



An Environmental Planning/Resource
Management Corporation

February 12, 2007



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900 South Fremont Avenue
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VIA OVERNITE AND EMAIL
(jcruz@dpw.lacounty.gov)



Subject: Results of Biological Inventory Surveys at Soft-Bottom Channel
Reaches 29, 33, 101, 102, 104, 105, 106, and 107, Los Angeles
County, California

Dear Ms. Cruz:



This letter report presents the findings of wildlife and plant inventory surveys conducted at soft-bottom channel reaches 29, 33, 101, 102, 104, 105, 106, and 107. The purpose of the inventory surveys was to provide a relatively complete picture of existing biological resources at each of the eight channel Reaches. Due to the relatively small area within each channel reach, a one-day inventory survey was sufficient. These survey results will provide information to assist the Los Angeles County Department of Public Works (LACDPW) in obtaining the necessary approvals from the California Department of Fish and Game (CDFG) to remove sediment and clear vegetation that has accumulated at these channel reaches.



As part of its annual maintenance activities for soft-bottom channel reaches, the LACDPW removes vegetation from approximately 100 channel reaches to maintain design flood flow capacity. This clearing activity is conducted in conformance with permits issued by the U.S. Army Corps of Engineers (ACOE), CDFG, and the California Regional Water Quality Control Board (RWQCB). The general standard of the CDFG permit is that vegetation "allowed to remain in 1997" shall not be impacted by future maintenance activities.

Note that Reaches 29 and 33 were part of the original 100 channel reaches and vegetation removals are approved at these two reaches under the existing permits. However, due to the increasing sediment build-up, vegetation as well as sediment removals are now necessary at these two reaches.

The LACDPW only recently accepted ownership of the other six reaches (101, 102, 104, 105, 106, and 107) and since the maintenance activities at these six reaches are not included under the existing permits, no vegetation removals have occurred. Habitat Assessments were previously conducted at these six reaches in 2004 (BonTerra Consulting 2004a, BonTerra Consulting 2004b) and these reaches were also included in the 2005 focused surveys.

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BACKGROUND

To effectively control flood waters from the mountainous watersheds surrounding the Los Angeles basin, the ACOE and the Los Angeles County Flood Control District constructed concrete-bottom and earth-bottom channels leading from dams and debris basins located along the frontal slopes of the San Gabriel, Santa Monica, Verdugo, and Santa Susanna mountains. Construction began in the 1930s. These channels, as a system, provide flood protection for Los Angeles County.

Channel maintenance activities have been performed regularly within the Flood Control District channels for over 50 years. Originally constructed by the ACOE, upon completion, most of the channel facilities were transferred to Los Angeles County Flood Control District for cyclic maintenance. The ACOE's maintenance guidelines require that "debris, objectionable growth, shoals, and waste materials must not encroach on the invert (i.e. channel bottom). Excess materials that will not move readily with low flows must be removed. Measures must be taken to control objectionable growth by approved chemical or mechanical means" (ACOE 1996).

The LACDPW formerly maintained channels clear of any vegetation, as required under 33 Code of Federal Regulations Section 208.10, until the CDFG began requiring the LACDPW to clear vegetation on alternating sides of the channels each year. The ACOE allowed limited clearing to occur between 1993 and 1995. Anticipated heavy rains during the 1997/1998 storm season caused by El Nino conditions resulted in a statewide need to remove vegetation and sediment from earth-bottom channels to restore their flood carrying capacity. The LACDPW obtained all necessary permits to conduct this work in the 1997/1998 storm season and has continued the ongoing maintenance through Fall 2005 as approved by the permits.

In 2002, the U.S. Fish and Wildlife Service (USFWS) provided the ACOE and the LACDPW a list of eight federally listed Threatened and Endangered species and a list of channel reaches for which focused surveys would be necessary prior to maintenance activities for the 2002-2003 storm season. The eight Threatened and Endangered species were the following: Santa Ana sucker (*Catostomus santaanae*), unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*), arroyo toad (*Bufo californicus*), California red-legged frog (*Rana aurora draytonii*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo belli pusillus*), Nevin's barberry (*Berberis [Mahonia] nevinii*), and slender-horned spineflower (*Dodecahema leptoceras*). Based on habitat suitability, focused surveys for the species indicated in Table 1 were determined to be necessary. Focused surveys were conducted in 2002, 2003, and 2005 at soft-bottom channel reaches identified as having suitable habitat for any of these Threatened or Endangered species. Note that the 2005 focused surveys included new channel reaches 101, 104, 105, 106, and 107 among others.

TABLE 1
RECOMMENDED FOCUSED SURVEYS FOR SPECIAL STATUS SPECIES

Soft-Bottom Channel Reach	Plant Species	Wildlife Species
Reach 29	N/A	N/A
Reach 33	N/A	N/A
Reach 101	San Fernando Valley spineflower Slender-horned spineflower	Arroyo toad
Reach 102	N/A	N/A
Reach 104	N/A	Least Bell's vireo Southwestern willow flycatcher Arroyo toad Unarmored threespine stickleback
Reach 105	Slender-horned spineflower	Arroyo toad Unarmored threespine stickleback
Reach 106	N/A	Least Bell's vireo Southwestern willow flycatcher Arroyo toad
Reach 107	N/A	Least Bell's vireo Southwestern willow flycatcher

REACH DESCRIPTIONS AND LOCATIONS

The LACDPW maintains numerous soft-bottom channel reaches that primarily function to control flood waters. Maintained soft-bottom channels are located between concreted segments of rivers and creeks in order to prevent backup of debris and sediment that moves downstream during high rainfall events. High volumes of stormwater carrying debris and sediment can cause considerable damage to downstream and upstream properties and can even result in the loss of human life. The dams, barriers, and debris basins also have spillways to allow removal of excess runoff water at safe velocities that will not damage the dam or downstream structures. Vegetation within the maintained segments of the soft-bottom channels increases the collection of debris.

The LACDPW continues to remove vegetation and, as needed, sediment from soft-bottom channels in a manner consistent with previously-approved and permitted maintenance activities. BonTerra Consulting has recently completed inventory surveys for the following reaches: 29, 33, 101, 102, 104, 105, 106, and 107 (see Exhibits 1 and 2); the results of these inventory surveys are described below. Watersheds containing these reaches include the Los Angeles River, Malibu Creek, Castaic Creek, and Santa Clara River watersheds. Reaches are located within the Van Nuys, Calabasas, Thousand Oaks, Newhall, Whitaker Peak, Warm Springs Mountains, and Oat Mountain U.S. Geological Survey (USGS) quadrangles in Los Angeles County, California.

Reach 29 – Las Virgenes Creek (PD T1684) M.C.I.

Reach 29, Las Virgenes Creek (PD T1684) M.C.I., is located south of the Ventura/Los Angeles County Line, west of Ruthwood Drive, north of Thousand Oaks Boulevard, east of Las Virgenes Road in the City of Calabasas, Los Angeles County (see Exhibit 3A). The reach is located within the Calabasas USGS 7.5-minute quadrangle map and is part of the Malibu Creek Watershed. The upstream limit of the Reach is the Ventura/Los Angeles County Line and the

downstream limit of the Reach is 3,006 feet upstream of Thousand Oaks Boulevard. The reach is approximately 371 feet in length. Refer to page 558-H3 of the Thomas Guide, Los Angeles County.

Reach 33 – Medea Creek (PD T1378 u.2)

Reach 33, Medea Creek (PD T1378 u.2), is located south of Laro Drive, northwest of Kanan Road in the City of Agoura Hills, Los Angeles County (see Exhibit 3B). The reach is located within the Thousand Oaks USGS 7.5-minute quadrangle map and is part of the Malibu Creek Watershed. The upstream limit of the Reach is 731 feet upstream of Thousand Oaks Boulevard and the downstream limit of the Reach is 215 feet downstream of Thousand Oaks Boulevard. The reach is approximately 946 feet in length. Refer to page 558-A4 of the Thomas Guide, Los Angeles County.

Reach 101 – Violin Canyon (PD 2312)

Reach 101, Violin Canyon (PD 2312), is located east of Interstate 5 and west of Emerald Lane in the community of Castaic in unincorporated Los Angeles County (see Exhibit 3C). The reach is located within the Newhall, Warm Springs, and Whittier Peak USGS 7.5-minute quadrangle maps and is part of the Castaic Creek Watershed. The upstream limit of the Reach is 2,637 feet upstream of Lake Hughes Road and the downstream limit of the Reach is 820 feet upstream of Lake Hughes Road. The reach is approximately 1,817 feet in length. Refer to page 4369-G5 to G6 of the Thomas Guide, Los Angeles County.

Reach 102 – Violin Canyon (PD 2275)

Reach 102, Violin Canyon (PD 2275), is located south of West Highland Court, east of adjacent open space, north of Oak Valley Road, and west of Sierra Oak Trail and Interstate 5 in the community of Castaic in unincorporated Los Angeles County (see Exhibit 3D). The reach is located within the Whittier Peak USGS 7.5-minute quadrangle map and is part of the Castaic Creek Watershed. The reach upstream limit is 1,072 feet upstream of the downstream face of Sierra Oak Trail RCB and the downstream limit is 94 feet upstream of the downstream face of Sierra Oak Trail RCB. The reach is approximately 978 feet in length. Refer to page 4369-E5 to F5 of the Thomas Guide, Los Angeles County.

Reach 104 – Castaic Creek (PD 2441 Units 1 and 2)

Reach 104, Castaic Creek (PD 2441 Units 1 & 2), is located south of Diablo Place, west of Hancock Lane and Interstate 5, north of Highway 126, and east of Castaic Creek and adjacent open space in Castaic Junction in unincorporated Los Angeles County (see Exhibit 3E). The reach is located within the Newhall USGS 7.5-minute quadrangle map and is part of the Castaic Creek Watershed. The reach upstream limit is 669 feet upstream of Muirfield Lane Centerline and the downstream limit is 478 feet downstream of Turnberry Lane Centerline. The reach is approximately 2,186 feet in length. Refer to page 4459-H6 to H7 of the Thomas Guide, Los Angeles County.

Reach 105 – San Francisquito Canyon Channel (PD 2456)

Reach 105, San Francisquito Canyon Channel (PD 2456), is located in the San Francisquito Creek north and south of Decoro Drive, west of Sunny Creek Drive, and east of North Dickason Drive and Interstate 5 in unincorporated Los Angeles County near the northern border of the City of Santa Clarita (see Exhibit 3F). The reach is located within the Newhall USGS 7.5-minute quadrangle map and is part of the Santa Clara River Watershed. The reach upstream limit is 417 feet upstream of Decoro Drive centerline and the downstream limit is 416 feet downstream of Decoro Drive centerline. The reach is approximately 833 feet in length. Refer to page 4460-F6 of the Thomas Guide, Los Angeles County.

Reach 106 – Castaic Drain Outlet (RMD Channel)

Reach 106, Castaic Drain Outlet (RMD Channel), is located south of Ridge Route Road, west of Castaic Regional Sports Complex, north of Castaic Road and Tapia Canyon Road, east of Castaic Road and Interstate 5 in the community of Castaic in unincorporated Los Angeles County (see Exhibit 3G). The reach is located within the Newhall USGS 7.5-minute quadrangle map and is part of the Santa Clara River Watershed. The reach upstream limit is the toe of the grouted rip rap apron and the downstream limit is 147 feet downstream of the grouted rip rap apron. The reach is approximately 147 feet in length. Refer to page 4459-H1 of the Thomas Guide, Los Angeles County.

Reach 107 – The Old Road Channel (RMD Channel)

Reach 107, The Old Road Channel (RMD Channel), is located south of the intersection of Calgrove Boulevard and The Old Road, west of Interstate 5, north of 24136 The Old Road, east of The Old Road and Towsley Canyon Park in unincorporated Los Angeles County (see Exhibit 3H). The reach is located within the Oat Mountain USGS 7.5-minute quadrangle map and is part of the Santa Clara River Watershed. The reach upstream limit is 230 feet upstream of the driveway into 24136 The Old Road and the downstream limit is the upstream end of the concrete-lined channel. The reach is approximately 943 feet in length. Refer to page 4640-F4 of the Thomas Guide, Los Angeles County.

METHODS

BonTerra Consulting biologists conducted inventory surveys on the dates indicated in Table 2.

TABLE 2
SUMMARY OF SURVEYORS AND DATES

Soft-Bottom Channel Reach	Survey Date	Botanist	Wildlife Biologist
Reach 29 – Las Virgenes Creek (PD T1684) M.C.I.	October 17	Andrea Edwards	Lindsay Messett
Reach 33 – Medea Creek (PD T1378 u.2)	October 17	Andrea Edwards	Lindsay Messett
Reach 101 – Violin Canyon (PD 2312)	October 23	Andrea Edwards	Jeff Wheeler
Reach 102 – Violin Canyon (PD 2275)	October 23	Andrea Edwards	Jeff Wheeler
Reach 104 – Castaic Creek (PD 2441 Units 1 & 2)	October 23	Andrea Edwards	Jeff Wheeler
Reach 105 – San Francisquito Canyon Channel (PD 2456)	October 23	Andrea Edwards	Jeff Wheeler
Reach 106 – Castaic Drain Outlet (RMD Channel)	September 28	Andrea Edwards	Jeff Wheeler
Reach 107 – The Old Road Channel (RMD Channel)	September 28	Andrea Edwards	Jeff Wheeler

BonTerra Consulting Biologists Jeff Wheeler, Lindsay Messett, and Andrea Edwards conducted general plant and wildlife surveys that included vegetation mapping and documentation of native riparian trees present. The California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2006) and California Department of Fish and Game's (CDFG) California Natural Diversity Database (CDFG 2006) were reviewed to identify special status plants, wildlife, and habitats known to occur in the vicinity of the project sites. The surveys focused on the identification of all plant and wildlife species present within each channel reach. It should be noted that there are annual plant species potentially present at each reach that would not be detectable on the survey dates. In addition, there are some bird species that potentially breed at these channel reaches but are migratory and leave the region during the fall season.

