will be selected by the applicant to prepare and implement the Mitigation Plan. The detailed Mitigation Plan will include the following requirements and be approved by the City of Corona prior to issuance of the grading permit:

- The existing locations of lilies and poppies will be monitored every two weeks by the Project Biologist to determine when the seeds are ready for collection. A qualified Seed Collector will collect all of the seeds from the plants to be impacted when the seeds are ripe. The seeds will be cleaned and stored by a qualified nursery or institution with appropriate storage facilities.
- Following the seed collection, the bulbs/plants will be removed by the bulb/plant collection or block transplantation method. The bulbs/plants will either be transplanted directly or stored by a qualified nursery or institution with appropriate storage facilities. If the bulbs/plants are collected and the block transplantation method is not used, then the top 12 inches of topsoil from the lily/poppy locations will be scraped, stockpiled, and used at the selected mitigation site.
- The mitigation site will be located in dedicated open space on the project site or at an off-site mitigation site. The mitigation site should not attempt to enhance existing populations and will not be impacted by any pesticides or herbicides used on adjacent properties.
- The lily/poppy mitigation site will be prepared for seeding as described in a conceptual restoration plan.
- The topsoil will be respread in the selected location as approved by the Project Biologist. Approximately 60 percent of the seeds and bulbs/plants collected will be spread/placed in the fall following soil preparation. Forty percent of the seed and bulbs/plants will be kept in storage for subsequent seeding, if necessary.
- A detailed Maintenance and Monitoring Plan will be developed by a qualified Biologist. The plan will include detailed descriptions of maintenance appropriate for the mitigation site, monitoring requirements, and annual report requirements; it will have the full authority to suspend any operation in the study area which is (in the qualified Biologist's opinion) not consistent with the restoration plan. Any disputes regarding the consistency of an action with the restoration plan will be resolved by the City of Corona and the Biologist.
- The performance criteria developed in the Maintenance and Monitoring Plan and approved by the City of Corona. The performance criteria should also include percent cover, density, and seed production requirements. These criteria will be developed by the Project Biologist following habitat analysis of an existing high quality lily population. This information will be recorded by a qualified Biologist.

- If the germination goal is not achieved following the first season, remediation measures will be implemented prior to seeding with the remaining 40 percent of seed and bulbs. Remedial measures will include at a minimum: soils testing, control of invasive species, soil amendments, and physical disturbance (to provide scarification of the seed) of the planted areas by raking or similar actions. Additional mitigation measures may be suggested as determined appropriate by the Project Biologist.
- Potential seed sources from additional donor sites will also be identified in case it becomes necessary to collect additional seed for use on the site following the performance of remedial measures.

Mitigation Measure #4 – Least Bell's Vireo

Focused surveys will be conducted during the Spring/Summer 2008 breeding season to confirm the absence of this species from the impact area. If this species is not detected during the surveys, no additional mitigation would be required. If this species is determined to be present, the habitat creation included in Mitigation Measure #1 will be required to mitigate for impacts on the least Bell's vireo. In addition, the following conditions will apply:

- Vegetation clearing activities will occur during the non-breeding season (September 16 to March 14).
- Survey results will be provided to the USACE and CDFG for consideration during jurisdictional permitting.
- Survey results will be provided to the WRC RCA for review and comment.

Mitigation Measure #5 – Burrowing Owl

Focused surveys for the burrowing owl will be conducted in Spring/Summer 2008 to confirm the absence of this species within the impact area. If this species is detected during the 2008 focused surveys, the City will follow Mitigation Guidelines for this species within the MSHCP.

Pursuant to Objective 6 for burrowing owl in the MSHCP, a pre-construction burrowing owl survey will be conducted prior to issuance of a grading permit to verify the presence or absence of the owl on the project site. This survey will be required regardless of whether the species is detected during the 2008 focused surveys. Seven days prior to the onset of construction activities, a qualified Biologist will survey within 500 feet of the project site for the presence of any active owl burrows. Any active burrow found during survey efforts will be mapped on the construction plans. If no active burrows are found, no further mitigation would be required. Results of the surveys will be provided to the City of Corona.

If nesting activity is present at an active burrow, the active site will be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the *California Fish and Game Code*.

