

Biological Resources Technical Report and MSHCP Consistency Analysis for the North Norco Channel Stage 11 Project

7 IMPACTS

This section addresses impacts to biological resources that would result from implementation of the proposed project.

7.1 Vegetation Communities

There are no special status vegetation communities within the Project site; therefore, the Project would not result in significant impacts to vegetation communities.

7.2 Special-Status Wildlife

There is one special status wildlife species with a moderate or higher potential to occur, burrowing owl. Burrowing owls are not currently present within the project site but could occupy the site in the future. Burrowing owls are covered under the MSHCP and compliance with the MSHCP reduces potential impacts to the species to less than significant. The project site is not within an MSHCP designated burrowing owl survey area; therefore, no additional measures are required under the MSHCP for burrowing owl. The project would be in compliance with other requirements of the MSHCP as discussed in section 8.1 of this report. Additionally, the Project would avoid direct impacts to burrowing owl in compliance with the MBTA by conducting a pre-construction burrowing owl survey. With implementation of these measures (MSHCP compliance and preconstruction survey), potential impacts to burrowing owl would be less than significant.

7.3 Special-Status Plants

No special-status plant species were identified on site during surveys and no special status plant species have a moderate or high potential to occur. Further, the Project is not within an MSHCP Narrow Endemic Plant Species Survey Area or a Criteria Area Plant Species Survey Area; therefore, the Project would not result in significant impacts to special-status plants.

7.4 Wildlife Corridors/Habitat Linkages

The Project site is not located within a Western Riverside MSHCP core or linkage and is not within a wildlife movement corridor. Therefore, the Project would not result in significant impacts to wildlife corridors/habitat linkages.

7.5 MSHCP Riparian/Riverine Habitat

The primary functions and values of the riverine habitat are groundwater recharge, water quality benefits, and sediment transport. Converting an earthen channel to a concrete channel could result in increased pollutants, scour, or increased sediment deposition to downstream habitat conserved by the MSHCP (i.e., Prado Basin).

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Pollutants associated with residential and commercial land uses in the area include fuels from vehicles, pesticides/herbicides from landscaping, trash and debris, and pathogens from equestrian activities. Such pollutants generally occur in small quantities and in scattered locations within the watershed, but could potentially be carried into the stormwater system and collectively increase the amount of pollutants in stormwater runoff carried by the main channel. This effect on the flows carried by the main channel, however, would be minor and incremental, and does not ultimately reflect an increase in the overall presence of pollutants in the watershed as a whole. Under existing conditions, these same pollutants are present, but may accumulate in soil and groundwater in areas that routinely pond or flood during significant rain events. The project has been designed with an earthen bottom for approximately half of facility to facilitate infiltration, which would provide a certain degree of treatment by settling out solids and filtering pollutants. The design also includes catch basins and water quality basins, which would serve a similar function.

With regard to sediment transport and scour, the project may alter the velocity and volume of stormwater flow carried by the mainline channel during storm events. However, these alterations in flow volumes/velocities would not occur in a manner that would result in substantial erosion or siltation on- or off-site because the channel geometry and lining has been designed to carry flood-flows without significant scour (RCFCWCD 2013).

For the above reasons, the proposed project would not result in significant impacts to the functions and values of riverine habitat.

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8 MITIGATION MEASURES AND RECOMMENDATIONS

8.1 MSHCP Compliance

This section addresses measures required for compliance with the MSHCP.

8.1.1 DBESP

The Project site contains areas that meet the definition of riverine habitat under the MSHCP Section 6.1.2; however, would not result in impacts to the functions and values of the riverine habitat. As there would be no loss in functions and values, a DBESP is not required.

8.1.2 MSHCP Standard Best Management Practices

The following standard best management practices from Appendix C of the MSHCP will be followed:

1. Water pollution and erosion control plans shall be developed and implemented in accordance with RWQCB [Regional Water Quality Control Board] requirements.
2. Projects should be designed to avoid the placement of equipment and personnel within the stream channel.
3. When stream flows must be diverted, the diversions shall be conducted using sandbags or other methods requiring minimal instream impacts. Silt fencing or other sediment trapping materials shall be installed at the downstream end of construction activity to minimize the transport of sediments off site. Settling ponds where sediment is collected shall be cleaned out in a manner that prevents the sediment from reentering the stream. Care shall be exercised when removing silt fences, as feasible, to prevent debris or sediment from returning to the stream.
4. Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project related spills of hazardous materials shall be reported to appropriate entities including but not limited to applicable jurisdictional city, FWS, and CDFG [now CDFW], RWQCB and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.
5. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

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8.1.3 MSHCP Development Fee

The District will pay a development fee as required by the MSHCP.

8.2 Other Required Measures

8.2.1 MBTA

The Project must avoid impacts to migratory birds in compliance with the MBTA. If ground disturbance activities occur during the avian nesting season (approximately March 15 to September 15), prior to commencement of ground disturbance activities preconstruction surveys shall be conducted by a qualified biologist within 300 feet of the proposed work area within the District's right-of-way. If nesting birds are observed within the survey area, the qualified biologist shall establish a no-disturbance buffer within the right-of-way. No construction activities shall take place within the buffer until a qualified biologist has determined the nest is no longer active.

8.2.2 Pre-Construction Burrowing Owl Survey

Prior to initiation of ground disturbance activities, a preconstruction burrowing owl survey shall be conducted by a qualified biologist in conformance with MSHCP guidelines. If burrowing owls are present within the project site, impacts to burrowing owl will be avoided through implementation of burrowing owl avoidance measures as described in the MSHCP..

8.2.3 Jurisdictional Waters

Appropriate permits shall be obtained from the regulatory agencies including a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers, a Water Quality Certification from the Regional Water Quality Control Board, and a Streambed Alteration Agreement from the CDFW. All conditions of the permits shall be implemented.

Biological Resources Technical Report and MSHCP Consistency Analysis for the North Norco Channel Stage 11 Project

9 REFERENCES

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APPENDIX A
Observed Wildlife Species

APPENDIX A
Wildlife Species Observed On Site

BIRD

BUSHTITS

***AEGITHALIDAE*—LONG-TAILED TITS AND BUSHTITS**

Psaltriparus minimus—Bushtit

FALCONS

***FALCONIDAE*—CARACARAS AND FALCONS**

Falco sparverius—American kestrel

FINCHES

***FRINGILLIDAE*—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES**

Carpodacus mexicanus—House finch

Spinus psaltria—Lesser goldfinch

FLYCATCHERS

***TYRANNIDAE*—TYRANT FLYCATCHERS**

Sayornis nigricans—Black phoebe

HAWKS

***ACCIPITRIDAE*—HAWKS, KITES, EAGLES, AND ALLIES**

Accipiter cooperii—Cooper's hawk

Buteo jamaicensis—Red-tailed hawk

HUMMINGBIRDS

***TROCHILIDAE*—HUMMINGBIRDS**

Calypte anna—Anna's hummingbird

JAYS, MAGPIES AND CROWS

***CORVIDAE*—CROWS AND JAYS**

Corvus brachyrhynchos—American crow

Corvus corax—Common raven

APPENDIX A (Continued)

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—Northern mockingbird

OLD WORLD SPARROWS

PASSERIDAE—OLD WORLD SPARROWS

* *Passer domesticus*—House sparrow

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—Mourning dove

* *Columba livia*—Rock pigeon (rock dove)

SHOREBIRDS

CHARADRIIDAE—LAPWINGS AND PLOVERS

Charadrius vociferus—Killdeer

STARLINGS AND ALLIES

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Setophaga nigrescens—Black-throated gray warbler

Setophaga coronata—Yellow-rumped warbler

INVERTEBRATE

BUTTERFLIES

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Vanessa cardui—Painted lady

APPENDIX A (Continued)

MAMMAL

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

SQUIRRELS

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

* signifies introduced (non-native) species

APPENDIX A (Continued)

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APPENDIX B
Observed Plant Species

APPENDIX B

Plant Species Observed On Site

VASCULAR SPECIES

DICOTS

AMARANTHACEAE—AMARANTH FAMILY

- * *Amaranthus albus*—prostrate pigweed

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

- * *Schinus molle*—Peruvian peppertree

APOCYNACEAE—DOGBANE FAMILY

Asclepias fascicularis—Mexican whorled milkweed

ASTERACEAE—SUNFLOWER FAMILY

- * *Senecio vulgaris*—old-man-in-the-Spring
- Erigeron canadensis*—Canadian horseweed
- Baccharis salicifolia*—mule-fat
- * *Verbesina encelioides*—golden crownbeard

BRASSICACEAE—MUSTARD FAMILY

- * *Brassica nigra*—black mustard

CHENOPODIACEAE—GOOSEFOOT FAMILY

- * *Salsola tragus*—prickly Russian thistle

EUPHORBIACEAE—SPURGE FAMILY

- * *Ricinus communis*—castorbean
- Croton setiger*—turkey-mullein
- * *Euphorbia maculata*—spotted sandmat

FABACEAE—LEGUME FAMILY

- * *Parkinsonia aculeata*—Jerusalem thorn

GERANIACEAE—GERANIUM FAMILY

- * *Erodium cicutarium*—redstem stork's bill

LAMIACEAE—MINT FAMILY

- * *Marrubium vulgare*—horehound

MALVACEAE—MALLOW FAMILY

- * *Malva parviflora*—cheeseweed mallow

APPENDIX B (Continued)

MYRTACEAE—MYRTLE FAMILY

- * *Eucalyptus polyanthemos*—redbox

OLEACEAE—OLIVE FAMILY

- * *Olea europaea*—olive

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—California sycamore

POLYGONACEAE—BUCKWHEAT FAMILY

- * *Polygonum aviculare*—prostrate knotweed

PORTULACACEAE—PURSLANE FAMILY

- * *Portulaca oleracea*—little hogweed

SALICACEAE—WILLOW FAMILY

Salix gooddingii—Goodding's willow

Salix laevigata—red willow

SIMAROUBACEAE—QUASSIA OR SIMAROUBA FAMILY

- * *Ailanthus altissima*—tree of heaven

SOLANACEAE—NIGHTSHADE FAMILY

- * *Nicotiana glauca*—tree tobacco
- * *Solanum elaeagnifolium*—silverleaf nightshade
- Datura wrightii*—sacred thorn-apple

TAMARICACEAE—TAMARISK FAMILY

- * *Tamarix ramosissima*—saltcedar

ZYGOPHYLLACEAE—CALTROP FAMILY

- * *Tribulus terrestris*—puncturevine

MONOCOTS

ARECACEAE—PALM FAMILY

- * *Washingtonia robusta*—Washington fan palm

CYPERACEAE—SEDGE FAMILY

- * *Cyperus involucratus*—umbrella plant

APPENDIX B (Continued)

***POACEAE*—GRASS FAMILY**

- * *Chloris truncata*—Australian fingergrass
- * *Cynodon dactylon*—Bermudagrass
- * *Dactyloctenium aegyptium*—Egyptian grass
- * *Eleusine indica*—Indian goosegrass
- Leptochloa fusca* ssp. *uninervia*—Mexican sprangletop

***TYPHACEAE*—CATTAIL FAMILY**

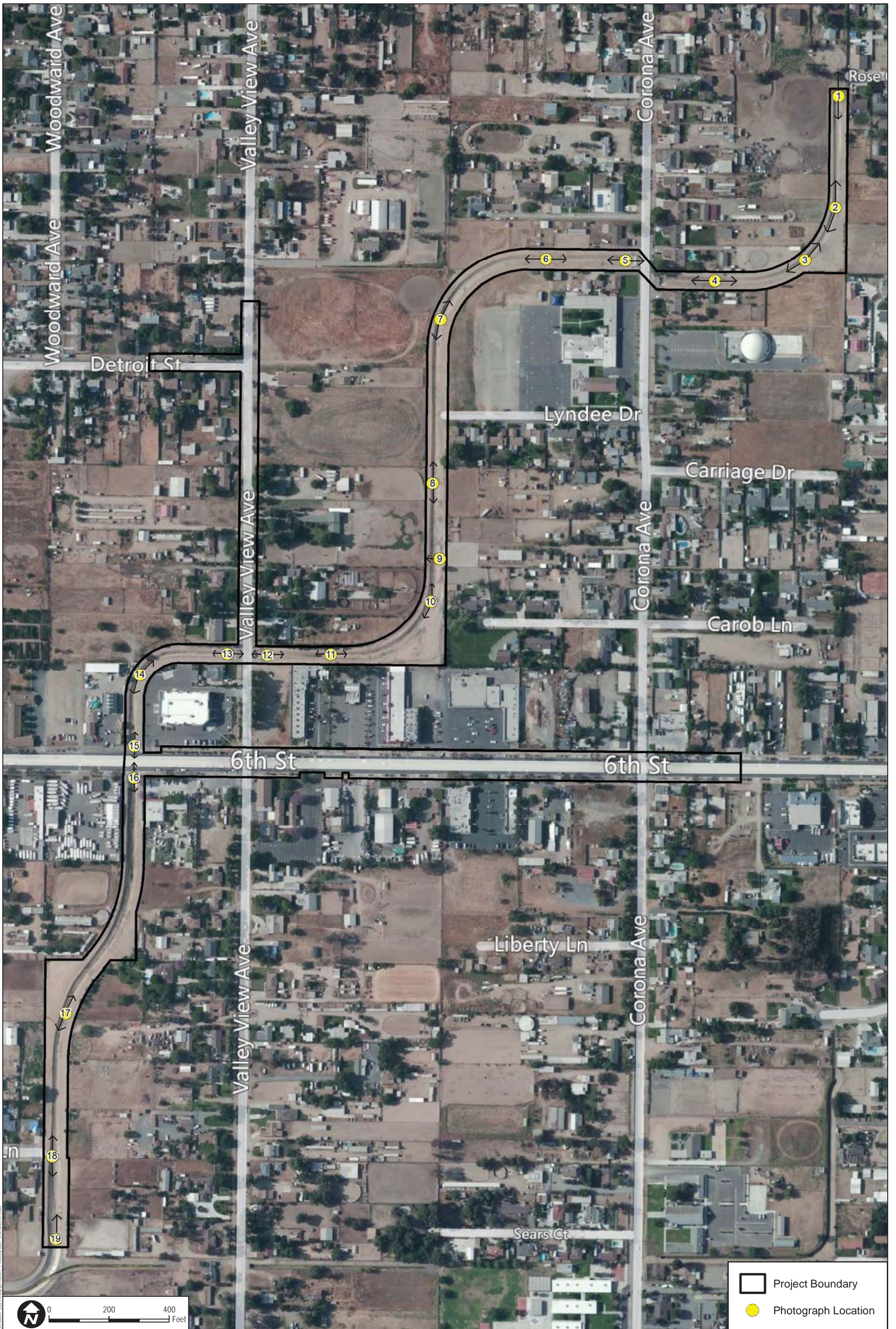
Typha sp.—cattail

* signifies introduced (non-native) species

APPENDIX B (Continued)

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APPENDIX C
Photo Documentation



- Project Boundary
- Photograph Location



DUDEK APPENDIX C: PHOTO DOCUMENTATION

Project: North Norco Channel Stage 11 Project, Norco, Riverside County, California

Photo Date: October 17, 2013

Channel Photos



Location 1: Facing north, upstream towards Seventh Street.