All plant species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993) and Munz (1974). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names. Nomenclature for vegetation types generally follows that of *The Vegetation Classification and Mapping Program: List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG 2003).

All wildlife species detected during the course of the surveys were documented in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign including scat, footprints, scratch-outs, dust bowls, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows Stebbins (2003) for amphibians and reptiles, American Ornithologists Union (1998) for birds, and Baker *et al.* (2003) for mammals.

Reaches 29, 33, 101, 102, 106, and 107 were surveyed in their entirety. The survey area for reach 104 was limited to the area immediately surrounding the two outlet structures, and the survey area for reach 105 was limited to the area 50 feet upstream and downstream from the bridge. Vegetation maps for each channel reach are included as Exhibits 3A-3H, and site photographs are included as Exhibits 4A-4H. In addition, a complete list of plant species observed at each channel reach is included in Appendix A, and a complete list of wildlife species observed at each channel reach is included in Appendix B. Note that Exhibits 3A-3H show vegetation types not only within the channel reach limits, but also within the area to be affected by maintenance activities (i.e. clearing limits). Table 3 on the following page presents the acreages for areas within the clearing limits that are expected to be impacted by maintenance activities for each channel reach. In addition, only those vegetation types warranting mitigation are included in Table 3.

TABLE 3
VEGETATION TYPES

Vegetation Types	Reach 29 (acres)	Reach 33 (acres)	Reach 101 (acres)	Reach 102 (acres)	Reach 104 (acres)	Reach 105 (acres)	Reach 106 (acres)	Reach 107 (acres)
	Clearing Limits	Clearing Limits	Clearing Limits	Clearing Limits	Clearing Limits	Clearing Limits	Clearing Limits	Clearing Limits
Scalebroom Scrub			2.15					
Freshwater Marsh	0.09	0.24		0.05				
Fremont Cottonwood Riparian Forest								
Southern Cottonwood – Willow Riparian					0.01		0.04	0.02
Southern Cottonwood – Willow Riparian/Coast Live Oak Woodland								0.20
Willow Riparian Woodland	0.01	0.11						
Mulefat Scrub			1.44			0.91		
Southern Riparian Scrub							0.18	0.35
Coast Live Oak Woodland								0.01
Disturbed/Mulefat Scrub				0.14				
Disturbed/Southern Riparian Scrub				0.07				
Ruderal/Scalebroom Scrub Seedlings								
Ruderal/Mulefat Scrub Seedlings								
Total (acres)	0.10	0.35	3.59	0.26	0.01	0.91	0.22	0.58

RESULTS

Reach 29 – Las Virgenes Creek (PD T1684) M.C.I.

Environmental Setting

Reach 29 is located in the City of Calabasas, which has a coastal climate with an average elevation of 800 to 1,500 feet above mean sea level (msl) near the reach. This reach is bounded by open space to the north and east, and by residential development to the south and west. Rolling hills and ridgelines make up important features of the surrounding area. A fire recently burned this reach and surrounding hills. Reach 29 is bordered by State Park Land, Las Virgenes Canyon Park, Cheeseboro Canyon Park and Santa Monica Mountains National Recreation Area open space areas. The Los Angeles County and Ventura County line is immediately north of the reach. Unincorporated Los Angeles County, State Park Land, the City of Woodland Hills, and Malibu Creek State Park are all adjacent to the City of Calabasas. East and West Las Virgenes Canyon meet just north of Reach 29, forming Las Virgenes Creek, which flows south. Surface water was present during the survey and flows into the reach from park lands to the north supporting natural open space areas. These open space areas support native habitats including riparian habitats along the drainage. Downstream from the reach is a concrete channel with a concrete invert.

Vegetation Types

This reach includes freshwater marsh and willow riparian woodland vegetation types. Freshwater marsh is dominated by wetland species including broad-leaved cattail (*Typha latifolia*) and sedge (*Scirpus* sp.); other species present include common horsetail (*Equisetum canadensis*), cocklebur (*Xanthium strumarium*), and arroyo willow (*Salix lasiolepis*) saplings. Willow riparian woodland is dominated by arroyo willow; other species present include California wild rose (*Rosa californica*), mugwort (*Artemisia douglasiana*), and common horsetail. In addition, some coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*) saplings are present. Developed and ruderal areas are also present. Developed areas include all paved areas, concrete lined channels, and other structures; ruderal areas show signs of past soil disturbance and are dominated by invasive non-native species, such as tocalote (*Centaurea melitensis*) and sweetclover/sourclover (*Melilotus* spp.).

Native Riparian Trees

There are no mature native riparian trees within the clearing limits for this reach.

Wildlife

Several wildlife species were observed at Reach 29. One reptile species was observed, the western fence lizard (*Sceloporus occidentalis*). Bird species observed include the sharp-shinned hawk (*Accipiter striatus*), mourning dove (*Zenaidura macroura*), black phoebe (*Sayornis nigricans*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), Bewick's wren (*Thryomanes bewickii*), white-crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Carduelis psaltria*), and American goldfinch (*Carduelis tristis*). Only one mammal species was observed, the California ground squirrel (*Spermophilus beecheyi*). In addition, a common (checkered) white (*Pontia protodice*) was also observed during the survey. No amphibian species were observed during the survey.

Reach 33 – Medea Creek (PD T1378 u.2)

Environmental Setting

Reach 33 is located in the City of Agoura Hills. The City of Agoura Hills has a coastal climate with an average elevation of 800 to 1,600 feet above msl near Reach 33. The reach is bounded by residential development to the west and by commercial development to the east and south. Limited open space can be found immediately adjacent to the reach to the north. Rolling hills and ridgelines can be found throughout the area. Unincorporated Los Angeles County borders the City of Agoura Hills to the east and south and the City of Westlake Village can be found immediately to the west. State Park Land can be found bordering the City of Agoura Hills and can also be found within the city itself. Medea Creek runs south through the City of Agoura Hills and meets Chesebro Canyon Creek just south of the 101 Freeway. Surface water was present during the survey and flows into the reach from a small open space area surrounded by residential and commercial buildings. Less than a mile upstream from the reach is Medea Creek Park. Native riparian habitats are present in the drainage immediately upstream of the reach.

Vegetation Types

This reach includes freshwater marsh and willow riparian woodland vegetation types. Freshwater marsh is dominated by wetland species including broad-leaved cattail and sedge; other species present include common horsetail and cocklebur. Willow riparian woodland is dominated by red willow (*Salix laevigata*) and arroyo willow; other species present include narrow-leaved willow (*Salix exigua*) and western ragweed (*Ambrosia psilostachya*). Open water and developed areas are also present.

Native Riparian Trees

Clearing activities have not occurred within this reach for several years now and, as a result, native riparian trees have matured within the clearing limits. About 10 mature willow trees are present in the clearing limits of this reach.

Wildlife

Several wildlife species were observed at Reach 33. One reptile species was observed, the western fence lizard. Bird species observed include the mallard (*Anas platyrhynchos*), green heron (*Butorides virescens*), American coot (*Fulica americana*), western gull (*Larus occidentalis*), Anna's hummingbird (*Calypte anna*), belted kingfisher (*Ceryle alcyon*), black phoebe, American crow, bushtit (*Psaltiriparus minimus*), yellow-rumped warbler (*Dendroica coronata*), house finch, lesser goldfinch, and house sparrow (*Passer domesticus*). In addition, painted lady (*Vanessa cardui*) and monarch (*Danaus plexippus*) were also observed during the survey. No amphibian or mammal species were observed during the survey.

Reach 101 – Violin Canyon (PD 2312)

Environmental Setting

Reach 101 is located in the community of Castaic in unincorporated Los Angeles County just north of the Santa Clarita Valley. The community of Castaic has a desert climate with an average elevation of 1,000 to 2,400 feet above msl near Reach 101. Mountain ranges, rolling hillsides, canyons, and ridgelines make up important features of the surrounding area.

Residential and commercial development can be found immediately adjacent to Reach 101 to the west, east, and south. Limited open space is located to the north. Interstate 5 is less than one-half mile west of Reach 101. Residential complexes are immediately adjacent to Reach 101 to the west and east. Castaic Lake State Recreation Area is located less than one mile east of Reach 101. Castaic Lagoon and Castaic Lake are both parts of the Castaic Lake State Recreation Area. Castaic Creek flows south from Castaic Lagoon until it reaches the Santa Clara River south of the interstate 5 and Highway 126 interchange. Surface water was not present during the survey and is expected to be present only under storm flow conditions.

Vegetation Types

This reach includes scalebroom scrub and mulefat scrub vegetation types. Scalebroom scrub is dominated by scalebroom (*Lepidospartum squamatum*); other species present include deerweed (*Lotus scoparius*), mulefat (*Baccharis salicifolia*), California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), and thick-leaf yerba santa (*Eriodictyon crassifolium*). Mulefat scrub is dominated by mulefat; other species present include scalebroom, California sagebrush, thick-leaf yerba santa, and mugwort. Unvegetated wash and developed areas are also present.

Native Riparian Trees

This reach contains one mature red willow tree.

Wildlife

Several wildlife species were observed at Reach 101. Reptiles observed include the western fence lizard and side-blotched lizard (*Uta stansburiana*). Bird species observed include the northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), mourning dove, Anna's hummingbird, American crow, common raven, bushtit, rock wren (*Salpinctes obsoletus*), Bewick's wren, northern mockingbird (*Mimus polyglottos*), yellow-rumped warbler, song sparrow (*Melospiza melodia*), white-crowned sparrow, red-winged blackbird (*Agelaius phoeniceus*), and house finch. No amphibian or mammal species were observed during the survey. Additional species observed during focused surveys in 2005 can be found in Appendix C.

Reach 102 – Violin Canyon (PD 2275)

Environmental Setting

Reach 102 is located within the community of Castaic in unincorporated Los Angeles County just north of the Santa Clarita Valley. The community of Castaic has a desert climate with an average elevation of 1,000 to 2,400 feet above msl near Reach 102. Mountain ranges, rolling hillsides, canyons, and ridgelines make up important features of the surrounding area. Residential development can be found immediately adjacent to Reach 102 to the north, south, and east. Open space can be found to the west. US Interstate 5 is less than one-half mile east of Reach 102. Castaic Lake State Recreation Area is located less than two miles east of Reach 102. Castaic Lagoon and Castaic Lake are both parts of the Castaic Lake State Recreation Area. Castaic Creek flows south from Castaic Lagoon until it reaches the Santa Clara River south of the Interstate 5 and Highway 126 interchange. Surface water was present during the survey, but the upstream habitats indicate that this reach is typically dry.

Vegetation Types

Primary native vegetation types in this reach include freshwater marsh, disturbed southern riparian scrub, and disturbed mulefat scrub. Freshwater marsh is dominated by wetland species including narrow-leaved cattail (*Typha angustifolia*); other species present include mulefat and narrow-leaved willow. Disturbed southern riparian scrub is dominated by an immature Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and arroyo willow; other species present include red willow, narrow-leaved willow, and mulefat. Disturbed mulefat scrub is dominated by mulefat; other species present include western sunflower (*Helianthus annuus*), telegraph weed (*Heterotheca grandiflora*), and common horseweed. Unvegetated wash and ruderal areas (with scalebroom and mulefat seedlings present in some areas) are present; disturbed areas (mechanically altered areas that are generally devoid of vegetation) are also present.

Native Riparian Trees

This reach contains one mature arroyo willow and one mature Fremont cottonwood.

Wildlife

Several wildlife species were observed at Reach 102. One reptile species was observed, the side-blotched lizard. Bird species observed include the California quail (*Callipepla californica*), mourning dove, Anna's hummingbird, bushtit, Bewick's wren, hermit thrush (*Catharus guttatus*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), California towhee (*Pipilo crissalis*), Lincoln's sparrow (*Melospiza lincolni*), white-crowned sparrow, and house finch. No amphibian or mammal species were observed.

Reach 104 – Castaic Creek (PD 2441 Units 1 and 2)

Environmental Setting

Reach 104 is located in Castaic Junction in unincorporated Los Angeles County. Castaic Junction has a desert climate with an average elevation of 900 to 2,500 feet above msl near Reach 104. Mountain ranges, rolling hillsides, canyons, creeks, and ridgelines within the Santa Clarita Valley make up important features of the surrounding area. Reach 104 is bounded by open space to the west and south and by development to the north and east. Reach 104 is less than one-half mile west of Interstate 5 and less than one mile north of Highway 126. Hancock Parkway and a large industrial complex can be found immediately adjacent to the east of Reach 104. Hasley Canyon is located to the west of Reach 104 and flows south into Castaic Creek, which in turn flows south from Castaic Lagoon until it reaches the Santa Clara River south of the Interstate 5 and Highway 126 interchange. Surface water was not present during the survey and is expected to be present only during storm flow conditions. However, the side outlets in this reach may pond water from new landscaping associated with adjacent commercial complex.

Vegetation Types

This reach includes Fremont cottonwood riparian forest, southern cottonwood – willow riparian, and southern riparian scrub vegetation types. Fremont cottonwood riparian forest is dominated by a dense stand of mature Fremont cottonwood trees; other native species present include narrow-leaved willow and mulefat. Southern cottonwood – willow riparian is dominated by a less dense and less mature stand of Fremont cottonwood and narrow-leaved willow; other species present include mulefat. Southern riparian scrub is dominated by narrow-leaved willow

and mulefat; other species present include annual bursage (*Ambrosia acanthicarpa*), western ragweed, and mugwort. Unvegetated wash, developed areas, disturbed areas, and ruderal areas are also present. The clearing limits consist of a 20 square foot area at the base of two outlets. Native vegetation types within the clearing limits includes southern cottonwood – willow riparian.

