



January 4, 2018

Ms. Nandini T. Moran
Los Angeles County Flood Control District
Flood Maintenance Division
900 South Fremont Avenue, Annex Building, 2nd Floor
Alhambra, California 91803

VIA EMAIL
ntmoran@dpw.lacounty.gov

Subject: Results of a Biological Reconnaissance Survey of LACFCD Soft-Bottom Channel Reaches 120 and 121 in the City of Santa Clarita, Los Angeles County, California

Dear Ms. Moran:

This letter report presents the results of a biological reconnaissance survey of two soft-bottom channel reaches located in the City of Santa Clarita, Los Angeles County (Exhibit 1). These two flood control facilities are being added to the Los Angeles County Flood Control District's (LACFCD's) existing California Department of Fish and Wildlife (CDFW), U.S. Army Corps of Engineers (USACE), and Regional Water Quality Control Board (RWQCB) soft-bottom channels (SBC) maintenance permits. The purpose of this survey is to provide baseline biological information in support of LACFCD's request for inclusion of these two facilities with existing regulatory permits.

The LACFCD maintains numerous SBC reaches and debris basins that primarily function to control floodwaters. Maintained SBC reaches are associated with concreted segments of rivers and creeks in order to prevent backup of debris and sediment that moves downstream during heavy rainfall events. High volumes of storm-water carrying debris and sediment can cause considerable damage to property and can result in the loss of human life. The dams, barriers, and debris basins also have spillways to allow removal of excess runoff water. The spillways slow the water velocity so that the runoff will not damage dams or downstream structures. Vegetation within the maintained segments of the SBCs and debris basins increases the collection of debris and decreases the efficiency of the system and thus creates a safety hazard to upstream and downstream properties. The LACFCD continues to remove vegetation and, as needed, sediment from the flood control facilities in a manner consistent with previously-approved and permitted maintenance activities.

METHODS

Prior to the survey, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2017) and CDFW's California Natural Diversity Database (CDFW 2017) were reviewed to identify special status plants, wildlife, and habitats known to occur in the vicinity of SBC Reaches 120 and 121. The database searches included the U.S. Geological Survey's (USGS's) Newhall Ranch and Mint Canyon 7.5-minute quadrangles. These databases contain records of reported occurrences of species recognized as special status including federally- and State-listed or proposed to be listed as Endangered or Threatened species, CDFW Species of Special Concern, and other special status species or habitats.

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BonTerra Psomas Biologists Brian Daniels and Katie Gallagher conducted a general plant and wildlife survey, including vegetation mapping, at Reaches 120 and 121 on September 15 and 22, 2017. The general biological survey included an evaluation of the potential of habitats on or adjacent to the sites to support special status plant and wildlife species. Nomenclature for taxonomy generally follows Jepson Flora Project (2016) for plants, Crother (2012) for amphibians and reptiles, American Ornithologists' Union (2017) for birds, and Wilson and Reeder (2005) for mammals. All species observed were recorded in field notes.

Nomenclature for vegetation types generally follows that of *Manual of California Vegetation* (Sawyer et al. 2009). When a vegetation type was recorded that did not easily conform to a described vegetation type, a new name was created conforming to the general format of Sawyer et al 2009. In addition to providing an inventory of special status plant and wildlife species, the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) also provides an inventory of vegetation types that are considered special status by State and federal resource agencies. Determination of a vegetation community's level of imperilment is based on the NatureServe Heritage Program Status Ranks (Faber-Langendoen et al. 2012) which ranks both native species and native vegetation types on a scale of 1 to 5 on a global (G) and statewide (S) basis according to their rarity; trend in population size or area; and recognized threats such as non-native species invasion. Generally, vegetation types dominated by non-native species are unranked.

RESULTS

A general description of these two SBC Reaches and the biological resources observed during the survey or that are expected to occur or potentially occurring are described below.