Location 1: Facing south, downstream.



Location 2: Facing north, upstream towards Seventh Street.



Location 2: Facing south, downstream.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



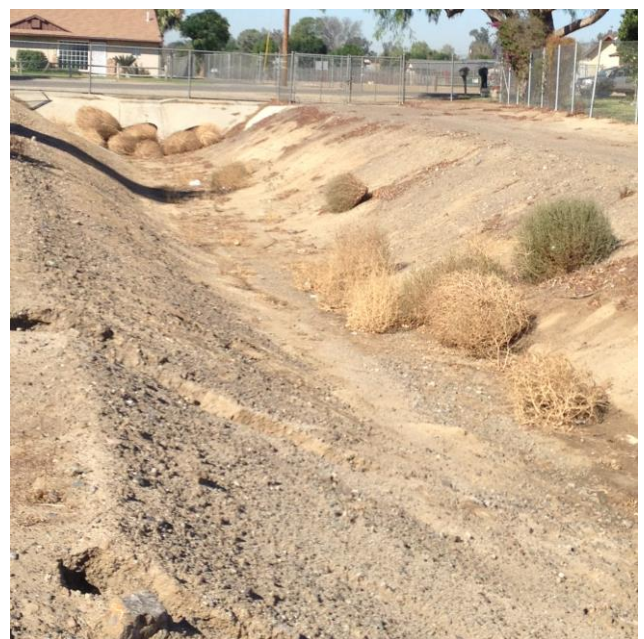
Location 3: Inlet 1 facing northeast, upstream.



Location 3: Inlet 1 facing west, downstream.



Location 4: Facing east, upstream.



Location 4: Facing west, downstream.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 5: Facing east, upstream towards Corona Avenue.



Location 5: Facing west, downstream.



Location 6: Facing east, upstream towards Corona Avenue.



Location 6: Facing west, downstream.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 7: Facing northeast, upstream.



Location 7: Facing southwest, downstream.



Location 8: Facing north, upstream.



Location 8: Facing south, downstream.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 9: Previous burrowing owl location – facing west. Three burrows in west bank of channel.



Location 9: Previous burrowing owl location – facing west. Collapsed burrow.



Location 9: Previous burrowing owl location – facing west. Collapsed burrow.



Location 9: Previous burrowing owl location – facing west. Burrow too small for adult burrowing owl. Spider webs across entrance.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 10: Facing north, upstream.



Location 10: Facing southwest, downstream.



Location 11: Facing east, upstream.



Location 11: Facing west, downstream towards Valley View Avenue.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 12: East of Valley View – facing east, upstream.



Location 12: East of Valley View – facing west, downstream towards Valley View Avenue.



Location 13: Facing west, downstream.



Location 13: Facing east, upstream towards Valley View Avenue.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 14: Facing southwest, downstream towards Sixth Street. Bed 8ft. Bank 28ft.



Location 14: Facing northeast, upstream. Bed 8ft. Bank 28ft.



Location 15: North of Sixth Street – facing north, upstream.



Location 15: North of Sixth Street – facing south, downstream towards Sixth Street.

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 16: Flowing Water – facing north, upstream towards Sixth Street.



Location 16: Flowing Water – facing south, downstream. Standing water is from inlet conveying nuisance flows into the channel.



Location 17: Facing northeast, upstream. Standing water is from inlet conveying nuisance flows.



Location 17: Facing southwest, downstream. Evidence of recent maintenance activities (scrape marks along channel slopes)

DUDEK APPENDIX C: PHOTO DOCUMENTATION



Location 18: Facing south, downstream. Wetland vegetation along toe of slope. Wetland vegetation present along toe of slope.



Location 18: Facing north, upstream. Water appears to be from inlet conveying nuisance flows.



Location 19: Overview of channel – facing north, upstream.

APPENDIX D
Special Status Species Table

APPENDIX D

Special Status Species Occurring in Vicinity

Wildlife

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|------------------------------|---|---------------------------------------|-------------------------------|---|---|
| <i>Amphibians</i> | | | | | |
| <i>Anaxyrus californicus</i> | arroyo toad | FE/CSC | Y (a) | Stream channels for breeding (typically 3rd order); adjacent stream terraces and uplands for foraging and wintering | Not expected. Adjacent stream terraces and uplands absent from maintained channel and not connected to occupied habitat. |
| <i>Lithobates pipiens</i> | northern leopard frog (native populations only) | None/ CSC | N | In or near quiet, permanent and semi-permanent water in many habitats from sea level to 7,000 feet. | Not expected. Maintained intermittent channel would not constitute as quiet, permanent, or semi-permanent habitat. |
| <i>Rana draytonii</i> | California red-legged frog | FT/ CSC | Y (c) | Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands | Not expected. No suitable vegetation within channel or upland of the channel to support this species and species is not recorded in the vicinity. |
| <i>Rana muscosa</i> | southern mountain yellow-legged frog | FE / CSC, CESA - Candidate Endangered | Y (c) | Meadow streams, isolated pools, lake borders, rocky stream courses within ponderosa pine, montane hardwood-conifer and montane riparian habitat types | Not expected. No suitable ponderosa pine, montane hardwood-conifer, or montane riparian habitat on site; species is not recorded in the vicinity. |
| <i>Spea hammondi</i> | western spadefoot | None/ CSC | Y | Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats | Low potential to occur. No suitable grassland, coastal sage scrub, or riparian vegetation within or immediately adjacent to the project area. Vernal pools or other standing water also absent from the site. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|---|---|------------------------------------|-------------------------------|--|---|
| <i>Taricha torosa</i> | Coast Range newt (Monterey Co. south only) | None/ CSC | Y | Coastal drainages from Mendocino Co. to San Diego Co. Lives in terrestrial habitats and will migrate over 1 kilometer to breed in ponds, reservoirs and slow moving streams. | Not expected. Site too distant from suitable habitat to support his species. |
| <i>Reptiles</i> | | | | | |
| <i>Actinemys marmorata</i> | western pond turtle | None/ CSC | Y | Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter | Not expected. Emergent basking sites and accessible adjacent uplands are absent from the project site. |
| <i>Anniella pulchra pulchra</i> | California legless lizard | None/ CSC | N | Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats | Not expected. No suitable coastal dune, coastal sage scrub, woodlands, or riparian habitat vegetation on site. |
| <i>Aspidoscelis hyperythra beldingi</i> | Belding's orange-throated whiptail | None/ CSC | Y | Coastal sage scrub, chaparral, grassland, juniper, and oak woodland | Not expected. No suitable scrub, chaparral, grassland, juniper, or oak woodland vegetation on site. |
| <i>Aspidoscelis tigris stejnegeri</i> | coastal whiptail | None/ SAL | N | Coastal sage scrub, chaparral | Not expected. No suitable scrub or chaparral vegetation on site. |
| <i>Coleonyx variegatus abbotti</i> | western banded gecko | None/ SAL | Y | Cismontane chaparral, coastal sage scrub, desert scrub; granite outcrops | Not expected. No suitable scrub or chaparral vegetation on site. Granite outcrops are absent from the site. |
| <i>Crotalus ruber</i> | red diamond rattlesnake | None/ CSC | Y | Variety of shrub habitats where there is heavy brush, large rocks, or boulders | Not expected. No heavy brush vegetation on site. The site also does not support large rocks or boulders. |
| <i>Lampropeltis zonata (parvirubra)</i> (San Bernardino population) | California mountain kingsnake (San Bernardino population) | None/ CSC | Y (f) | Valley-foothill hardwood, hardwood-conifer, chaparral, coniferous forest, wet meadow | Not expected. No suitable forest, chaparral, or meadow vegetation on site and species was not recorded in the project vicinity. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|---|--|------------------------------------|-------------------------------|--|--|
| <i>Lampropeltis zonata (pulchra)</i> (San Diego population) | California mountain kingsnake (San Diego population) | None/ CSC | Y (f) | Valley-foothill hardwood, hardwood-conifer, chaparral, coniferous forest, wet meadow | Not expected. No suitable forest, chaparral, or meadow vegetation on site. |
| <i>Lichanura trivirgata</i> | rosy boa | None/ SAL | Y | Rocky chaparral, coastal sage scrub, oak woodlands, desert, and semi-desert scrub | Not expected. No suitable scrub, chaparral, or oak woodland vegetation on site. |
| <i>Phrynosoma blainvillii</i> | Blainville's horned lizard | None, CSC | Y | Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest | Not expected. No suitable scrub, grassland, chaparral, oak, riparian, or coniferous forest vegetation on site. |
| <i>Salvadora hexalepis virgultea</i> | coast patch-nosed snake | None/ CSC | N | Chaparral, washes, sandy flats, rocky areas | Low potential to occur. Maintained stream channel likely would not support this species. |
| <i>Thamnophis hammondi</i> | two-striped gartersnake | None/ CSC | N | Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools | Low potential to occur. Maintained channel devoid of rocky bed. |
| <i>Birds</i> | | | | | |
| <i>Accipiter cooperii</i> (nesting) | Cooper's hawk | None/ WL | Y | Riparian and oak woodlands, montane canyons | Not expected to nest on site. No suitable riparian or oak vegetation and the project area is not within a montane canyon. |
| <i>Accipiter gentilis</i> (nesting) | northern goshawk | None/ CSC | Y | Within and in the vicinity of coniferous forest. Uses old nests, and maintains alternate sites. | Not expected to nest on site. No coniferous forest within or in the vicinity of the project site. Species also not recorded in the vicinity. |
| <i>Accipiter striatus</i> (nesting) | sharp-shinned hawk | None/ WL | Y | Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats | Not expected to nest on site. No suitable forest or woodland vegetation on site. Species not recorded in the project vicinity. Does not breed on coastal slope of Southern California. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|--|--|------------------------------------|-------------------------------|--|---|
| <i>Agelaius tricolor</i> (nesting colony) | tricolored blackbird | BCC, USWL/ CSC | Y | Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture | Not expected. Although the site supports a fresh water source with adjacent agricultural areas, emergent wetlands with cattails or tules are absent. |
| <i>Aimophila ruficeps canescens</i> | southern California rufous-crowned sparrow | None/ WL | Y | Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops | Low potential to occur. No suitable grass-covered hillsides, scrub or chaparral vegetation on site. Boulders and outcrops also absent. |
| <i>Ammodramus savannarum</i> (nesting) | grasshopper sparrow | None/ CSC | Y (e) | Open grassland and prairie, especially native grassland with a mix of grasses and forbs | Low potential to occur. Project site does not contain open grassland or prairie vegetation. |
| <i>Amphispiza belli belli</i> | Bell's sage sparrow | BCC, USWL/ WL | Y | Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys | Low potential to occur. No suitable scrub or chaparral vegetation on site. |
| <i>Aquila chrysaetos</i> (nesting and wintering) | golden eagle | BCC/ WL, P | Y: | Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest | Not expected. No suitable vegetation and the site is characterized by flat topography. |
| <i>Asio otus</i> (nesting) | long-eared owl | None/ CSC | N | Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest | Not expected to nest on site. Dense vegetation is absent from the project site and vicinity. |
| <i>Athene cucularia</i> (burrow sites and some wintering sites) | burrowing owl | BCC / CSC | Y (c) | Grassland, lowland scrub, agriculture, coastal dunes, and other artificial open areas | Moderate potential. Observed on site during Dudek surveys conducted in 2009 (Dudek 2010). No burrowing owl individuals, active burrows (observed sign, feathers, white wash, or pellets), or suitable burrows were observed during Dudek surveys in 2013. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|--|------------------------------|------------------------------------|-------------------------------|--|--|
| <i>Buteo regalis</i> (wintering) | ferruginous hawk | BCC/ WL | Y | Open, dry country, grasslands, open fields, agriculture | Low potential to winter on site. Adjacent open fields and agriculture may support this species, but species is not recorded in the project vicinity. |
| <i>Buteo swainsoni</i> (nesting) | Swainson's hawk | BCC, USWL/ ST | Y | Open grassland, shrublands, croplands | Low potential to nest on site. Adjacent agricultural areas may support this species, but this species is not recorded in the project vicinity. |