Native Riparian Trees

The clearing limits for the two outlets in this reach support about 34 mature riparian trees: north outlet contains 18 Fremont cottonwood and one willow tree and the south outlet contains 11 Fremont cottonwood and four willow trees.

Wildlife

Several wildlife species were observed at Reach 104. One reptile species was observed, the side-blotched lizard. Bird species observed include the ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler, house finch, and lesser goldfinch. One mammal species was observed, desert cottontail (*Sylvilagus audubonii*). No amphibian species were observed. However, African clawed frogs (*Xenopus laevis*) are known to occur just north of Reach 104 near Live Oak Road and Castaic Creek. Additional species observed during focused surveys in 2005 can be found in Appendix C.

Reach 105 – San Francisquito Canyon Channel (PD 2456)

Environmental Setting

Reach 105 is located at the northern border of the City of Santa Clarita and unincorporated Los Angeles County at San Francisquito Creek and Decoro Drive. Reach 105 has a desert climate with an average elevation of 1,100 to 1,300 feet above msl near Reach 105. Mountain ranges, rolling hillsides, canyons, creeks, and ridgelines make up important features of the surrounding area. Reach 105 is bounded by residential development to the west and east. San Francisquito Canyon provides some open space immediately north and south of Reach 105. Interstate 5 is approximately five miles west of Reach 105. In addition to residential development, a high school can also be found immediately to the west of Reach 105. San Francisquito Creek flows south until it reaches the Santa Clara River near McBean Parkway. Surface water was not present during the survey and is expected to be present only under storm flow conditions.

Vegetation Types

This reach includes mulefat scrub vegetation type, which is dominated by mulefat; other species present include telegraph weed, common horseweed, narrow-leaved willow, red willow, and black mustard (*Brassica nigra*). Unvegetated wash, developed areas, disturbed areas, and ruderal areas are also present.

Native Riparian Trees

Within the 50-foot survey boundary, this reach contains one mature red willow tree.

Wildlife

Several wildlife species were observed at Reach 105. One reptile species was observed, the side-blotched lizard. Bird species observed include the red-tailed hawk, common raven, Bewick's wren, house wren (*Troglodytes aedon*), yellow-rumped warbler, California towhee, and white-crowned sparrow. No amphibian or mammal species were observed. Additional species observed during focused surveys in 2005 can be found in Appendix C.

Reach 106 – Castaic Drain Outlet (RMD Channel)

Environmental Setting

Reach 106 is located within the community of Castaic in unincorporated Los Angeles County approximately five miles north of the Interstate 5 and Highway 126 interchange. The community of Castaic has a desert climate with an average elevation of 1,000 to 2,400 feet above msl near Reach 106. Mountain ranges, rolling hillsides, canyons, creeks, and ridgelines make up important features of the surrounding area. Immediately adjacent to Reach 106, industrial development can be found to the north and agriculture to the south. The Castaic Sports Complex is immediately adjacent to the east, and Interstate 5 is less than 100 feet to the west of Reach 106. Castaic Creek is approximately one-half mile east of Reach 106 and flows south from Castaic Lagoon until it reaches the Santa Clara River south of the Interstate 5 and Highway 126 interchange. Surface water was present during the survey and flows into the reach from an underground drainage channel. Native riparian habitats are immediately downstream from this reach.

Vegetation Types

This reach includes southern cottonwood – willow riparian and southern riparian scrub vegetation types. Southern cottonwood – willow riparian is dominated by Fremont cottonwood and red willow; other species present include arroyo willow, narrow-leaved willow, and mulefat. Southern riparian scrub is dominated by red willow, narrow-leaved willow, and mulefat; other species present include arroyo willow, broad-leaved cattail, and willow-herb (*Epilobium ciliatum*). Disturbed areas are also present.

Native Riparian Trees

This reach contains several mature riparian trees, including two Fremont cottonwoods and about 10 red willows, which are located in the southern cottonwood – willow riparian area. In addition, numerous willow saplings (*Salix* spp.) and a few Fremont cottonwood saplings are present throughout the southern cottonwood – willow riparian and southern riparian scrub vegetation types within this reach.

Wildlife

Several wildlife species were observed at Reach 106. One reptile species was observed, the side-blotched lizard. Bird species observed include the California quail, mourning dove, Anna's hummingbird, black phoebe, western scrub-jay, American crow, common raven, Bewick's wren, house wren, common yellowthroat (*Geothlypis trichas*), and song sparrow. One mammal species was observed, the California ground squirrel. No amphibian species were observed. Additional species observed during focused surveys in 2005 can be found in Appendix C.

Reach 107 – The Old Road Channel (RMD Channel)

Environmental Setting

Reach 107 is located in unincorporated Los Angeles County east of Santa Clarita Woodlands Park and west of Interstate 5, just south of the City of Santa Clarita. The City of Santa Clarita has a desert climate with an average elevation of 1,300 to 2,600 feet above msl near Reach 107. A dog kennel and single family residence is located immediately adjacent to Reach 107 to the east. Mountains, creeks, canyons, and ridgelines make up important features of the surrounding area. This reach is near the headwaters for the South Fork Santa Clara River and is bordered by The Old Road to the west and Interstate 5 to the east. The Interstate 5 is less than one-quarter mile east of Reach 107. Surface water was present during the survey.

Vegetation Types

This reach includes southern cottonwood – willow riparian, southern riparian scrub, and coast live oak woodland vegetation types. Southern cottonwood – willow riparian is dominated by Fremont cottonwood and red willow; other species present include mulefat. Southern riparian scrub is dominated by red willow and mulefat; other species present include elderberry (*Sambucus mexicana*), mugwort, and coastal scrub species such as California sagebrush, great basin sagebrush, and black sage. Coast live oak woodland is dominated by coast live oak; other species present include mugwort and red willow. Developed areas, disturbed areas, ruderal areas, and ornamental areas (landscaped plantings of various non-native species) are also present.

Native Riparian Trees

North of the main ornamental area where non-native trees line the channel, there are approximately two coast live oaks in the riparian area (and two coast live oaks further upslope), three Fremont cottonwoods, and two red willows, along with many large elderberry shrubs and willow saplings. South of the main ornamental area, there are approximately six coast live oaks, one Fremont cottonwood, 13 red willows, and two southern California black walnuts (*Juglans californica*), along with many large elderberry shrubs and willow saplings. In areas adjacent to this reach, including private property to the east of the channel, and the area between the fenced channel and The Old Road, there are many more mature trees, including about 21 coast live oaks, 10 red willows, and one southern California black walnut. In addition, numerous coast live oaks and red willows located further to the east on private property could be observed from this reach.

Wildlife

Several wildlife species were observed at Reach 107. Reptile species observed, include the western fence lizard and side-blotched lizard. Bird species observed include the mourning dove, Nuttall's woodpecker (*Picoides nuttallii*), black phoebe, western scrub-jay, American crow, oak titmouse (*Baeolophus inornatus*), Bewick's wren, song sparrow, house finch, and lesser goldfinch. One mammal species was observed, the California ground squirrel. No amphibian species were observed. Additional species observed during focused surveys in 2005 can be found in Appendix C.

CONCLUSION

Ownership of six of these eight channel reaches (101, 102, 104, 105, 106, and 107) was only recently transferred to the LACDPW. These six channel reaches are not included under the existing ACOE, CDFG, and RWQCB permits that the LACDPW holds in order to perform maintenance activities at the various flood control structures in their ownership. To facilitate the permitting process, Habitat Assessments were conducted at these six reaches in 2004 (BonTerra Consulting 2004a, BonTerra Consulting 2004b) and these reaches were included in the 2005 focused surveys (see Table 1). No Threatened or Endangered species were identified at channel reaches 101, 102, 104, 105, 106, and 107 in 2005 (BonTerra Consulting 2005). These inventory surveys combined with previous surveys will provide the baseline data upon which impacts resulting from LACDPW maintenance activities at these facilities will be determined. Table 3 presents acres of vegetation types present in each of these six reaches and the amount of vegetation expected to be affected by clearing activities.

As discussed in the inventory report for channel reaches 8 and 34, the CDFG permit conditions that are applicable when surface water is present are appropriate for many of the channel reaches, but not all the channel reaches under the jurisdiction of the LACDPW. Many of these channel reaches contain surface water whose source is excess irrigation runoff from landscaped areas and other artificial sources. Often this artificial runoff, or nuisance water, is found in stagnant ponds that become habitat for non-native species such as the African clawed frog, whose presence can have adverse effects on native fish and amphibian species. The CDFG permit conditions compel the removal of non-native invasive plant and wildlife species such as the African clawed frog. Avoidance or redirecting the flow of water around maintenance activities does not remove the African clawed frog but may result in its spread in the watershed. Physical removal of the African clawed frog is time consuming, costly, and not always successful since the work is very difficult. Where channel reaches do not support native amphibian species, it is cost-effective to perform maintenance activities that remove the nuisance water.

In conclusion, the CDFG permit conditions presume pristine conditions when surface water is present and do not include conditions that recognize the relatively low biological value of existing biological conditions at many of the channel reaches maintained by the LACDPW. It is BonTerra Consulting's opinion that the CDFG permit conditions regarding surface water are overly restrictive and create maintenance costs that are unnecessary. However, all eight of the reaches discussed in this report have moderate to high biological value and do not fit the same category as channel reach 8 and many other soft-bottom channel reaches under the jurisdiction of the LACDPW.

RECOMMENDATIONS

For the six new channel reaches (101, 102, 104, 105, 106, and 107) now in the ownership of the LACDPW, maintenance activities have not been performed for at least two years as of this year (2006). BonTerra Consulting recommends that focused surveys continue to be performed on a regular basis, in appropriate locations, at reaches 101, 102, 104, 105, 106, and 107. In addition, BonTerra Consulting recommends that specifics of the maintenance activities required for each of the six new reaches be described and adopted into a new and revised Maintenance Plan for all of the LACDPW's soft-bottom channels. Specific survey recommendations for each reach (including reaches 29 and 33 that are included in the existing permits) are discussed below.

Reach 29

The quality of the vegetation types immediately adjacent to this reach, especially the riparian habitats, suggest that this reach likely supports native fish and amphibian species, even though none were observed during this one-day inventory survey. Therefore, BonTerra Consulting recommends that the necessary vegetation and sediment removals be conducted at Reach 29 under the guidance of a biological monitor in order to minimize potential impacts on native fish and amphibian species.

Reach 33

The quality of the vegetation types immediately adjacent to this reach, especially the riparian habitats, suggest that this reach likely supports native fish and amphibian species, even though none were observed during this one-day inventory survey. Therefore, BonTerra Consulting recommends that the necessary vegetation and sediment removals be conducted at Reach 33 under the guidance of a biological monitor in order to minimize potential impacts on native fish and amphibian species.

Reach 101

Focused surveys for the San Fernando Valley spineflower and slender-horned spineflower were conducted in 2003 and survey results were negative (BonTerra Consulting 2003). Although surveys for the arroyo toad were not recommended in 2003, the final Critical Habitat for the arroyo toad is now within 350 feet of the reach. Therefore, surveys for the arroyo toad were recommended and performed in 2005 and the results were negative (BonTerra Consulting 2005). BonTerra Consulting recommends that arroyo toad surveys be conducted again in 2007.

Reach 102

BonTerra Consulting's May 12, 2004 Habitat Assessment for this reach determined that habitats that potentially support two Threatened and Endangered species are in this area, but outside the areas maintained prior to transfer of ownership to the LACDPW. Therefore, no focused surveys are required if maintenance activities are restricted to previously maintained areas.

Reach 104

BonTerra Consulting's May 12, 2004 Habitat Assessment for this reach determined that this reach contains habitats that potentially support four Threatened and Endangered wildlife species: unarmored threespine stickleback, arroyo toad, southwestern willow flycatcher, and least Bell's vireo. Therefore, surveys for the arroyo toad, southwestern willow flycatcher, and least Bell's vireo were recommended and performed in 2005 and the results were negative (BonTerra Consulting 2005). BonTerra Consulting recommends that focused surveys be conducted again in 2007 for the arroyo toad, southwestern willow flycatcher, and least Bell's vireo. If suitable habitat is present (i.e. surface water) prior to implementation of any maintenance activities in this reach, then focused surveys for the unarmored threespine stickleback would also be required.

Reach 105

BonTerra Consulting's May 12, 2004 Habitat Assessment for this reach evaluated a different area than now currently proposed for flood maintenance. Therefore, the evaluations have changed slightly since 2004. Focused surveys were conducted in 2005 for the arroyo toad and the results were negative (BonTerra Consulting 2005). Prior to implementation of any maintenance activities in 2007, BonTerra Consulting recommends that focused surveys be conducted for the slender-horned spineflower and the arroyo toad. Furthermore, if suitable habitat is present (i.e. surface water) prior to implementation of any maintenance activities in this reach, then focused surveys for the unarmored threespine stickleback would also be required.

Reach 106

BonTerra Consulting's July 28, 2004 Habitat Assessment for this reach determined that this reach contains habitats that potentially support three Threatened and Endangered wildlife species: arroyo toad, southwestern willow flycatcher, and least Bell's vireo. Therefore, surveys for the arroyo toad, southwestern willow flycatcher, and least Bell's vireo were recommended and performed in 2005 and the results were negative (BonTerra Consulting 2005). BonTerra Consulting recommends that focused surveys be conducted again in 2007 for the arroyo toad, southwestern willow flycatcher, and least Bell's vireo.