Reach 120 (Jake's Way; PD 2496)

Location

SBC Reach 120 (Jake's Way; PD 2496) is located in the Canyon Country Community of the City of Santa Clarita, Los Angeles County (Exhibit 2a). This SBC reach extends for 950 feet along the south bank of the Santa Clara River just east of the State Route 14 (Antelope Valley Freeway) bridge. This SBC reach is bounded by residential development to the south, but otherwise borders open spaces of the Santa Clara River. Surface water was present during the surveys at the mouth of the outlet located at the west end of the reach. This reach is located within the Mint Canyon USGS 7.5-minute quadrangle map.

Vegetation Types

This facility supports alluvial sage scrub (scale-broom-buckwheat alluvial shrubland), annual brome grassland, open water, and disturbed areas graded by adjacent construction. Individual Fremont cottonwood trees (*Populus fremontii*; cottonwood forest) are scattered throughout the adjacent riverbed, but do not occur within the project boundaries.

Alluvial sage scrub occurs throughout most of the riverbed outside the survey area. It is dominated by scattered scale-broom (*Lepidospartum squamatum*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and mulefat (*Baccharis salicifolia*). Ephemeral scoured streambed takes up a large portion between the canopies of the dominant shrubs within this vegetation type. Several individuals of the invasive tree-of-heaven (*Ailanthus altissima*) shows evidence of cutting and resprouting. Scattered and infrequent invasive brome grasses occur throughout this vegetation type.

Annual brome grassland occurs in the project area near the existing construction. Cheatgrass (*Bromus tectorum*), red brome (*Bromus madritensis* var. *rubens*), and ripgut brome (*Bromus diandrus*) dominate this vegetation type. Species that are scattered, but not dominant, include invasive herbs like tocolote

(*Centaurea melitensis*) and native herbs like telegraphweed (*Heterotheca grandiflora*), annual bursage (*Ambrosia acanthicarpa*) and locoweed (*Acmispon glabra*). It is possible that a portion of area covered by this vegetation type was broadcast seeded by the most recent construction efforts.

Open water drains from the outlet in the project area. Saplings of arroyo willow (*Salix lasiolepis*) and cottonwoods occur within this area, but all individuals very recently died. It is likely the vegetation was sprayed with herbicide within the previous few months. A small patch of giant reed (*Arundo donax*) is resprouting from recent mowing of the above-ground material. One tamarisk (*Tamarix ramosissima*) plant remains healthy on the edge of the open water.

A vegetation map of Reach 120 and adjacent areas is attached as Exhibit 3a. Representative photographs are included as Exhibit 4a.

Wildlife

No fish were observed during the survey, but native fish species are known to occur upstream and downstream of this SBC reach in the Santa Clara River. Therefore, the surface water at the mouth of the outlet may occasionally harbor native fish species. No amphibians were observed, but the Baja California treefrog (*Pseudacris hypochondriaca*) and western toad (*Anaxyrus boreas*) may occur in wet periods. The western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and southern alligator lizard (*Elgaria multicarinata*) are expected to occur. Snakes with potential to occur in this SBC reach include the red racer (*Coluber flagellum*), gopher snake (*Pituophis catenifer*), and western rattlesnake (*Crotalus oreganus*). Although none were observed during the survey, a variety of bird species are expected to occur at this SBC reach. Year-round residents in the region that are expected to use this SBC reach include, but are not limited to, black phoebe (*Sayornis nigricans*), common raven (*Corvus corax*), bushtit (*Psaltiriparus minimus*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), and California towhee (*Melospiza crissalis*). Mammals expected to use this SBC reach include, but are not limited to, the Virginia opossum (*Didelphis virginiana*), desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), and northern raccoon (*Procyon lotor*).

Special Status Species

There is potential for three special status plant species to occur within the survey area that would be a constraint on proposed maintenance activities at this SBC reach. The alluvial sage scrub vegetation type in this SBC reach provides potentially suitable habitat for the federally endangered, State-listed, and California Rare Plant Rank (CRPR) List 1B.1 slender-horned spineflower (*Dodecahema leptoceras*), the State-listed and CRPR List 1B.2 white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), and the CRPR List 2B.2 white rabbit-tobacco (*Pseudognaphalium leucocephalum*). The two spineflowers are annual herbaceous species that are not visible year-round, but only appear after winters of sufficient rainfall. The white rabbit-tobacco is a perennial species that blooms in the spring. No individuals were observed within the project area.