| <i>Campylorhynchus brunneicapillus sandiegensis</i> (San Diego and Orange Counties only) | coastal cactus wren | BCC/ CSC | Y | Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub | Not expected. No suitable cactus scrub on site or in the immediate vicinity. |
| <i>Charadrius montanus</i> (wintering) | mountain plover | FPT, BCC, USWL/ CSC | Y | Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts | Low potential to winter on site. Adjacent open fields and agriculture may support this species, but species is not recorded in the project vicinity. |
| <i>Circus cyaneus</i> (nesting) | northern harrier | None/ CSC | Y | Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub | Low potential to nest on site. Adjacent fields may support this species, but species is not recorded in the project vicinity. |
| <i>Coccyzus americanus occidentalis</i> (nesting) | western yellow-billed cuckoo | FC, BCC/ SE | Y (a) | Dense, wide riparian woodlands and forest with well-developed understories | Not expected to nest on site. No suitable riparian vegetation on site. |
| <i>Cypseloides niger</i> (nesting) | black swift | BCC, USWL/ CSC | Y | Nests in moist crevices or caves on sea cliffs or near waterfalls in deep canyons; forages over many habitats | Not expected to nest on site. No suitable crevices, cliffs or canyons on site. Species not recorded in the project vicinity. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|---|--------------------------------|------------------------------------|-------------------------------|---|---|
| <i>Elanus leucurus</i> (nesting) | white-tailed kite | None/ P | Y | Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian | Low potential to nest on site. Adjacent agriculture may support this species, but nesting opportunities on site are very limited. |
| <i>Empidonax traillii extimus</i> (nesting) | southwestern willow flycatcher | FE, USWL/ SE | Y (a) | Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk | Not expected to nest on site. No suitable riparian vegetation. |
| <i>Eremophila alpestris</i> | horned lark | None/ WL | Y | Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields | Low potential to occur. Adjacent agriculture and fields may support this species. |
| <i>Falco columbarius</i> (wintering) | merlin | None/ WL | Y | Nests in open country, open coniferous forest, prairie; winters in open woodlands, grasslands, cultivated fields, marshes, estuaries and sea coasts | Low potential to occur. Adjacent field may support this species, but species is not recorded in the project vicinity. |
| <i>Falco mexicanus</i> (nesting) | prairie falcon | BCC/ WL | Y | Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs | Not expected to nest on site. No suitable cliffs or bluffs for nesting occur on site. |
| <i>Falco peregrinus anatum</i> (nesting) | American peregrine falcon | BCC, FD/ SD, P | Y | Nests on cliffs, buildings, bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present | Not expected to nest on site as cliffs, buildings, and bridges are absent from the site. |
| <i>Haliaeetus leucocephalus</i> (nesting and wintering) | bald eagle | FD, BCC / SE, P | Y | Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains | Not expected to nest or winter on site. Site does not contain a large enough water body to support this species. |
| <i>Icteria virens</i> (nesting) | yellow-breasted chat | None/ CSC | Y | Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush. | Not expected to nest on site. No suitable riparian vegetation on site. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|---|--------------------------------|------------------------------------|-------------------------------|--|--|
| <i>Lanius ludovicianus</i> (nesting) | loggerhead shrike | BCC/ CSC | Y | Open ground, including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, open woodland | Low potential to occur on site. Adjacent areas provide agricultural areas and open field suitable for this species, but species is not recorded in project vicinity. |
| <i>Melanerpes lewis</i> (nesting) | Lewis's woodpecker | BCC, USWL/ None | N | Open oak savannahs, broken deciduous and coniferous habitats. | Not expected to nest on site. No suitable forest habitat on site or in the area. Species not recorded in the project vicinity. |
| <i>Pandion haliaetus</i> (nesting) | osprey | None/ WL | Y | Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast | Not expected to occur. No large water bodies on the inland site. Species not recorded in the project vicinity. |
| <i>Phalacrocorax auritus</i> (nesting colony) | double-crested cormorant | None/ WL | Y | Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes | Not expected to occur. No large water bodies on the inland site. Species not recorded in the project vicinity. |
| <i>Plegadis chihi</i> (nesting colony) | white-faced ibis | None/ WL | Y | Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries | Not expected to nest on site. No suitable marsh vegetation. Species not recorded in the project vicinity. |
| <i>Poliopitila californica californica</i> | coastal California gnatcatcher | FT, USWL/ CSC | Y | Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer | Not expected. No suitable scrub habitat on or immediately adjacent to the site. Riparian vegetation is also absent. |
| <i>Progne subis</i> (nesting) | purple martin | None/ CSC | Y | Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland | Not expected to nest on site. No suitable woodland or forest vegetation on site. Species not recorded in the project vicinity. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|--|---|------------------------------------|-------------------------------|---|--|
| <i>Setophaga petechia</i> (nesting) | yellow warbler | BCC/ CSC | Y | Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders and willows; winters in a variety of habitats | Not expected to nest on site. No suitable riparian vegetation on site. |
| <i>Strix occidentalis occidentalis</i> | California spotted owl | BCC, USWL/ CSC | Y (f) | Forests and woodlands dominated by hardwoods, oak and oak-conifer woodlands, and conifers at high elevations | Not expected. No suitable forests or woodlands. Site too low in elevation. |
| <i>Vireo bellii pusillus</i> (nesting) | least Bell's vireo | FE, USWL/ SE | Y: | Nests in southern willow scrub with dense cover within 1–2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry, or mesquite on desert areas | Not expected to nest on site. No suitable riparian vegetation on site. |
| <i>Mammals</i> | | | | | |
| <i>Antrozous pallidus</i> | pallid bat | None/ CSC | N | Rocky outcrops, cliffs, and crevices with access to open habitats for foraging | Low potential to occur. No suitable rocky outcrops, cliffs or crevices on site. Open areas adjacent to the site may support this species. |
| <i>Chaetodipus fallax fallax</i> | northwestern San Diego pocket mouse | None/ CSC | Y | Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams, and sandy loams | Not expected. No suitable scrub, grassland or chaparral vegetation on site. |
| <i>Dipodomys merriami collinus</i> | Earthquake Merriam's (Aguanga) kangaroo rat | None/ SAL | Y (c) | Riversidean alluvial fan sage scrub, flood plains, sandy and sandy loam soils | Not expected to occur. Species not recorded in the project vicinity and has a narrow distribution that includes Temecula Creek and Wilson Creek. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|--|-----------------------------------|------------------------------------|-------------------------------|--|---|
| <i>Dipodomys merriami parvus</i> | San Bernardino kangaroo rat | FE/ CSC | Y (c) | Riversidean alluvial fan sage scrub, flood plains, sandy and sandy loam soils | Not expected to occur. Species' distribution is narrow and is restricted to parts of the San Jacinto River and Bautista Creek. |
| <i>Dipodomys stephensi</i> | Stephens' kangaroo rat | FE/ ST | Y | Open habitat, grassland, sparse coastal sage scrub, sandy loam, and loamy soils with low clay content; gentle slopes (< 30%) | Not expected. Outside of known occupied areas and surrounding areas are too developed. |
| <i>Eumops perotis californicus</i> | greater bonnetted bat | None/ CSC | N | Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures | Not expected. Very limited roosting opportunities on site and no man-made structures on site. |
| <i>Glaucomys sabrinus californicus</i> | San Bernardino flying squirrel | None/ CSC | Y (e) | Restricted to the San Jacinto Mountains in the MSHCP Plan Area. | Not expected. Outside of known geographic range of species. |
| <i>Lasiurus xanthinus</i> | western yellow bat | None/ CSC | N | Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland | Low potential to occur. No suitable vegetation on site. |
| <i>Lepus californicus bennettii</i> | San Diego black-tailed jackrabbit | None/ CSC | Y | Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands | Low potential to occur. The site is predominantly open ground. Fencing may preclude this species. |
| <i>Neotoma lepida intermedia</i> | San Diego desert woodrat | None/ CSC | Y | Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth | Low potential to occur. No suitable scrub, chaparral, or woodland vegetation. Rock outcrops, cactus thickets, and dense undergrowth also absent from the site. No middens observed. |
| <i>Nyctinomops femorosaccus</i> | pocketed free-tailed bat | None/ CSC | N | Rocky desert areas with high cliffs or rock outcrops | Low potential to occur. The site is not rocky nor does it contain high cliffs or rock outcrops. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|--|--------------------------|------------------------------------|-------------------------------|---|---|
| <i>Nyctinomops macrotis</i> | big free-tailed bat | None/ CSC | N | Rugged, rocky canyons | Not expected. No rugged, rocky canyons on site or in the immediate project vicinity. |
| <i>Perognathus longimembris brevinasus</i> | Los Angeles pocket mouse | None/ CSC | Y (c) | Grassland, coastal sage scrub, disturbed habitats; fine, sandy soils | Low potential to occur. The site supports fine and very fine sandy loams but is disturbed. |
| <i>Fish</i> | | | | | |
| <i>Catostomus santaanae</i> | Santa Ana sucker | FT/ CSC | Y | Small, shallow, cool, clear streams less than 7 meters in width and a few centimeters to more than a meter in depth; substrates are generally coarse gravel, rubble and boulder | Not expected. Intermittent, maintained channel not likely to support this species. No suitable coarse gravel, rubble, or bouldery substrates. |
| <i>Gila orcutti</i> | arroyo chub | None/ CSC | Y | Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths > 40 centimeters; substrates of sand or mud | Not expected. Intermittent, maintained channel not likely to support this species. |
| <i>Rhinichthys osculus</i> ssp. 3 | Santa Ana speckled dace | None/ CSC | N | Permanent streams with cool, flowing rocky-bottomed washes, shallow cobble and gravel riffles | Not expected. Intermittent, maintained channel not likely to support this species. |
| <i>Invertebrates</i> | | | | | |
| <i>Branchinecta lynchi</i> | vernal pool fairy shrimp | FT/ None | Y (a) | Vernal pools; cool-water pools with low to moderate dissolved solids | Not expected. No suitable vernal pools on site. |
| <i>Branchinecta sandiegonensis</i> | San Diego fairy shrimp | FE/ None | N | Small, shallow vernal pools, occasionally ditches and road ruts | Not expected. No suitable vernal pools on site. |
| <i>Euphydryas editha quino</i> | Quino checkerspot | FE/ None | Y | Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant <i>Plantago erecta</i> and nectar plants must be present | Not expected. No suitable hilltops ridgelines, or rocky outcrops on site. Species not recorded in the project vicinity. |
| <i>Streptocephalus woottoni</i> | Riverside fairy shrimp | FE/ None | Y (a) | Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids | Not expected. No suitable vernal pools on site. |