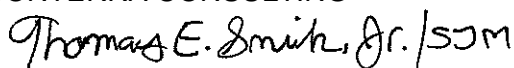
Reach 107

BonTerra Consulting's July 28, 2004 Habitat Assessment for this reach determined that this reach contains habitats that potentially support two Threatened and Endangered wildlife species: southwestern willow flycatcher and least Bell's vireo. Therefore, surveys for the southwestern willow flycatcher and least Bell's vireo were recommended and performed in 2005 and the results were negative (BonTerra Consulting 2005). BonTerra Consulting recommends that focused surveys be conducted again in 2007 for the southwestern willow flycatcher and least Bell's vireo.

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please call Marc Blain or Tom Smith at (626) 351-2000.

Sincerely,

BONTERRA CONSULTING



Thomas E. Smith, Jr., AICP
Principal, Environmental Planning Services



Marc Blain
Biological Resources Manager

Attachments: Exhibit 1 – Regional Location
Exhibits 2A, 2B, 2C, 2D, 2E, 2F, 2G and 2H – Local Vicinity
Exhibits 3A, 3B, 3C, 3D, 3E, 3F, 3G and 3H – Vegetation Types
Exhibits 4A, 4B, 4C, 4D, 4E, 4F, 4G and 4H – Site Photographs
Appendix A – Plant Compendia
Appendix B – Wildlife Compendia
Appendix C – Los Angeles County Soft Bottom Channels 2005 Focused Survey Results

References and Other Literature

- Army Corps of Engineers (ACOE) 1996 (November 29). *Navigation and Dredging Operations and Maintenance Guidance and Procedures*. Pamphlet No. 1130-2-520.
- BonTerra Consulting. 2005 (August 12). *Los Angeles County Soft Bottom Channels: 2005 Focused Survey Results*. Prepared for County of Los Angeles, Department of Public Works.
- BonTerra Consulting. 2004a (July 28). *Results of Habitat Assessment for PD2012 Outlet, Castaic Drain Outlet, and The Old Road Channel, Los Angeles County, California*. Prepared for County of Los Angeles, Department of Public Works.
- BonTerra Consulting. 2004b (May 12). *Los Angeles County Department of Public Works Habitat Assessment Reconnaissance Surveys: Debris Basins, Debris Retaining Inlets and Soft-Bottom Channels*. Prepared for County of Los Angeles, Department of Public Works.
- BonTerra Consulting. 2003 (October 14). *Los Angeles County Soft Bottom Channels: 2003 Focused Survey Results*. Prepared for County of Los Angeles, Department of Public Works.
- BonTerra Consulting. 2002 (September 27). *Los Angeles County Channels: Focused Survey Results*. Prepared for County of Los Angeles, Department of Public Works.
- Bragg, A.N. 1962. *Predation on arthropods by spadefoot tadpoles*. Herpetologica 18:144.
- Bragg, A.N. 1964. *Further Study of Predation and Cannibalism in Spadefoot Tadpoles*. Herpetologica 20:17-24.
- Brown, H.A. 1966. *Temperature Adaptation and Evolutionary Divergence in Allopatric Populations of the Spadefoot Toad, Scaphiopus hammondi*. PhD Dissertation, University of California, Riverside, California.
- Brown, H.A. 1967. *Embryonic Temperature Adaptations and Genetic Compatibility of Two Allopatric Populations of the Spadefoot Toad, Scaphiopus hammondi*. Evolution 21(4):742-761.
- Burgess, R.C. 1950. *Development of Spadefoot Toad Larvae Under Laboratory Conditions*. Copeia 1950:49-51.
- California Department of Fish and Game (CDFG). 2006. *California Natural Diversity Database*. Natural Heritage Division, Sacramento, California.
- California Department of Fish and Game (CDFG). 2003. *The Vegetation Classification and Mapping Program: List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*. Wildlife and Habitat Data Analysis Branch, Sacramento, California. http://www.dfg.ca.gov/whdab/html/natural_communities.html
- California Native Plant Society (CNPS). 2006. *Inventory of Rare and Endangered Plants*. Sacramento, California. <http://www.cnps.org/inventory>

- Chambers Group. 2003. *Results of the Biological Reconnaissance Surveys for the Los Angeles Department of Public Works, 116 Debris Basins, Los Angeles County.*
- Denver, R.J., N. Mirhadi, and M. Phillips. 1998. *Adaptive Plasticity in Amphibian Metamorphosis: Response of Scaphiopus Hammondi Tadpoles to Habitat Dessication.* Ecology 79:1859-1872.
- Dimmett, M.A., and R. Ruibal. 1980a. *Exploitation of Food Resources by Spadefoot Toads (Scaphiopus).* Copeia 4:854-862.
- Dimmett, M.A., and R. Ruibal. 1980b. *Environmental Correlates of Emergence in Spadefoot Toads (Scaphiopus).* Journal of Herpetology 14(1):21-29.
- Feaver, P.E. 1971. *Breeding Pool Selection and Larval Mortality of Three California Amphibians: Ambystoma Tigrinum Californiense Gray, Hyla regilla Baird and Girard, and Scaphiopus hammondi Girard.* MA Thesis, Fresno State College, Fresno, California.
- Hayes, M.P., and J. Warner. 1985. *Life History Notes: Rana Catesbeiana, Food.* Herpetological Review 16(4):109.
- Hickman, J.C. Editor. 1993. *The Jepson Manual: Higher Plants of California.* University of California Press, Berkeley, California.
- Holland, D.C., and R.H. Goodman Jr. 1998. *A Guide to the Amphibians and Reptiles of MCB Camp Pendleton, San Diego County, California.* Final report prepared for AC/S Environmental Security Resources Management Division under Contract M00681-94-0039.
- Jennings, M.R. and Hayes, M.P. 1994. *Amphibian and Reptile Species of Special Concern in California.* Prepared for the California Department of Fish and Game.
- Jennings, M.R., and M.P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California.* Final report submitted to California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California, under Contract 8023.
- Low, B. 1976. *The Evolution of Amphibian Life Histories in the Desert.* Pages 149-195 in *Evolution of Desert Biota.* University of Texas Press, Austin, Texas.
- Morey, S.R. and D.A. Guinn. 1992. *Activity Patterns, Food Habits, and Changing Abundance in a Community of Vernal Pool Amphibians.* Pp. 149-158 In: D. F. Williams, S. Byrne, and T.A. Rado (editors), *Endangered and sensitive species of the San Joaquin Valley, California: Their biology, management, and conservation.* The California Energy Commission, Sacramento, California, and the Western Section of the Wildlife Society.
- Munz, P.A. 1974. *A Flora of Southern California.* University of California Press, Berkeley, California.
- Myers, G.S. 1944. *California records of the western spade-foot toad.* Copeia 1944(1):58.
- Newman, R.A. 1998. *Ecological Constraints on Amphibian Metamorphosis: Interactions of Temperature and Larval Density with Responses to Changing Food Level.* Oecologia 115:9-16.

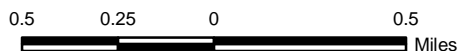
- Ramirez, R. 2003. *Arroyo toad (Bufo californicus) hydrogeomorphic habitat baseline analysis/radio telemetry study – Rancho Las Flores, San Bernardino County, California*. Prepared for Rancho Las Flores Limited Partnership, Dana Point, CA.
- Ruibal, R., L. Tevis, Jr., and V. Roig. 1969. *The Terrestrial Ecology of the Spadefoot Toad Scaphiopus hammondi*. Copeia 3:571-584.
- Stebbins, R.C. 1972. *Amphibians and reptiles of California*. California Natural History Guides (31). University of California Press, Berkeley, Los Angeles, London.
- Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians*. 3rd ed. Houghton-Mifflin Company. Boston, MA.
- Storer, T.I. 1925. *A synopsis of the Amphibia of California*. University of California Publications in Zoology 27:1-342.
- Sullivan, B.K., and P.J. Fernandez. 1999. *Breeding activity, estimated age structure, and growth in Sonoran desert anurans*. Herpetologica 55:334-343.
- U.S. Fish and Wildlife Service. 1999a. *Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan*. Region 1 U.S. Fish and Wildlife Service.
- U.S. Fish and Wildlife Service. 1999b. *Survey Protocol for the Arroyo Toad*. Available online at: http://ventura.fws.gov/es/protocols/arroyotoad_protocol.pdf
- USFWS. 2005. *Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Southern California Distinct Vertebrate Population Segment of the Mountain Yellow-Legged Frog (Rana muscosa)*. Federal Register, Vol. 70, No. 176: 54105-54143.
- Whitaker, J.O., D. Rubin, and J.R. Munsee. 1977. *Observations on Food Habits of Spadefoot Toads, Genus Scaphiopus*. Herpetologica 33:468-475.
- Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, M. White, eds. 1988. *California's Wildlife, Vol. 1: Amphibians and Reptiles*. California Department of Fish and Game, The Resources Agency, Sacramento, CA.
- Zeiner, D.C., W.F. Laudenslayer, Jr., and K.E. Mayer (compiling editors). 1988. *California's wildlife. Volume I. Amphibians and reptiles*. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, California.



