3.5 Biological Resources

3.5.1 Introduction

This section provides an overview of the biological resources known to occur within the study area associated with each component of the IRP. This section also analyzes impacts to biological resources associated with each of the components. The significance of impacts is determined for each of the Proposed Alternatives and the No Project Alternative. Mitigation to reduce the impacts associated with each Proposed Alternative is identified where applicable.

3.5.2 Environmental Setting

The HSA lies primarily within the City of Los Angeles, a highly urbanized, densely populated area approximately of 465 square miles. It includes coastline, harbors, valleys, hills, and portions of two mountain ranges – the Verdugo Mountains and Santa Monica Mountains. Prominent geographic features that support extensive natural habitat are the Santa Monica Mountains to the west of the City of Los Angeles, the San Gabriel Mountains to the north, and the Pacific Ocean to the south and west of the City of Los Angeles. Elevations within the City of Los Angeles range from sea level to 5,080 feet above mean sea level (msl) at Elsie Peak. Los Angeles has a Mediterranean climate that is characterized by relatively mild temperatures year around and precipitation that occurs primarily during the winter season.

Urbanized areas of the HSA support low to moderate amounts of vegetation that typically consists of non-native landscape species selected for their ornamental value. Native vegetation grows primarily in open space areas (e.g., in open lots or on undeveloped hillsides). Fragmented natural habitat within the HSA is subject to disturbance and typically supports high amounts of ruderal (weedy) plant species. Native vegetation communities present within the HSA include coastal sage scrub, chaparral, and southern willow scrub.

Wildlife within the HSA is limited generally to species that have adapted to urban habitats. The western fence lizard (*Sceloporus occidentalis*) commonly is found in open lots. During migration seasons, a variety of birds can be observed within the City of Los Angeles; the number of nesting birds in urban habitats, however, is limited. Bird species that commonly breed in urban habitats of the City of Los Angeles include the rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), and house finch (*Carpodacus mexicanus*). Although primarily nocturnal and not often seen, several mammal species adapted to urban habitats commonly are observed in the HSA. These include Virginia opossum (*Didelphis virginiana*), black rat (*Rattus rattus*), and raccoon (*Procyon lotor*). Additional details on the biological setting of the HSA are provided below.

3.5.2.1 General Setting

Special-status species within the HSA include plants or wildlife listed under the federal Endangered Species Act (ESA) as threatened or endangered (or candidates for such designation), plants or wildlife similarly listed under the California Endangered Species Act (CESA), and wildlife listed as Species of Special Concern by the California

Department of Fish and Game (CDFG). Additionally, special-status species within the HSA include plant species designated by the California Native Plant Society (CNPS) as presumed extinct in California (List 1A); plants designated by the CNPS as rare, threatened, or endangered in California and elsewhere (List 1B); and plants designated by the CNPS as being rare, threatened, or endangered in California but more common elsewhere (List 2). The special-status plant species with the potential to occur in the HSA, along with specific information on status, are presented in Table 3.5-1. The special-status wildlife species with the potential to occur in the HSA are presented in Table 3.5-2.

Table 3.5-1. Special-Status Plant Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status		
	USFWS	**CDFG**	**CNPS**
Aphanisma blitoides Aphanisma	—	—	List 1B
Aster greatae Greata's aster	—	—	List 1B
Astragalus brauntonii Braunton's milk-vetch	FE	—	List 1B
Astragalus pycnostachyus var. lanosissimus Ventura marsh milk-vetch	FE	SE	List 1B
Astragalus tener var. titi coastal dunes milk-vetch	FE	SE	List 1B
Atriplex pacifica south coast saltscale	—	—	List 1B
Atriplex parishii Parish's brittlescale	—	—	List 1B
Atriplex serenana var. davidsonii Davidson's saltscale	—	—	List 1B
Berberis nevinii Nevin's barberry	FE	SE	List 1B
Calochortus clavatus var. gracilis slender mariposa lily	—	—	List 1B
Calochortus plummerae Plummer's mariposa lily	—	—	List 1B
Calystegia sepium ssp. binghamiae Santa Barbara morning glory	—	—	List 1A
Centromadia parryi ssp. australis southern tarplant	—	—	List 1B
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	—	—	List 1B
Chorizanthe parryi var. Fernandina San Fernando Valley spineflower	FC	SE	List 1B

Table 3.5-1. Special-Status Plant Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status		
	USFWS	**CDFG**	**CNPS**
Cordylanthus maritimus ssp. maritimus salt marsh bird's beak	FE	SE	List 1B
Crossosoma californicum Catalina crossosoma	—	—	List 1B
Deinandra [Hemizonia] minthornii Santa Susana tarplant	—	SR	List 1B
Dithyrea maritima Beach spectaclepod	—	ST	List 1B
Dodecahema leptoceras slender-horned spineflower	FE	SE	List 1B
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	—	—	List 1B
Dudleya cymosa ssp. ovatifolia Santa Monica Mountains dudleya	FT	—	List 1B
Dudleya multicaulis many-stemmed dudleya	—	—	List 1B
Dudleya virens ssp. insularis island green dudleya	—	—	List 1B
Fremontodendron mexicanum Mexican flannelbush	FE	SR	List 1B
Helianthus nuttallii ssp. parishii Los Angeles sunflower	—	—	List 1A
Horkelia cuneata ssp. puberula mesa horkelia	—	—	List 1B
Lasthenia glabrata ssp. coulteri Coulter's goldfields	—	—	List 1B
Linanthus orcuttii Orcutt's linanthus	—	—	List 1B
Lycium brevipes var. hassei Santa Catalina Island desert thorn	—	—	List 1B
Malacothamnus davidsonii Davidson's bush mallow	—	—	List 1B
Nama stenocarpum mud nama	—	—	List 2
Navarretia fossalis spreading navarretia	FT	—	List 1B
Navarretia prostrata prostrate navarretia	—	—	List 1B
Nemacaulis denudata var. denudata coast woolly heads	—	—	List 1B

Table 3.5-1. Special-Status Plant Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status		
	USFWS	**CDFG**	**CNPS**
Orcuttia californica California Orcutt grass	FE	SE	List 1B
Pentachaeta lyonii Lyon's pentachaeta	FE	SE	List 1B
Phacelia stellaris Brand's phacelia	—	—	List 1B
Potentilla multijuga ballona cinquefoil	—	—	List 1A
Ribes divaricatum var. parishii Parish's gooseberry	—	—	List 1B
Rorippa gambelii Gambel's watercress	FE	ST	List 1B
Sidalcea neomexicana salt spring checkerbloom	—	—	List 2
Suaeda esteroa estuary seablite	—	—	List 1B

Notes:
USFWS: Unites States Fish and Wildlife Service
CDFG: California Department of Fish and Game
CNPS: California Native Plant Society
— No status designation for this species by the applicable agency

Status Definitions

USFWS

FE Federally Listed As Endangered
FT Federally Listed As Threatened
FC Candidate Species for Federal Listing As Threatened or Endangered

CDFG

SR State-Listed As Rare
ST State-Listed As Threatened
SE State-Listed As Endangered

CNPS

List 1A Plants Presumed Extinct in California
List 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3 Plants About Which More Information is Needed – A Review List
List 4 Plants of Limited Distribution – A Watch List

Source:
CNPS, 2004
CDFG, 2005

Table 3.5-2. Special-Status Wildlife Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status	
	USFWS	**CDFG**
Tryonia imitator mimic tryonia [California brackish water snail]	—	SA
Neduba longipennis Santa Monica shieldback katydid	—	SA
Cicindela hirticollis gravida sandy beach tiger beetle	—	SA
Cicindela senilis frosti tiger beetle	—	SA
Coelus globosus Globose dune beetle	—	SA
Onychobaris langei Lange's El Segundo dune weevil	—	SA
Trigonoscuta dorothea dorothea Dorothy's El Segundo dune weevil	—	SA
Brennania belkini Belkin's dune tabanid fly	—	SA
Eucosma hennei Henne's eucosman moth	—	SA
Danaus plexippus monarch butterfly	—	SA
Euphilotes battoides allyni El Segundo blue butterfly	FE	SA
Glaucopsyche lygdamus palosverdesensis Palos Verdes blue butterfly	FE	SA
Panoquina errans wandering [saltmarsh] skipper	—	SA
Oncorhynchus mykiss irideus southern steelhead – southern California ESU	FE	SSC
Gila bicolor mojavensis Mojave tui chub	FE	SE, FP
Gila orcutti arroyo chub	—	SSC
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	—	SSC
Catostomus santaanae Santa Ana sucker	FT	SSC
Spea [Scaphiopus] hammondii western spadefoot	—	SSC

Table 3.5-2. Special-Status Wildlife Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status	
	USFWS	**CDFG**
Bufo [microscaphus] californicus arroyo [southwestern] toad	FE	SSC
Rana muscosa mountain yellow-legged frog	FE[1]	SSC
Emys [Clemmys] marmorata pallida Southwestern pond turtle	—	SSC
Phrynosoma coronatum [blainvillii] coast [San Diego] horned lizard	—	SSC
Aspidoscelis [Cnemidophorus] hyperythra orange-throated whiptail	—	SSC
Aspidoscelis [Cnemidophorus] tigris stejnegeri [multiscutalus] coastal western whiptail	—	SA
Anniella pulchra pulchra silvery legless lizard	—	SSC
Lampropeltis zonata pulchra San Diego mountain kingsnake	—	SSC
Pelecanus occidentalis californicus California brown pelican	FE	SE
Phalacrocorax auritus double-crested cormorant	—	SSC
Ixobrychius exilis least bittern	—	SSC
Plegadis chihi white-faced ibis	—	SSC
Accipiter cooperii Cooper's hawk	—	SSC
Accipiter striatus sharp-shinned hawk	—	SSC
Buteo regalis ferruginous hawk	—	SSC
Buteo swainsoni Swainson's hawk	—	ST
Circus cyaneus northern harrier	—	SSC
Pandion haliaetus osprey	—	SSC
Falco columbarius merlin	—	SSC

Table 3.5-2. Special-Status Wildlife Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status	
	USFWS	**CDFG**
Falco mexicanus prairie falcon	—	SSC
Falco peregrinus anatum American peregrine falcon	Delisted	SE
Laterallus jamaicensis coturniculus California black rail	—	ST, FP
Charadrius alexandrinus nivosus western snowy plover	FT	SSC
Sterna antillarum browni California least tern	FE	SE, FP
Sterna elegans elegant tern	—	SSC
Coccyzus americanus occidentalis western yellow-billed cuckoo	FC	SE
Asio flammeus short-eared owl	—	SSC
Athene cunicularia burrowing owl	—	SSC
Empidonax traillii extimus southwestern willow flycatcher	FE	SE
Lanius ludovicianus loggerhead shrike	—	SSC
Vireo bellii pusillus least Bell's vireo	FE	SE
Eremophila alpestris actia California horned lark	—	SSC
Polioptila californica californcia coastal California gnatcatcher	FT	SSC
Dendroica petechia brewsteri yellow warbler	—	SSC
Icteria virens yellow-breasted chat	—	SSC
Passerculus sandwichensis beldingi Belding's savannah sparrow	FE	—
Passerculus sandwichensis rostratus large-billed savannah sparrow	—	SSC
Agelaius tricolor tricolored blackbird	—	SSC

Table 3.5-2. Special-Status Wildlife Species Known to Occur in the HSA
Integrated Resources Plan EIR

Species	Status	
	USFWS	CDFG
Lepus californicus bennettii San Diego black-tailed jackrabbit	—	SSC
Perognathus longimembris pacificus Pacific pocket mouse	FE	SSC
Neotoma lepida intermedia San Diego desert woodrat	—	SSC

Notes:
USFWS: United States Fish and Wildlife Service
CDFG: California Department of Fish and Game
— No status designation for this species by the applicable agency

Status Definitions

USFWS

FE	Federally Listed as Endangered
FT	Federally Listed as Threatened
FC	Candidate Species for Federal Listing as Threatened or Endangered

CDFG

SE	State-Listed as Endangered
ST	State-Listed as Threatened
FP	Fully Protected
P	Protected
SA	Special Animal
SSC	Species of Special Concern

[1] Refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only.
Source:
CDFG, 2004.

The six areas of biological interest located in the HSA are the Los Angeles River, El Segundo Dunes, Ballona Creek and Wetlands, Ballona and Del Rey Lagoons, Baldwin Hills, and Santa Monica Bay. These areas of biological interest are shown in Figure 3.5-1 and described below.