The CNDDDB lists alluvial sage scrub as G3 and S3 and Fremont cottonwood forest as G4 and S3. This means they are vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.

There is potential for one special status wildlife species to occur within this reach that would be a constraint on proposed maintenance activities at this SBC reach. The surface water at the new outlet of this facility provides potentially suitable habitat for the federally and State-listed Endangered and State fully protected unarmored threespine stickleback (*Gasterosteus aculeatus santaannae*). Although the amount of water available for this species doesn't appear substantial enough to support a resident population of unarmored threespine stickleback, it has the potential to provide safe harbor to small numbers of fish after winter seasons with above average rainfall.

Reach 121 (San Francisquito Creek; PD 2271)

Location

SBC Reach 121 (San Francisquito Creek; PD 2271) is located within the City of Santa Clarita, Los Angeles County (Exhibit 2b). The reach is situated on the east bank of San Francisquito Creek, extending from approximately 330 feet upstream to approximately 562 feet downstream of Newhall Ranch Road for a total length of 1,150 feet. Reach 121 is bounded by an urban park and residential development to the east, but otherwise borders open spaces of San Francisquito Creek. Construction for the Newhall Ranch Road bridge widening project spanned the entire creek and encompassed both sides of the existing bridge. Surface water was present during the survey at the south end of this SBC reach outside the construction zone. The reach is located within the Newhall USGS 7.5-minute quadrangle map.

Vegetation Types

This facility includes annual brome grassland, arroyo willow–giant reed shrubland, Fremont cottonwood–willow–mulefat woodland, ephemeral scoured streambed, open cottonwood–mulefat woodland, revegetated sagebrush–tamarisk shrubland, sandbar willow shrubland, alluvial sage scrub (scale-broom–buckwheat alluvial shrubland), open water, disturbed areas graded by adjacent construction, and developed concrete levees and access ramps. Revegetated–cottonwood–deer grass woodland occurs adjacent to the project area along the bike path, but does not occur within the project boundaries.

Annual brome grassland occurs in the project area in flood flow gaps between native riparian vegetation types. Cheatgrass (*Bromus tectorum*), red brome (*Bromus madritensis* var. *rubens*), and ripgut brome (*Bromus diandrus*) dominate this vegetation type. Species that were scattered but not dominant include invasive herbs like tocolote (*Centaurea melitensis*) and native herbs like telegraphweed (*Heterotheca grandiflora*) and annual bursage (*Ambrosia acanthicarpa*).

Arroyo willow–giant reed shrubland occurs in one small location within roughly 30 feet of the east levee bank north of the Newhall Ranch Road bridge. The canopy of arroyo willow (*Salix lasiolepis*) and giant reed (*Arundo donax*) covers 100% of the area and is too thick to allow access underneath. Presumably there is no vegetative understory in the sandy bottom. The sunlit edge adjacent to the disturbed construction area contains a few mulefat and sandbar willow (*Salix exigua*) with short-pod mustard (*Hirschfeldia incana*), prickly lettuce (*Lactuca serriola*), and evening primrose (*Oenothera elata*) underneath.

Fremont cottonwood–willow–mulefat woodland mostly follows high moisture levels from outlet entrainment channels. Two of the three outlets have perennial nuisance flows from the surrounding urban development. The entrainment channels contain stagnant open water under thick woodland canopy. The upper canopy is mostly cottonwood trees with scattered sandbar willows, arroyo willows, and mulefat in the midstory. The understory consists of exotic subshrubs and herbs including Mexican fan palm (*Washingtonia rubusta*), giant reed, and smilo grass (*Stipa millacea*)

Ephemeral scoured streambed is a habitat with less than 5% vegetative cover. It is scoured during high velocity ephemeral floods, so most vegetation cannot take hold. It mostly consists of sand and some cobble.