Nesting activity for burrowing owl in the region normally occurs between March and August. To protect the active burrow, the following restrictions to construction activities will be required until the burrow is no longer active (as determined by a qualified Biologist): (1) clearing limits will be established within a 500-foot buffer around any active burrow, unless otherwise determined by a qualified Biologist and (2) access and surveying will be restricted within 300 feet of any active burrow, unless otherwise determined by a qualified Biologist. Any encroachment into the buffer area around the active burrow will only be allowed if the Biologist determines that the proposed activity will not disturb the nest occupants. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest.

If an active burrow is observed during the non-nesting season, the nest site will be monitored by a qualified Biologist; when the raptor is away from the nest, the Biologist will either actively or passively relocate the burrowing owl based on direction from the WRC RCA. The Biologist will then remove the burrow so the burrowing owl cannot return to the burrow.

Mitigation Measure #7 – Drainage

Proposed developments in proximity to the MSHCP Conservation Area will incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures will be put in place to avoid the discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Stormwater systems will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. This can be accomplished using a variety of methods including natural detention basins, grass swales, or mechanical trapping devices. Regular maintenance will occur to ensure effective operations of runoff control systems.

Mitigation Measure #8 – Night Lighting

Night lighting will be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. Shielding will be incorporated in project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased.

Mitigation Measure #9 – Noise

Proposed noise generating land uses affecting the MSHCP Conservation Area will incorporate setbacks, berms, or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards.

Mitigation Measure #10 – Invasives

When approving landscape plans for proposed landscaping adjacent to the MSHCP Conservation Area, Permittees will consider the invasive, non-native plant species listed in the MSHCP and will require revisions to landscape plans (subject to the limitations of their jurisdiction) to avoid the use of invasive species for the landscaping adjacent to the MSHCP Conservation Area. Considerations in reviewing the applicability of this list will include proximity of planting areas to the MSHCP Conservation Areas, species considered in the planting plans, resources being protected within the MSHCP Conservation Area (and their relative sensitivity to invasion), and barriers to plant and seed dispersal (such as walls, topography and other features).

Mitigation Measure #11 – Barriers

Where appropriate, barriers will be placed in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in the MSHCP Conservation Area. Such barriers may include native landscaping, rocks and/or boulders, fencing, walls, signage and/or other appropriate mechanisms.

Mitigation Measure #12 – Construction Minimization Measures

The following Construction Minimization Measures (Section 7.5.3 of the MSHCP) will be implemented during project construction to minimize impacts on biological resources during construction:

- Plans for water pollution and erosion control will be prepared for all discretionary projects involving the movement of earth in excess of 50 cubic yards. The plans will describe sediment and hazardous materials control, dewatering or diversion structures, fueling and equipment management practices, and use of plant material for erosion control. Plans will be reviewed and approved by the County of Riverside and any participating jurisdiction prior to construction.
- Timing of construction activities will consider seasonal requirements for breeding birds and migratory non-resident species. Habitat clearing will be avoided during species' active breeding season (defined as March 1 to June 30).
- Sediment and erosion control measures will be implemented until such time soils are determined to be successfully stabilized.
- Short-term stream diversions will be accomplished by the use of sand bags or other methods that will result in minimal instream impacts. Short-term diversions will consider effects on wildlife.
- Silt fencing or other sediment-trapping materials will be installed at the downstream end of construction activities to minimize the transport of sediments offsite.

- Settling ponds where sediment is collected will be cleaned in a manner that prevents sediment from re-entering the stream or damaging and/or disturbing adjacent areas. Sediment from settling ponds will be removed to a location where sediment cannot re-enter the stream or the surrounding drainage area. Care will be exercised during removal of silt fencing to minimize release of debris or sediment into streams.
- No erodible materials will be deposited into water courses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- The footprint of disturbance will be minimized to the maximum extent feasible. Access to sites will occur on pre-existing access routes to the greatest extent possible.
- Equipment storage, fueling, and staging areas will be sited on non-sensitive upland habitat types with minimal risk of direct discharge into riparian areas or other sensitive habitat types.
- The limits of disturbance (including the upstream, downstream and lateral extents) will be clearly defined and marked in the field. Monitoring personnel will review the limits of disturbance prior to initiation of construction activities.
- During construction, the placement of equipment within the stream or on adjacent banks or adjacent upland habitats occupied by Covered Species that are outside of the project footprint will be avoided.
- Exotic species removed during construction will be properly handled to prevent sprouting or regrowth.
- Training of construction personnel will be provided.
- Ongoing monitoring and reporting will occur for the duration of the construction activity to ensure implementation of best management practices.
- When work is conducted during the fire season (as identified by the Riverside County Fire Department) adjacent to coastal sage scrub or chaparral vegetation, appropriate fire-fighting equipment (e.g., extinguishers, shovels, water tankers) shall be available on the site during all phases of project construction to help minimize the chance of human-caused wildfires. Shields, protective mats, and/or other fire preventative methods shall be used during grinding, welding, and other spark-inducing activities. Personnel trained in fire hazards, preventative actions, and responses to fires shall advise contractors regarding fire risk from all construction-related activities.
- Active construction areas shall be watered regularly to control dust and minimize impacts to adjacent vegetation.

- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances shall occur only in designated areas within the proposed grading limits of the project site. These designated areas shall be clearly marked and located in such a manner as to contain runoff.
- Waste, dirt, rubble, or trash shall not be deposited in the Conservation Area or on native habitat.

Mitigation Measure #13 – Public/Quasi-public Lands

The DBESP report will include replacement public/quasi-public land impacted by the proposed project through the purchase of equivalent or superior quality habitat at a 1:1 ratio that will be dedicated in fee title or conservation easement to the WRC RCA. The WRC RCA will review the proposed acquisition to ensure that the lands to be acquired by the City of Corona are of equivalent or superior quality to the public/quasi-public lands impacted by the proposed project. The dedicated lands will be managed by the WRC RCA in a manner that is consistent with the goals of the MSHCP.

Recommendation #1 – Wildlife Movement

The culvert under Paseo Grande should be designed following guidelines in Section 7.5.2 of the MSHCP. Guidelines in Section 7.5.2 recommend a width of at least five feet to allow for passage by medium-sized wildlife. The existing eight-foot culvert under Paseo Grande exceeds these minimum requirements. In addition, the crossing should be designed in a manner which allows a dry crossing under most circumstances. This may include designing an elevated bench above the normal high water line or providing a textured gentle slope up the side of the culvert and/or undercrossing. Barriers to small terrestrial wildlife movement should be encouraged along new and modified roadways, so that they are guided toward appropriate undercrossings.

7.0 BIOLOGICALLY EQUIVALENT OR SUPERIOR ALTERNATIVE CONCLUSION AND DETERMINATION

Although the removal of 3.62 acres of Riparian/Riverine habitat is considered a significant loss of riparian forest habitat, the proposed mitigation would be considered biologically equivalent or superior. A mitigation strategy to preserve or restore offsite riparian habitat is also included in Section 6.0 (Mitigation Measure #1). The restoration of 3.62 acres of riparian forest habitat would ensure that there is no net loss of riparian habitat in the project region. The restoration of this habitat is expected to be biologically equivalent to allowing the habitat to remain in place, and may be considered superior if the habitat is preserved or restored along a larger watercourse that is connected to other regionally significant habitat areas occupied by the least Bell's vireo. Although the functions and values of existing drainages would be altered, this mitigation would provide similar functions and values in an area that will be protected by a conservation easement or other similar

agreement as outlined in a conceptual mitigation plan. Therefore, the restoration of 3.62 acres of riparian forest habitat is considered a biologically equivalent or superior preservation alternative.

8.0 REFERENCES

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**APPENDIX A
SITE PHOTOS**



Riparian forest vegetation (mule fat scrub) in Wardlow Wash.



Riparian forest vegetation (southern cottonwood-willow riparian forest and mule fat scrub) in Wardlow Wash.

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Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

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Riparian forest vegetation (California sycamore-coast live oak riparian forest) in Wardlow Wash.



Riparian forest vegetation (southern cottonwood-willow riparian forest and southern coast live oak riparian forest) in Wardlow Wash.

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Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

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Chaparral on the steep slopes in the central portion of the survey area.



Coastal sage scrub/chaparral on the steep slopes in the central portion of the survey area.

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Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

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Mabey Canyon Debris Basin from the west looking east. Vegetation in the debris basin is ruderal.



View to the south from hill above the Mabey Canyon Debris Basin showing extensive residential development to the east and natural open space to the west.

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Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

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