Los Angeles River

The Los Angeles River drains a watershed of 800 square miles that extends from the eastern portions of the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains to the western portion of the San Gabriel Mountains. The watershed includes and is shaped by the path of the Los Angeles River. The upper portion of the watershed (approximately 324 square miles) is dominated by forest or open space and the remaining watershed (approximate 476 square miles) is characterized by intensive commercial, industrial, and residential uses.

Figure 3.5-1
Areas of Biological Interest

CH:CDM

Source: Bonterra Consulting

The Los Angeles River flows from its headwaters in the Santa Monica and San Gabriel Mountains to the northern corner of Griffith Park. From Griffith Park, the Los Angeles River travels in a southerly direction, passing through the Glendale Narrows, a narrow break in the hilly landscape of the eastern portion of the Santa Monica Mountains. The Los Angeles River exits the Glendale Narrows and flows across the coastal plain and into San Pedro Bay near the City of Long Beach (Figure 3.5-1).

A number of major tributaries flow into the Los Angeles River, including Burbank Western Channel, Pacoima Wash, Tujunga Wash, and Verdugo Wash in the San Fernando Valley; and the Arroyo Seco, Compton Creek, and Rio Hondo downstream of Glendale Narrows. Twenty-two lakes are located within the boundaries of the Los Angeles River watershed; all are impoundments created for water conservation, recreation, or other uses. A number of spreading grounds have been established in the watershed; while some are currently active, others are unused. Flood control facilities include Sepulveda Dam and Basin, Hansen Dam, Lopez Dam, and Pacoima Dam. The Los Angeles River is connected hydraulically to the San Gabriel River through the Whittier Narrows Reservoir, although this connection occurs primarily during large storm events.

The Los Angeles River, which once flowed freely over the coastal plain, was channelized between 1914 and 1970 to control runoff and reduce the impacts of major flood events in the region. Today, the Los Angeles River is lined with concrete on 47.9 miles of its 51-mile length. The following three reaches of the Los Angeles River channel are not lined with concrete reinforcement:

- In the Sepulveda Flood Control Basin
- Through the Glendale Narrows
- South of Willow Street in Long Beach

In addition, 53.2 miles of Los Angeles River tributary streams are channelized and lined with concrete.

Prior to channelization, the Los Angeles River was characterized by intermittent flow during the majority of the year. Flows from many of its tributaries did not reach the Los Angeles River except during storm events. The existing flow in the Los Angeles River is dominated by effluent, with approximately 80 percent originating at dischargers and the remaining 20 percent attributable to low-flow runoff, storm drain runoff, and groundwater discharging at the surface.

Within portions of the unlined or soft-bottom reaches of the Los Angeles River, scattered wetlands and riparian vegetation are present. Vegetation communities present in the unlined reaches include southern willow scrub vegetation, which is dominated by black willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix laevigata*), and emergent marsh, which is dominated by cattail (*Typha latifolia*) and bulrush (*Scirpus* spp.). Within Sepulveda Basin, exotic species are present including arundo (*Arundo donax*) and non-native species of ash (*Fraxinus* spp.). In the reach along Glendale Narrows, considerable wetland and riparian vegetation are present, supported in part by the high groundwater discharge in this area and by the man-made pools from the sills of bridges in this reach. Scouring

during high flood events clears some of the understory vegetation in this reach, but well-rooted willows have persisted in recent years. Below Willow Street in Long Beach, the unlined channel is influenced tidally, and supports a mix of scattered wetland and riparian, intertidal, and submerged aquatic habitat.

Although the concrete-lined reaches of the Los Angeles River are primarily unvegetated, some organisms are associated with the warm, nutrient-rich, slow-moving waters, such as algae and aquatic invertebrates that are abundant under appropriate conditions. In particular, the concrete-lined reach of the Los Angeles River that extends from Willow Street upstream to Rosecrans Avenue supports a shallow sheet flow of water from the low-flow channel to the banks and creates a dense algal mat (Garrett, 2004). This algal mat supports a large number of aquatic invertebrates, providing abundant forage habitat for shorebirds and other waterbirds. Both shorebird foraging and nesting occur along this reach.

The existing low flow in the Los Angeles River fluctuates on a daily cycle, with peak flows occurring in the early morning or evening and minimum flows occurring during the day. Peak flows during the low-flow months are estimated to average around 148 cubic feet per second (cfs) with an existing average depth of water of approximately 3.6 inches on the concrete sills along this reach. Water depths are based on hydraulic modeling and have not been field verified. Minimum flows during the low-flow months are estimated to average about 112 cfs, with an average depth of water of approximately 2.9 inches along the concrete sills (City of Los Angeles, 2005). The flow rate at which the water begins to spill out of the low-flow channel onto the adjacent sills between Wardlow Road and Willow Street is approximately 47 cfs (CH2M HILL, 2005).

Water depth varies over the concrete sill based on algal growth, sediment deposits, variation in flow amounts, and minor differences in the Los Angeles River channel itself (Garrett, 2004). The habitat heterogeneity allows species with different requirements to use different portions of the Los Angeles River (Garrett, 2004). The species currently present in the largest numbers generally are adapted to using shallow water and algal mats with up to 1 to 2 inches of water (Garrett, 2004). Conditions suitable for these species are present in shallow water over concrete or sediments. Where deeper water persists (i.e., at depths of 3 to 4 inches), algal mats could form in sufficient density to support the weight of shorebirds foraging on top of mats.

The shorebird use of the lower Los Angeles River has been well documented, and shorebird counts have been conducted along this reach since the late 1980s (Page et al., 1999; Daniels, 2005; Cooper, 2003; Garrett, 2004). Specific habitats used by waterbirds along the lower Los Angeles River include the following (Garrett, 2004):

- Shallow water over concrete that supports an algae mat with associated invertebrates – used by foraging western sandpiper (*Calidris mauri*), least sandpiper (*Calidris minutilla*), black-necked stilt (*Himantopus mexicanus*), black-bellied plover (*Pluvialis squatarola*), long-billed dowitcher (*Limnodromus scolopaceus*), and others

- Wet mud and silt deposits – used by western and least sandpipers, killdeer (*Charadrius vociferus*), black-necked stilt, American avocet (*Recurvirostra americana*), semipalmated plover (*Charadrius semipalmatus*), and others
- Dry beaches and gravel bars – used by breeding shorebirds, including black-necked stilts, killdeer, American avocets, and resting shorebirds including willet (*Catoptrophorus semipalmatus*), long-billed curlew (*Numenius americanus*), and marbled godwit (*Limosa fedoa*)
- Low vegetation, including sedges (*Carex* spp.) and wet grass – used by pectoral sandpiper (*Calidris melanotos*), solitary sandpiper (*Tringa solitaria*), and white-faced ibis (*Plegadis chihi*)

Although shorebirds generally forage more frequently during the day (Dodd and Colwell, 1996), they can be active at night, and heavy predation pressure might cause a proportional increase in nighttime foraging (Azuaje et al., 1993). Shorebirds use the lower Los Angeles River primarily in the spring, summer, and fall when flows are moderate and ample shallow water or emergent habitat is available. The habitat is used extensively by migrating shorebirds during the spring and fall migrations.

Spring migration is between mid-March and late-May, with early arrivals recorded about March 15, the peak activity between April 10 and May 5, and the final birds passing through by May 20 (Garrett, 2004). The greatest use of the lower Los Angeles River by shorebirds occurs during the fall migration. The first fall migrating adults begin arriving on the lower Los Angeles River around June 20; the peak arrival by adults is between July 10 and July 30. The first fall juveniles arrive between July 25 and July 30, with the peak juvenile arrival between August 15 and September 15 (Garrett, 2004).

The most common migrant species recorded on the Los Angeles River include western and least sandpiper, long-billed dowitcher, short-billed dowitcher (*Limnodromus griseus*), black-bellied plover, semi-palmated plover, willet, Wilson's phalarope (*Phalaropus tricolor*), and red-necked phalarope (*Phalaropus lobatus*). Rare species also have been recorded, including ruff (*Philomachus pugnax*), Baird's sandpiper (*Calidris bairdii*), Pacific golden plover (*Pluvialis fulva*), and others.

High counts of shorebirds during the fall migration in recent years range from 5,600 total shorebirds in August 1999 (Cooper, 2003) to 16,800 shorebirds in September 2000 (Garrett, 2004). High counts of fall migrants along the shorebird reach of the Los Angeles River (Willow Street to Rosecrans Avenue) consistently have exceeded 5,000 to 10,000 birds in recent years (Daniels, 2005; Garrett, 2004), making the habitat comparable in importance to other important regional shorebird habitats, such as Anaheim Bay National Wildlife Refuge (Page et al., 1999). Daniels reports a higher proportional use of the lower Los Angeles River by juvenile birds over shorebird habitats in Anaheim Bay National Wildlife Refuge, which habitats are used by a higher proportion of adults (Daniels, 2005).

Breeding birds are present on the lower Los Angeles River and could include black-necked stilt, American avocet, killdeer, and spotted sandpiper (*Actitis macularia*). The peak breeding period is between April and June. Dry habitats are required for nesting

and could include beaches, gravel bars forming small islands, islands of wrack or debris, isolated levees, or other vacant areas.

El Segundo Dunes

The El Segundo Dunes consist of geologically recent and older sand dunes along the coast from Ballona Creek to the Palos Verdes Hills (Figure 3.5-1). Formerly, these sand dunes extended from 3 to 6 miles inland, with crests ranging from 85 to 185 feet above msl. Most of the El Segundo Dune area is now fully developed. The few remaining patches of this habitat are found near LAX and Hyperion. The type of dune scrub vegetation that characterizes this area supports special-status plant and wildlife species, including the federally endangered El Segundo blue butterfly (*Euphilote battoides allyni*). The food plant for this butterfly is coastal buckwheat (*Eriogonum parvifolium*), found in dune scrub vegetation. The Los Angeles World Airports and Chevron Company support ongoing efforts to maintain these habitats on their properties, including planting coastal buckwheat and removing grasses, weeds, and other invasive species.

Ballona Creek and Wetlands

Similar to the Los Angeles River, Ballona Creek is channelized for flood control purposes. Near its mouth at the Pacific Ocean, the creek bisects an area known as the Ballona Wetlands, which is one of only two remaining coastal wetland areas bordering Santa Monica Bay (Figure 3.5-1).

Vegetation communities in coastal wetlands include salt and freshwater marshes and southern willow scrub. A 10-acre freshwater marsh has been restored in Ballona Wetlands, which supports emergent marsh dominated by cattail and bulrush, and perimeter riparian vegetation dominated by willows and mulefat (*Baccharis salicifolia*). Additional willow woodlands are present along undeveloped areas in lower Ballona Creek, and fragmented and degraded areas of salt and brackish marsh are present in the remaining coastal marsh. Dominant plant species in salt marsh areas include pickleweed (*Salicornia* spp.) and alkali heath (*Frankenia* sp.). These vegetation types provide high-quality habitat for a variety of wildlife species and also have the potential to support many special-status plant and wildlife species. Endangered and threatened species known to occur at the Ballona Wetlands include the California least tern (*Sterna antillarum browni*) and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*).

Ballona and Del Rey Lagoons

The Ballona and Del Rey Lagoons are located near the mouth of Ballona Creek (Figure 3.5-1). The Ballona Lagoon is north of the creek and Marina Del Rey, and it runs perpendicular to the creek (from the mouth of the creek, north to the Venice canals). The Ballona Lagoon receives waters from the Marina Del Rey ocean entrance and experiences tidal action. It maintains a relatively high-quality mud-flat habitat that supports invertebrates that, in turn, support foraging shorebirds. The endangered least tern is known to forage at Ballona Lagoon and has the potential to forage in Del Rey Lagoon.

The Del Rey Lagoon is located south of Ballona Creek and is connected to the creek by a gated pipeline to control the flows. This lagoon supports minimal native vegetation

and is small and park-like because it is surrounded by homes and streets. The Del Rey Lagoon supports both domesticated ducks and wild or native duck species. This lagoon also is known for occasional occurrences of rare bird species, such as little blue heron (*Egretta caerulea*); this species is common in the southeast U.S., but is a rare visitor to the west coast.