APPENDIX D (Continue)

| Scientific Name | Common Name | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations | Status on Site or Potential to Occur |
|--|----------------------------------|---------------------------------------|----------------------------------|--|--|
| <i>Rhaphiomidas terminatus abdominalis</i> | Delhi Sands flower-loving fly | FE/ None | Y | Associated with Delhi sands formation; sparsely vegetated habitat (< 50%) supporting <i>Eriogonum fasciculatum</i> , <i>Croton californicus</i> , <i>Heterotheca grandiflora</i> | Not expected. No suitable Delhi sands formation or associated plant species on site. |

APPENDIX D (Continue)

Plants

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|----------------------------|-----------|---------------------------------------|----------------------------------|--|---|
| <i>Abronia villosa</i> var. <i>aurita</i> | chaparral sand- verbena | 1B.1 | None/ None | N | Chaparral, Coastal scrub, Desert dunes/sandy/ annual herb/ January- September/ 260-5,250 feet | Not expected. No suitable vegetation on site. |
| <i>Allium marvinii</i> | Yucaipa onion | 1B.1 | None/ None | Y (b) | Chaparral(clay, openings)/ perennial bulbiferous herb/ April-May/ 2,490- 3,490 feet | Not expected. No suitable vegetation or soils on site. Site is outside of known elevation range for this species. |
| <i>Allium munzii</i> | Munz's onion | 1B.1 | FE/ ST | Y (b) | Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland/mesic, clay/ perennial bulbiferous herb/ March-May/ 970- 3,510 feet | Not expected. No suitable vegetation or clay soils on site. |
| <i>Ambrosia pumila</i> | San Diego ambrosia | 1B.1 | FE/ None | Y (b) | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/often in disturbed areas, sometimes alkaline/ perennial rhizomatous herb/ April-October/ 65-1,360 feet | Not expected. No suitable vegetation on site. Vernal pools absent from Project study area. |
| <i>Arctostaphylos rainbowensis</i> | Rainbow manzanita | 1B.1 | None/ None | Y (e) | Chaparral/ perennial evergreen shrub/ December-Mar/ 740-2,200 feet | Not expected. No suitable vegetation on site. Shrub would have been observed during surveys if present. Site is outside of known elevation range for this species. |
| <i>Arenaria paludicola</i> | marsh sandwort | 1B.1 | FE/ SE | N | Marshes and swamps (freshwater or brackish)/sandy, openings/ stoloniferous herb/ May-August/ < 560 feet | Not expected. No suitable marshes or swamps on site. Site is outside of the known elevation range for this species. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|-------------------------------|-----------|---------------------------------------|----------------------------------|---|--|
| <i>Astragalus brauntonii</i> | Braunton's milk-vetch | 1B.1 | FE/ None | N | Chaparral, Coastal scrub, Valley and foothill grassland/recent burns or disturbed areas, usually sandstone with carbonate layers/ perennial herb/ January–August/ 13–2,100 feet | Not expected. No suitable vegetation on site. Nearest record is approximately 9 miles southwest of the site. |
| <i>Astragalus pachypus</i> var. <i>jaegeri</i> | Jaeger's bush milk-vetch | 1B.1 | None/ None | Y | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/sandy or rocky/ perennial shrub/ December–June/ 1,200–3,000feet | Not expected. No suitable vegetation on site. Shrub would have been observed during surveys if present. Site is outside of known elevation range for this species. |
| <i>Atriplex coronata</i> var. <i>notatior</i> | San Jacinto Valley crownscale | 1B.1 | FE/ None | Y (d) | Playas, Valley and foothill grassland (mesic), Vernal pools/alkaline/ annual herb/ April–August/ 460–1,640 feet | Not expected. No suitable vegetation or vernal pools on site. Not recorded within the project vicinity. |
| <i>Atriplex coulteri</i> | Coulter's saltbush | 1B.2 | None/ None | N | Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/ perennial herb/ March–October/ 10–1,500 feet. | Not expected. No suitable vegetation on site. Nearest record is over 7 miles from the site. |
| <i>Atriplex parishii</i> | Parish's brittlescale | 1B.1 | None/ None | Y (d) | Chenopod scrub, Playas, Vernal pools/alkaline/ annual herb/ June–October/ 82–6,230 feet | Not expected. No suitable vegetation or vernal pools on site. Not recorded within the project vicinity. |
| <i>Atriplex serenana</i> var. <i> davidsonii</i> | Davidson's saltscale | 1B.2 | None/ None | Y (d) | Coastal bluff scrub, Coastal scrub/alkaline/ annual herb/ April–October/ 33–660 feet | Not expected. No suitable scrub vegetation on site. Not recorded within the project vicinity. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|------------------------------|------------------------|-----------|---------------------------------------|----------------------------------|--|--|
| <i>Baccharis malibuensis</i> | Malibu baccharis | 1B.1 | None/ None | N | Coastal sage scrub, chaparral, cismontane woodlands; generally in Conejo volcanic substrates in Santa Monica Mountains and Simi Hills/ shrub/ August | Not expected. No suitable vegetation or Conejo volcanic substrates on site and shrub would have been detected during surveys if present. Outside of known geographic range of species. |
| <i>Berberis nevini</i> | Nevin's barberry | 1B.1 | FE/ SE | Y (d) | Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub/sandy or gravelly/ perennial evergreen shrub/ March–June/ 900–2,710 feet | Not expected. No suitable vegetation. Shrub would have been observed during surveys if present. Site is outside of known elevation range for this species. |
| <i>Boechera johnstonii</i> | Johnston's rock cress | 1B.2 | None/ None | Y (b) | Chaparral, Lower montane coniferous forest/often on eroded clay/ perennial herb/ February–June/ 4,430–7,050 feet | Not expected. No suitable vegetation or soils on site. Site is outside of known elevation range for this species. |
| <i>Brodiaea filifolia</i> | thread-leaved brodiaea | 1B.1 | FT/ SE | Y (d) | Chaparral(openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools/often clay/ perennial bulbiferous herb/ March–June/ 82–4,000 feet | Not expected. No suitable vegetation or clay soils on site. Vernal pools are absent from the site. |
| <i>Brodiaea orcuttii</i> | Orcutt's brodiaea | 1B.1 | None/ None | Y | Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools/mesic, clay, sometimes serpentinite/ perennial bulbiferous herb/ May–July/ 98–5,550 feet | Not expected. No suitable vegetation or clay soils on site. Vernal pools are absent from the site. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|---|-----------------------------|-----------|---------------------------------------|----------------------------------|---|---|
| <i>Calandrinia breweri</i> | Brewer's calandrinia | 4.2 | None/ None | N | Chaparral, Coastal scrub/sandy or loamy, disturbed sites and burns/ annual herb/ Mar-Jun/ 33-4,003 feet | Low potential to occur. No suitable vegetation on site, but species is disturbance-tolerant. Nearest record over 5 miles southwest of site. |
| <i>California macrophylla</i> | round-leaved filaree | 1B.1 | None/ None | N | Cismontane woodland, Valley and foothill grassland/clay/ annual herb/ March-May/ 49-3,940 feet | Not expected. No suitable vegetation or clay soils on site. |
| <i>Calochortus palmeri</i> var. <i>munzii</i> | San Jacinto mariposa lily | 1B.2 | None/ None | Y (b) | Chaparral, Lower montane coniferous forest, Meadows and seeps/ perennial bulbiferous herb/ June-July/ 3,940-7,220 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |
| <i>Calochortus weedii</i> var. <i>intermedius</i> | intermediate mariposa lily | 1B.2 | None/ None | Y | Chaparral, Coastal scrub, Valley and foothill grassland/rocky, calcareous/ perennial bulbiferous herb/ May-July/ 340-2,810 feet | Not expected. No suitable on site. Nearest record over 7 miles southeast of site. |
| <i>Calystegia sepium</i> ssp. <i>binghamiae</i> | Santa Barbara morning-glory | 1B.1 | None/ None | N | Marshes and swamps(coastal), Riparian scrub(alluvial)/Historically associated with wetland and marshy places, but possibly in drier situations as well. Perennial rhizomatous herb/ Apr-May/ 0-722 feet | Not expected. No suitable vegetation on site. Marshes and swamps are absent from the site. |
| <i>Ceanothus ophiochilus</i> | Vail Lake ceanothus | 1B.1 | FT/ SE | Y (d) | Chaparral(gabbroic or pyroxenite-rich outcrops)/ perennial evergreen shrub/ February-March/ 1,900-3,490 feet | Not expected. No suitable chaparral habitat on site. Site is outside of known elevation range for this species. |
| <i>Centromadia pungens</i> ssp. <i>laevis</i> | smooth tarplant | 1B.1 | None/ None | Y (d) | Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland/alkaline/ annual herb/ April-September/ 0-1,570 feet | Low potential to occur. No suitable vegetation on site, but species is disturbance-tolerant and suitable alkaline soils occur on site. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|---|---------------------------------------|-----------|---------------------------------------|----------------------------------|--|--|
| <i>Chloropyron maritimum</i> ssp. <i>maritimum</i> | salt marsh bird's- beak | 1B.2 | FE/ SE | N | Coastal dunes, coastal saltwater marshes and swamps/ annual herb; hemiparasitic / May–October/ < 100 feet | Not expected. No suitable vegetation on site and site is outside of known elevation range for this species. |
| <i>Chorizanthe parryi</i> var. <i>fernandina</i> | San Fernando Valley spineflower | 1B.1 | FC/ SE | N | Coastal scrub, valley and foothill grassland; sandy/ annual herb/ April– June/ 492–4,002 feet | Not expected. No suitable vegetation on site. |
| <i>Chorizanthe parryi</i> var. <i>parryi</i> | Parry's spineflower | 1B.1 | None/ None | Y (e) | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/sandy or rocky, openings/ annual herb/ April–June/ 900– 4,000 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range of species. |
| <i>Chorizanthe polygonoides</i> var. <i>longispina</i> | long-spined spineflower | 1B.2 | None/ None | Y | Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools/often clay/ annual herb/ April–July/ 98–5,020 feet | Not expected. No suitable vegetation or clay soils on site. Vernal pools are absent. Maintained channel would not likely support this species. |
| <i>Chorizanthe procumbens</i> | prostrate spineflower | None | None/ None | Y | Coastal scrub, chaparral, grasslands/ sandy/ herb/ <2,625 feet | Not expected. No suitable vegetation on site. Not known within the project vicinity. |
| <i>Chorizanthe xanti</i> var. <i>leucotheca</i> | white-bracted spineflower | 1B.2 | None/ None | N | Mojavean desert scrub, Pinyon and juniper woodland/sandy or gravelly/ annual herb/ April–June/ 980–3,940 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range of species. |
| <i>Cladium californicum</i> | California sawgrass | 2.3 | None/ None | N | Meadows and seeps, Marshes and swamps (Alkaline or Freshwater)/ perennial rhizomatous herb/ June– September/ 200–1,970 feet | Not expected. No suitable vegetation on site. Maintained channel would not likely support this species. |
| <i>Clinopodium chandleri</i> | San Miguel savory | 1B.2 | None/ None | Y (b) | Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland/rocky, gabbroic or metavolcanic/ perennial shrub/ March–July/ 390–3,530 feet | Not expected. No suitable vegetation on site. Shrub would have been observed during surveys if present. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|--------------------------------|-----------|---------------------------------------|----------------------------------|--|--|
| <i>Deinandra mohavensis</i> | Mojave tarplant | 1B.3 | None/ SE | Y (e) | Chaparral, Coastal scrub, Riparian scrub/mesic/ annual herb/ July–October (January)/ 2,100–5,250 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |
| <i>Dodecahema leptoceras</i> | slender-horned spineflower | 1B.1 | FE/ SE | Y (b) | Chaparral, Cismontane woodland, Coastal scrub(alluvial fan)/sandy/ annual herb/ April–June/ 660–2,490 feet | Not expected. No suitable vegetation on site. Alluvial fans absent from the site. Nearest record is over 10 miles northeast of the site. |
| <i>Dudleya multicaulis</i> | many-stemmed dudleya | 1B.2 | None/ None | Y (b) | Chaparral, Coastal scrub, Valley and foothill grassland/often clay/ perennial herb/ April–July/ 50–2,590 feet | Not expected. No suitable vegetation or clay soils on site. |
| <i>Dudleya viscida</i> | sticky dudleya | 1B.2 | None/ None | Y (f) | Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial herb/ May–June/ 33–1,800 feet | Not expected. No suitable vegetation on site. Not known within the project vicinity. |
| <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> | Santa Ana River woollystar | 1B.1 | FE/ SE | Y | Chaparral, Coastal scrub(alluvial fan)/sandy or gravelly/ perennial herb/ May–September/ 300–2,000 feet | Not expected. No suitable vegetation on site. |
| <i>Eryngium aristulatum</i> var. <i>parishii</i> | San Diego button-celery | 1B.1 | FE/ SE | Y | Coastal scrub, Valley and foothill grassland, Vernal pools/mesic/ annual/perennial herb/ April–June/ 66–2,030 feet | Not expected. No suitable vegetation on site. Vernal pools absent from the site. |
| <i>Galium angustifolium</i> ssp. <i>jacinticum</i> | San Jacinto Mountains bedstraw | 1B.3 | None/ None | Y (b) | Lower montane coniferous forest/ perennial herb/ June–August/ 4,430–6,890 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |
| <i>Galium californicum</i> ssp. <i>primum</i> | Alvin Meadow bedstraw | 1B.2 | None/ None | Y (f) | Chaparral, Lower montane coniferous forest/granitic, sandy/ perennial herb/ May–July/ 4,430–5,580 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|---------------------------|-----------|---------------------------------------|----------------------------------|--|---|
| <i>Hesperocyparis forbesii</i> | Tecate cypress | 1B.1 | None/ None | N | Closed-cone coniferous forest, Chaparral/clay, gabbroic or metavolcanic/ perennial evergreen tree/ 840–4,920 feet | Not expected. No suitable vegetation on site and conspicuous tree would have been detected during surveys if present. Also outside of known elevation range of species. |
| <i>Hesperocyparis goveniana</i> | Gowen cypress | 1B.2 | FT/ None | N | Closed-cone coniferous forest, Chaparral(maritime)/ perennial evergreen tree/ 98-984 feet | Not expected. No suitable vegetation on site. |
| <i>Heuchera hirsutissima</i> | shaggy-haired alumroot | 1B.3 | None/ None | Y (f) | Subalpine coniferous forest, Upper montane coniferous forest/rocky, granitic/ perennial rhizomatous herb/ (May) June–July/ 4,990–11,480 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |
| <i>Horkelia cuneata</i> ssp. <i>puberula</i> | mesa horkelia | 1B.1 | None/ None | N | Chaparral(maritime), Cismontane woodland, Coastal scrub/sandy or gravelly/ perennial herb/ February–July (September)/ 230–2,660 feet | Not expected. No suitable vegetation on site. |
| <i>Lasthenia glabrata</i> ssp. <i>coulteri</i> | Coulter's goldfields | 1B.1 | None/ None | Y (d) | Marshes and swamps(coastal salt), Playas, Vernal pools/ annual herb/ February–June/ < 4,000 feet | Not expected. No suitable vegetation on site. Vernal pools are absent from the site. Maintained channel would not likely support this species. |
| <i>Lepechinia cardiophylla</i> | heart-leaved pitcher sage | 1B.2 | None/ None | Y (d) | Closed-cone conifer forest, chaparral, cismontane woodland/ shrub/ April–July/ 1,700–4,500 feet. | Not expected. No suitable vegetation on site, shrub would have been observed during surveys, and the site is outside of the known elevation range of this species. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|---|-------------------------------|-----------|---------------------------------------|----------------------------------|--|---|
| <i>Lilium parryi</i> | lemon lily | 1B.2 | None/ None | Y (f) | Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest/mesic/ perennial bulbiferous herb/ July–August/ 4,000–9,010 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |
| <i>Limnanthes alba</i> ssp. <i>parishii</i> | Parish's meadowfoam | 1B.2 | None/ SE | Y | Lower montane coniferous forest, Meadows and seeps, Vernal pools/vernally mesic/ annual herb/ April–June/ 1,970–6,560 feet | Not expected. No suitable vegetation on site. Vernal pools absent from the site. Site is outside of known elevation range for this species. |
| <i>Lycium parishii</i> | Parish's desert-thorn | 2.3 | None/ None | N | Coastal scrub, Sonoran desert scrub/ perennial shrub/ March–April/ 1,000–3,280 feet | Not expected. No suitable vegetation on site, shrub would have been observed during surveys, and the site is outside the known elevation range of this species. |
| <i>Mimulus clevelandii</i> | Cleveland's bush monkeyflower | 4.2 | None/ None | Y (f) | Chaparral, Cismontane woodland, Lower montane coniferous forest/gabbroic, often in disturbed areas, openings, rocky/ perennial rhizomatous herb/ April–July/ 2,670–6,560 feet | Not expected. Site is outside of known elevation range for this species. |
| <i>Monardella australis</i> ssp. <i>jokersti</i> | Jokerst's monardella | 1B.1 | None/ None | N | Chaparral, Lower montane coniferous forest/Steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes/ perennial rhizomatous herb/ Jul-Sep/ 4,429-5,741 feet | Not expected. No suitable vegetation on site and the site is outside the known elevation range of this species. |
| <i>Monardella hypoleuca</i> ssp. <i>intermedia</i> | intermediate monardella | 1B.3 | None/ None | N | Chaparral, Cismontane woodland, Lower montane coniferous forest(sometimes)/ Usually understory/ perennial rhizomatous herb/ Apr-Sep/ 1,312-4,101 feet | Not expected. No suitable vegetation on site and the site is outside the known elevation range of this species. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|----------------------------------|-----------|---------------------------------------|----------------------------------|--|--|
| <i>Monardella macrantha</i> ssp. <i>hallii</i> | Hall's monardella | 1B.3 | None/ None | Y | Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland/ perennial rhizomatous herb/ June–August/ 2,400–7,200 feet | Not expected. No suitable vegetation on site. Site is outside of known elevation range for this species. |
| <i>Monardella pringlei</i> | Pringle's monardella | 1A | None/ None | N | Coastal scrub(sandy)/ annual herb/ May–June/ 980–1,310 feet | Not expected. No suitable vegetation on site and the site is outside the known elevation range of this species. |
| <i>Nama stenocarpum</i> | mud nama | 2B.2 | None/ None | Y (d) | Marshes and swamps(lake margins, riverbanks)/ annual/perennial herb/ January–July/ 16–1,640 feet | Not expected. No suitable vegetation on site. Maintained channel would not likely support this species. |
| <i>Navarretia fossalis</i> | spreading navarretia | 1B.1 | FT/ None | Y (b) | Chenopod scrub, Marshes and swamps(assorted shallow freshwater), Playas, Vernal pools/ annual herb/ Apr–Jun/ 98–4,270 feet | Not expected. No suitable vegetation on site. Vernal pools absent from the site. Maintained channel would not likely support this species. |
| <i>Navarretia prostrata</i> | prostrate vernal pool navarretia | 1B.1 | None/ None | Y (d) | Coastal scrub, Meadows and seeps, Valley and foothill grassland(alkaline), Vernal pools/mesic/ annual herb/ April–July/ 50–2,300 feet | Not expected. No suitable vegetation on site. Vernal pools absent from the site. Maintained channel would not likely support this species. |
| <i>Nolina cismontana</i> | chaparral nolina | 1B.2 | None/ None | N | Chaparral, Coastal scrub/sandstone or gabbro/ perennial evergreen shrub/ May–July/ 460–4,180 feet | Not expected. No suitable vegetation on site and shrub would have been observed during surveys if present. |
| <i>Orcuttia californica</i> | California Orcutt grass | 1B.1 | FE/ SE | Y (b) | Vernal pools/ annual herb/ April–August/ 49–2,170 feet | Not expected. No vernal pools on site. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|------------------------|-----------|---------------------------------------|----------------------------------|---|--|
| <i>Penstemon californicus</i> | California beardtongue | 1B.2 | None/ None | Y | Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland/sandy/ perennial herb/ May–June (August)/ 3,840–7,550 feet | Not expected. No suitable vegetation on site and the site is outside the known elevation range of this species. |
| <i>Pentachaeta aurea</i> ssp. <i>allenii</i> | Allen's pentachaeta | 1B.1 | None/ None | N | Coastal scrub, valley and foothill grassland/ annual herb/ March–June/ 250–1,700 feet. | Not expected. No suitable vegetation on site. |
| <i>Phacelia keckii</i> | Santiago Peak phacelia | 1B.3 | None/ None | N | Closed-cone coniferous forest, Chaparral/ annual herb/ May–June/ 1,790–5,250 feet | Not expected. No suitable vegetation on site and the site is outside the known elevation range of this species. |
| <i>Phacelia stellaris</i> | Brand's star phacelia | 1B.1 | FC/ None | Y (b) | Coastal dunes, Coastal scrub/ annual herb/ March–June/ 3–1,312 feet | Not expected. No suitable vegetation on site. Not known within the project vicinity. |
| <i>Potentilla rimicola</i> | cliff cinquefoil | 2B.3 | None/ None | Y (e) | Subalpine coniferous forest, Upper montane coniferous forest/granitic, rocky/ perennial herb/ July–September/ 7,870–9,190 feet | Not expected. No suitable vegetation. Site is outside the known elevation range for this species. |
| <i>Pseudognaphalium leucocephalum</i> | white rabbit-tobacco | 2.3 | None/ None | N | Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/sandy, gravelly/ perennial herb/ (July) August–November (December)/ 0–6,890 feet | Not expected. No suitable vegetation on site. |
| <i>Senecio aphanactis</i> | chaparral ragwort | 2.3 | None/ None | N | Chaparral, Cismontane woodland, Coastal scrub/sometimes alkaline/ annual herb/ January–April/ 49–2,620 feet | Not expected. No suitable vegetation on site. |
| <i>Sibaropsis hammittii</i> | Hammitt's clay-cress | 1B.2 | None/ None | Y (b) | Chaparral(openings), Valley and foothill grassland/clay/ annual herb/ March–April/ 2,360–3,490 feet | Not expected. No suitable vegetation or clay soils on site. Site is outside the known elevation range of this species. |