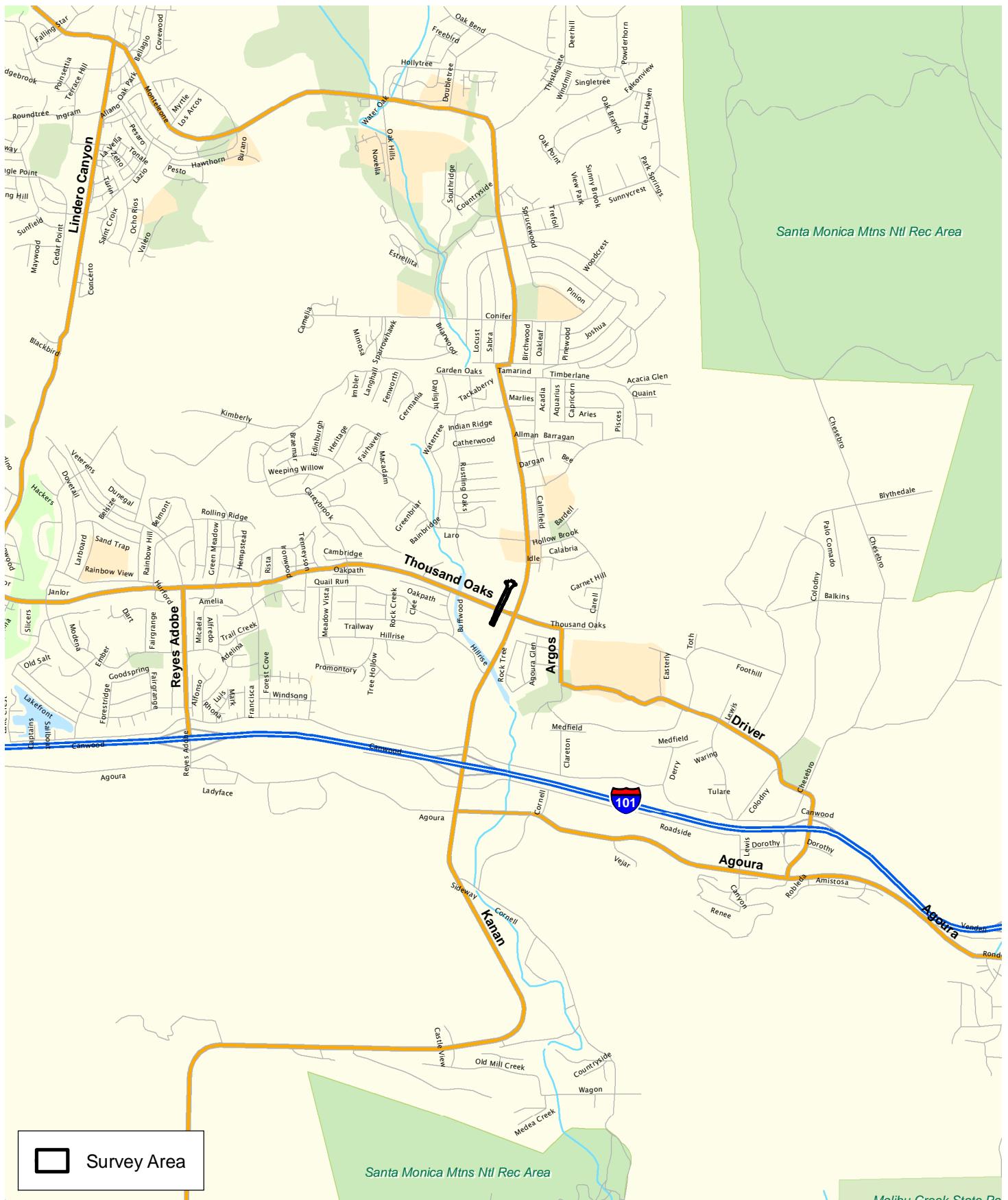
Local Vicinity: Reach 29

Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 2A



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Local Vicinity: Reach 33

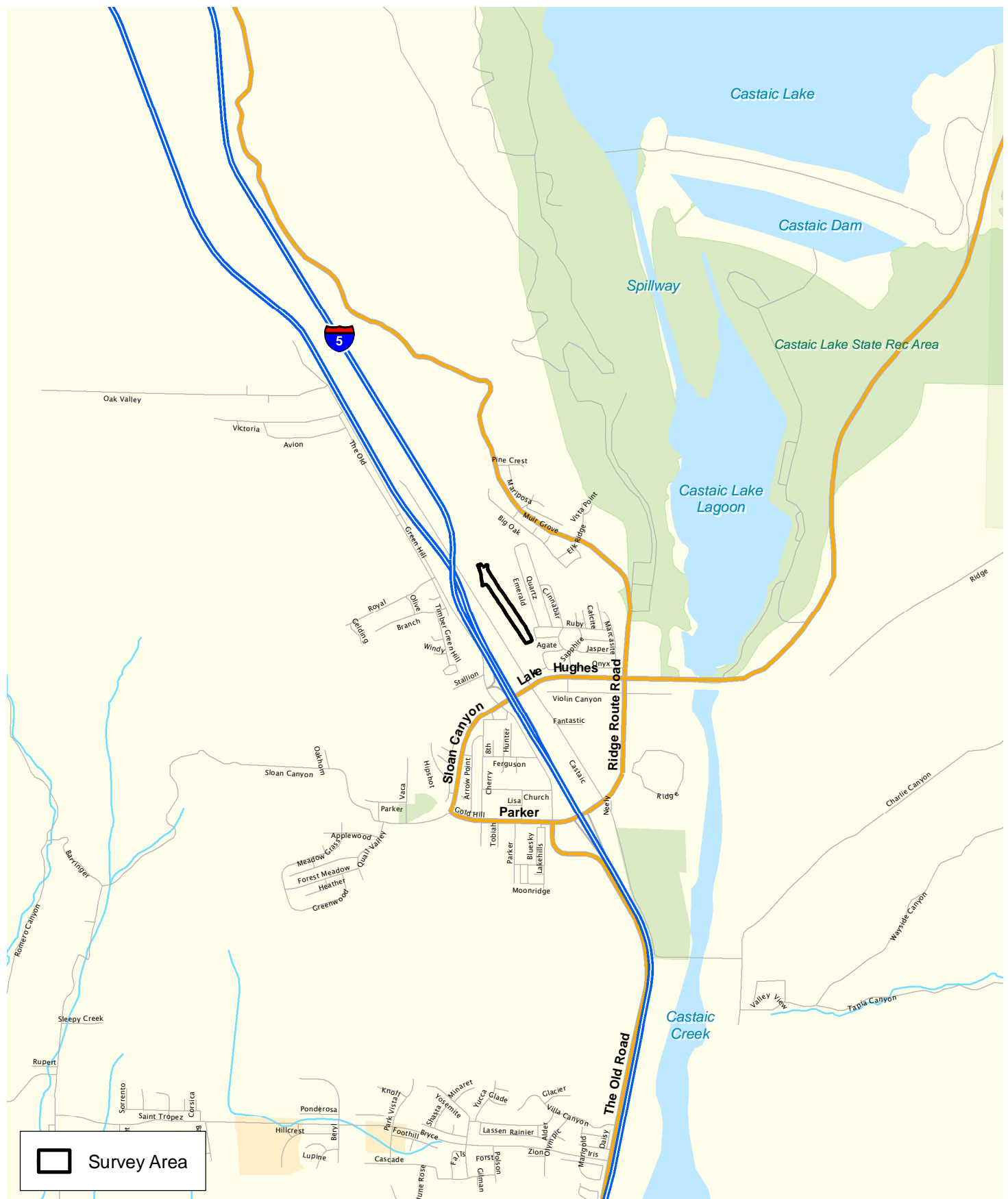
Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 2B



0.5 0.25 0 0.5
Miles

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Local Vicinity: Reach 101

Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 2C



0.5 0.25 0 0.5 Miles

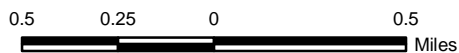
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Local Vicinity: Reach 102

Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 2D



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Local Vicinity: Reach 105

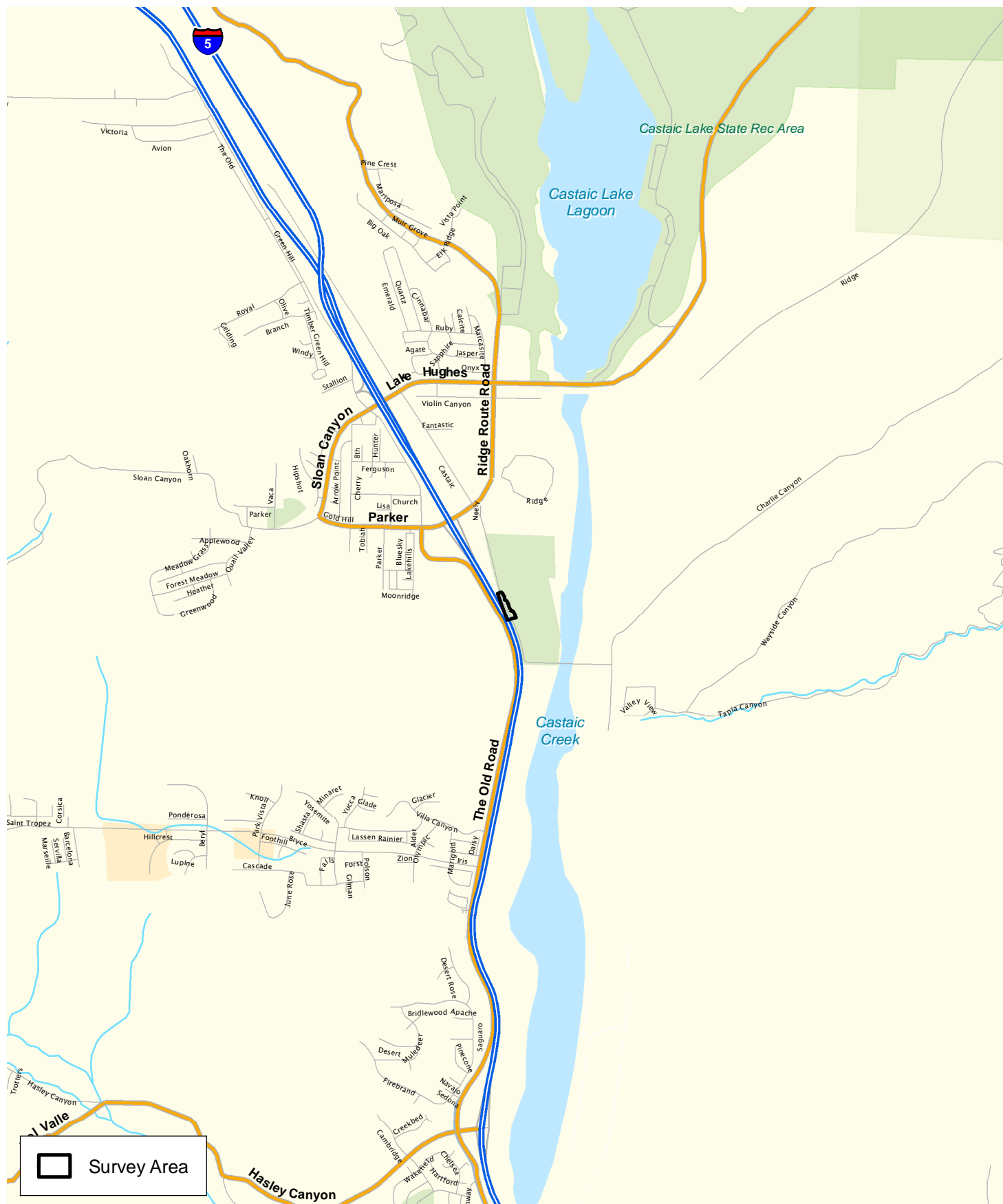
Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 2F



0.5 0.25 0 0.5 Miles

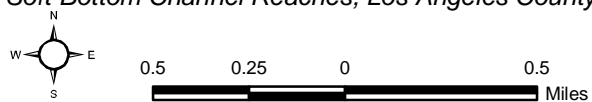
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Local Vicinity: Reach 106

Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 2G



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Local Vicinity: Reach 107

Soft-Bottom Channel Reaches, Los Angeles County, California


Exhibit 2H




0.5 0.25 0 0.5 Miles


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 Reach Limits


 Clearing Limits


Vegetation

 Freshwater Marsh

 Willow Riparian Woodland

Other Areas

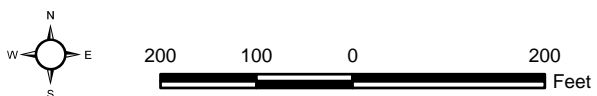
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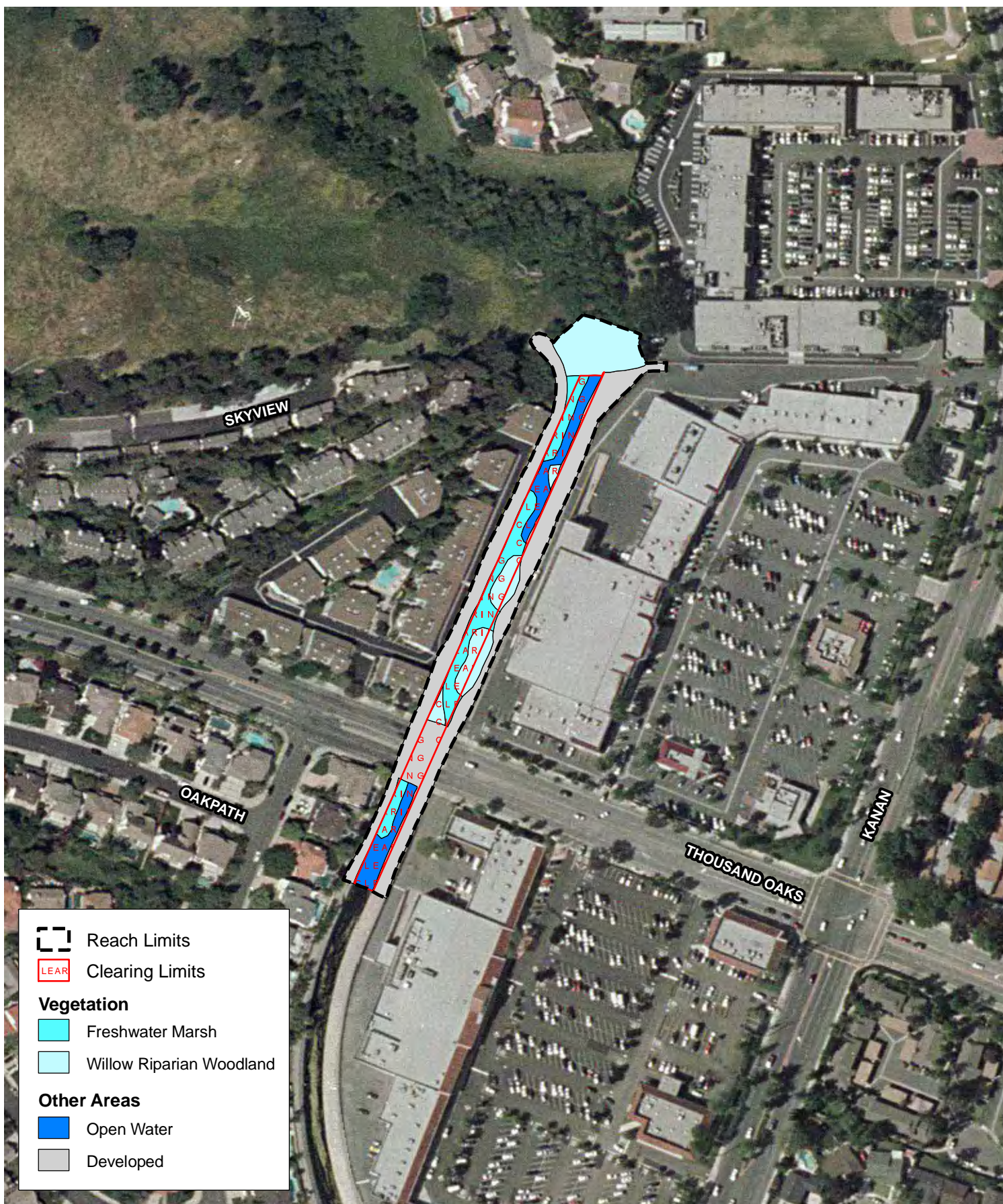
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Vegetation Types: Reach 29, Las Virgenes Creek (PDT 1684)

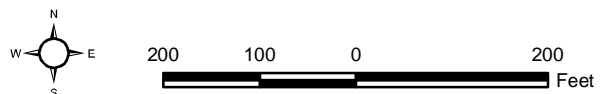
Exhibit 3A

Soft-Bottom Channel Reaches, Los Angeles County, California





Vegetation Types: Reach 33, Medea Creek (PDT 1378 U.2)



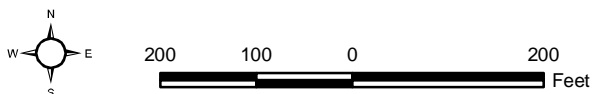
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Vegetation Types: Reach 101, Violin Canyon (PD 2312)

Exhibit 3C

Soft-Bottom Channel Reaches, Los Angeles County, California



Bonterra
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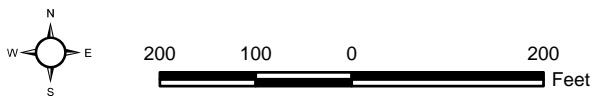
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Vegetation Types: Reach 102, Violin Canyon (PD 2275)