Baldwin Hills

The Baldwin Hills, located east of the Ballona Wetlands and south of Ballona Creek, have a maximum elevation of 511 feet above msl (Figure 3.5-1). These hills support one of the largest remaining areas of natural open space in the HSA. Kenneth Hahn State Recreation Area is located in the northern and eastern portion of the Baldwin Hills. The eastern and southern slopes of the hills contain residential areas, with much of the remaining land area owned by oil development interests.

Vegetation communities in these hills include non-native annual grassland, coastal sage scrub, and southern willow scrub. These vegetation communities provide high-quality habitat for wildlife species and also have potential to support several special-status plant and wildlife species. The coastal sage scrub habitats in the Baldwin Hills are dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*), and they provide potentially suitable habitat for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), although this species has not been observed in this area. In addition, the southern willow scrub habitats provide potentially suitable habitat for the endangered least Bell's vireo (*Vireo Bellii pusillus*).

Santa Monica Bay

The Santa Monica Bay extends from approximately the Palos Verdes Point on the Palos Verdes Peninsula northward to approximately Point Dume (on the coast south of Westlake Village, California) (Figure 3.5-1). The bay extends 15 to 20 miles offshore and includes underwater landforms such as Dume Canyon, Santa Monica Canyon, and Redondo Canyon. Representative bay habitats include sandy beach, rocky intertidal, soft-bottom, kelp forests, and pelagic or open water. Each of these habitat types is discussed briefly below.

Sandy beaches are important foraging and nesting grounds for many shorebird species. The protection of this habitat is central to the population recovery of two endangered species, the western snowy plover (*Charadrius alexandrinus nivosus*) and California least tern. Although the western snowy plover no longer nests on Santa Monica Bay beaches, it is still a resident during the winter season. The California least tern is restricted to one nesting colony on Santa Monica Bay at Venice Beach that is protected by a 6-foot-high, 300- by 500-foot-long fence.

Rocky intertidal areas are hard-bottom habitats that typically comprise a mix of rocky and sandy shoreline. These areas include the shallow kelp-covered areas adjacent to rocky headlands, submarine canyon walls, and deep-water plateaus. Hard-bottom habitats also include man-made features such as artificial reefs and breakwaters. Although hard-bottom habitat is scarce in Santa Monica Bay, it supports a unique and productive ecosystem. Ecologically sensitive bird species that require this habitat

include the black oystercatcher (*Haematopus bachmani*), surfbird (*Aprhiza virgata*), wandering tattler (*Heteroscelus incanus*), and black turnstone (*Arenaria melanocephala*).

Soft-bottom habitat comprises unconsolidated, soft sediments (sand, silt, and clay) that make up most of the Santa Monica Bay seafloor. This habitat supports a variety of organisms, including more than 100 common species of bottom-dwelling fish such as the white croaker (*Genyonemus lineatus*), queenfish (*Seriphus politus*), California halibut (*Paralichthys californicus*), and barred sand bass (*Paralabrax nebulifer*).

Kelp forests consist of vertically structured underwater vegetation. These forests (or beds) provide valuable foraging and protective habitat for more than 800 species of fishes and invertebrates. Kelp forests or beds occur over hard-bottom substrate. The Santa Monica Bay supports two large kelp forests, one on the Palos Verdes Shelf (west of the Palos Verde Peninsula) and the other in the area from Malibu west to Point Dume.

Pelagic, or open water, habitat is the most extensive of any of the coastal and marine habitats in the Santa Monica Bay. The vast majority of life in the bay depends directly or indirectly on phytoplankton that live in the upper ocean water layers. Phytoplankton forms the base of food web that supports grazing zooplankton, fish, and marine bacteria. In Southern California, 40 percent of fish live within the pelagic habitat. This habitat provides valuable foraging habitat for endangered seabirds such as the California brown pelican (*Pelecanus occidentalis californicus*).

3.5.2.2 Project-Level Components

Field surveys of biological resources at the locations of components evaluated at a project level were conducted in March 2005. A description of the location of these components, including results of the field observations, is provided in this section.

Hyperion

Hyperion is situated east of Vista Del Mar and south of Imperial Highway (Figure 3.5-1). The El Segundo Dunes, remnants of a once vast dune system, are north of Imperial Highway. Field observations indicate that Hyperion is situated on a fully developed, level site with minimal landscaping. The east side of the site is a west-facing bluff, landscaped predominately with ornamental species such as myoporum (*Myoporum laetum*), pampas grass (*Cortaderia selloana*), and ice plant (*Mesembryanthemum crystallinum*). A centrally located area on the bluff supports some native vegetation including coastal sage scrub species such as California sagebrush, California buckwheat, and a small patch of mule fat. The coastal buckwheat, a food plant for the federally endangered El Segundo blue butterfly, was not observed during March 2005 field surveys. A power line easement that contains remnant patches of dune scrub vegetation is located outside the Hyperion footprint on the back side of this bluff. Wildlife species observed on the site consisted of gulls including California gull (*Larus californicus*), western gull (*Larus livia*), glaucous-winged gull (*Larus glaucescens*), Bonaparte's gull (*Larus philadelphia*), and other birds common in urban habitats such as rock pigeon, American crow, and European starling.

Tillman

Tillman is located in the Sepulveda Flood Control Basin (Figure 3-5.1), which is in the Sepulveda Dam Recreation Area about 2,000 feet from the Los Angeles River. Tillman is surrounded by parks, a golf course, and the Sepulveda Basin Wildlife Area.

The Tillman grounds are landscaped and include a Japanese Garden on the west side of the site. The central part of the site is developed, but a variety of ornamental trees and shrubs are distributed throughout the site. The landscaping includes native species planted to represent different vegetation communities, such as coastal sage scrub and chaparral. The native landscaping also includes a small area in the east-central part of the site planted with wetland species such as willows, Fremont cottonwood, and cattails. The eastern part of the site includes a laydown area that supports a dense growth of ruderal vegetation including black mustard (*Brassica nigra*), field mustard (*Brassica rapa*), Russian thistle (*Salsola tragus*), and cheeseweed (*Malva parviflora*). South of the laydown area is a mowed-grass field used for the sport of cricket. Haskell Creek borders the east side of the laydown area and cricket field. The vegetation in the creek is almost 100 percent non-native with Shamel ash trees (*Fraxinus* sp.) being the dominant species. A few native species are present in this creek including willows and mule fat.

Bird species recorded during the site visit included chipping sparrow (*Spizella passerina*), lark sparrow (*Chondestes grammacus*), white-crowned sparrow (*Zonotrichia leucophyrs*), Lincoln's sparrow (*Melospiza lincolnii*), song sparrow (*M. melodia*), Cassin's kingbird (*Tyrannus vociferans*), western bluebird (*Sialia mexicana*), and a flock of non-native mitred parakeets (*Aratinga mitrata*) foraging in ornamental trees on the site.

Los Angeles-Glendale

LAG is located at the eastern edge of the Santa Monica Mountains and across the Los Angeles River from Griffith Park (Figure 3.5-1). The surrounding area primarily consists of industrial land uses. The east side of LAG is developed, but the west side borders the Los Angeles River and has a park-like appearance with mowed grass, a variety of trees and shrubs, and a pond. Some of the trees are ornamental species and include non-native Canary Island pine (*Pinus canariensis*), jacaranda (*Jacaranda mimosifolia*), and gum trees (*Eucalyptus* sp.). Additionally, native tree species such as coast live oak (*Quercus agrifolia*) and California sycamore (*Plantanus racemosa*) that were either planted for their ornamental value or were retained during development of LAG are present. Wildlife species observed during the site visit included the non-native wildlife species fox squirrel (*Sciurus niger*), and bird species including mallard (*Anas platyrhynchos*), American coot (*Fulica Americana*) (on the pond), and black phoebe (*Sayornis nigricans*), American crow, ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Dendroica coronata*), song sparrow, and house finch in the adjacent vegetation.

NEIS II

No biological resources are associated with the proposed belowground tunnel locations of NEIS II. The aboveground NEIS II areas, however, have the potential to be located on sites that support biological resources. These sites are described here.

Division Street Shaft Site
The Division Street shaft site is an existing shaft site used to construct NEIS Phase 1. This site is in an industrial area and is unvegetated. No biological resources are located at the site.

Griffith Park Shaft Site
The Griffith Park shaft site is an area in the park of mowed grass and trees. The trees include large ornamental species such as ash and the London plane tree (*Platanus acerifolia*). A drainage area along the southwest side of this area has several newly planted native Fremont cottonwoods. A Cooper's hawk (*Accipiter cooperii*) was observed at this staging site.

Verdant Street Shaft Site
The Verdant Street shaft site is a vacant lot in an industrial area located adjacent to the Southern Pacific Railroad. Ruderal vegetation is present on the lot, including Russian thistle and foxtail chess (*Bromus madritensis*).

Los Angeles Zoo Shaft Site
The Los Angeles Zoo shaft site is a developed site within a parking lot that is primarily used for storage; no biological resources are located at the proposed shaft site. Ornamental vegetation elsewhere on the parking lot is abundant and consists primarily of eucalyptus trees. More recent plantings at the site consist of native species including matilija poppy (*Romneya coulteri*).

Observatory Annex Shaft Site
The Observatory Annex shaft site is a developed parking lot, and no biological resources are located on the site; ornamental vegetation, including eucalyptus trees, are located elsewhere on the parking lot.

Pecan Grove Shaft Site
The Pecan Grove shaft site is a picnic area of Griffith Park. The vegetation consists of mowed grass and a few ornamental trees including olive (*Olea europaea*) and tanbark oak (*Lithocarpus densiflorus*).

Chevy Chase at West End Site
The Chevy Chase at West End site is located at the west end of Chevy Chase Drive, east of the Los Angeles River. The diversion structure would be installed within the roadway. No biological resources are located at the site.

Chevy Chase at Algers Site
The Chevy Chase at Algers site is located within the roadway near Algers Street. No biological resources are located at the site.

Brazil Street Site
The Brazil Street site is located on a lot within an industrial area; an abandoned warehouse is located onsite. Ruderal vegetation is present on the site.

LAG Diversion in Colorado Boulevard Site

The LAG diversion in Colorado Boulevard site is located on Colorado Boulevard within the roadway in front of LAG. No biological resources are located at the site.

GBIS

No biological resources are associated with the proposed belowground tunnel locations of GBIS; however, the aboveground GBIS features could be located in areas that support biological resources. These areas are described here. The biological resources associated with the Los Angeles Zoo shaft site, Observatory Annex shaft site, and Pecan Grove shaft site are described under NEIS II.

Travel Town Shaft Site

The Travel Town site is in open space located off Zoo Drive and next to Travel Town. The site is used as an equestrian area and primarily supports non-native vegetation including foxtail chess and other ruderal species including field mustard and cheeseweed. The site contains several planted sycamore trees and an ornamental acacia (*Acacia* sp.).

Barham Shaft Site

The Barham site is along Forest Lawn Drive across from Warner Brothers Studios. The site is situated at the base of a hillside that supports native chaparral and oak woodland vegetation. Vegetation onsite consists predominantly of non-native grasses, ruderal species, and several non-native California pepper trees (*Schinus molle*); however, some native chaparral and coast live oak trees are present at the edge of this area.

Riverside East Shaft Site

The Riverside East site is situated in an urban park next to the Los Angeles River. The vegetation consists of mowed grass and a dense grove of trees consisting of native coast live oaks, California black walnuts (*Juglans californica*), and California sycamores. A Cooper's hawk was observed at this site during the March 2005 field survey.

Valley Heart Shaft Site

The Valley Heart site is an open lot between residential areas and SR 134. It is used as an equestrian area and supports a sparse growth of non-native grasses and ruderal vegetation. A few native species are present and include blue elderberry (*Sambucus mexicana*) and California black walnut.

Riverside West Shaft Site

The Riverside West site is situated in an urban park next to the Los Angeles River. The vegetation consists of mowed grass and a variety of ornamental trees that include sweet gum (*Liquidambar* sp.), Chinese elm (*Ulmus parvifolia*), and native California sycamores.

Woodbridge Park Shaft Site

The Woodbridge Park site area is situated in an urban park surrounded by a residential area. The vegetation consists of mowed grass and a variety of

ornamental trees that include eucalyptus, pines (*Pinus* sp.), maidenhair trees (*Ginkgo biloba*), and locust trees (*Robinia* sp.).

Caltrans North Hollywood Maintenance Yard Site
The Caltrans North Hollywood Maintenance Yard area is located next to SR-170 (Hollywood Freeway) and is a developed site with no vegetation.