APPENDIX D (Continue)

| Scientific Name | Common Name | CNPS List | Status Federal/ State ¹ | Covered Under the MSHCP (Y/N) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range | Status On Site or Potential to Occur |
|--|--------------------------|-----------|---------------------------------------|----------------------------------|---|--|
| <i>Sidalcea neomexicana</i> | salt spring checkerbloom | 2.3 | None/ None | N | Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas/alkaline, mesic/ perennial herb/ March–June/ 49–5,020 feet | Not expected. No suitable vegetation on site. |
| <i>Sphenopholis obtusata</i> | prairie wedge grass | 2.3 | None/ None | N | Cismontane woodland, Meadows and seeps/mesic/ perennial herb/ Apr-Jul/ 984-6,562 feet | Not expected. No suitable vegetation on site. Site is outside the known elevation range of this species. |
| <i>Symphotrichum defoliatum</i> | San Bernardino aster | 1B.2 | None/ None | N | Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Valley and foothill grassland(vernally mesic)/near ditches, streams, springs/ perennial rhizomatous herb/ July–November/ < 6,690 feet | Not expected. No suitable vegetation on site. Maintained channel would not likely support this species. |
| <i>Thysanocarpus rigidus</i> | rigid fringepod | 1B.2 | None/ None | N | Pinyon and juniper woodland/Dry rocky slopes/ annual herb/ Feb-May/ 1,969-7,218 feet | Not expected. No suitable vegetation on site. Site is outside the known elevation range of this species. |
| <i>Trichocoronis wrightii</i> var. <i>wrightii</i> | Wright's trichocoronis | 2B.1 | None/ None | Y (b) | Meadows and seeps, Marshes and swamps, Riparian forest, Vernal pools/alkaline/ annual herb/ May–September/ 16–1,430 feet | Not expected. No suitable vegetation on site. Vernal pools absent from site. Maintained channel would not likely support this species. |

APPENDIX D (Continue)

Status Legend:

Federal Designation

| | |
|------|---|
| BCC | USFWS: Birds of Conservation Concern |
| FE: | Federally listed as endangered |
| FT: | Federally listed as threatened |
| FPT | Federally proposed Threatened |
| FC: | Federal Candidate for listing |
| FD | Federally Delisted |
| USWL | U.S. WatchList of Birds of Conservation Concern – joint between American Bird Conservation and the National Audubon Society |

State Designation

| | |
|--------------|---|
| SE | State listed as endangered |
| ST | State listed as threatened |
| SD | State-listed as Delisted |
| SR | State Rare |
| CSC | California Special Concern Species |
| P | CDFW Protected and Fully Protected Species |
| SAL | CDFW Special Animals List (CDFG 2011) |
| WL | CDFW Watch List Species |
| CRPR 1A | Plants presumed extinct in California |
| CRPR List 1B | Plants rare, threatened, or endangered in California and elsewhere |
| CRPR List 2 | Plants rare, threatened, or endangered in California but more common elsewhere |
| CRPR List 3 | Plants about which more information is needed – a review list |
| CRPR List 4 | Plants of limited distribution – a watch list |
| ¹ | Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat) |
| ² | Fairly endangered in California (20% to 80% of occurrences threatened) |
| ³ | Not very endangered in California (less than 20% of occurrences threatened or no current threats known). |

MSHCP

- (a) Surveys may be required for these species as part of wetlands mapping as described in Section 6.1.2 of the MSHCP.
- (b) Surveys may be required for these species within Narrow Endemic Plant Species survey area as described in Section 6.1.3 of the MSHCP.
- (c) Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP.
- (d) Surveys may be required for these species within Criteria Area as described in Section 6.3.2 of the MSHCP.
- (e) These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.
- (f) These Covered Species will be considered to be Covered Species Adequately Conserved when a Memorandum of Understanding is executed with the Forest Service that addresses

APPENDIX D (Continued)

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APPENDIX B-2

Jurisdictional Waters Delineation Report

JURISDICTIONAL WATERS DELINEATION REPORT
for the
North Norco Channel Stage II Project No. 2-0-00140-II,
Riverside County, California

Prepared for:

**Riverside County Flood Control and
Water Conservation District**

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Prepared by:

DUDEK

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MARCH 2015

**Jurisdictional Waters Delineation Report for the North Norco Channel
Stage 11 Project No. 2-0-00140-11, Riverside County, California**

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**Jurisdictional Waters Delineation Report for the North Norco Channel
Stage 11 Project No. 2-0-00140-11, Riverside County, California**

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Jurisdictional Waters Delineation Report for the North Norco Channel Stage 11 Project No. 2-0-00140-11, Riverside County, California

1 INTRODUCTION

This report documents the results of a jurisdictional waters delineation for the proposed North Norco Channel Stage 11 Project No. 2-0-00140-11 (Project) in the City of Norco, California.

The Project site is in western Riverside County, California in the City of Norco (Figure 1). The northern terminus of the Project is at the end of Rose Court, southwest of the intersection of 7th Street and Temescal Avenue. The Project site is situated in Section 6 of Township 3 South Range 6 West of the Corona North 7.5-minute U.S. Geological Survey (USGS) quadrangle (Figure 2). The Project alignment follows the existing interim North Norco Channel downstream in a southwest direction crossing Corona Avenue, Valley View Avenue, and 6th Street. The southern terminus of the Project is north of 5th Street and approximately 250 feet east of Sierra Avenue (Figure 3). The approximate center point latitude is 33°56'22"N and the longitude is 117°32'55"W.

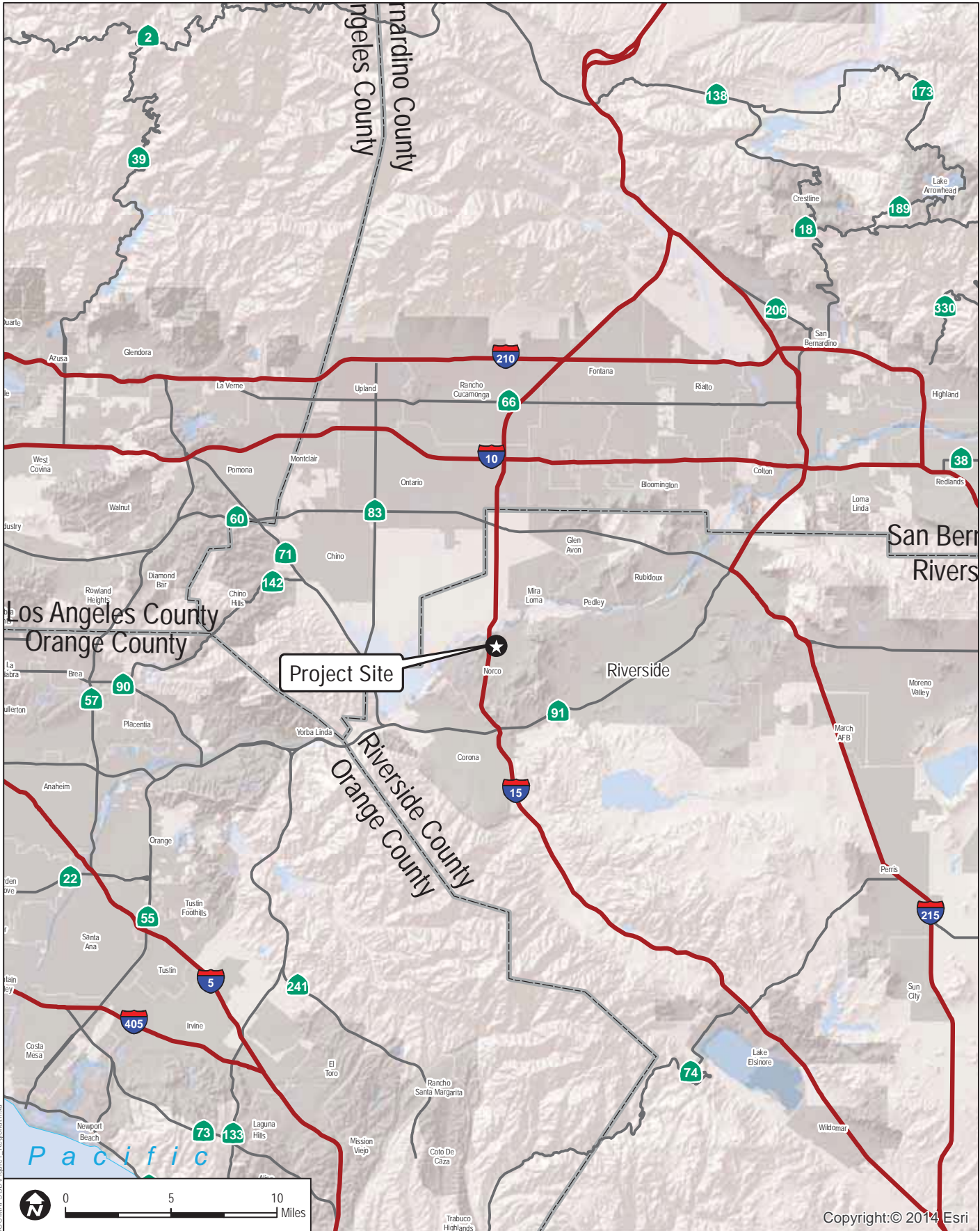
This report is intended to describe the existing conditions of jurisdictional waters under the regulatory authority of the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) within the Project site, provide an assessment of impacts to jurisdictional waters as a result of the Project, and provide avoidance, minimization, and mitigation measures.

1.1 Project Background

The Riverside County Flood Control and Water Conservation District (District) proposes improvements to their facilities in accordance with the North Norco Master Drainage Plan in order to reduce flood risk in the Project area. Improvements would occur to the North Norco Channel Stage 11 mainline (referred to in this report as the main channel), Line N-2 Stage 1 in 6th Street, Line NC Stage 1 in Valley View Avenue, and Line NC-1 Stage 1 in Detroit Street, collectively referred to as the North Norco Channel, Stage 11 Project. After consideration of 10 different alternatives, the District has selected an alternative which includes a concrete rectangular channel with a 24-foot base width and 8-foot depth west of Valley View Avenue and a trapezoidal channel with an earthen bottom and concrete side-slopes with 6 to 7-foot depth east of Valley View Avenue. The Project includes a slab bridge at 6th Street and double reinforced concrete box (RCB) culverts at both Valley View Avenue and Corona Avenue. The Project totals approximately 5,912 linear feet.

**Jurisdictional Waters Delineation Report for the North Norco Channel
Stage 11 Project No. 2-0-00140-11, Riverside County, California**

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SOURCE: ESRI 2013

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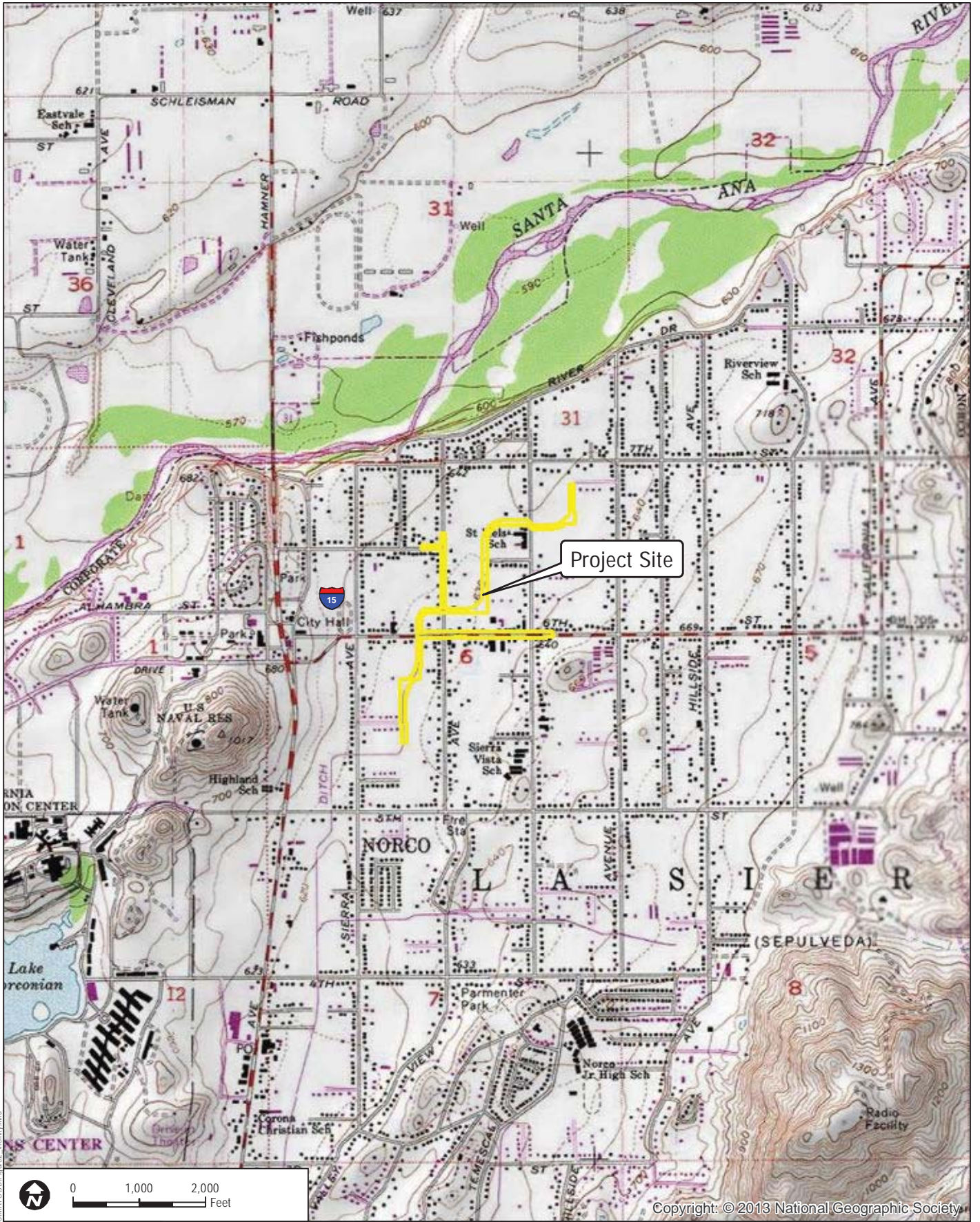
NORTH NORCO CHANNEL STAGE 11 PROJECT NO. 2-0-00140-11

**FIGURE 1
Regional Map**

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**Jurisdictional Waters Delineation Report for the North Norco Channel
Stage 11 Project No. 2-0-00140-11, Riverside County, California**

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Project Site

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SOURCE: USGS 7.5-Minute Series Quadrangle (Romoland, Murrieta)