Open cottonwood–mulefat woodland occurs in two locations with low to medium moisture levels. The cottonwood canopy is very open, covering roughly 40% of the area. Between the scattered cottonwood canopy, there is a midstory canopy of coastal sage scrub (California sagebrush and mulefat) and an understory of mostly brome grasses and bare ground. The stand of open cottonwood–mulefat woodland upstream of the bridge contains mature cottonwood trees that naturally have an open canopy; however,

the stand downstream of the bridge have young cottonwood trees and exhibits a slightly degraded and weedy quality in its canopy hierarchy.

Revegetated sagebrush-tamarisk shrubland surrounds the access ramp, adjacent to the bike path. Presumably, California sagebrush and California buckwheat were planted to revegetate the construction area with native species. Tamarisk and some vanilla-scented wattle (*Acacia redolens*) have since colonized and cover roughly 50% of the area. The planted native shrubs cover the remaining 50%. Exotic herbs such as brome grasses and tocolote are scattered throughout the canopy gaps.

Sandbar willow shrubland (*Salix exigua*) tend to line the edges of the cottonwood–willow–mulefat woodland, taking advantage of the medium moisture levels from the downstream outlet entrainment channel where it can compete with cottonwood trees. Canopy gaps consist of equal parts mulefat to brome grasses and bare ground.

Alluvial sage scrub (scale-broom-buckwheat alluvial shrubland) covered most of the dry open riverbed. It is dominated by scale-broom and California buckwheat with some scattered California sagebrush, mulefat and sandbar willow individuals. Ephemeral scoured streambed took up a large portion of the area between the canopies of the dominant shrubs within this vegetation type. Scattered and infrequent invasive brome grasses occurred throughout this vegetation type.

A vegetation map of Reach 121 and adjacent areas is attached as Exhibit 3b. Representative photographs of are included as Exhibit 4b.

Wildlife

The non-native western mosquito fish (*Gambusia affinis*) was present in the small channel flowing from the outlet at the south end of this SBC reach. Although no native fish were observed during the survey, native fish species are known to occur upstream in San Francisquito Creek and downstream in the Santa Clara River. Therefore, the flowing water at the mouth of the outlet may occasionally harbor native fish species. No amphibians were observed, but the Baja California treefrog and western toad are expected to occur. The western fence lizard, side-blotched lizard, and southern alligator lizard are reptile species expected to occur in this SBC reach. Snakes with potential to occur include the red racer, gopher snake, and western rattlesnake. A variety of bird species were observed using the riparian habitats of this SBC reach including California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), red-shouldered hawk (*Buteo lineatus*), California scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), oak titmouse (*Baeolophus inornatus*), bushtit, Bewick's wren (*Thryomanes bewickii*), California thrasher (*Toxostoma redivivum*), house finch, lesser goldfinch, and California towhee. Mammals expected to use this SBC reach but not limited to include the Virginia opossum, black rat (*Rattus rattus*), desert cottontail, coyote, and northern raccoon.

Special Status Species

There is potential for two special status plant species that would be a constraint on proposed maintenance activities at this SBC reach. The alluvial sage scrub vegetation type in this SBC reach provides potentially suitable habitat for the federally endangered, State-listed, and CRPR List 1B.1 slender-horned spinyflower (*Dodecahema leptoceras*) and the CRPR List 2B.2 white rabbit-tobacco (*Pseudognaphalium leucocephalum*). The spinyflower is an annual herbaceous species that is not visible year-round, but only appear after winters of sufficient rainfall. The white rabbit-tobacco is a perennial species that blooms in the spring. No individuals were observed within the project area.

The CNDDDB lists alluvial sage scrub as G3 and S3 and Fremont cottonwood forest as G4 and S3. This means they are vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.

There is potential for four special status wildlife species to occur within the project area that would each be a constraint on proposed maintenance activities at this SBC reach. The surface water in the channel flowing from the outlet at downstream end of this SBC reach is relatively substantial and provides potentially suitable habitat for the federally and State-listed Endangered and State fully protected unarmored threespine stickleback. The aquatic and upland habitats also provide potentially suitable habitat for the federally listed Endangered arroyo toad (*Anaxyrus californicus*). In addition, the riparian habitats provide potentially suitable habitat for the federally listed Endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and the federally and State-listed Endangered least Bell's vireo (*Vireo bellii pusillus*).