Weddington Park Site
The Weddington Park site is a city park landscaped with ornamental trees and lawn located at the western terminus of Valley Spring Lane.

Acama Vineland Site
The Acama site is a landscaped area within the loop ramp to the southbound Hollywood Freeway at Vineland Avenue near Acama Street.

Vineland and Riverside, Parking Lot on Riverside, Site
The Vineland and Riverside, parking lot on the Riverside, site is a parking lot with a completely paved surface located on Riverside Drive, east of Vineland; no biological resources are present.

Vineland and Riverside, Caltrans Easement on Northwest Corner, Site
The Vineland and Riverside, Caltrans easement on the northwest corner, site is densely landscaped with ornamental vegetation.

Vineland and Moorpark, Auto Repair on Northwest Corner, Site
The Vineland and Moorpark site is an auto repair facility located at the northwest corner of Vineland Avenue and Moorpark Street. This site is fully developed and no vegetation is present onsite.

NOS Diversion at Sonora Extended Site
This NOS diversion site is located along the north side of Zoo Drive. The site is landscaped with grass and a few ornamental trees.

NOS Diversion (to VORS) at Woodbridge near Colfax Site
The Colfax/Woodbridge site is located on Woodbridge Street within the roadway, east of Colfax and north of the Tujunga Wash. The diversion location is in the street and is devoid of biological resources.

NOS Diversion near Los Angeles River Site
The NOS diversion near the Los Angeles River site is located within a landscaped park and picnic area adjacent to Zoo Drive South. Landscape vegetation, including ornamental trees and lawn, are present.

3.5.2.3 Program-Level Components

The specific location of the program-level components would be determined during implementation of the IRP. Project-level environmental review would be conducted for each program-level component as the individual projects are developed, as applicable.

VSLIS

No biological resources are associated with any proposed belowground location of VSLIS; however, the aboveground structures associated with VSLIS could be located in areas that support biological resources. Depending on the final alignment, potential biological resources could be present where VSLIS aboveground structures are located. However, in general, biological resources are not expected to be present because of the highly urbanized setting of the VSLIS alignment.

Recycled Water Distribution

The existing recycled water distribution system is proposed for expansion so that recycled water generated at Hyperion, Tillman, LAG, and proposed URPs along Ballona Creek and Compton Creek could be distributed to an expanded industrial and irrigation user base. These distribution facilities would consist of pipelines, pumping stations, and recycled water storage tanks. Depending on the location of the aboveground structures for the distribution system, the method of installation, and location of underground pipelines, potential biological resources could be present. However, in general, sensitive biological resources are not expected to be present because of the highly urbanized nature of possible locations in the HSA. For the groundwater recharge option, recycled water would be conveyed to the Hansen and Pacoima Spreading Grounds.

Dry Weather Runoff – Smart Irrigation

Smart Irrigation would be implemented in the HSA to reduce the amount of dry weather runoff from individual properties in the City of Los Angeles. This would require owners to install control devices to automated irrigation systems on individual properties. No biological resources are expected to be associated with the implementation of smart irrigation practices because implementing these measures would not involve construction of new facilities.

Dry Weather Runoff – Low-Flow Diversions

Under the Proposed Alternatives, low-flow runoff or dry weather runoff could be managed by diverting the runoff into the wastewater collection system. These runoff diversions would be located in two primary areas, the urbanized coastal area along the Santa Monica Bay and inland areas of the San Fernando Valley. These runoff diversion facilities would consist of temporary storage, pumps, diversion structures, and pipelines. Depending on the location of the diversion structures, biological resources could occur, but they are anticipated to be minimal because of the highly urbanized nature of possible locations in the HSA.

Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands

Each diversion system would be connected to a URP or treatment wetlands. Depending on the location of the URPs or treatment wetlands, potential biological resources could be present; however, in general, such resources are anticipated to be absent because of the highly urbanized nature of the potential locations in the HSA.

Wet Weather Runoff – Onsite Management

Under the IRP, various wet weather onsite management features would be implemented, including onsite storage and percolation, and onsite storage and reuse devices. In addition to onsite runoff, these features also could manage offsite (neighborhood) wet weather runoff. Under the IRP, site improvements would be implemented to capture and percolate the collected runoff into the ground. Neighborhood facilities could occur at schools, government properties, parks and open space areas, vacant lots, and non-used alleys. Depending on the location of the capture and percolation facilities, potential biological resources could occur; however, in general, such resources are not anticipated to be present because of the highly urbanized nature of the potential locations in the HSA.

Wet Weather Runoff – Urban Runoff Plants

Each of the URPs would house a pumping system, diurnal storage tank, coarse screening units (to remove trash and other large items), grit chambers (to remove sediments), storage tanks, grease removal units, MF units, disinfection systems, and clean water storage. The effluent from each URP would be returned to the local body of water from which it was diverted or discharged to a nearby recycled water pipeline or storage tank. Each URP would require approximately 1 to 5 acres of land. Depending on the location of the URPs, potential biological resources could be present; however, in general, such resources are anticipated to be absent because of the highly urbanized nature of the possible locales in the HSA.

Wet Weather Runoff – Non-Urban Regional Recharge

This component proposes to capture non-urban wet weather runoff from the San Fernando Valley for recharge of the groundwater basins, such as Hansen and Pacoima Spreading Grounds. The conveyance pipeline generally would be located under streets and public rights-of-way, where minimal, if any, biological resources are present.

3.5.3 Environmental Impacts

This section presents the regulatory framework, methodology, thresholds of significance, and biological impacts of implementing the individual project-level and program-level components and the biological impacts of implementing the Proposed Project Alternatives (Sections 3.5.4 through Section 3.5.8).

3.5.3.1 Background

Regulatory Framework

Numerous regulations govern the biological resources in the HSA. An overview of these regulations and the responsible agencies is presented below.

Federal

Federal Endangered Species Act. The federal ESA of 1973 protects plants and animals listed by the federal government as "endangered" or "threatened." The ESA is implemented by enforcement of Sections 7 and 9 of the ESA, as administered by the United States Fish and Wildlife Service (USFWS).

Section 7 applies to federal agency actions (like permits or funding) for public or private activities, such as Section 404 permits issued by the USACE for construction work in waters or wetlands. Specifically, Section 7 imposes an affirmative duty on federal agencies to ensure that their actions (including permitting) are not likely to jeopardize the continued existence of a listed species (plant or animal) or result in the destruction or modification of critical habitat (Title 50 Code of Federal Regulations § 402.01[a])(50 CFR § 402.01[a]). Sections 7 and 10(a) of the federal ESA allow or authorize "incidental" takes in accordance with the provisions, but only with a permit that could be obtained through consultation with the USFWS. Section 9 makes it unlawful for anyone to "take" a listed animal, and includes significantly modifying its habitat. This law applies to private parties and private land; a landowner is not allowed to "take" an endangered animal or its habitat on their property without first obtaining the appropriate authorization to do so in accordance with the provisions of Section 7 or 10(a).

Clean Water Act. Sections 401 and 404 of the Clean Water Act (CWA) (33 USC §§1344). Activities that have the potential to discharge fill materials into "Waters of the U.S." including wetlands are regulated under Section 404 of the CWA, as administered by the U.S. Army Corps of Engineers (USACE). Fill activities could be permitted by a Nationwide or Individual Permit. The Nationwide Permit Program involves certain activities that have been preauthorized by USACE. Activities that do not fall under the Nationwide Permit Program would require Individual Permits. Typically, the USACE requires mitigation in the form of restoration of areas of temporary impacts, and restoration/enhancement of additional wetland areas at a specified ratio of impacts. Alternatively, in-lieu fees can be paid into a mitigation banking fund. Projects requiring a Section 404 permit also require a CWA Section 401 Water Quality Certification or Waiver, issued by the appropriate Regional Board.

Migratory Bird Treaty Act. The original Migratory Bird Treaty Act (MBTA) of 1918 implemented the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds. Specific provisions of the statute include the establishment of a federal prohibition, unless permitted, 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, included in the terms of the Convention … for the protection of migratory birds … or any part, nest, or egg of any such bird.*

Birds species protected under the provisions of the MBTA are identified by the List of Migratory Birds (50 CFR, § 10.13, as updated by the 1983 American

Ornithologists Union Checklist and published supplements through 1995, USFWS).

State

Streambed Alteration Agreement. The CDFG has jurisdictional authority over wetland resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1600 through 1607. Activities of state and local agencies and public utilities that are project proponents are regulated by the CDFG under Section 1601 of the code and regulates work that will substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. CDFG enters into a Streambed Alteration Agreement with a project proponent and can impose conditions on the agreement to ensure impacts to fish and wildlife or habitat are avoided, minimized, or mitigated.

Because CDFG includes under its jurisdiction streamside habitats that, under the federal definition, might not qualify as wetlands and/or Waters of the U.S. on a particular project site, CDFG jurisdiction could be broader than the jurisdiction of the USACE. As an example, riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the Clean Water Act, and often do not have the three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated as a wetland. However, riparian forests are frequently within CDFG regulatory jurisdiction under Section 1601.

Regional Water Quality Control Board 401 Permit Process

The Regional Board is the primary agency responsible for protecting water quality in California. The Regional Board regulates discharges to surface waters under the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act. The jurisdiction of the Regional Board extends to all waters of the state and all Waters of the U.S., including wetlands.

Section 401 of the Clean Water Act provides the Regional Board with the authority to regulate any proposed federally permitted activity that could affect water quality. Among such activities are discharges of dredged or fill material permitted by USACE under Section 404 of the Clean Water Act. The regulation occurs through issuance of a Water Quality Certification. Certifications must be based on a finding that the proposed discharge will comply with water quality standards.

California Endangered Species Act

The CESA is established by Section 2080 of the California Fish and Game Code. It specifically prohibits "take" of any species the CDFG designates to be endangered or threatened. Take is defined in the Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

CESA allows for take that is incidental to otherwise lawful development projects. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-induced losses of listed species populations and their essential habitats.

Through permits or memoranda of understanding, the CDFG may authorize individuals, public agencies, or educational institutions, to import, export, take, or possess any endangered species, threatened species, or candidate species of plants and animals. Take is authorized only after it has been demonstrated by the applicant that the impacts of a project shall be minimized and fully mitigated. The measures required to meet this obligation are roughly proportional in extent to the impact of the authorized take on the species and must be capable of successful implementation.

California Department of Fish and Game Code Section 3503
Fish and Game Code Section 3503, much like the federal MBTA, prohibits the needless destruction of the nest or eggs of any bird. The Fish and Game Code states "It 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."

Local
Significant Ecological Areas. Significant Ecological Areas (SEA) were established in 1976 by Los Angeles County to designate areas with sensitive environmental conditions and/or resources to preserve biological diversity. Los Angeles County defines an SEA as "ecologically important or fragile land and water areas, valuable as plant and animal communities." These areas are classified as such based on the presence of one or more of the following:

- Habitats for rare and endangered species of plants and animals
- Restricted natural communities – ecological areas that are scarce on a regional basis
- Habitats restricted in distribution in the county
- Breeding or nesting grounds
- Unusual biotic communities
- Sites with critical wildlife and fish value
- Relatively undisturbed habitats

SEA boundaries are general in nature, and broadly outline the biological resources of concern. The Los Angeles County General Plan allows development in SEAs as long as development is "highly compatible" with the identified resources.

Methodology

The determination of impacts in this analysis is based on a review of the existing documentation for each of the Proposed Alternatives. The existing documentation was supplemented by March 2005 field surveys of project-level component locations.

Thresholds of Significance

The following four thresholds of significance are based on the *City of L.A. CEQA Thresholds Guidelines* (City of Los Angeles, 1998) and *California Environmental Quality Act (CEQA) Guidelines* (CELSOC, 2004) and were developed to evaluate impacts to biological resources during the construction and operation phases of the IRP. A Proposed Project Alternative would have a significant impact to biological resources if it would:

BIO-1: Result in a loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species

BIO-2: Result in the alteration of a federally defined wetlands habitat (Section 404 of the Clean Water Act)

BIO-3: Affect habitat, including aquatic habitat, such that normal behaviors of a federal-, state-, or locally listed species are disturbed to a degree that could diminish the chances for long-term survival of a sensitive species

BIO-4: Result in conflicts with local tree ordinances or policies

3.5.3.2 Component Impacts

This section presents impacts to biological resources related to implementation of project-level and program-level components of the IRP Facilities Plan. Impacts to biological resources from implementing the Project Alternatives are analyzed and presented in Sections 3.5.4 through 3.5.8.