FIGURE 2
Vicinity Map

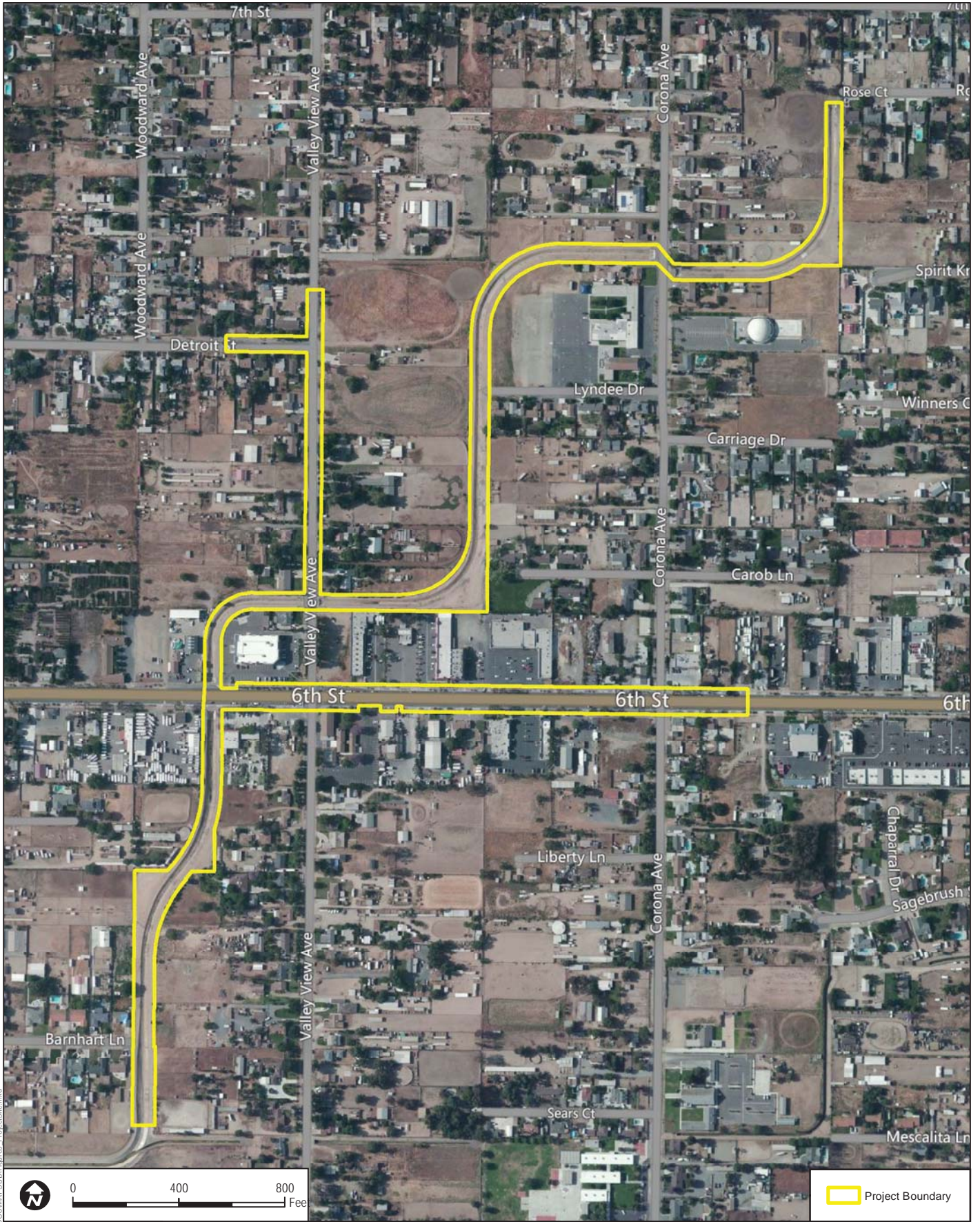
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Stage 11 Project No. 2-0-00140-11, Riverside County, California**

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SOURCE: Bing 2013, SSURGO

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NORTH NORCO CHANNEL STAGE 11 PROJECT NO. 2-0-00140-11

FIGURE 3
Project Site Map

**Jurisdictional Waters Delineation Report for the North Norco Channel
Stage 11 Project No. 2-0-00140-11, Riverside County, California**

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Jurisdictional Waters Delineation Report for the North Norco Channel Stage 11 Project No. 2-0-00140-11, Riverside County, California

2 REGULATORY BACKGROUND

2.1 Federal Statutes and Regulations – U.S. Army Corps of Engineers

Any person or public agency proposing to discharge dredged or fill material into waters of the United States, including jurisdictional wetlands, must obtain a permit from the ACOE.

As defined in Title 33 of the Code of Federal Regulations (CFR) Part 328.3, waters of the United States include all waters subject to interstate or foreign commerce, including tidal waters, interstate waters and wetlands, many intrastate waters, impoundments, tributaries, the territorial seas, and adjacent wetlands. Specifically, Section 328.3(a) defines waters of the United States as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
 - a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - c. Which are or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

Jurisdictional Waters Delineation Report for the North Norco Channel Stage 11 Project No. 2-0-00140-11, Riverside County, California

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA [Clean Water Act] (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of CWA, the final authority regarding CWA jurisdiction remains with the EPA [U.S. Environmental Protection Agency] (33 CFR 328.3(a)).

For non-tidal waters of the United States, the lateral limits of ACOE jurisdiction extend to the ordinary high water mark (OHWM) when no adjacent wetlands are present. As defined in 33 CFR 328.3(e), the OHWM is “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” If adjacent wetlands are present, the jurisdiction extends to the limit of the wetlands.

Wetlands are “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3). Wetlands are jurisdictional if they meet this definition as well as the definition of waters of the United States. The ACOE predominantly uses the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE Regional Supplement; ACOE 2008a) methodology to determine the presence of wetlands. According to the ACOE Regional Supplement, three criteria must be satisfied to classify an area as a wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

ACOE-Regulated Activities

Under Section 404 of the Clean Water Act (CWA), the ACOE regulates activities that involve a discharge of dredged or fill material, including but not limited to grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into waters of the United States. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, providing some drainage channel maintenance activities, and excavating without stockpiling.

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2.2 State Statutes and Regulations – Regional Water Quality Control Board

Under Section 401 of the Clean Water Act, the State of California also has jurisdiction over waters and wetlands of the United States. The State will also exert independent jurisdiction via the Porter–Cologne Water Quality Control Act (Porter–Cologne Act) over isolated waters and wetlands (“waters of the State”) that are not subject to ACOE jurisdiction under Section 404 of the Clean Water Act.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal CWA.

Therefore, in California, before ACOE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification or waiver from the RWQCB.

Under Section 401 of the CWA, the RWQCB regulates at the state level all activities that are regulated at the federal level by the ACOE.

Porter–Cologne Water Quality Control Act

The RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state” (California Water Code, Section 13260(a)), pursuant to provisions of the state Porter–Cologne Act. “Waters of the state” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code, Section 13050(e)).

Under the Porter–Cologne Act, the RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into waters of the state, that are not regulated by ACOE due to a lack of connectivity with a navigable water body.

2.3 State Statutes and Regulations – California Department of Fish and Wildlife

California Fish and Game Code, Sections 1600–1616, mandates that “it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed,

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channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.”

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. Furthermore, CDFW jurisdiction extends to riparian habitat and may include oak woodlands in canyon bottoms. Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear, but reemerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional. The CDFW does not have jurisdiction over ocean or shoreline resources.

Water features such as vernal pools and other seasonal swales, where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features, are generally not asserted to fall within state jurisdiction. The state generally does not assert jurisdiction over human-made water bodies, unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

Under California Fish and Game Code, Sections 1600–1616, the CDFW has the authority to regulate work that will substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake. The CDFW also has the authority to regulate work that will deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all federal and nonfederal projects.

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3 METHODS

3.1 Literature Review

Prior to conducting fieldwork, the following available resources were reviewed to assess the potential for jurisdictional features: aerial photographs (Bing Maps 2013; Google Earth 2013; Historic Aerials 2013), the USGS 7.5-minute topographic quadrangle, a U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil map (USDA NRCS 2013), the *Watershed Assessment, Tracking & Environmental Results (WATERS)* (EPA 2013), the USGS National Hydrography Dataset (NHD) (USGS 2013), and the National Wetland Inventory (USFWS 2013). Additional studies that were reviewed included the *Biological Resources Technical Report and Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for the North Norco Channel Stage 11 Project* (Dudek 2010).

3.2 Jurisdictional Delineation

Dudek biologists Linda Archer and Heather Moine conducted a delineation of jurisdictional waters within the Project site on October 17, 2013. All areas within the Project site were surveyed on foot for the following types of features:

- Waters of the United States, including wetlands, under the jurisdiction of the ACOE, pursuant to Section 404 of the federal CWA
- Waters of the state under the jurisdiction of the California RWQCB, pursuant to Section 401 of the federal CWA and the Porter–Cologne Act as wetlands or drainages
- Streambeds under the jurisdiction of the CDFW, pursuant to Section 1602 of the California Fish and Game Code.

Non-wetland waters of the United States are delineated based on the presence of an OHWM as determined using the methodology in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (ACOE 2008b). Wetland waters of the United States are delineated based on methodology described in the 1987 ACOE Manual (ACOE 1987) and the ACOE Regional Supplement (ACOE 2008a).

All surface flows are waters of the state and are delineated at the OHWM, at the outer limits of hydrophytic vegetation, or at the outer rim of depressional features if relevant.

In accordance with California Fish and Game Code, streambeds are determined based on the presence of a definable bed and bank and are delineated from top of bank to top of bank or the extent of associated riparian vegetation.

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Drainage features were delineated using a Trimble GeoXT handheld GPS unit with submeter accuracy.

Survey Limitations

The survey was conducted during the fall season, which may have limited identification of spring and summer blooming annual plant species that would potentially occur in the area. However, based on characteristics observed at each of the investigation locations, this limitation is not expected to have affected the jurisdictional determination.

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4 PHYSICAL CHARACTERISTICS

4.1 Land Uses

Land use within the Project site main channel is designated as water related and lateral connections are within existing paved streets. Land uses adjacent to the Project site include residential agricultural with single family homes along the majority of the channel, commercial community with commercial businesses north and south of 6th Street, and existing schools consisting of Saint Mel Roman Catholic Church on the corner of Corona Avenue and Lyndee Drive (City of Norco 2012). Interstate 15 (I-15) is approximately 0.2 mile to the west of the Project site. West of the I-15, land uses include commercial community, light blue, residential agricultural, and parks.

4.2 Climate

Western Riverside County, within which the Project site is located, has a semi-arid climate characterized by long, hot, dry summers and damp, short winters that have a heavy fog layer for weeks at a time. The average high temperature during the summer approaches of 92.0 degrees Fahrenheit (°F), with an annual average of 78.2°F. Low temperatures are approximately 26°F to 34°F lower than the high temperatures, with an annual average low temperature of 48.3°F. The average annual precipitation is 12.71 inches. Almost all of the precipitation expected during a given year begins in September and extends into May. The summer months are virtually rainless (WRCC 2013).

4.3 Soils

According to the Soil Survey of the Western Riverside Area, California (USDA NRCS 2013), the soils within the Project vicinity include the following: Buchenau loam (BhA, BhC), Buchenau silt loam (BkC2), Cieneba sandy loam (ChC), Greenfield sandy loam (GyA), Placentia fine sandy loam (PIB, PID), Ramona sandy loam (RaB3), and Ramona very fine sandy loam (ReC2). The geographic extent of soils within the study area is depicted on Figure 4, and brief descriptions of the surface soils present within the Project site are provided below.

Buchenau soils occur on small alluvial fans formed from metasedimentary rocks. They occur at elevations of less than 300 to 1,500 feet in a subhumid mesothermal climate with mean annual rainfall of 12 to 15 inches with hot dry summers and cool winters. Mean annual temperature is 62°F.

Cieneba soils formed from material weathered from granite and other rocks of similar texture and composition. Gradients are 9% to 85%. The soils are at elevations of 500 to 4,000 feet. The

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climate is dry subhumid mesothermal with warm dry summers and cool moist winters. Mean annual precipitation is 12 to 35 inches. Mean annual temperature is 57°F to 65°F.

Greenfield soils are on fans and terraces at elevations of 100 to 3,500 feet. Slopes range from 0% to 30%. The soils formed in moderately coarse and coarse textured alluvium or some wind deposited material derived from granitic and mixed sources. The climate is dry subhumid mesothermal with hot, dry summers and cool, moist winters. The mean annual precipitation is 9 to 20 inches. The mean annual temperature is 60°F to 64°F.

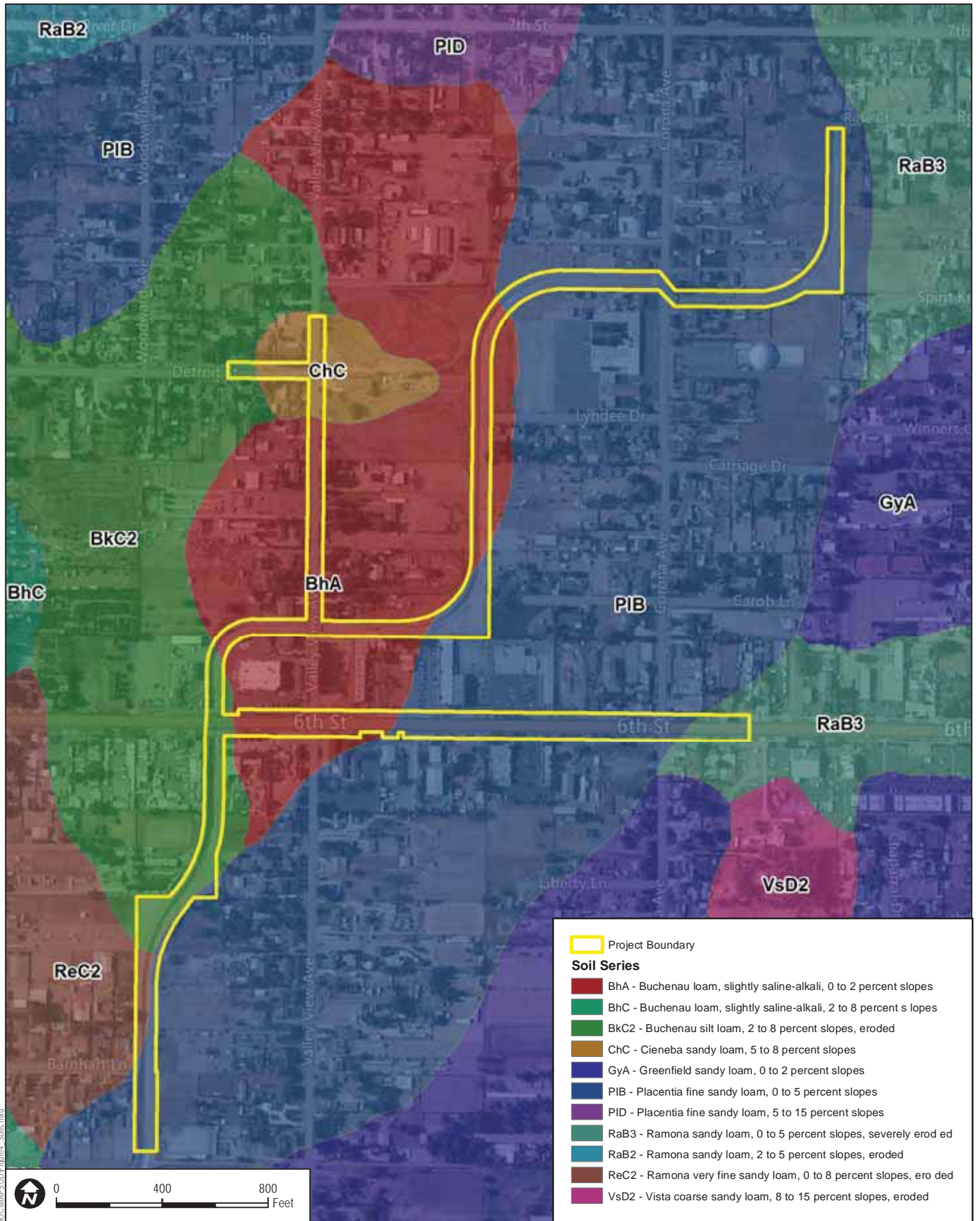
Placentia soils are nearly level to moderately sloping and are on fans and terraces at elevations of 50 to 2,500 feet. They formed in alluvium from granite and other rocks of similar composition and texture. The climate is dry subhumid mesothermal with long dry warm summers and cool moist winters. The mean annual precipitation is about 12 to 18 inches. The average annual temperature is 58°F to 65°F.