Exhibit 3D

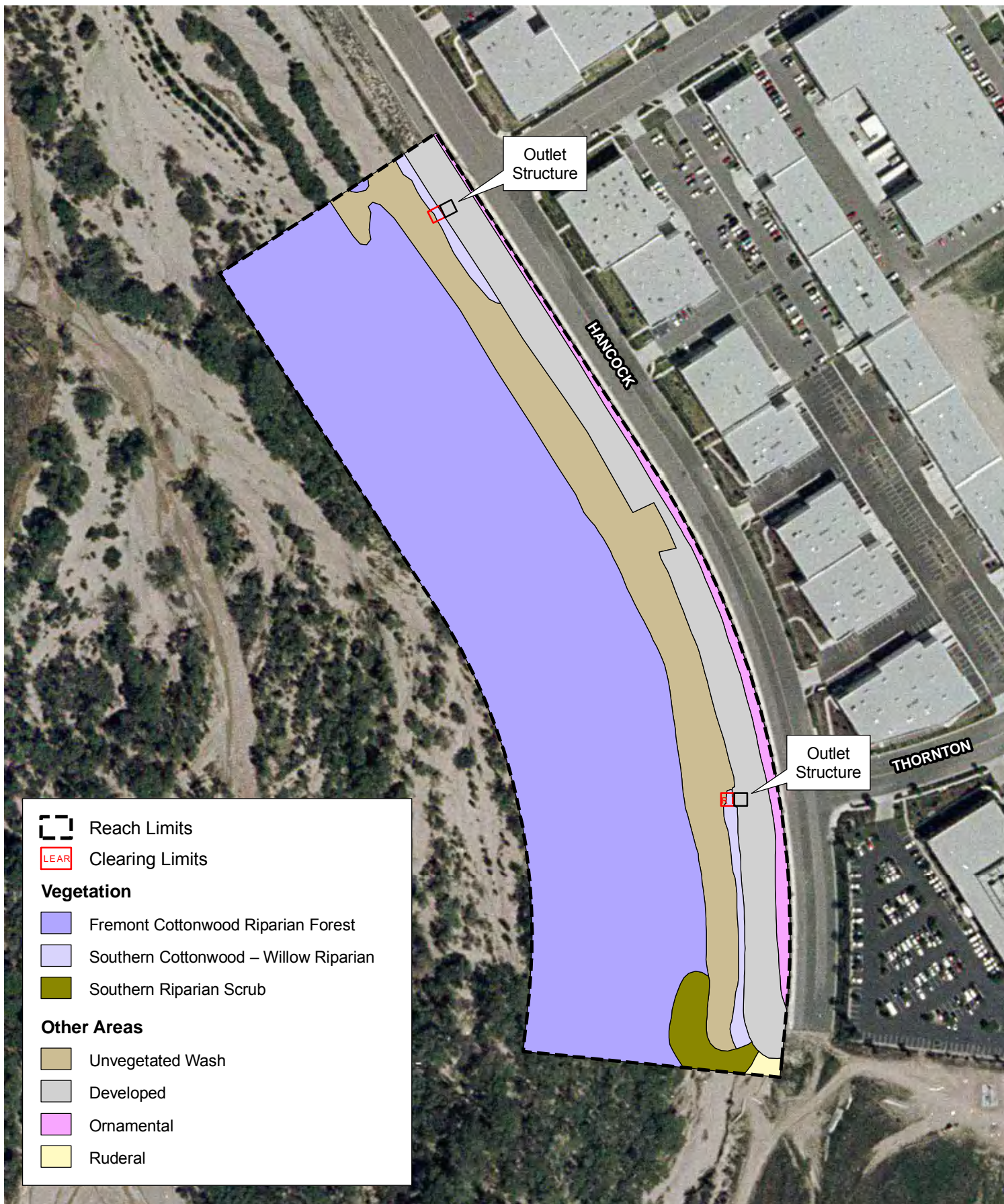
Soft-Bottom Channel Reaches, Los Angeles County, California



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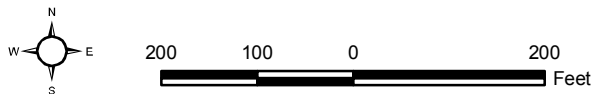
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Vegetation Types: Reach 104, Castaic Creek (PD 2441, VMTS 1 & 2)

Exhibit 3E

Soft-Bottom Channel Reaches, Los Angeles County, California



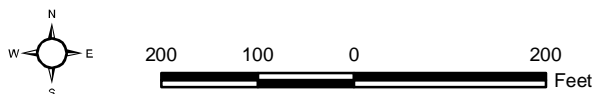
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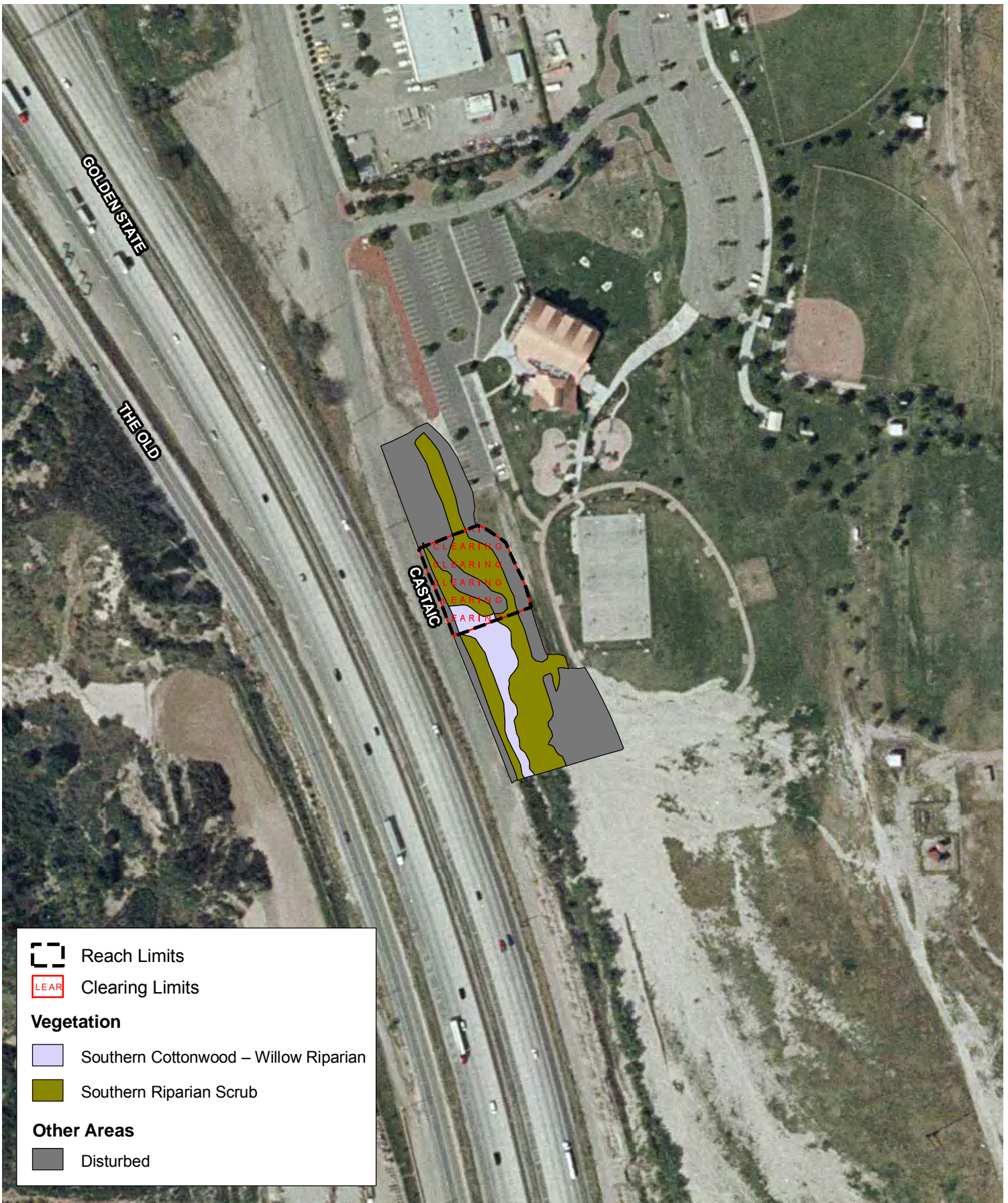


Vegetation Types: Reach 105, San Francisquito Canton Channel (PD 2456) Exhibit 3F

Soft-Bottom Channel Reaches, Los Angeles County, California



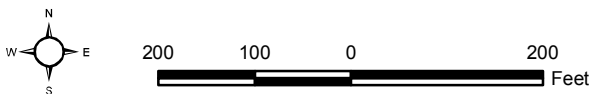
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Vegetation Types: Reach 106, Castaic Drain Outlet (RMD Channel)

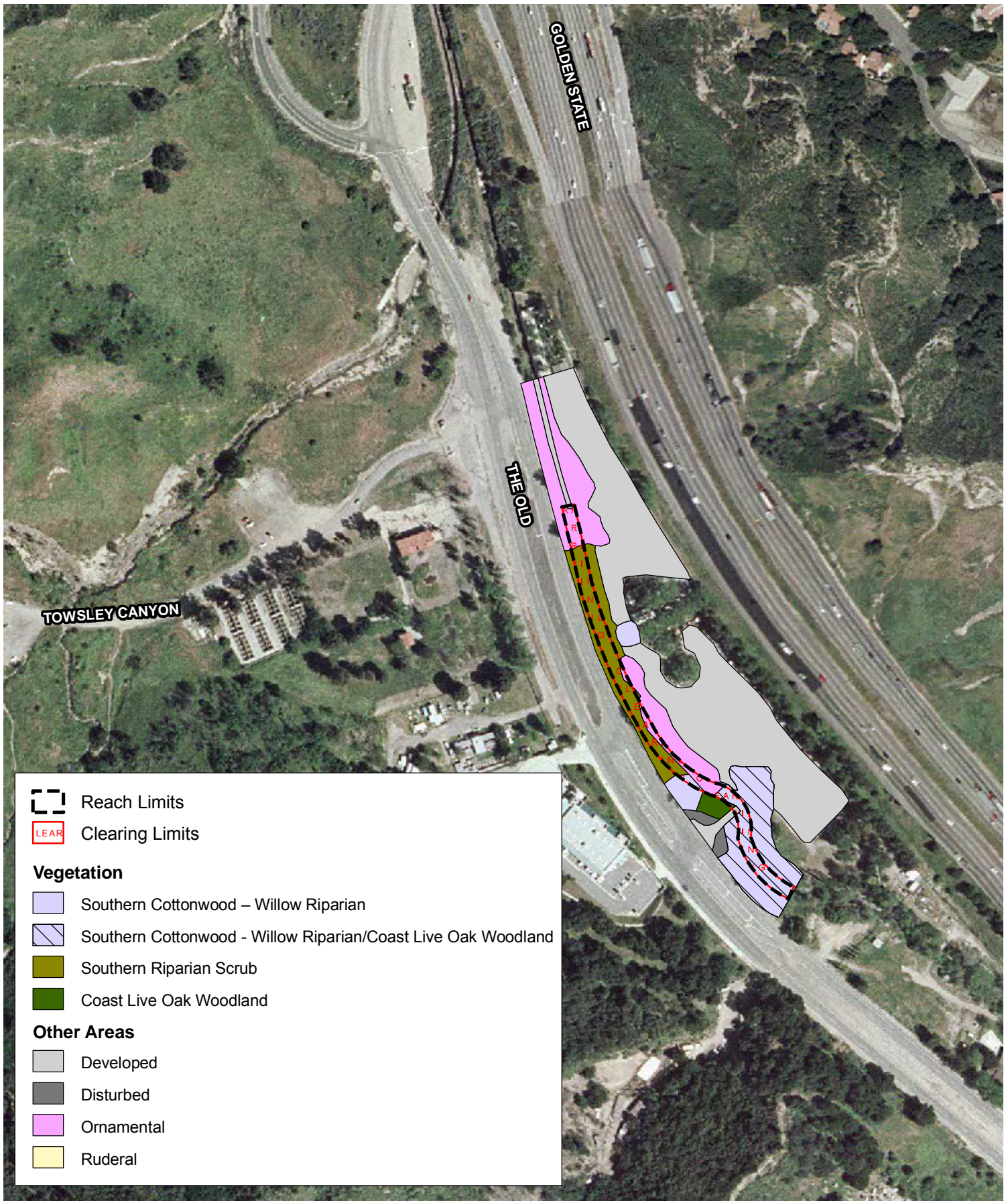
Exhibit 3G

Soft-Bottom Channel Reaches, Los Angeles County, California



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Vegetation Types: Reach 107, The Old Road Channel (RMD Channel)

Exhibit 3H

Soft-Bottom Channel Reaches, Los Angeles County, California

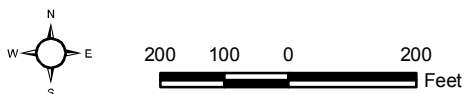




Photo 1



Photo 2

Site Photographs: Reach 29

Exhibit 4A

Soft-Bottom Channel Reaches, Los Angeles County, California

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Photo 1



Photo 2

Site Photographs: Reach 33

Exhibit 4B

Soft-Bottom Channel Reaches, Los Angeles County, California

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Photo 1



Photo 2

Site Photographs: Reach 101

Exhibit 4C

Soft-Bottom Channel Reaches, Los Angeles County, California

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Photo 1



Photo 2

Site Photographs: Reach 102

Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 4D

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Photo 1



Photo 2

Site Photographs: Reach 104

Exhibit 4E

Soft-Bottom Channel Reaches, Los Angeles County, California

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Photo 1



Photo 2

Site Photographs: Reach 105

Exhibit 4F

Soft-Bottom Channel Reaches, Los Angeles County, California

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Photo 1



Photo 2

Site Photographs: Reach 106

Soft-Bottom Channel Reaches, Los Angeles County, California

Exhibit 4G

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Photo 1



Photo 2

Site Photographs: Reach 107

Exhibit 4H

Soft-Bottom Channel Reaches, Los Angeles County, California

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APPENDIX A

**PLANT COMPENDIA FOR REACHES
29, 33, 101, 102, 104, 105, 106 and 107**

REACH 29: PLANT COMPENDIUM

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

ASCLEPIADACEAE - MILKWEED FAMILY

Asclepias fascicularis

narrow-leaved milkweed

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia psilostachya

western ragweed

Artemisia douglasiana

mugwort

Baccharis pilularis

coyote brush

*Carduus pycnocephalus**

Italian thistle

*Centaurea melitensis**

toocalote

Conyza canadensis

common horseweed

Hazardia squarrosa

saw-toothed goldenbush

*Lactuca serriola**

prickly lettuce

*Sonchus asper**

prickly sow-thistle

Stephanomeria virgata

tall wreath plant

Xanthium strumarium

cocklebur

BORAGINACEAE - BORAGE FAMILY

Heliotropium curassavicum

salt heliotrope / alkali heliotrope

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Hirschfeldia incana**

shortpod mustard

*Rorippa nasturtium-aquaticum**

white water cress

CHENOPODIACEAE - GOOSEFOOT FAMILY

*Chenopodium album**

lamb's quarters

*Salsola tragus**

Russian thistle

CONVOLVULACEAE - MORNING-GLORY FAMILY

Calystegia macrostegia

morning-glory

FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

*Melilotus indica**

sourclover

FAGACEAE - OAK / BEECH FAMILY

REACH 29: PLANT COMPENDIUM (Continued)