Project-level Component Impacts

Hyperion Expansion to 500 mgd

Construction at Hyperion would occur within the current Hyperion plant boundaries. No special-status species or upland, wetland, or aquatic habitat is present on the site.

No state- or federally listed endangered, threatened, rare, candidate, sensitive, or special-status species are present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive, or a special-status species.

Construction at the Hyperion site has the potential to result in secondary impacts from dust settling on the bluff located immediately to the east. This bluff supports potentially suitable habitat for the federally endangered El Segundo blue butterfly. However, no coastal buckwheat, a food plant for the El Segundo blue butterfly, was observed during March 2005 field surveys. Therefore, the habitat on the bluffs would not support the special-status

species, and no impact would occur to the El Segundo blue butterfly. If present, any dust accumulation on the habitat could impair reproduction of the El Segundo blue butterfly.

Wetland habitat is not present on the site. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitats are present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

During operation, an increased discharge of secondary-treated effluent into Santa Monica Bay would occur. The current discharge of 450 mgd would increase to 500 mgd by the year 2020, representing an 11 percent increase. This increase could have secondary impacts on aquatic biological resources because of changes in local water quality at the underwater discharge point. In general, this impact is expected to be minimal because no change in the water quality of the discharge is expected. Also, added quantity is expected to be diluted quickly at the underwater ocean outfall and because the dilution ratio specified in the NPDES permit (84:1) would be kept in compliance range. This discharge could require modification of existing federal and state discharge permits, and operation would be conducted in compliance with permit requirements.

The non-native landscaped vegetation on the site consists only of ornamental species, and none of the trees is expected to have restrictions with regard to removal under any local tree ordinance or policy. Therefore, no conflicts with any local tree ordinance or policy would occur.

Hyperion Process Upgrades

Construction at Hyperion would occur within the existing Hyperion plant boundaries. No special-status species or upland, wetland, or aquatic habitats are present on the site.

Construction at the Hyperion site could result in a secondary impact from dust settling on the bluff located immediately to the east. This bluff supports potentially suitable habitat for the federally endangered El Segundo blue butterfly. However, no coastal buckwheat, a food plant for the El Segundo blue butterfly was observed during March 2005 field surveys. Therefore, the habitat on the bluffs would not support the special-status species, and no impact would occur to the El Segundo blue butterfly.

Wetland habitat is not present on the site. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitats are present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

During operations, biosolids would be reused beneficially at an approved site. The approved site is in Kern County at a farm owned by the City of Los Angeles. The farm has been previously evaluated and is currently used for disposal activities. Disposal of additional biosolids could require modification of existing permits, and operation would be conducted according to permit requirements. No impacts to biological resources are anticipated to occur during operation of this component.

The non-native landscaped vegetation on the site consists of ornamental species, and none of the trees have restrictions with regard to removal under any local tree ordinance or policy. Therefore, no conflicts with any local tree ordinance or policy would occur.

Tillman Expansion to 100 mgd

Construction at Tillman would occur within the existing Tillman plant boundaries, primarily to the east of the existing clarifiers. No special-status species or upland, wetland, or aquatic habitats are present on the site.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species is present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species. Expansion would affect vacant land with no potential to support special-status species.

Wetland habitat is not present on the site. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The project operation would result in an increase of the existing treatment capacity of Tillman from 64 mgd to 100 mgd, which is an increase of 56 percent. This increase in capacity could translate into increases in effluent discharges, which potentially could have secondary effects on biological resources in the Los Angeles River downstream. The net flow changes in the Los Angeles River are described in Section 3.11 – Water Quality. The effects of flow changes to biological resources are analyzed in Section 3.5.3.3.

The non-native landscaped vegetation onsite consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Therefore, no conflicts with any local tree ordinance or policy would occur.

Tillman Expansion to 80 mgd

Construction at Tillman would occur within the current Tillman plant boundaries, and the impacts to biological resources would be similar to the

Tillman Expansion to 100 mgd. No special-status species or upland, wetland, or aquatic habitat is present on the site.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species are present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species. Expansion would affect vacant land to the east of the existing clarifiers, with no potential to support special-status species.

Wetland habitat is not present on the site. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitats are present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The project operation would result in an increase of the existing treatment capacity of Tillman from 64 to 80 mgd, a 25 percent increase in capacity. This increase could translate into increases in effluent discharges (less than the Tillman Expansion to 100-mgd discharge levels) that potentially could have secondary effects on biological resources in the Los Angeles River downstream. The net flow changes in the Los Angeles River are described in Section 3.11 – Water Quality.

The non-native landscaped vegetation on the site consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Therefore, no conflicts with any local tree ordinance or policy would occur.

Tillman Process Upgrades

Construction at Tillman would occur within the current Tillman plant boundaries, and the impacts to biological resources would be similar to the Tillman Expansion to 100 mgd. No special-status species or upland, wetland, or aquatic habitats are present on the site.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species are present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species. Expansion would occur on developed portions of the plant, which have no potential to support special-status species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including

aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation onsite consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Therefore, no conflicts with any local tree ordinance or policy would occur.

Tillman Wastewater Storage
Construction at Tillman would occur east of the existing Tillman plant boundaries (berm) beneath the existing cricket field. No special-status species or upland, wetland, or aquatic habitats are present on the site.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species are present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation onsite consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Therefore, no conflicts with any local tree ordinance or policy would occur.

Expansion of LAG to 30 mgd
Construction at LAG would occur within the current LAG plant boundaries. No special-status species or upland, wetland, or aquatic habitat is present on the site.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species is present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation on the site consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Native oaks and sycamores onsite would be preserved where feasible; however, impacts to trees could occur and could conflict with local ordinances or policies.

LAG Operational Storage

Construction at LAG would occur within the current LAG plant boundaries. No special-status species or upland, wetland, or aquatic habitat is present onsite.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species is present onsite. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation on the site consists of ornamental species, and none of the trees have restrictions for removal under any local tree ordinance or policy. Native oaks and sycamores onsite would be preserved where feasible; however, impacts to trees could occur and result in conflicts with local ordinances or policies.

NEIS II West Alignment

No impacts to biological resources would result from the subsurface tunneling. However, the sites of shafts and associated structures would be aboveground and construction could result in impacts on biological resources.

The aboveground construction sites are developed or located in landscaped areas. No native habitats are present within areas that could be affected, and biological resources at most shaft sites are considered to be of low value.

A Cooper's hawk was observed at the Griffith Park site; however, no nest structure was observed. This species is unlikely to nest in the immediate area because of the lack of intact native habitat. However, should Cooper's hawk or other nesting raptors be present onsite at the time of construction, construction activity during the breeding season could affect breeding activities.

No state- or federally listed endangered, threatened, rare, candidate, sensitive species, or special-status species is present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive, or a special-status species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitats are present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation onsite consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Therefore, no impacts to trees would occur that conflict with local ordinance and policy.

NEIS II East Alignment

No impacts to biological resources would result from the subsurface tunneling. However, the sites of shafts and associated structures would be aboveground, and construction could result in impacts on biological resources.

No state- or federally listed endangered, threatened, rare, candidate, sensitive, or special-status species is present on the site. Therefore, implementation of this component would not result in loss of individuals or reduction of existing habitat of a state- or federally listed endangered, threatened, rare, candidate, sensitive species, or a special-status species.

Wetland habitat is not present on the site. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation on the sites consists of ornamental species, and none of the trees has restrictions for removal under any local tree ordinance or policy. Therefore, no impacts to trees would conflict with local ordinance and policy.

GBIS South Alignment

No impacts to biological resources would result from the subsurface tunneling. However, the sites of shafts and associated structures would be aboveground and construction may result in impacts on biological resources.

The aboveground sites are developed in open space or located in an urban park setting. As a result, biological resources at the shaft sites are variable but mostly considered to be of low value.

The Barham shaft site area is situated at the base of a slope that supports chaparral and oak woodlands. These native habitats are present onsite and provide potential habitat for the several special-status plant species including Greata's aster (*Aster greatae*), Braunton's milk-vetch (*Astragalus brauntonii*), Nevin's barberry (*Berberis nevinii*), slender mariposa lily (*Calochortus clavatus*

var. *gracilis*), Plummer's mariposa lily (*Calochortus plummerae*), and Parish's gooseberry (*Ribes divaricatum* var. *parishii*). If the native habitats cannot be avoided during construction and operation, potential impacts to these species would occur.

Because of the limited native habitat, no special-status wildlife species (Table 3.5-2) is expected to breed on the sites. Common raptor species, such as the red-shouldered hawk (*Buteo lineatus*) and American kestrel (*Falco sparverius*), could occur at the aboveground sites. Potential impacts to raptor nesting could occur if nest sites are present and if construction occurs during the breeding season for these species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitat is present onsite. Therefore, project construction would not affect any upland or wetland habitats, including aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation on the sites consists of ornamental species, and none of the trees have restrictions for removal under any local tree ordinance or policy. Therefore, no impacts to trees would conflict with local ordinance and policy.

GBIS North Alignment

No impacts to biological resources would result from the subsurface tunneling. However, the sites of shafts and associated structures would be aboveground, and construction could result in impacts to biological resources.

The aboveground sites are developed or located in an urban park setting. As a result, biological resources at the shaft site are considered to be of low value.

A Cooper's hawk was observed at the Riverside East shaft site; however, no nest structure was observed, and this species is unlikely to nest in this immediate area because of the lack of intact native habitat. However, should Cooper's hawk or other nesting raptors be present onsite at the time of construction, construction activity during the breeding season could affect breeding activities.

No other special-status wildlife species (Table 3.5-2) is expected to breed on the shaft sites. Common raptor species, such as the red-shouldered hawk and American kestrel, could occur at the aboveground sites. Potential raptor nesting impacts could occur if nest sites are present and if construction occurs during the breeding season for these species.

Wetland habitat is not present onsite. Therefore, no impacts to wetlands would occur.

No upland, wetland, or aquatic habitats are present onsite. Therefore, project construction would not affect any upland or wetland habitats, including

aquatic habitats, to such a degree that the chances for long-term survival of a sensitive species are diminished.

The non-native landscaped vegetation on the shaft sites, except for one, consists of ornamental species, and none of the trees have removal restrictions under local tree ordinances or policies. The exception is the Riverside East shaft site area, which supports a dense grove of trees that includes native coast live oaks, California black walnuts, and California sycamores. In the event native trees onsite cannot be preserved or avoided, impacts to trees would occur in conflict with local ordinance and policy.

Program-Level Component Impacts

The specific location of program-level components would be determined during the implementation of the IRP. Additional project-level environmental review and documentation would be conducted for each program-level component as the individual components are developed, as applicable. The general locations of each of the program-level components are shown in (Figure 3.5-1).

VSLIS

VSLIS would be constructed within road rights-of-way using either tunneling or open-trench construction methods, and supporting facilities generally would be located in urban developed areas, landscaped parks, or other locations where native habitat or special-status species usually are absent. As such, impacts to biological resources generally would be avoided, including impacts to special-status species, impacts to wetlands, impacts to habitat, and impacts to trees protected by local ordinance or policy. However, depending on the final alignment and construction method selected, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur where the VSLIS aboveground structures and shaft sites or trenches are located if biological resources are present.

Recycled Water

Generally, the recycled water facilities, supporting facilities, and water uses would be located in urban developed areas, landscaped parks, or other locations where native habitat or special-status species are typically absent. As such, impacts to biological resources generally would be avoided, including impacts to special-status species, impacts to wetlands, impacts to habitat, and impacts to trees protected by local ordinance or policy. However, depending on the final location of recycled water distribution system facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur where facilities are located if biological resources are present.

The implementation of the Recycled Water Program would result in increased distribution of recycled water to users and/or spreading grounds during operation and result in a reduction of effluent discharged into receiving bodies of water, including the Los Angeles River. The indirect effect of flow reduction

in the Los Angeles River could be potential effects on shorebird foraging and nesting habitat along the lower Los Angeles River.

Dry Weather Runoff – Smart Irrigation

An estimated installation of Smart Irrigation devices in up to 80 percent of single-family residences, up to 50 percent of multifamily residences, and up to 20 percent of commercial/industrial connections, would result in up to 515,000 smart irrigation devices installed by year 2020 (average annual installation of over 34,000 devices from 2006 to 2020). Smart irrigation devices would be installed at existing residences and businesses. Therefore, no potential impacts on special-status species or habitat, wetlands, or trees protected under local ordinances or policies would occur during construction of this component.