RECOMMENDATIONS

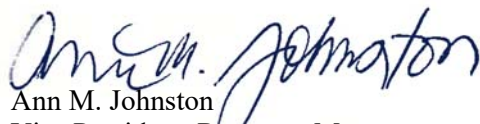
In summary, BonTerra Psomas recommends surveys for six Threatened and/or Endangered plant and wildlife species that, if present, would be a constraint on proposed maintenance activities at these two SBC reaches. The specific species and recommendations for each SBC reach are presented below:

Reach 120 (Jake's Way) – Focused surveys for the federally endangered, state-listed, and CRPR List 1B.1 slender-horned spineflower and the State-listed and CRPR List 1B.2 white-bracted spineflower are recommended to determine presence or absence. If surface water is present prior to clearing activities, then visual surveys for the unarmored threespine stickleback are recommended to determine its presence or absence.

Reach 121 (San Francisquito Creek) – Focused surveys for the federally and state-listed Endangered slender-horned spineflower are recommended to determine its presence or absence. Focused surveys for the federally listed Endangered arroyo toad and southwestern willow flycatcher, and the federally and State-listed Endangered least Bell's vireo are recommended in order to determine their presence or absence. If surface water is present prior to clearing activities, then visual surveys for the unarmored threespine stickleback are recommended to determine its presence or absence.