Quercus agrifolia
coast live oak

Quercus lobata valley oak
POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum
California buckwheat
ROSACEAE - ROSE FAMILY

Rosa californica
California wild rose

Rubus ursinus
California blackberry
SALICACEAE - WILLOW FAMILY

Salix lasiolepis
arroyo willow
SOLANACEAE - NIGHTSHADE FAMILY

*Nicotiana glauca**
tree tobacco
URTICACEAE - NETTLE FAMILY

Urtica dioica ssp. *holosericea*
hoary nettle
VERBENACEAE - VERVAIN FAMILY

Verbena lasiostachys
western verbena

CLASS MONOCOTYLEDONES (MONOCOTS) CYPERACEAE - SEDGE FAMILY

Scirpus sp.
sedge
POACEAE [GRAMINEAE] - GRASS FAMILY

*Bromus diandrus**
ripgut grass

Bromus madritensis ssp. *rubens**
foxtail chess

*Piptatherum miliaceum**
smilo grass / millett ricegrass

*Polypogon monspeliensis**
annual beard grass
TYPHACEAE - CATTAIL FAMILY

Typha latifolia
broad-leaved cattail

* indicates non-native species

REACH 33: PLANT COMPENDIUM

GYMNOSPERMS

PINACEAE - PINE FAMILY

Pinus sp.*
pine

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

APOCYNACEAE - DOGBANE FAMILY

*Nerium oleander**
oleander

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia psilostachya
western ragweed

Baccharis pilularis
coyote brush

Conyza sp.
horseweed

*Lactuca serriola**
prickly lettuce

Xanthium strumarium
cocklebur

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Hirschfeldia incana**
shortpod mustard

*Rorippa nasturtium-aquaticum**
white water cress

EUPHORBIACEAE - SPURGE FAMILY

Chamaesyce sp.
spurge

*Ricinus communis**
castor bean

FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

*Melilotus indica**
sourclover

FAGACEAE - OAK / BEECH FAMILY

Quercus lobata
valley oak

MORACEAE - FIG FAMILY

*Ficus carica**
edible fig / common fig

SALICACEAE - WILLOW FAMILY

Populus fremontii ssp. *fremontii*
Fremont cottonwood

Salix exigua
narrow-leaved willow

Salix laevigata
red willow

Salix lasiolepis
arroyo willow

REACH 33: PLANT COMPENDIUM (Continued)

CLASS MONOCOTYLEDONES (MONOCOTS)

ARECACEAE (PALMAE) - PALM FAMILY

Washingtonia sp.*

fan palm

CYPERACEAE - SEDGE FAMILY

Scirpus sp.

bulrush

POACEAE [GRAMINEAE] - GRASS FAMILY

*Polypogon monspeliensis**

annual beard grass

TYPHACEAE - CATTAIL FAMILY

Typha latifolia

broad-leaved cattail

* indicates non-native species

REACH 101: PLANT COMPENDIUM

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

APOCYNACEAE - DOGBANE FAMILY

*Nerium oleander**

oleander

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa

annual bursage

Artemisia californica

California sagebrush

Artemisia douglasiana

mugwort

Baccharis salicifolia

mule fat

*Centaurea melitensis**

toalote

*Centaurea solstitialis**

yellow star thistle

Conyza sp.

horseweed

Encelia farinosa

brittlebush

Helianthus annuus

western sunflower

Heterotheca grandiflora

telegraph weed

*Lactuca serriola**

prickly lettuce

Lepidospartum squamatum

scale-broom

Stephanomeria virgata

tall wreath plant

Xanthium strumarium

cocklebur

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Brassica nigra**

black mustard

*Hirschfeldia incana**

shortpod mustard

CHENOPODIACEAE - GOOSEFOOT FAMILY

Atriplex canescens

fourwing saltbush / shad scale

Atriplex lentiformis

big saltbush

*Salsola tragus**

Russian thistle

EUPHORBIACEAE - SPURGE FAMILY

REACH 101: PLANT COMPENDIUM (Continued)

Eremocarpus setigerus
doveweed / turkey mullein
FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

Astragalus sp.
locoweed

Lotus scoparius
deerweed / California broom

Melilotus sp.*
sweetclover / sourclover
HYDROPHYLLACEAE - WATERLEAF FAMILY

Eriodictyon crassifolium
thick-leaf yerba santa
LAMIACEAE (LABIATAE) - MINT FAMILY

*Marrubium vulgare**
common horehound

Salvia columbariae
chia

Salvia mellifera
black sage
MYRTACEAE - MYRTLE FAMILY

Eucalyptus sp.*
gum
ONAGRACEAE - EVENING PRIMROSE FAMILY

Epilobium canum
California fuchsia
POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum
California buckwheat
SALICACEAE - WILLOW FAMILY

Salix laevigata
red willow
SOLANACEAE - NIGHTSHADE FAMILY

*Nicotiana glauca**
tree tobacco
TAMARICACEAE - TAMARISK FAMILY

*Tamarix ramosissima**
Mediterranean tamarisk
CLASS MONOCOTYLEDONES (MONOCOTS)
ARECACEAE (PALMAE) - PALM FAMILY

Washingtonia sp.*
fan palm
LILIACEAE - LILY FAMILY

Yucca whipplei
Our Lord's candle
POACEAE [GRAMINEAE] - GRASS FAMILY

Avena sp.*
wild oat

Bromus madritensis ssp. *rubens**
foxtail chess

REACH 101: PLANT COMPENDIUM (Continued)

Leymus condensatus

giant wild rye

*Piptatherum miliaceum**

smilo grass / millett ricegrass

*Polypogon monspeliensis**

annual beard grass

* indicates non-native species

REACH 102: PLANT COMPENDIUM

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa
annual bursage

Artemisia californica
California sagebrush

Artemisia douglasiana
mugwort

Baccharis pilularis
coyote brush

Baccharis salicifolia
mule fat

*Centaurea melitensis**
tocalote

Conyza canadensis
common horseweed

Erigeron foliosus
fleabane daisy

Helianthus annuus
western sunflower

Heterotheca grandiflora
telegraph weed

*Lactuca serriola**
prickly lettuce

Lepidospartum squamatum
scale-broom

Malacothrix saxatilis
cliff malacothrix

Stephanomeria virgata
tall wreath plant

Xanthium strumarium
cocklebur

BORAGINACEAE - BORAGE FAMILY

Heliotropium curassavicum
salt heliotrope / alkali heliotrope

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Brassica nigra**
black mustard

CHENOPODIACEAE - GOOSEFOOT FAMILY

Atriplex lentiformis
big saltbush

*Atriplex semibaccata**
Australian saltbush

*Chenopodium album**
lamb's quarters

*Salsola tragus**
Russian thistle

REACH 102: PLANT COMPENDIUM (Continued)

FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

- Astragalus* sp.
locoweed
- Lotus scoparius*
deerweed / California broom

- Melilotus alba**
white sweet-clover

HYDROPHYLLACEAE - WATERLEAF FAMILY

- Eriodictyon crassifolium*
thick-leaf yerba santa

LAMIACEAE (LABIATAE) - MINT FAMILY

- Salvia apiana*
white sage
- Salvia mellifera*
black sage

OXALIDACEAE - WOOD-SORREL FAMILY

- Oxalis pes-caprae** (?)
Bermuda buttercup / sour grass

POLYGONACEAE - BUCKWHEAT FAMILY

- Eriogonum fasciculatum*
California buckwheat

- Rumex crispus**
curly dock

SALICACEAE - WILLOW FAMILY

- Populus fremontii* ssp. *fremontii*
Fremont cottonwood

- Salix exigua*
narrow-leaved willow

- Salix laevigata*
red willow

- Salix lasiolepis*
arroyo willow

SOLANACEAE - NIGHTSHADE FAMILY

- Nicotiana glauca**
tree tobacco

TAMARICACEAE - TAMARISK FAMILY

- Tamarix ramosissima**
Mediterranean tamarisk

CLASS MONOCOTYLEDONES (MONOCOTS)

LILIACEAE - LILY FAMILY

- Yucca whipplei*
Our Lord's candle

POACEAE [GRAMINEAE] - GRASS FAMILY

- Avena* sp.*
wild oat

- Bromus diandrus**
ripgut grass

- Bromus madritensis* ssp. *rubens**
foxtail chess

REACH 102: PLANT COMPENDIUM (Continued)

*Cynodon dactylon**

bermuda grass

Leptochloa uninervia

Mexican sprangletop

*Piptatherum miliaceum**

smilo grass / millett ricegrass

*Polypogon monspeliensis**

annual beard grass

TYPHACEAE - CATTAIL FAMILY

Typha angustifolia

narrow-leaved cattail

* indicates non-native species

REACH 104: PLANT COMPENDIUM

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa
annual bursage

Ambrosia psilostachya
western ragweed

Artemisia californica
California sagebrush

Artemisia douglasiana
mugwort

Baccharis pilularis
coyote brush

Baccharis salicifolia
mule fat

*Centaurea melitensis**
tocalote

Chrysothamnus nauseosus
rubber rabbitbrush

Conyza canadensis
common horseweed

Gnaphalium sp.
everlasting

Helianthus annuus
western sunflower

Heterotheca grandiflora
telegraph weed

Lepidospartum squamatum
scale-broom

Stephanomeria virgata
tall wreath plant

Xanthium strumarium
cocklebur

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Brassica nigra**
black mustard

*Hirschfeldia incana**
shortpod mustard

OLEACEAE - OLIVE FAMILY

Fraxinus velutina (?)
velvet ash

SALICACEAE - WILLOW FAMILY

Populus fremontii ssp. *fremontii*
Fremont cottonwood

Salix exigua
narrow-leaved willow

SOLANACEAE - NIGHTSHADE FAMILY

REACH 104: PLANT COMPENDIUM (Continued)

Datura wrightii
jimson weed

*Nicotiana glauca**
tree tobacco

TAMARICACEAE - TAMARISK FAMILY

*Tamarix ramosissima**
Mediterranean tamarisk

CLASS MONOCOTYLEDONES (MONOCOTS)

POACEAE [GRAMINEAE] - GRASS FAMILY

*Arundo donax**
giant reed

*Bromus hordeaceus**
soft chess

Bromus madritensis ssp. *rubens**
foxtail chess

* indicates non-native species

REACH 105: PLANT COMPENDIUM

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa
annual bursage

Ambrosia psilostachya
western ragweed

Artemisia californica
California sagebrush

Artemisia douglasiana
mugwort

Artemisia dracunculus
tarragon

Baccharis salicifolia
mule fat

*Centaurea melitensis**
tocalote

Cirsium sp. (?)
thistle

Conyza canadensis
common horseweed

Gnaphalium sp.
everlasting

Heterotheca grandiflora
telegraph weed

*Lactuca serriola**
prickly lettuce

Lepidospartum squamatum
scale-broom

Stephanomeria virgata
tall wreath plant

Xanthium strumarium
cocklebur

BORAGINACEAE - BORAGE FAMILY

Heliotropium curassavicum
salt heliotrope / alkali heliotrope

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Brassica nigra**
black mustard

*Hirschfeldia incana**
shortpod mustard

CHENOPODIACEAE - GOOSEFOOT FAMILY

*Salsola tragus**
Russian thistle

FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

Astragalus sp.
locoweed

REACH 105: PLANT COMPENDIUM (Continued)

Lotus scoparius
deerweed / California broom

*Melilotus alba**
white sweet-clover
HYDROPHYLLACEAE - WATERLEAF FAMILY

Eriodictyon crassifolium
thick-leaf yerba santa
LAMIACEAE (LABIATAE) - MINT FAMILY

*Marrubium vulgare**
common horehound
ONAGRACEAE - EVENING PRIMROSE FAMILY

Oenothera elata
evening primrose
POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum
California buckwheat

*Polygonum persicaria**
lady's thumb

Rumex sp.
dock
SALICACEAE - WILLOW FAMILY

Populus fremontii ssp. *fremontii*
Fremont cottonwood

Salix exigua
narrow-leaved willow

Salix laevigata
red willow
SIMAROUBACEAE - QUASSIA FAMILY

*Ailanthus altissima**
tree of heaven
SOLANACEAE - NIGHTSHADE FAMILY

Datura wrightii
jimson weed

*Nicotiana glauca**
tree tobacco
TAMARICACEAE - TAMARISK FAMILY

*Tamarix ramosissima**
Mediterranean tamarisk
URTICACEAE - NETTLE FAMILY

Urtica dioica ssp. *holosericea*
hoary nettle
CLASS MONOCOTYLEDONES (MONOCOTS)
CYPERACEAE - SEDGE FAMILY

Cyperus sp.
umbrella-sedge

Scirpus sp.
bulrush
JUNCACEAE - RUSH FAMILY

Juncus bufonius
toad rush

REACH 105: PLANT COMPENDIUM (Continued)