The operation of the Dry Weather Runoff – Smart Irrigation Program could reduce dry weather runoff by up to 11 mgd and reduce drinking water usage by up to 15,800 acre-feet per year. Operation would result in a reduction of low-flow runoff into receiving bodies of water, including the Los Angeles River. The indirect effect of flow reduction in the Los Angeles River could be potential effects on the shorebird forage and nesting habitat along the lower Los Angeles River.

Dry Weather Runoff – Low-Flow Diversions

The runoff diversions would occur in two primary areas, the coastal area along the Santa Monica Bay and an inland area in the San Fernando Valley.

The coastal runoff diversions would involve diverting approximately 9 mgd of urban runoff from storm drains into the Coastal Interceptor Sewer, where the flows would be conveyed to and treated at Hyperion. About one half of the storm drain diversions along the coast have been or currently are programmed for implementation. Implementing the proposed dry weather diversions under the IRP would entail diversions of the remaining half of storm drains, which include the following: Castlerock, Santa Ynez Canyon, Marquez Avenue, Pulga Canyon, Montana Avenue, and North Westchester.

The inland urban runoff diversions would divert up to 15 mgd of runoff to the wastewater system. Dry weather diversions would occur at Browns Creek, Wilbur Wash, Limekiln Canyon, Caballero Canyon, Bull Creek, and Pacoima Wash. The specific volumes of runoff proposed for each diversion, which range from 1 to 7 mgd, are specified in Section 2 – Project Description of this EIR.

Because of the generally urbanized conditions in and around the potential diversion locations, impacts to biological resources from construction of diversion facilities would not be likely. This includes potential impacts to special-status species, wetlands, habitats, or trees protected by local ordinances or policies. However, depending on the final location of facilities, potential impacts to biological resources, including special-status species and

habitat, wetlands, and trees protected under local ordinances or policies, could occur if facilities are located in non-urban, undeveloped, or open space areas.

Operational impacts could occur as low-flow amounts are diverted from existing surface waters in inland areas. Diversion amounts range from 1 to 7 mgd, depending on the runoff source. Diversions could result in reduced flow in surface waters. Flow could support limited amounts of wetland or riparian habitat, and the reduction of flow could result in loss of the extent or quality of habitat.

The implementation of the Dry Weather Runoff Program would result in a reduction of low-flow runoff into receiving bodies of water, including the Los Angeles River. The indirect effect of flow reduction in the Los Angeles River would be potential effects on the shorebird forage and nesting habitat along the lower Los Angeles River.

Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands
Approximately 5 mgd of dry weather urban runoff from Compton Creek (2 mgd) and Ballona Creek (3 mgd) would be diverted to URPs or treatment wetlands where the runoff would be treated to Title 22 standards and then recycled for use in industrial processes and for irrigation. Combined, these URPs would provide up to 3,300 acre feet per year of recycled water.

In addition, the inland low-flow urban runoff diversions to the wastewater collection system (total of 16 mgd), could alternatively be diverted to URPs or constructed treatment wetlands for treatment instead of receiving treatment in the wastewater system. Dry weather diversions would occur at Browns Creek, Wilbur Wash, Limekiln Canyon, Caballero Canyon, Bull Creek, and Pacoima Wash. Between 1 and 7 mgd of runoff would be diverted, depending on the source. For these inland low-flow diversions, treated water would be discharged to the source.

Diversion facilities, including temporary storage, pumps, diversion structures, and pipelines, would have to be constructed at each runoff source location and tied to the associated URP or treatment wetlands.

Because of the generally urban conditions in and around the potential diversion locations, URPs, or treatment wetland locations, impacts to biological resources from construction of diversion facilities would not be expected. This includes potential impacts to special-status species, wetlands, habitats, or trees protected by local ordinances or policies. However, depending on the final location of facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur if facilities are located in non-urban, undeveloped, or open space areas.

Operational impacts could occur as low-flow amounts are diverted from Ballona Creek (3 mgd) and Compton Creek (3 mgd) and recycled for reuse. Diversions could result in reduced flow in surface waters. Flow could support limited amounts of wetland or riparian habitat, and the reduction of flow could result in loss of the extent or quality of habitat. These impacts would be avoided in inland low-flow runoff diversions because water would be discharged back to receiving waters once it is treated. Where treatment wetlands are implemented, the habitat created in the treatment wetland could offset any impacts from loss of habitat from diversions.

The implementation of the Dry Weather Runoff Program would result in a reduction of dry weather runoff into receiving bodies of water, including the Los Angeles River. The indirect effect of flow reduction to the Los Angeles River would be potential effects on the shorebird forage and nesting habitat along the lower Los Angeles River. Secondary beneficial impacts to biological resources along the Los Angeles River could result from the improvement in water quality of the low-flow runoff that would be diverted and treated prior to discharge to receiving waters.

Wet Weather Runoff – Urban Runoff Plants

To manage runoff during wet weather, three wet weather URPs with a combined capacity of 160 mgd would be constructed along the coast in the Santa Monica Bay watershed. Each wet weather URP would treat 53 mgd of runoff. At each URP, approximately 25 million gallons of wet weather storage would be provided, which represents about half of the anticipated treatment volume.

Because of the generally urbanized conditions in and around the potential URP locations, impacts to biological resources generally would be avoided. This includes impacts to special-status species, habitat, wetlands, and trees protected by local ordinances or policies. However, depending on the final location of facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur where facilities are located.

Secondary beneficial impacts would result from the improvement of the quality of the low-flow runoff that would be diverted and treated in a URP prior to discharge to receiving waters.

Wet Weather Runoff – Onsite Management

Onsite capture and percolation improvements on property and neighborhood would be used to reduce the amounts of wet weather runoff from properties in the eastern San Fernando Valley by up to 304 mgd to as much as 498 mgd. Potential capture and percolation facilities would be installed in existing residential, open space/parks, school grounds, government properties, unused alleys, and other underused or vacant properties within currently urban areas. Therefore, potential impacts on biological resources generally would not occur. This includes impacts to special-status species, habitats, wetlands, and trees protected by local ordinances or policies. However,

depending on the final location of facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur if facilities are located in non-urban, undeveloped, or open space areas.

Wet Weather Runoff – Non-Urban Regional Recharge

Under this option, approximately 245 mgd of wet weather runoff captured from the San Fernando Valley would be used to recharge the groundwater basins from which the City of Los Angeles receives its water. Because the eastern portions of the San Fernando Valley generally have highly permeable soils, recharge would occur primarily at existing spreading grounds in this area.

Rainfall from the northwestern areas of the valley (hillside and mountain areas) would be collected in a new pipeline and conveyed to spreading grounds in eastern San Fernando Valley, such as the Hansen or Pacoima Spreading Grounds. A pipeline would be situated in an east-west direction and collect non-urban runoff from various sources. The pipeline would be approximately 10 miles long and 100 inches in diameter. Although its location and alignment have not yet been determined, it is anticipated that this pipeline would be located beneath existing streets or developed areas in the urbanized portions of the valley. Impacts on biological resources generally would not occur. This includes impacts to special-status species, habitats, wetlands, and trees protected by local ordinances or policies. However, depending on the final location of facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur where facilities are located.

Summary of Component Impacts

The potential impacts to biological resources from implementing each component are summarized in Table 3.5-3.

3.5.3.3 Alternative Impacts

The four Proposed Project Alternatives and No Project Alternative are described in Section 2. The impacts to biological resources due to implementation of Alternatives 1, 2, 3, and 4 and to the No Project Alternative are described below.

Alternative 1

The potential primary and secondary impacts of Alternative 1 on biological resources are presented below. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

Table 3.5-3. Biological Component Impact Summary Table
Integrated Resources Plan EIR

Component	Significance Threshold			
	Special-Status Species	**Wetland Habitat**	**Long-Term Species Survival**	**Tree Ordinances**
Project-level				
Hyperion Expansion to 500 mgd	None	None	Potential water quality changes at ocean outfall from changes in discharge quantity; expected to have minimal effects on biological resources at outfall.	None
Hyperion Process Upgrades	None	None	None	None
Tillman Expansion to 100 mgd	None	None	None	None
Tillman Expansion to 80 mgd	None	None	None	None
Tillman Process Upgrades	None	None	None	None
Tillman Wastewater Storage	None	None	None	None
LAG Expansion to 30 mgd with Storage	None	None	None	Potential impact to trees protected under federal, state, or local policy or ordinance.
LAG Operational Storage	None	None	None	Potential impact to trees protected under federal, state, or local policy or ordinance.
NEIS II – West Alignment	Construction at the Griffith Park shaft site could have primary impact on nesting special-status birds.	None	None	None
NEIS II – East Alignment	None	None	None	None

Table 3.5-3. Biological Component Impact Summary Table
Integrated Resources Plan EIR

Component	Significance Threshold			
	Special-Status Species	**Wetland Habitat**	**Long-Term Species Survival**	**Tree Ordinances**
GBIS – South Alignment	If native habitat not avoided at the Barham shaft site, construction could affect special-status plant species if present. Also, construction could impact nesting raptors at above ground sites, if present.	None	None	None
GBIS – North Alignment	Construction could have primary impact on nesting Cooper's hawk at the Riverside East shaft site, if present at the time of construction. Nesting of other common raptor species could occur if present at the time of construction	None	None	Potential impact to trees protected under federal, state, or local policy or ordinance.
Program-Level				
VSLIS	Not anticipated	Not anticipated.	Not anticipated	Not anticipated
Recycled Water Distribution	Not anticipated	Not anticipated	Potential to affect shorebird habitat in the Los Angeles River	Not anticipated
DWR – Smart Irrigation	Not anticipated.	Not anticipated.	Potential effects to shorebird habitat in the Los Angeles River over existing conditions.	Not anticipated.
DWR – LF Divisions	Not anticipated	Diversions in inland drainages could result in loss of the extent or quality of wetland and riparian habitat in surface waters where diversions occur due to reduced flow rates. May be evaluated again at Project level.	Potential effects to shorebird habitat in the Los Angeles River over existing conditions	Not anticipated;

Table 3.5-3. Biological Component Impact Summary Table
Integrated Resources Plan EIR

Component	Significance Threshold			
	Special-Status Species	**Wetland Habitat**	**Long-Term Species Survival**	**Tree Ordinances**
DWR – URP or TW	Not anticipated	Diversions could result in loss of the extent or quality of wetland and riparian habitat in Ballona Creek and Compton Creek due to reduced flow rates.	Potential effects to shorebird habitat in the Los Angeles River over existing conditions	Not anticipated
WWR – Onsite Management	Not anticipated	Not anticipated; may be evaluated again at Project level.	Not anticipated; may be evaluated again at Project level.	Not anticipated; may be evaluated again at Project level.
WWR – Urban Treatment Plants	Not anticipated	Not anticipated	Not anticipated	Not anticipated
WWR – Non-Urban Recharge	Not anticipated	Not anticipated	Not anticipated	Not anticipated

Impact BIO-1
Potential primary and secondary impacts related to special-status species resulting from Alternative 1 are discussed below.

Primary Impacts. Implementation of Alternative 1 would result in potentially significant primary impacts, and mitigation is required as discussed below.

At the Griffith Park shaft site on the NEIS II West Alignment, construction would result in potential primary impacts on nesting special-status birds, if present. At the Riverside East shaft site (GBIS North Alignment), if native habitat is not avoided, construction could affect nesting of Cooper's hawk and other common raptor species, if present at the time of construction. The potential exists for significant impacts unless mitigation measure BIO-MM-1 is incorporated.

At the Barham shaft site (GBIS South Alignment), if the native habitat at the site is not avoided, construction potentially could affect Greata's aster, Braunton's milk-vetch, Nevin's barberry, and Parish's gooseberry, if present. The potential exists for significant impacts unless mitigation measure BIO-MM-2 is incorporated.

The location of program-level components generally would be in urban or developed areas and would not affect biological resources. However, the facility locations would be determined in the future. If a future location were to be in a non-urban, undeveloped, or open space area, a potential exists for significant impacts on biological resources if such resources are located on the sites. Therefore, the potential exists for significant impacts unless mitigation measure BIO-MM-3 is incorporated.

Secondary Impacts. Implementation of Alternative 1 would result in potential less-than-significant secondary impacts, and no mitigation is required as discussed below.