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

Sincerely,
BonTerra Psomas


Ann M. Johnston
Vice President, Resource Management

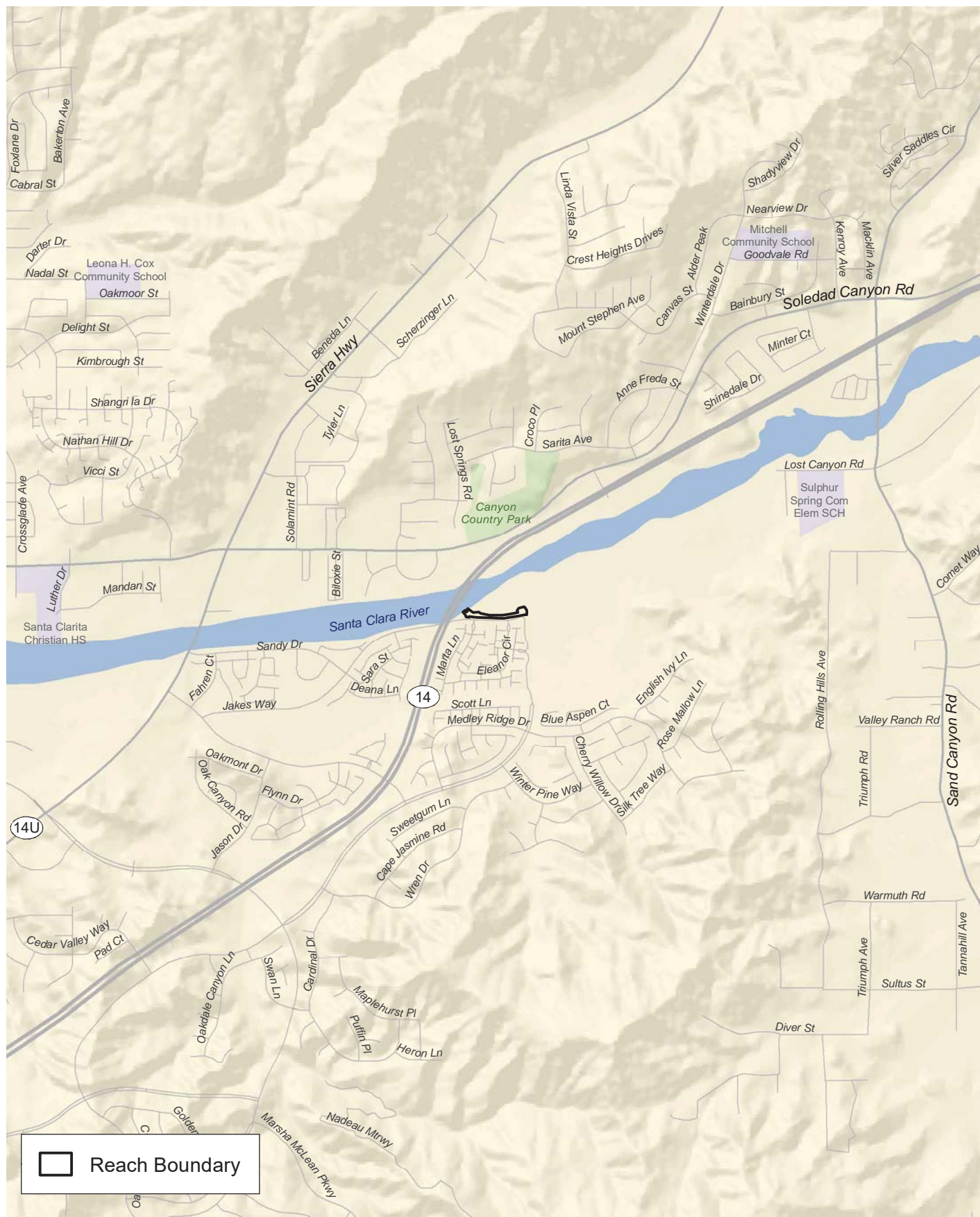

Marc T. Blain
Senior Project Manager

Attachments: Exhibit 1 – Regional Location
Exhibits 2a-2b – Local Vicinity
Exhibits 3a-3b – Vegetation Maps
Exhibits 4a-4b – Site Photographs

REFERENCES

- American Ornithologists' Union (AOU). 2016 (July). *Check-list of North American Birds* (7th ed., as revised through the 57th Supplement). Washington, D.C.: AOU. <http://checklist.aou.org/taxa/>.
- California Department of Fish and Wildlife (CDFW). 2017. California Natural Diversity Database. Records of Occurrence for Newhall Ranch and Mint Canyon 7.5-minute quadrangle maps. Sacramento, CA: CDFW, Natural Heritage Division.
- California Native Plant Society (CNPS). 2017. Inventory of Rare and Endangered Plants (online edition, v8-03. Records of Occurrence for Newhall Ranch and Mint Canyon 7.5-minute quadrangle maps. Sacramento, CA: CNPS. <http://www.rareplants.cnps.org/>.
- Crother, B.I. 2012. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding. *SSAR Herpetological Circular* 39:1–92. Shoreview, MN: SSAR. https://ssarherps.org/wp-content/uploads/2014/07/HC_39_7thEd.pdf.
- Faber-Langendoen, D., L. Master, J. Nichols, K. Snow, A. Tomaino, R. Bittman, G. Hammerson, B. Heidel, L. Ramsay, and B. Young. 2012 (June). NatureServe Conservation Status Assessments: Methodology for Assigning Ranks (Revised Edition). Arlington, VA: NatureServe. http://www.natureserve.org/sites/default/files/publications/files/natureserve_conservationstatusmethodology_jun12_0.pdf.
- Jepson Flora Project. 2016 (December 23, Revision 4). Jepson eFlora (Records for common species in the Plant Compendium and all species descriptions discussed in the Vegetation Type sections). Berkeley, CA: The Jepson Herbarium. <http://ucjeps.berkeley.edu/eflora/>.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation (Second Edition). Sacramento, CA: CNPS.
- Wilson, D.E. and D.A.M. Reeder (Eds). 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference* (3rd Ed). Baltimore, MD: Johns Hopkins University Press.