POACEAE [GRAMINEAE] - GRASS FAMILY

*Arundo donax**

giant reed

Bromus madritensis ssp. *rubens**

foxtail chess

*Piptatherum miliaceum**

smilo grass / millett ricegrass

*Polypogon monspeliensis**

annual beard grass

TYPHACEAE - CATTAIL FAMILY

Typha latifolia

broad-leaved cattail

* indicates non-native species

REACH 106: PLANT COMPENDIUM

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

AMARANTHACEAE - AMARANTH FAMILY

*Amaranthus albus**
tumbleweed

ANACARDIACEAE - SUMAC FAMILY

*Schinus molle**
Peruvian pepper tree

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa
annual bursage

Ambrosia psilostachya
western ragweed

Baccharis pilularis
coyote brush

Baccharis salicifolia
mule fat

Conyza sp.
horseweed

*Gnaphalium luteo-album**
weedy cudweed

Heterotheca grandiflora
telegraph weed

*Lactuca serriola**
prickly lettuce

Xanthium strumarium
cocklebur

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Brassica nigra**
black mustard

*Hirschfeldia incana**
shortpod mustard

*Raphanus sativus**
wild radish

*Rorippa nasturtium-aquaticum**
white water cress

CHENOPODIACEAE - GOOSEFOOT FAMILY

*Chenopodium album**
lamb's quarters

*Salsola tragus**
Russian thistle

EUPHORBIACEAE - SPURGE FAMILY

Chamaesyce sp.
spurge

FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

Lotus scoparius
deerweed / California broom

MALVACEAE - MALLOW FAMILY

*Malva parviflora**
cheeseweed

REACH 106: PLANT COMPENDIUM (Continued)

ONAGRACEAE - EVENING PRIMROSE FAMILY

Epilobium ciliatum
willow-herb

PLATANACEAE - SYCAMORE FAMILY

Platanus racemosa
western sycamore

SALICACEAE - WILLOW FAMILY

Populus fremontii ssp. *fremontii*
Fremont cottonwood

Salix exigua
narrow-leaved willow

Salix laevigata
red willow

Salix lasiolepis
arroyo willow

SOLANACEAE - NIGHTSHADE FAMILY

Datura wrightii
jimson weed

*Nicotiana glauca**
tree tobacco

Solanum americanum
white nightshade

TAMARICACEAE - TAMARISK FAMILY

*Tamarix ramosissima**
Mediterranean tamarisk

ZYGOPHYLLACEAE - CALTROP FAMILY

*Tribulus terrestris**
puncture vine

CLASS MONOCOTYLEDONES (MONOCOTS)

CYPERACEAE - SEDGE FAMILY

Cyperus sp.
umbrella-sedge

POACEAE [GRAMINEAE] - GRASS FAMILY

*Cynodon dactylon**
bermuda grass

*Phalaris minor**
little-seed canary grass

*Polypogon monspeliensis**
annual beard grass

TYPHACEAE - CATTAIL FAMILY

Typha latifolia
broad-leaved cattail

* indicates non-native species

REACH 107: PLANT COMPENDIUM

GYMNOSPERMS

PINACEAE - PINE FAMILY

Pinus sp.
pine (ornamental)

FLOWERING PLANTS

CLASS DICOTYLEDONES (DICOTS)

ACERACEAE - MAPLE FAMILY

Acer macrophyllum
big-leaf maple

ANACARDIACEAE - SUMAC FAMILY

Malosma laurina
laurel sumac

Toxicodendron diversilobum
western poison oak

ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY

Ambrosia acanthicarpa
annual bursage

Artemisia californica
California sagebrush

Artemisia douglasiana
mugwort

Artemisia tridentata
great basin sagebrush

Baccharis pilularis
coyote brush

Baccharis salicifolia
mule fat

Cirsium sp. (?)
thistle

Conyza sp.
horseweed

Gnaphalium sp.
everlasting

Heterotheca grandiflora
telegraph weed

Lessingia filaginifolia
California aster

Senecio flaccidus var. *douglasii*
sand wash butterweed / groundsel

BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY

*Brassica nigra**
black mustard

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

Sambucus mexicana
blue elderberry

CHENOPODIACEAE - GOOSEFOOT FAMILY

*Salsola tragus**
Russian thistle

REACH 107: PLANT COMPENDIUM (Continued)

FABACEAE (LEGUMINOSAE) - LEGUME FAMILY

Melilotus sp.*
sweet-clover

FAGACEAE - OAK / BEECH FAMILY

Quercus agrifolia
coast live oak

HYDROPHYLLACEAE - WATERLEAF FAMILY

Eriodictyon crassifolium
thick-leaf yerba santa

JUGLANDACEAE - WALNUT FAMILY

Juglans californica
southern California black walnut

LAMIACEAE (LABIATAE) - MINT FAMILY

Salvia mellifera
black sage

MYRTACEAE - MYRTLE FAMILY

Eucalyptus sp.*
gum

POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum
California buckwheat

RANUNCULACEAE - CROWFOOT FAMILY

Clematis lasiantha
pipestems

ROSACEAE - ROSE FAMILY

Adenostoma fasciculatum
chamise

SALICACEAE - WILLOW FAMILY

Populus fremontii ssp. *fremontii*
Fremont cottonwood

Salix laevigata
red willow

SCROPHULARIACEAE - FIGWORT FAMILY

Mimulus aurantiacus
bush monkeyflower

SOLANACEAE - NIGHTSHADE FAMILY

Datura wrightii
jimson weed

*Nicotiana glauca**
tree tobacco

VISCACEAE - MISTLETOE FAMILY

Phoradendron macrophyllum
big leaf mistletoe

CLASS MONOCOTYLEDONES (MONOCOTS)

ARECACEAE (PALMAE) - PALM FAMILY

Washingtonia sp.*
fan palm

POACEAE [GRAMINEAE] - GRASS FAMILY

Avena sp.*
wild oat

REACH 107: PLANT COMPENDIUM (Continued)

Bromus madritensis ssp. *rubens**

foxtail chess

*Cynodon dactylon**

bermuda grass

TYPHACEAE - CATTAIL FAMILY

Typha latifolia

broad-leaved cattail

* indicates non-native species

APPENDIX B

**WILDLIFE COMPENDIA FOR REACHES
29, 33, 101, 102, 104, 105, 106 and 107**

REACH 29: WILDLIFE COMPENDIUM

Reptiles

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Sceloporus occidentalis
western fence lizard

Birds

ACCIPITRIDAE - HAWKS

Accipiter striatus
sharp-shinned hawk

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove

TYRANNIDAE - TYRANT FLYCATCHERS

Sayornis nigricans
black phoebe

CORVIDAE - JAYS & CROWS

Aphelocoma californica
western scrub-jay

Corvus brachyrhynchos
American crow

Corvus corax
common raven

TROGLODYTIDAE - WRENS

Thryomanes bewickii
Bewick's wren

EMBERIZIDAE - SPARROWS & JUNCOS

Zonotrichia leucophrys
white-crowned sparrow

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch

Carduelis psaltria
lesser goldfinch

Carduelis tristis
American goldfinch

Mammals

SCIURIDAE - SQUIRRELS

Spermophilus beecheyi
California ground squirrel

Invertebrates

PIERIDAE - WHITES, SULFURS, & ORANGETIPS

Pontia protodice
common (checkered) white

* indicates introduced species

REACH 33: WILDLIFE COMPENDIUM

Reptiles

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Sceloporus occidentalis
western fence lizard

Birds

ANATIDAE - WATERFOWL

Anas platyrhynchos
mallard

ARDEIDAE - HERONS

Butorides virescens
green heron

RALLIDAE - RAILS

Fulica americana
American coot

LARIDAE - GULLS & TERNS

Larus occidentalis
western gull

TROCHILIDAE - HUMMINGBIRDS

Calypte anna
Anna's hummingbird

ALCEDINIDAE - KINGFISHERS

Ceryle alcyon
belted kingfisher

TYRANNIDAE - TYRANT FLYCATCHERS

Sayornis nigricans
black phoebe

CORVIDAE - JAYS & CROWS

Corvus brachyrhynchos
American crow

AEGITHALIDAE - BUSHTITS

Psaltiriparus minimus
bushtit

PARULIDAE - WARBLERS

Dendroica coronata
yellow-rumped warbler

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch

Carduelis psaltria
lesser goldfinch

PASSERIDAE - OLD WORLD SPARROWS

Passer domesticus
house sparrow *

Invertebrates

NYMPHALIDAE - BRUSH-FOOTED BUTTERFLIES

Vanessa cardui
painted lady

REACH 33: WILDLIFE COMPENDIUM (Continued)

DANAIDAE - MILKWEED BUTTERFLIES

Danaus plexippus
monarch

* indicates introduced species

REACH 101: WILDLIFE COMPENDIUM

REPTILES

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Sceloporus occidentalis
western fence lizard

Uta stansburiana
side-blotched lizard

BIRDS

ACCIPITRIDAE - HAWKS

Circus cyaneus
northern harrier

Buteo jamaicensis
red-tailed hawk

FALCONIDAE - FALCONS

Falco sparverius
American kestrel

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove

TROCHILIDAE - HUMMINGBIRDS

Calypte anna
Anna's hummingbird

CORVIDAE - JAYS & CROWS

Corvus brachyrhynchos
American crow

Corvus corax
common raven

AEGITHALIDAE - BUSHTITS

Psaltirparus minimus
bushtit

TROGLODYTIDAE - WRENS

Salpinctes obsoletus
rock wren

Thryomanes bewickii
Bewick's wren

MIMIDAE - THRASHERS

Mimus polyglottos
northern mockingbird

PARULIDAE - WARBLERS

Dendroica coronata
yellow-rumped warbler

Melospiza melodia
song sparrow

Zonotrichia leucophrys
white-crowned sparrow

ICTERIDAE - BLACKBIRDS

Agelaius phoeniceus
red-winged blackbird

REACH 101: WILDLIFE COMPENDIUM (Continued)

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch

REACH 102: WILDLIFE COMPENDIUM

REPTILES

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Uta stansburiana
side-blotched lizard

BIRDS

ODONTOPHORIDAE - QUAILS

Callipepla californica
California quail

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove

TROCHILIDAE - HUMMINGBIRDS

Calypte anna
Anna's hummingbird

AEGITHALIDAE - BUSHTITS

Psaltiriparus minimus
bushtit

TROGLODYTIDAE - WRENS

Thryomanes bewickii
Bewick's wren

TURDIDAE - THRUSHES & ROBINS

Catharus guttatus
hermit thrush

TIMALIIDAE - WRENTITS

Chamaea fasciata
wrentit

MIMIDAE - THRASHERS

Toxostoma redivivum
California thrasher

EMBERIZIDAE - SPARROWS & JUNCOS

Pipilo crissalis
California towhee

Melospiza lincolni
Lincoln's sparrow

Zonotrichia leucophrys
white-crowned sparrow

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch

REACH 104: WILDLIFE COMPENDIUM

REPTILES

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Uta stansburiana
side-blotched lizard

BIRDS

REGULIDAE - KINGLETS

Regulus calendula
ruby-crowned kinglet

PARULIDAE - WARBLERS

Dendroica coronata
yellow-rumped warbler

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch

Carduelis psaltria
lesser goldfinch

MAMMALS

LEPORIDAE - HARES & RABBITS

Sylvilagus audubonii
desert cottontail

REACH 105: WILDLIFE COMPENDIUM

REPTILES

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Uta stansburiana
side-blotched lizard

ACCIPITRIDAE - HAWKS

Buteo jamaicensis
red-tailed hawk

CORVIDAE - JAYS & CROWS

Corvus corax
common raven

TROGLODYTIDAE - WRENS

Thryomanes bewickii
Bewick's wren

Troglodytes aedon
house wren

PARULIDAE - WARBLERS

Dendroica coronata
yellow-rumped warbler

EMBERIZIDAE - SPARROWS & JUNCOS

Pipilo crissalis
California towhee

Zonotrichia leucophrys
white-crowned sparrow

REACH 106: WILDLIFE COMPENDIUM

REPTILES

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Uta stansburiana
side-blotched lizard

ODONTOPHORIDAE - QUAILS

Callipepla californica
California quail

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove

TROCHILIDAE - HUMMINGBIRDS

Calypte anna
Anna's hummingbird

TYRANNIDAE - TYRANT FLYCATCHERS

Sayornis nigricans
black phoebe

CORVIDAE - JAYS & CROWS

Aphelocoma californica
western scrub-jay

Corvus brachyrhynchos
American crow

Corvus corax
common raven

TROGLODYTIDAE - WRENS

Thryomanes bewickii
Bewick's wren

Troglodytes aedon
house wren

PARULIDAE - WARBLERS

Geothlypis trichas
common yellowthroat

EMBERIZIDAE - SPARROWS & JUNCOS

Melospiza melodia
song sparrow

MAMMALS

SCIURIDAE - SQUIRRELS

Spermophilus beecheyi
California ground squirrel

REACH 107: WILDLIFE COMPENDIUM

REPTILES

PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS

Sceloporus occidentalis
western fence lizard

Uta stansburiana
side-blotched lizard

BIRDS

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove

PICIDAE - WOODPECKERS

Picoides nuttallii
Nuttall's woodpecker

TYRANNIDAE - TYRANT FLYCATCHERS

Sayornis nigricans
black phoebe

CORVIDAE - JAYS & CROWS

Aphelocoma californica
western scrub-jay

Corvus brachyrhynchos
American crow

PARIDAE - TITMICE

Baeolophus inornatus
oak titmouse

TROGLODYTIDAE - WRENS

Thryomanes bewickii
Bewick's wren

EMBERIZIDAE - SPARROWS & JUNCOS

Melospiza melodia
song sparrow

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch

Carduelis psaltria
lesser goldfinch

MAMMALS

SCIURIDAE - SQUIRRELS

Spermophilus beecheyi
California ground squirrel