Ramona soils are nearly level to moderately steep. They are on terraces and fans at elevations of 250 to 3,500 feet. They formed in alluvium derived mostly from granitic and related rock sources. The climate is dry subhumid mesothermal with warm dry summers and cool moist winters. Mean annual precipitation is 10 to 20 inches. Average annual temperature is 60°F to 66°F.

4.4 Vegetation Communities and Land Covers

The entire main channel consists of disturbed land. The channel is manufactured, regularly maintained and is mostly devoid of vegetation. Portions of the channel had emergent vegetation including prickly Russian thistle (*Salsola tragus*), turkey-mullein (*Croton setiger*), prostrate knotweed (*Polygonum aviculare*), tree of heaven (*Ailanthus altissima*), tree tobacco (*Nicotiana glauca*), and Mexican sprangletop (*Leptochloa fusca* ssp. *uninervia*). In addition, the access on either side of the channel is also manufactured, regularly maintained, and devoid of vegetation.

Outside of the main channel, the Project site consists of developed areas including paved roads associated with the laterals and residential areas adjacent to the laterals. Vegetation in these areas is limited to ornamental trees including Peruvian peppertree (*Schinus molle*), olive (*Olea europaea*), and tree of heaven (*Ailanthus altissima*).



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SOURCE: Bing 2013, SSURGO

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**FIGURE 4
Soils Map**

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4.5 Topography

The Project site is a relatively flat area in western Chino Valley in northwest Riverside County. The Project vicinity is bound by the Santa Ana River to the north, La Sierra Hills to the east, Prado Basin to the west, and the Santa Ana Mountains to the west and south. The Project site is almost flat, gently sloping to the southwest. The main channel ranges from a high of 640 feet above mean sea level near the northeast corner to approximately 627 feet above mean sea level in the southwest corner. Lateral Line NC-1 Stage 1 in Detroit Street is approximately 635 to 639 feet above mean sea level. Lateral in 6th Street (Line N-2 Stage 1) and Valley View Avenue (Line NC Stage 1) have slightly higher elevation 631 to 653 feet above mean sea level and 631 to 648 feet above mean sea level, respectively.

4.6 Hydrology

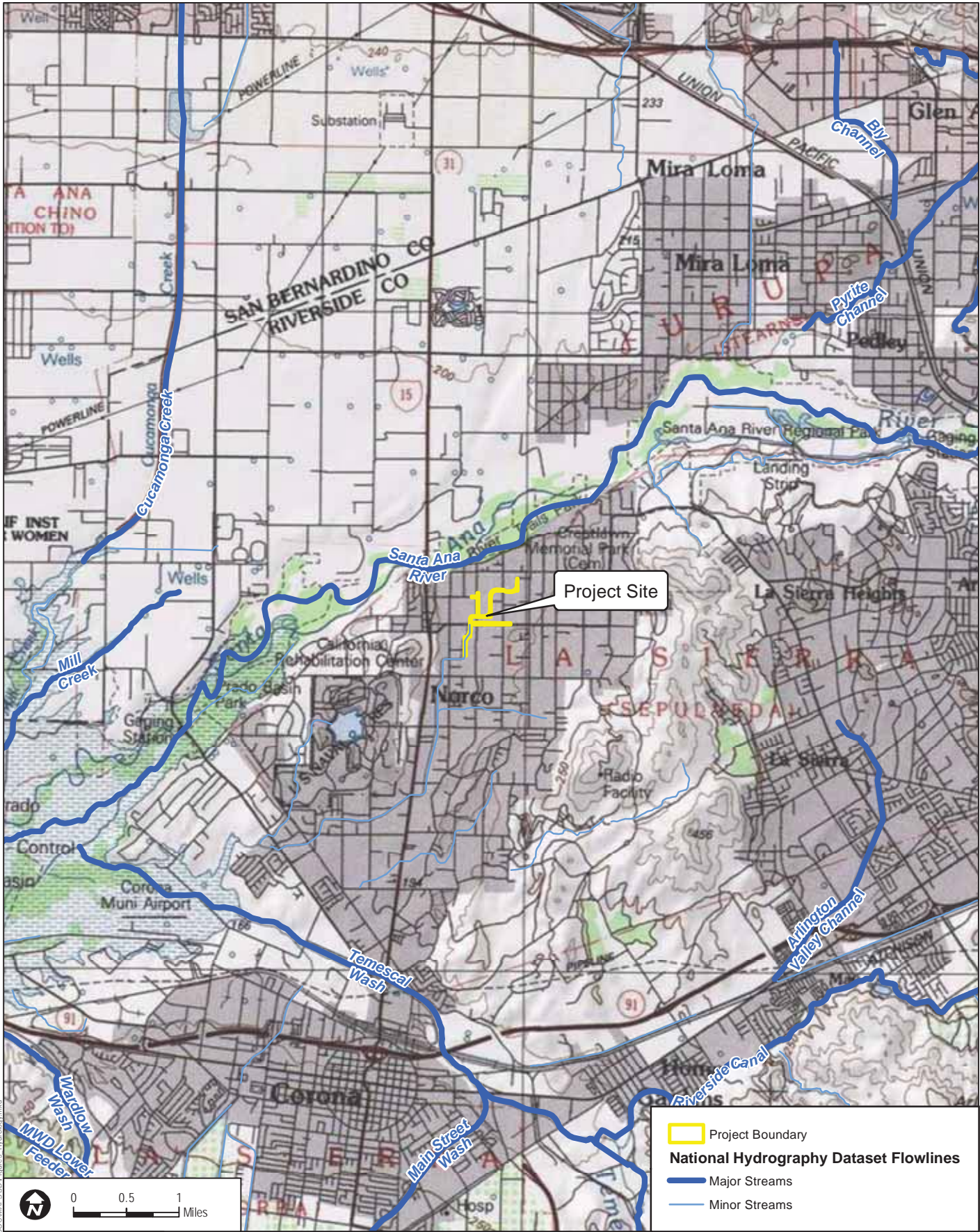
There are no streams depicted on the USGS topographic quadrangle within or adjacent to the Project site. South of 6th Street, the main channel is identified on the Corona North USGS quadrangle map as “Canal Ditch” (USGS 2013). The Santa Ana River, the primary water feature in the vicinity, is approximately 0.6 mile to the north of the Project site. Surface water features in the vicinity flow from northeast to southwest to the Prado Basin approximately 4 miles southwest of the Project site (Figure 5). The Santa Ana River continues from Prado Basin, flowing approximately 30 miles to the southwest, terminating at the Pacific Ocean.

4.7 Watershed

The Project site is located within the Santa Ana River Hydrologic Unit, the Middle Santa Ana River Hydrologic Area, and the Temescal Hydrologic Sub-Area (Figure 6) within the Temescal watershed in the Santa Ana River watershed. The Water Quality Control Plan for the Santa Ana River Basin (RWQCB 2011) indicates the following beneficial uses for the Middle Santa Ana River Hydrologic Area: Agricultural Supply (AGR), Groundwater Recharge (GWR), Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Rare, Threatened or Endangered Species (RARE).

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Project Boundary
National Hydrography Dataset Flowlines
 Major Streams
 Minor Streams



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SOURCE: ESRI USA Topo Maps, USGS NHD

FIGURE 5
Hydrology Map

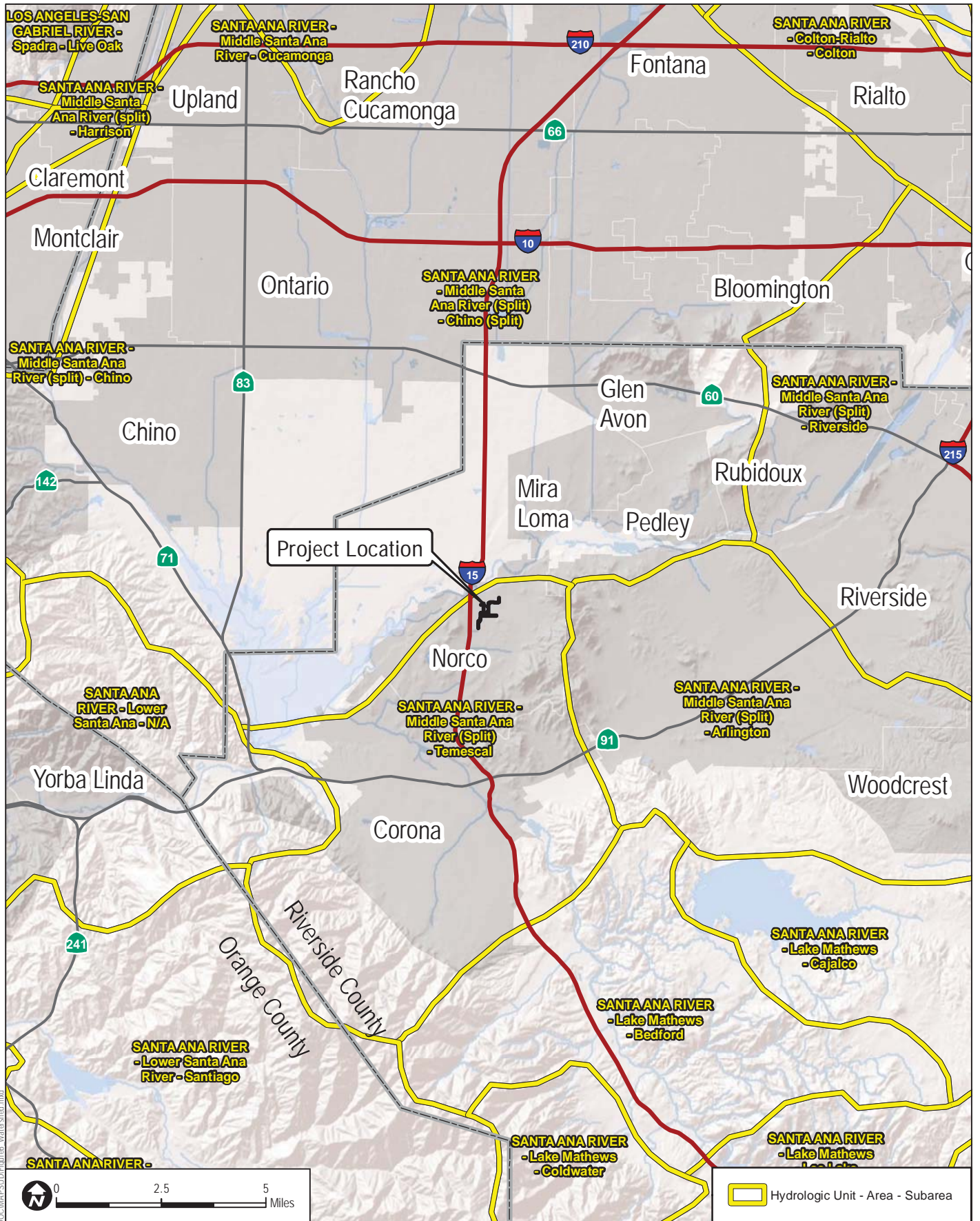
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SOURCE: ESRI

NORTH NORCO CHANNEL STAGE 11 PROJECT NO. 2-0-00140-11

FIGURE 6
Watershed Map

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5 RESULTS OF SURVEY

The Project site has two hydrologic features. The locations of these features are depicted on Figure 7 and photos are provided in Appendix A. Three wetland data points were taken and Wetland Determination Data Forms are provided in Appendix B.

The main channel generally flows northeast to southwest, becomes a concrete-lined trapezoidal channel after it flows off site, and continues to the Prado Flood Control Basin and the Santa Ana River approximately 2.7 miles southwest of the Project site. There is also a small drainage along the south bank of the main channel, east of the channel's crossing of Valley View Avenue and north of Inland Vet Supply.

5.1 Main Channel

The main channel occurs along the entire length of the Project site and conveys water from the northeast towards the southwest. The main channel is a manufactured flood control facility constructed in uplands. The aboveground portion of the channel originates at the northern terminus of the Project site where a box culvert outlets into the channel from Rose Court, presumably conveying nuisance flow and stormwater runoff from the surrounding residential area. The main channel generally flows south and west through the Project site. At the first bend there is a concrete pad with riprap. At the Corona Avenue, Valley View Avenue, and 6th Street road crossings, the flows are contained in two 48-inch corrugated metal pipes and the channel banks are protected by concrete aprons. Aside from these bank stabilization features, the channel remains earthen-lined and maintained. There are several 3- to 4-inch PVC pipes that inlet into the main drainage.

The Project site is influenced by urban nuisance and storm flows. At the time of Dudek's survey, the main channel was primarily dry; there were flows in the southern portion of the main channel below 6th Street continuing to where the water flows out of the Project site to the trapezoidal concrete-lined channel. The surface flows appear to be from nuisance runoff from the surrounding residential areas as it occurs immediately downstream of inlets. Throughout the rest of the main channel, OHWM indicators were present within the bed of the channel and included sediment deposition, shelving, and drift deposits. There were no OHWM indicators above the bed of the channel. Due to the engineered nature of the channel, the OHWM was measured from bank to bank at the bed of the channel and ranged from 5 to 13 feet in width with an average of approximately 7 feet.