During operation of the Hyperion expansion, an increased discharge of secondary-treated effluent into Santa Monica Bay would occur. The volume of discharge would increase from the current discharge of 450 to 500 mgd by the year 2020, an 11 percent increase. The effects of increased effluent discharge to the marine environment of the Santa Monica Bay likely would be minimal because: 1) no change in the water quality of the discharge would occur (see Section 3.11 – Hydrology and Water Quality), 2) additional discharge quantity likely would be diluted quickly at the underwater ocean outfall diffuser (see Section 3.11 – Hydrology and Water Quality), and 3) the initial dilution ratio specified in the NPDES permit (84:1) would require compliance. This increased volume of discharge could require modification of existing federal and state discharge permits, and operation would be conducted in compliance with permit requirements. Therefore, significant impacts to marine biological resources would not be anticipated.

Mitigation. The following mitigation measures will be implemented to reduce the potential for impacts to biological resources.

BIO-MM-1
If habitat suitable for raptor nesting or other native bird species occurs on any Proposed Project site, a survey for active raptor nests will occur 30 days prior to commencement of any construction activities during the raptor nesting season, February 1 to June 30. In addition, within 7 days prior to any construction activities during the general nesting season for birds, March 15 to August 15, a survey of nesting birds will be conducted. Any active raptor or other bird nests observed during the survey will be mapped on construction plans. Restrictions on construction activities will be implemented in the vicinity of the nest until the nest is no longer active as determined by a qualified biologist. Typically, a 300- to 500-foot buffer zone (or as determined appropriate by a qualified biologist) is designated around a nest to allow construction to proceed while minimizing disturbance to the active nest. Once the nest is no longer active and the young have dispersed, construction can proceed within the buffer zone.

BIO-MM-2
To reduce potential impacts to special-status plant species with potential to occur at the Barham shaft site, focused protocol surveys for special-status plant species will be conducted during the appropriate period for each species. If no special-status plant species is found at the Barham shaft site, no further mitigation would be required.

In the event focused surveys locate a regionally important population of special-status plants on the Proposed Project site, mitigation could be required. Mitigation for special-status plants is determined through coordination and negotiation between the appropriate resource agencies and the Proposed Project proponent. Determination of appropriate mitigation is determined on a case-by-case basis, considering factors such as quality of habitat on the Project site, size of plant populations located, and status of the species. Mitigation could include avoidance of the plants to the greatest extent possible, relocation of specimens with monitoring/collection of seeds, or purchase of offsite habitat areas containing the observed special-status plant species.

BIO-MM-3
During design of program-level components, if the facilities would be located on a non-urban, undeveloped, or open space area, or would otherwise have the potential to affect biological resources, a qualified biologist will perform a site survey to determine the potential of the component to affect biological resources (special-status plants, wildlife, and habitats, wetlands, and trees protected under local ordinances and policies). If biological resources are present, alternative site locations or design modifications that would avoid impacts to the biological resources would be implemented. If avoidance cannot be implemented, consultation with agencies having jurisdiction over

identified resources would occur to identify case-by-case and/or species-specific mitigation.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-2
Potential primary and secondary impacts resulting from Alternative 1 to wetlands are discussed below.

Primary Impacts. None of the project-level components under Alternative 1 would affect wetlands. The location of program-level components would be determined during implementation of the IRP. Program-level components generally would be located in urban or developed areas where no wetlands occur. However, because the specific locations and construction methods for program-level components have not yet been determined, there could be the potential to affect wetlands if the program-level components or related ancillary structures are ultimately sited in areas that support wetlands. Therefore, the potential exists for significant impacts unless mitigation measure BIO-MM-3, described above, is incorporated.

Secondary Impacts. For the dry weather URPs and treatment wetlands, the potential to impact wetlands could occur if wetlands exist between the diversion (to the URP or treatment wetlands) and the discharge point back into the body of water. For low-flow diversions to the wastewater collection system, the potential exists to adversely affect wetlands downstream of the diversion, if wetlands are present. Therefore, the potential exists for significant impacts unless mitigation measure BIO-MM-4 is incorporated.

Alternative 1 also would result in a reduction of total flow to the Los Angeles River (71 to 73 mgd compared to an existing 84 mgd). The reduced flow would have the effect of lessening flow through the riparian and wetland habitat through the Glendale Narrows area. However, the reduced flow likely would not significantly affect the quality or quantity of the habitat because the wetlands and riparian habitat in the unlined portions of the Los Angeles River are supported by groundwater, the depths of the pools throughout this reach would remain at the depth of the hydraulic controls (man-made sills), and the riparian habitat tends to shrink or expand based on where the water edges are.

Mitigation. Mitigation measure BIO-MM-4 below will be implemented to reduce the potential impact to wetlands.

BIO-MM-4
To reduce potential secondary impacts to the extent or quality of wetland and or riparian habitat in surface waters due to implementation of Dry Weather Runoff – Low-Flow Diversion (Coastal and Inland) and Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands, a survey would be conducted during the design phase to determine if wetlands exist downstream of the diversion point and upstream of the effluent discharge point. If wetlands are present, the diversion point would be redesigned to occur downstream of the

wetlands, or a new location would be selected for the URP, treatment wetlands, or low-flow diversion.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-3
Potential primary and secondary impacts resulting from Alternative 1 to the long-term survival of species are discussed below.

Primary Impacts. None of the project-level components under Alternative 1 would affect the long-term survival of any special-status species. The location of program-level components would be determined during implementation of the IRP. It is anticipated that program-level components would be located in developed or urban areas where special-status species and habitat do not occur. However, depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Secondary Impacts. The overall effect of Alternative 1 would be reduced flow to the Los Angeles River (compared to existing conditions), which could affect the amount of algal mat habitat along the lower reach of the Los Angeles River that is used for foraging by shorebirds. The existing low-flow (i.e., summer to fall) levels along this reach of the Los Angeles River range from a diurnal maximum of approximately 148 cfs to a diurnal minimum of approximately 112 cfs. Table 3.5-4 provides a summary of anticipated flow changes and corresponding water depths along the shorebird reach of the Los Angeles River for the four Proposed Project Alternatives. Existing conditions flow is provided for estimated diurnal minimum and maximum. The diurnal variation has not been developed for all alternatives; however, a range of estimated daily average flows is provided, with corresponding average water depths on the concrete sill. For Alternative 1, diurnal variation is anticipated to range from a high of 126 cfs to a minimum of 96 cfs (City of Los Angeles, 2005). Peak flows would occur in the lower portion of the Los Angeles River in evening and early morning, slowly ramping up about 8 p.m. each evening, with peak flows occurring between 2 a.m. and 10 a.m., and declining after that.

As indicated, flow changes to the lower Los Angeles River under Alternative 1 are anticipated to result in a reduction in the average depth on the concrete sill during the summer low flows ranging by 11 to 14 percent, or approximately 0.5 inch.

This small reduction in water depth on the sill is not anticipated to result in a substantial reduction in the extent or quality of the shorebird habitat. The depth would be anticipated to continue to support the algal mat production and corresponding invertebrates that support foraging shorebirds. Most of the shorebirds that use this reach are foraging in less than 2 inches of water and use shallow water habitat rather than the algal mat where it forms at that depth. Water depths resulting under Alternative 1 would be anticipated to continue to support these habitat conditions. As such, the impact on

shorebirds under Alternative 1 is anticipated to be less than significant, and no mitigation would be required.

Table 3.5-4. Minimum and Maximum Estimated Sheet Flow Depth Changes for Potential Future Alternatives
Integrated Resources Plan EIR

Existing Conditions (Base Case)			Future Flow Alternatives: Estimated Sheet-flow Depth Variation (in inches)							
			Alternative 1		Alternative 2		Alternative 3		Alternative 4	
			Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Low-Flow Diurnal Flow	**Flow (ft^3/s)**	**Level (in.)**	110	113	135	141	135	156	135	147
			2.8`	2.9	3.4	3.5	3.4	3.8	3.4	3.6
Minimum	112	2.9	-3%	0%	17%	21%	17%	31%	17%	24%
Maximum	148	3.6	-22%	-19%	-6%	-3%	-6%	6%	-6%	0%
Mean	130	3.3	-14%	-11%	5%	8%	5%	17%	5%	11%

Notes:
Level = sheet flow depth calculated as the water surface at the indicated flow less the 1-foot depth of the notched channel.
Positive values indicate that the future sheet flow depth is estimated to be greater than base case depth.
Source: City of Los Angeles, 2005

Mitigation: Mitigation measure BIO-MM-3 will be implemented to reduce the potential for impacts to biological resources from program-level components.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-4
Potential primary and secondary impacts resulting from Alternative 1 related to tree ordinances or policies are discussed below.

Primary Impacts. Potential primary impacts to trees governed by a local tree ordinance or policies would occur at LAG and the Riverside East shaft site (GBIS North Alignment). Coast live oak and California sycamore were planted or retained during development of LAG and are still present. The Riverside East shaft site supports a dense grove of trees that contains native coast live oaks, California black walnuts, and California sycamores. These sites are located in the City of Los Angeles, and the City of Los Angeles General Plan – Conservation Element states that native oak trees are protected. The ordinance prohibits destruction of the valley oak (*Quercus lobata*), California live oak (*Quercus agrifoli*a), and any tree of the oak genus indigenous to California. It excludes scrub oaks (*Quercus dumosa* aka *Quercus herberidifolia*) and nursery-grown oaks (City of Los Angeles, 2001). To be considered protected, the native oak trees need to measure 8 inches or more in diameter at 4.5 feet above the ground. Therefore, potentially significant impact on oak trees governed by local tree ordinance or policy would occur unless mitigation measure BIO-MM-6 is incorporated.

Implementation of Alternative 1 could affect Los Angeles County SEAs (i.e., Griffith Park); however, implementation would not conflict with any Habitat Conservation Plans or Natural Community Conservation Plans, or other

approved local, regional, or state habitat conservation plans. Because impacts to biological resources due to implementation of Alternative 1 on the Griffith Park SEA would be limited to the aboveground structures associated with the GBIS and NEIS II tunnel alignments as discussed above, and the location of these structures would not affect habitat, no significant impacts would occur and no mitigation is required.

The location of program-level components would be determined during implementation of the IRP. It is anticipated that program-level components would be located where trees protected under local ordinances or policies would be avoided. However, depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Secondary Impacts. No secondary impacts would occur to trees governed by local tree ordinances or policies, and no mitigation would be required.

Mitigation. Mitigation measures would be implemented to reduce potential impacts related to protected trees.

> BIO-MM-5
> Prior to construction, a qualified biologist will review the City of Los Angeles tree ordinances. The qualified biologist will then identify and quantify the trees that need to be removed at the Riverside East shaft site or program-level component locations, as applicable. Any replacement requirements listed in the City of Los Angeles ordinance with regard to protected oak trees will be obeyed.

Impacts after Mitigation. No impact is anticipated.

Alternative 2

Each of the components that comprise Alternative 2 is described in detail in Section 2.3.5.

The potential primary and secondary impacts of Alternative 2 on biological resources are presented below. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

Impact BIO-1

Primary Impacts. The primary impacts of implementing Alternative 2 project-level components are the same as those for Alternative 1. Construction of Alternative 2 would have potential impacts on nesting special-status birds, if present, at the Griffith Park shaft site (NEIS II West Alignment). At the GBIS North Alignment Riverside East shaft site, if native habitat is not avoided, construction would affect nesting Cooper's hawk and other common raptor species. Additionally, potential impact to potential habitat for endangered plant species (Greata's aster, Braunton's milk-vetch, Nevin's barberry, and Parish's gooseberry) could occur during construction at the Barham shaft site. Therefore, the potential exists for significant impacts to biological resources.

Additionally, the primary impacts of implementing Alternative 2 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Secondary Impacts. The secondary impact of implementing Alternative 2 is the same as for Alternative 1. Increased discharge could require modification of existing federal and state discharge permits, and operation would be conducted in compliance with permit requirements. Therefore, no mitigation is required.

Mitigation. Mitigation measures BIO-MM-1, BIO-MM-2, and BIO-MM-3, as described under Alternative 1, will be implemented to mitigate potential impacts to biological resources.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-2
Primary Impacts. The primary impacts of implementing Alternative 2 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to wetlands, if present.