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Local Vicinity – Reach 120 – Jake’s Way (PD 2496)

Exhibit 2a

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program

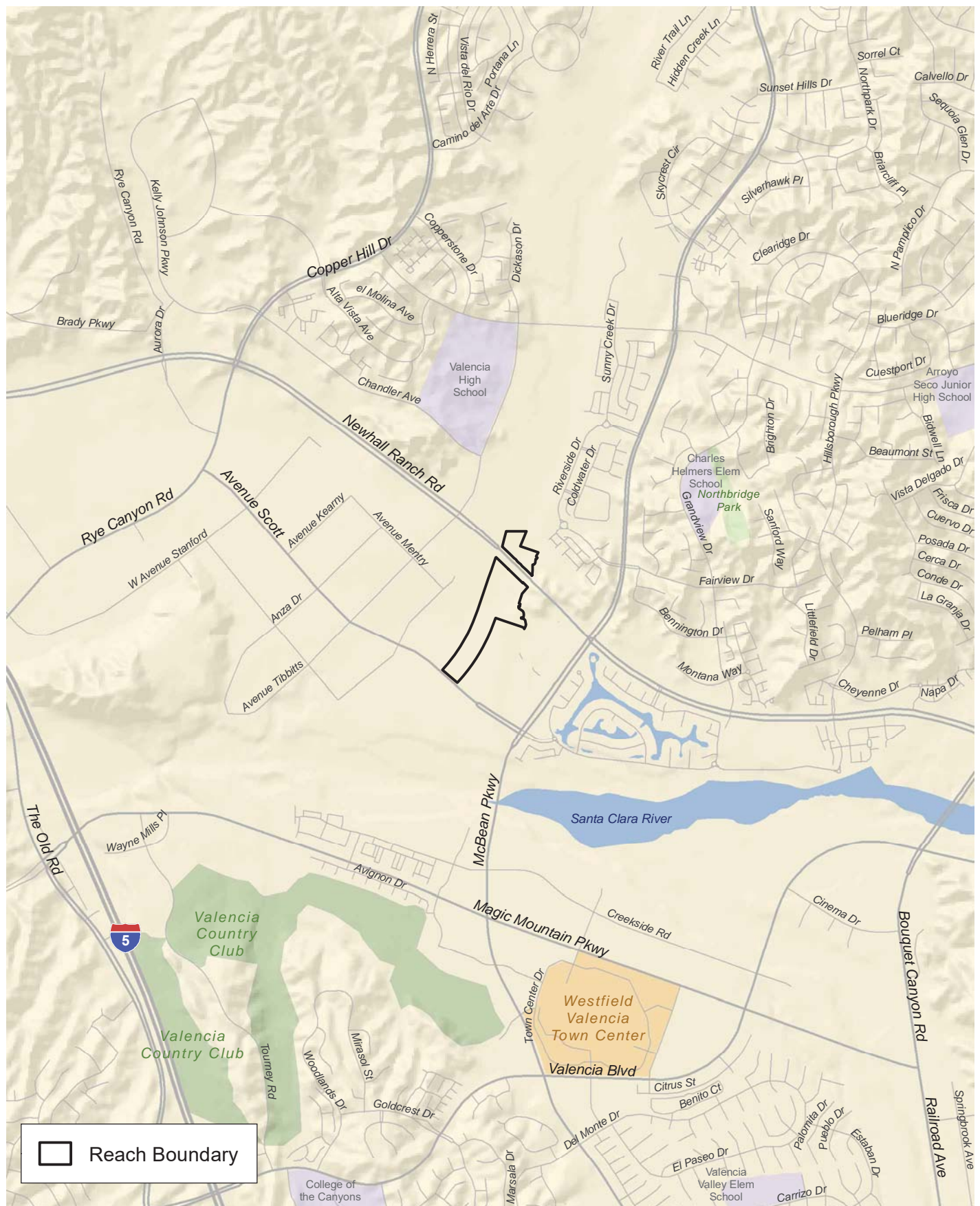


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Local Vicinity – Reach 121 – San Francisquito Creek (PD 2271)

Exhibit 2b

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program



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- Outlet Location
- LACFCD Easement Boundary (1.47 acres)
- Access Features**
 - Access Ramp (0.08 acres)
 - Access Road (0.33 acres)
- Vegetation Types and Other Areas**
 - Annual Brome Grassland
 - Cottonwood Forest
 - Ephemeral Scoured Streambed
 - Mulefat Shrubland
 - Scale-broom – Buckwheat Alluvial Shrubland
 - Disturbed
 - Developed
 - Open Water