Secondary Impacts. The secondary impacts of implementing Alternative 2 program-level components are the same as those for Alternative 1. Dry weather URPs and treatment wetlands significantly could affect wetlands by reducing the amount of flow, if wetlands are present downstream of the diversion point.

Alternative 2 would result in an increase in total flow to the Los Angeles River (87 to 91 mgd, compared to an existing 84 mgd). Similar to Alternative 1, Alternative 2 likely would not significantly affect the wetland and riparian along the unlined portion of the Los Angeles River.

Mitigation. Mitigation measure BIO-MM-3 and BIO-MM-4, as described under Alternative 1, will be implemented to mitigate potential wetland impacts.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-3
Primary Impacts. The primary impacts of implementing Alternative 2 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources. Potential exists for significant impacts unless mitigation measure BIO-MM-3 is incorporated.

Secondary Impacts. Alternative 2 is anticipated to increase summer low flows in the lower Los Angeles River, potentially altering the depth of water on the concrete sill that currently supports nesting and migratory shorebirds. The

average change in the depth of water on the sill is anticipated to be an increase of between 5 and 8 percent, or a maximum increase of up to 0.5 inch (Table 3.5-4). During the maximum daily flow, the change in depth could be greater than this. In general, this level of change would not be anticipated to result in substantial changes in the extent or quality of the shorebird habitat along the lower Los Angeles River, and the impact is anticipated to be less than significant.

Mitigation. Mitigation is not required.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-4
Primary Impacts. The primary impacts of implementing Alternative 2 are the same as those for Alternative 1. Construction of Alternative 2 could result in impacts to trees governed by a local tree ordinance or policies at LAG and the Riverside East shaft site area (GBIS North Alignment). Therefore, potentially significant impacts to oak trees could occur.

The primary impacts of implementing Alternative 2 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Similar to Alternative 1, implementation of Alternative 2 is not expected to affect Los Angeles County SEAs (i.e., Griffith Park) and would not conflict with any Habitat Conservation Plans or Natural Community Conservation Plans, or other approved, local, regional, or state habitat plans. Therefore, no significant impacts would occur and no mitigation is required.

Secondary Impacts. No secondary impacts would occur on trees governed by local tree ordinances or policies and no mitigation would be required.

Mitigation. Mitigation measure BIO-MM-5, as described under Alternative 1, would be implemented for Alternative 2.

Impacts after Mitigation. No impact is anticipated.

Alternative 3
Alternative 3 comprises the components described in detail in Section 2.3.6.

The potential primary and secondary cumulative impacts of Alternative 3 on biological resources are presented below. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

Impact BIO-1
Primary Impacts. The primary impacts of implementing Alternative 3 project-level components are the same as those for Alternative 1. Construction of Alternative 3 would have potential impacts on nesting special-status birds, if present, at the Griffith Park shaft site (NEIS II West Alignment). At the GBIS North Alignment Riverside East shaft site, if native habitat is not avoided,

construction would affect nesting Cooper's hawk and other common raptor species. Additionally, potential impacts to possible habitat for endangered plant species (Greata's aster, Braunton's milk-vetch, Nevin's barberry, and Parish's gooseberry) could occur during construction at the Barham shaft site. Therefore, there is a potential for significant impacts to biological resources.

Additionally, the primary impacts of implementing Alternative 3 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources. Potential exists for significant impacts.

Secondary Impacts. The secondary impact of implementing Alternative 3 is the same as those for Alternative 1. Increased discharge could require modification of existing federal and state discharge permits, and operation would be conducted in compliance with permit requirements. Therefore, no mitigation is required.

Mitigation. Mitigation measures BIO-MM-1, BIO-MM-2, and BIO-MM-3, as described under Alternative 1, will be implemented to mitigate potential biological resource impacts.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-2
Primary Impacts. The primary impacts of implementing Alternative 3 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method for program-level components, potentially significant impacts could occur to wetland and riparian resources. Potential exists for significant impacts unless mitigation measure BIO-MM-3 is incorporated.

Secondary Impacts. The secondary impacts of implementing Alternative 3 program-level components are the same as those for Alternative 1. Dry weather URPs and treatment wetlands could significantly affect wetlands by reducing the amount of flow, if wetlands are present downstream of the diversion point.

Alternative 3 would result in an increase in total flow to the Los Angeles River (87 to 101 mgd, compared with an existing 84 mgd). As with Alternative 2, Alternative 3 likely would not significantly affect the wetland and riparian resources along the unlined portion of the Los Angeles River.

Mitigation. Mitigation measures BIO-MM-3 and BIO-MM-4, as described under Alternative 1, will be implemented to mitigate potential wetland impacts.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-3
Primary Impacts. The primary impacts of implementing Alternative 3 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources. Potential exists for significant impacts unless mitigation measure BIO-MM-3 is incorporated.

Secondary Impacts. Alternative 3 is anticipated to increase summer low flows on the lower Los Angeles River, potentially altering the depth of water on the concrete sill that currently supports nesting and migratory shorebirds. The average change in the depth of water on the sill is anticipated to be an increase of between 5 and 17 percent, or a maximum increase of up to 0.5 inch (Table 3.5-4). During the maximum daily flow, the depth change could be greater than this. In general, this level of change is not be anticipated to result in substantial changes in the extent or quality of the shorebird habitat along the lower Los Angeles River, and the impact is anticipated to be less than significant.

Mitigation. Mitigation is not required.

Impact BIO-4
Primary Impacts. The primary impacts of implementing Alternative 3 are the same as those for Alternative 1. Construction of Alternative 3 could result in impacts to trees governed by a local tree ordinance or policies at LAG and the Riverside East shaft site area (GBIS North Alignment). Potentially significant impact on oak trees would occur unless mitigation measure BIO-MM-6 is incorporated.

The primary impacts of implementing Alternative 3 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources. Potential exists for significant impacts unless mitigation measure BIO-MM-3 is incorporated.

Similar to Alternative 1, implementation of Alternative 3 is not expected to affect Los Angeles County SEAs (i.e., Griffith Park) and would not conflict with any Habitat Conservation Plans or Natural Community Conservation Plans, or other approved, local, regional, or state habitat plans. Therefore, no significant impacts would occur and no mitigation is required.

Secondary Impacts. No secondary impacts would occur on trees governed by local tree ordinances or policies, and no mitigation would be required.

Mitigation. Mitigation measure BIO-MM-5, as described under Alternative 1, will be implemented.

Impacts after Mitigation. No impact is anticipated.

Alternative 4

Each of the components that compose Alternative 4 is described in detail in Section 2.3.7.

The potential primary and secondary impacts of Alternative 4 on biological resources are presented below. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

Impact BIO-1

Primary Impacts. The primary impacts of implementing Alternative 4 project-level components are the same as those for Alternative 1. Construction of Alternative 4 would have potential impacts on nesting special-status birds, if present, at the Griffith Park shaft site (NEIS II West Alignment). At the GBIS North Alignment Riverside East shaft site, if native habitat is not avoided, construction would affect nesting Cooper's hawk and other common raptor species. Additionally, potential impact to potential habitat for endangered plant species (Greata's aster, Braunton's milk-vetch, Nevin's barberry, and Parish's gooseberry) could occur during construction at the Barham shaft site. Therefore, the potential exists for significant impacts to biological resources.

Additionally, the primary impacts of implementing Alternative 4 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Secondary Impacts. The secondary impact of implementing Alternative 4 is the same as those for Alternative 1. Increased discharge could require modification of existing federal and state discharge permits, and operation would be conducted in compliance with permit requirements. Therefore, no mitigation is required.

Mitigation. Mitigation measures BIO-MM-1, BIO-MM-2, and BIO-MM-3, as described under Alternative 1, will be implemented to mitigate potential biological resource impacts.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-2

Primary Impacts. The primary impacts of implementing Alternative 4 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to wetland and riparian resources.

Secondary Impacts. The secondary impacts of implementing Alternative 4 program-level components are the same as those for Alternative 1. Dry weather URPs and treatment wetlands significantly could affect wetlands by reducing the amount of flow, if wetlands are present downstream of the diversion point.

Alternative 4 would result in an increase in total flow to the Los Angeles River (87 to 95 mgd, compared to an existing 84 mgd). As with Alternative 1,

Alternative 4 likely would not significantly affect the wetland and riparian resources along the unlined portion of the Los Angeles River.

Mitigation. Mitigation measures BIO-MM-3 and BIO-MM-4, as described under Alternative 1, will be implemented to mitigate potential wetland impacts.

Impacts after Mitigation. No impact is anticipated.

Impact BIO-3
Primary Impacts. The primary impacts of implementing Alternative 4 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Secondary Impacts. Alternative 4 is anticipated to increase summer low flows on the lower Los Angeles River, potentially altering the depth of water on the concrete sill that currently supports nesting and migratory shorebirds. The average change in the depth of water on the sill is anticipated to be an increase of between 5 and 11 percent, or a maximum increase of less than 0.5 inch (see Table 3.5-4). During the maximum daily flow, the depth change could be greater than this. In general, this level of change would not be anticipated to result in substantial changes in the extent or quality of the shorebird habitat along the lower Los Angeles River, and the impact is anticipated to be less than significant.

Mitigation. No mitigation is required.

Impact BIO-4
Primary Impacts. The primary impacts of implementing Alternative 4 are the same as those for Alternative 1. Construction of Alternative 4 could result in impacts to trees governed by a local tree ordinance or policies at LAG and the Riverside East shaft site area (GBIS North Alignment). Therefore, potentially significant impact on oak trees could occur.

The primary impacts of implementing Alternative 4 program-level components are the same as those for Alternative 1. Depending on the final locations and construction method of program-level components, potentially significant impacts could occur to biological resources.

Similar to Alternative 1, implementation of Alternative 4 is not expected to affect Los Angeles County SEAs (i.e., Griffith Park) and would not conflict with any Habitat Conservation Plans or Natural Community Conservation Plans, or other approved, local, regional, or state habitat plans. Therefore, no significant impacts would occur and no mitigation is required.

Secondary Impacts. No secondary impacts would occur on trees governed by local tree ordinances or policies, and no mitigation would be required.

Mitigation. Mitigation measure BIO-MM-5, as described under Alternative 1 will be implemented.

Impacts after Mitigation. No impact is anticipated.

No Project Alternative

The No Project Alternative, for purposes of this EIR, is no action. Under this Alternative, integrated improvements to the wastewater treatment and collection system, recycled water system, or runoff system would not occur.

Individual wastewater, recycled water, or runoff projects are still likely to be necessary to meet regulatory requirements and future demands, but such individual projects would be designed and constructed as the needs arise rather than being planned in a systemwide integrated manner. In this case, each individual project would be subject to its own environmental clearance in the future.

Under the No Project Alternative, the existing water treatment infrastructures would remain the same with no improvements, and the City of Los Angeles would not enact water conservation efforts. Specific potential impacts to special-status species, wetlands, habitats, and protected trees resulting from project construction or operation would be avoided.

Under the No Project Alternative, low-flow quantity in the Los Angeles River is assumed to remain the same as the existing average flow of 84 mgd. As a result, no substantial changes in the depth of flow on the sill is anticipated; therefore, shorebird foraging habitat would not be affected.

3.5.3.4 Cumulative Impacts

Implementation of any of the Proposed Project Alternatives would require the construction of various site specific and program-level facilities. None of the related plans or projects is expected to directly affect special-status species or result in significant impacts. Thus, direct cumulative impacts to such species are not anticipated.

Some of the related plans and projects would result in reduced flow to the Los Angeles River (such as the Sun Valley Watershed Management Plan, water recycling projects, and the two state park projects); however, these reductions in flow to the Los Angeles River, in conjunction with any of the Project Alternatives, would not result in significant cumulative impacts to wetlands. The wetland and riparian habitat zones along the unlined portions of the Los Angeles River supported by groundwater would adjust to the new flow levels without substantial loss of acreage, and the sills associated with the bridges in the unlined portion of the Los Angeles River would control the level of water upstream, regardless of flow reductions.

The cumulative flow reduction to the Los Angeles River from the related plans and projects, in conjunction with each Proposed Project Alternative, could result in significant cumulative impacts to the algal mat habitat used for foraging by migratory shorebirds if the amount of algal mat habitat is substantially reduced.

Lastly, potential impacts to protected trees would be mitigated to a level below significance. Although some of the other related plans or projects also could affect protected trees, they would be subject to the requirements of the tree ordinances and policies and their impacts would be mitigated. As a consequence, cumulative impacts to protected trees would not occur.