Aerial Date: February, 2016

Reach 120 – Jake's Way (PD 2496)

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program

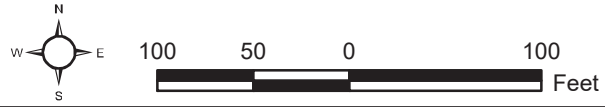


Exhibit 3a



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- Outlet Location
 - ▭ Reach Boundary (6.17 acres)
 - ▭ LACFCD Easement Boundary (17.94 acres)
 - ▭ Access Ramp (0.05 acres)
 - ▭ Access Road (0.67 acres)
- Vegetation Types and Other Areas**
- Annual Brome Grassland
 - Arroyo willow – Giant Reed shrubland
 - Cottonwood – Willow – Mulefat Woodland
 - Ephemeral Scoured Streambed
 - Open Cottonwood – Mulefat Woodland
 - Revegetated Sagebrush - Tamarisk Shrubland
 - Revegetated – Cottonwood – Deer Grass Woodland
 - Sandbar willow shrubland
 - Scale-broom – Buckwheat Alluvial Shrubland
 - Open Water
 - Disturbed
 - Developed

Aerial Source: LAR-IAC 2014

Reach 121 – San Francisquito Creek (PD 2271)

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program



Exhibit 3b





September 22, 2017 - View upstream from left to right of alluvial sage scrub, ephemeral scoured streambed, and annual brome grassland from top of access ramp.



September 22, 2017 - View upstream of outlet and open water from nuisance flows. Dead vegetation exhibits evidence of possible herbicide usage.

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Reach 120 – Jake's Way (PD 2496)

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program

Exhibit 4a-1





September 15, 2017 - View downstream of disturbed habitat from previous construction activities and possible reseeding. Notice fenceline from construction boundary.



September 22, 2017 - View of access ramp and possible herbicide usage in riprap.

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Reach 120 – Jake’s Way (PD 2496)

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program

Exhibit 4a-2





September 22, 2017 - View of outlet and ponded nuisance flow at bottom of access ramp.



September 15, 2017 - View of entrainment channel from ponded water.

Reach 121 – San Francisquito Creek (PD 2271)

Exhibit 4b-1

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program





September 15, 2017 - Entrainment channel is blocked by accumulated debris at 90-degree bend.



September 15, 2017 - View upstream in middle of riverbed of annual brome grassland and ephemeral scoured streambed.

Reach 121 - San Francisquito Creek (PD 2271)

Exhibit 4b-2

Los Angeles County Flood Control District - Soft-Bottom Channel Maintenance Program





September 22, 2017 - View upstream of arroyo willow-giant reed shrubland and disturbed ground from construction activities.



September 15, 2017 - View of upper canopy of cottonwood-willow-mulefat woodland.

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Reach 121 – San Francisquito Creek (PD 2271)

Exhibit 4b-3

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program





September 15, 2017 - View of cottonwood-willow-mulefat woodland understory consisting of exotic species surrounding entrainment channel.



September 15, 2017 - View across riverbed of open cottonwood-mulefat woodland with understory of California sagebrush and brome grasses.

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Reach 121 – San Francisquito Creek (PD 2271)

Exhibit 4b-4

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program





September 22, 2017 - View of gate to access ramp from bike path with revegetated sagebrush-tamarisk shrubland in background.



September 15, 2017 - View of sandbar willow shrubland lining edges of cottonwood-willow-mulefat woodland.

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Reach 121 – San Francisquito Creek (PD 2271)

Exhibit 4b-5

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program





September 15, 2017 - View of alluvial sage scrub with brome grasses and bare ground in understory.

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Reach 121 – San Francisquito Creek (PD 2271)

Exhibit 4b-6

Los Angeles County Flood Control District – Soft-Bottom Channel Maintenance Program