The channel is mostly devoid of vegetation and is regularly maintained in accordance with the Memorandum of Understanding (MOU) between the District and CDFW (CDFG and District

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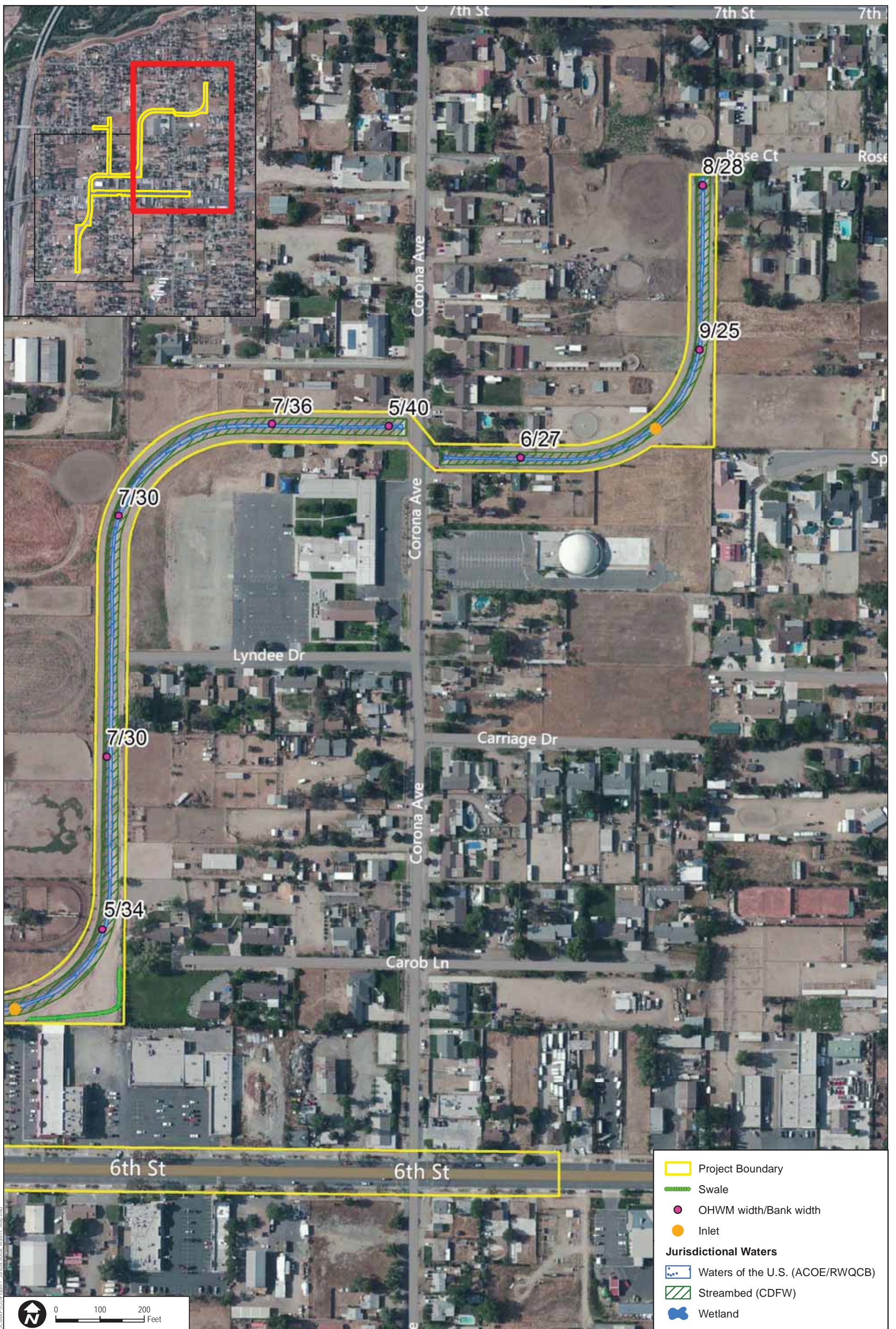
1997). Along the lower portion of the channel there was evidence that the channel slopes had been recently scraped (see Photo Location 20 in Appendix A). Hydrophytic vegetation is present in three locations and wetland data points were taken in these locations (Appendix B).

Wetland Determination

Wetland sample point 1 is located immediately downstream of an inlet east of Valley View Avenue. The vegetated area is approximately 100 square feet and occupied the bed of the channel. The vegetation data collected at this location indicates that, in this area, the vegetation is hydrophytic because there was a dominance of hydric vegetation including cattail (*Typha* sp. [OBLIGATE]), prostrate knotweed (*Polygonum aviculare* [FACULTATIVE-WET (FACW)]), Mexican sprangletop (*Leptochloa fusca* ssp. *uninervia* [FACW]), and red willow (*Salix laevigata* [FACW]).

This area supported wetland hydrology indicators including saturation and drainage patterns. Water source is from an inlet on the south bank of the channel which appears to convey nuisance flow from the commercial development immediately adjacent to the channel.

Data collected indicates that the soils are not hydric because there was no evidence of hydric soil indicators (including no depleted matrix, sandy redox, or redox depressions). This area is a difficult wetland situation as described in the ACOE Regional Supplement and meets the definition of a Recently Developed Wetland, which included wetlands intentionally or unintentionally produced by human activities that have not been in place long enough to develop hydric soil indicators. Soils are hydric if they have been ponded or flooded for more than 14 consecutive days during the growing season. There had been 0.5 inch of rain in the 14 days preceding the field survey (www.wunderground.com) and the channel surrounding this area is dry; therefore, this area remains inundated longer than the rest of the channel. Based on a review of Google Earth aerials, ponding in this area is visible in a March 2011 photo and a June 2012 photo, and green vegetation is present in a January 2013 photo. Based on field indicators combined with the historic aerial photographs, this area appears to remain inundated for long periods of time as a result of flows from the inlet and meets the definition of hydric soil. This area is within the OHWM of the channel and meets all three wetland criteria; therefore, it is an ACOE wetland.



- Project Boundary
- Swale
- OHWM width/Bank width
- Inlet
- Jurisdictional Waters**
- Waters of the U.S. (ACOE/RWQCB)
- Streambed (CDFW)
- ⊕ Wetland



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SOURCE: Bing 2013, SSURGO

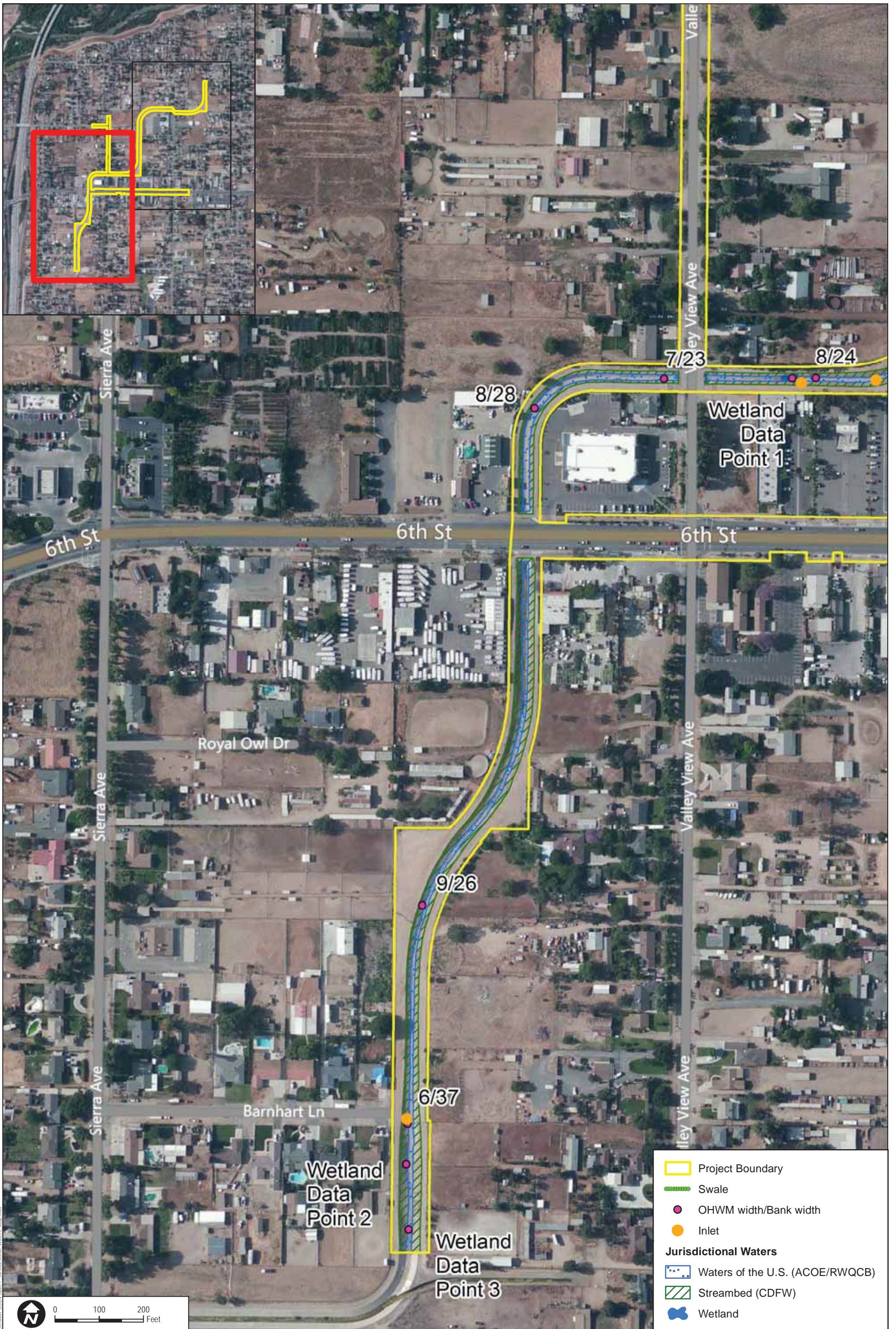
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FIGURE 7a
Jurisdictional Waters Map

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- Project Boundary
- Swale
- OHHM width/Bank width
- Inlet
- Jurisdictional Waters**
- Waters of the U.S. (ACOE/RWQCB)
- Streambed (CDFW)
- ☞ Wetland



FIGURE 7b
Jurisdictional Waters Map

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Wetland Sample points were taken at the southern end of the Project site. For approximately 262 feet from the southern terminus of the Project site, a thin strip of hydrophytic vegetation occurs along the edge of the channel. Vegetation within this strip includes Mexican sprangletop (FACW), umbrella plant (*Cyperus involucratus*, FACW), Canadian horseweed (*Erigeron canadensis*, FACU), Goodding's willow (*Salix gooddingii*, FACW), old-man-in-the-spring (*Senecio vulgaris*, FACU), and narrowleaf cattail (*Typha angustifolia*, OBL). For wetland delineation purposes, an area is considered to be vegetated if it has 5% or more total plant cover. Due to the small area of vegetation, this area does not meet the ACOE wetland delineation criteria. Furthermore, this area is disturbed as a result of regular, authorized maintenance performed by the District as prescribed in the MOU with CDFW. Therefore, the baseline condition is the maintained channel. Due to the lack of sufficient vegetative cover and the regular authorized maintenance of the channel, this area does not meet the definition of an ACOE wetland.

5.2 Swale

A small feature occurs in the upland area adjacent to the main channel just east of the channel crossing at Valley View Avenue and north of Inland Vet Supply. The drainage feature appears to be the result of nuisance flows coming from residential horse property adjacent to the east of the right-of-way (ROW). The water flows south, parallel to the property, then continues west towards the main channel, entering a pipe that outlets into the channel. The north-south portion of this feature is earthen and vegetated with Mexican sprangletop, the middle section is earthen and unvegetated, and the southwestern portion is unvegetated and partially lined with riprap. The riprap is comprised of pieces of brick, concrete, pavers, and cinderblocks. The swale averages 3 feet in width and has some evidence of surface flows including soil cracking, moist soils, and drift deposits. This drainage is visible in aerial photographs from at least 2003 (Google Earth 2013).

The swale is a round bottom feature with intermittent indicators of flow that was created in upland and drains only upland surface flows; therefore, it is not a waters of the United States. It does not have a clearly defined bed and bank and lacks riparian resources; therefore, it is not a CDFW-jurisdictional streambed.

5.3 Jurisdictional Waters Conclusion

The main channel ultimately flows to the Santa Ana River, which is tributary to the Pacific Ocean. Because the main channel is physically and hydrologically connected to the Santa Ana River and an OHWM is present throughout the main channel, the main channel is a waters of the United States under the jurisdiction of the ACOE and RWQCB. One area within the main channel meets the definition of a jurisdictional wetland. A total of 1.10 acres of non-wetland and 0.01-acre wetland waters of the United States occur within the Project site.

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There are no features isolated from waters of the United States within the Project site; therefore, there are no isolated waters of the State.

The CDFW regulates bed, channel, and bank of streams under Section 1602 of the California Fish and Game Code. Therefore for the main channel, the slopes of the channel up to the top of the bank and the channel bed were mapped as CDFW-jurisdictional streambed. There are approximately 4.22 acres of CDFW-jurisdictional streambed within the Project site, including 1.11 acres that overlap with waters of the U.S. and 3.11 acres of unvegetated banks.

Table 1 summarizes the jurisdictional waters within the Project site.

Table 1
Summary of Jurisdictional Waters

| | Acres of Non-wetland Waters of the U.S. (linear feet) | Acres of Wetland Waters of the U.S. | Acres of Addt'l CDFW Streambed ¹ |
|------------------------------------|--|--|--|
| Main Channel – East of Valley View | 0.73 (3,447) | 0.01 | 2.09 |
| Main Channel – West of Valley View | 0.37 (2,230) | NA | 1.02 |
| Total | 1.10 (5,677) | 0.01 | 3.11 |

Note:

¹ Represents banks of channel outside of waters of the United States.

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6 IMPACTS

The District proposes improvements to their facilities in accordance with the North Norco Master Drainage Plan in order to reduce flood risk in the Project area. The District conducted an extensive analysis of 10 different alternatives in order to identify a project which would meet the flood management goals while also minimizing impacts to jurisdictional waters. The District has selected an alternative which would maintain an earthen-bottom channel for a portion of the Project. The recommended improvements beginning at the downstream limit would include:

- A concrete-lined rectangular channel with a 24-foot base width, depth of 8 feet and access roads on both sides of the channel;
- A maintenance access ramp located approximately 840 feet downstream of Sixth Street;
- A slab bridge under Sixth Street;
- A concrete-lined rectangular channel with a 24-foot base width, 8 feet depth and 2 access roads between Sixth Street and Valley View Avenue;
- A double cell 11 feet 8 inch by 6 feet reinforced concrete box (RCB) culvert under Valley View Avenue to have a compatible base width as the rectangular channel;
- A trapezoidal channel upstream of Valley View Avenue transitioned from the RCB;
- A concrete-lined soft bottom trapezoidal channel with a base width of 18 feet, side slopes at 1.5 to 1, a depth of 7 feet, a 3 feet toe down of the concrete slope lining and one access road along the south and east side of the channel, between Valley View Avenue and Corona Avenue;
- A maintenance access ramp located approximately 400 feet upstream of Valley View Avenue;
- A double 8 feet wide by 6 feet high RCB under Corona Avenue;
- A concrete-lined soft bottom trapezoidal channel with 18-foot base width, 6-foot depth, side slopes still at 1.5 to 1 and one access road along the south or east bank upstream of Corona Avenue;
- A maintenance access ramp upstream of Corona Avenue; and
- Two water quality basins.

Permanent impacts to waters of the United States were assumed to include all areas where permanent fill would be placed within the OHWM including the concrete rectangular channel, slope lining of the trapezoidal channel, portions of the RCB culverts, energy dissipators, and portions of the maintenance access ramps. Permanent impacts to CDFW-

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jurisdictional streambed include the concrete rectangular channel, the concrete-lined slopes of the trapezoidal channel, maintenance access ramps, and vehicular turn around areas. Impacts to jurisdictional waters are summarized in Table 2 and depicted on Figure 8.

Table 2
Summary of Impacts to Jurisdictional Waters

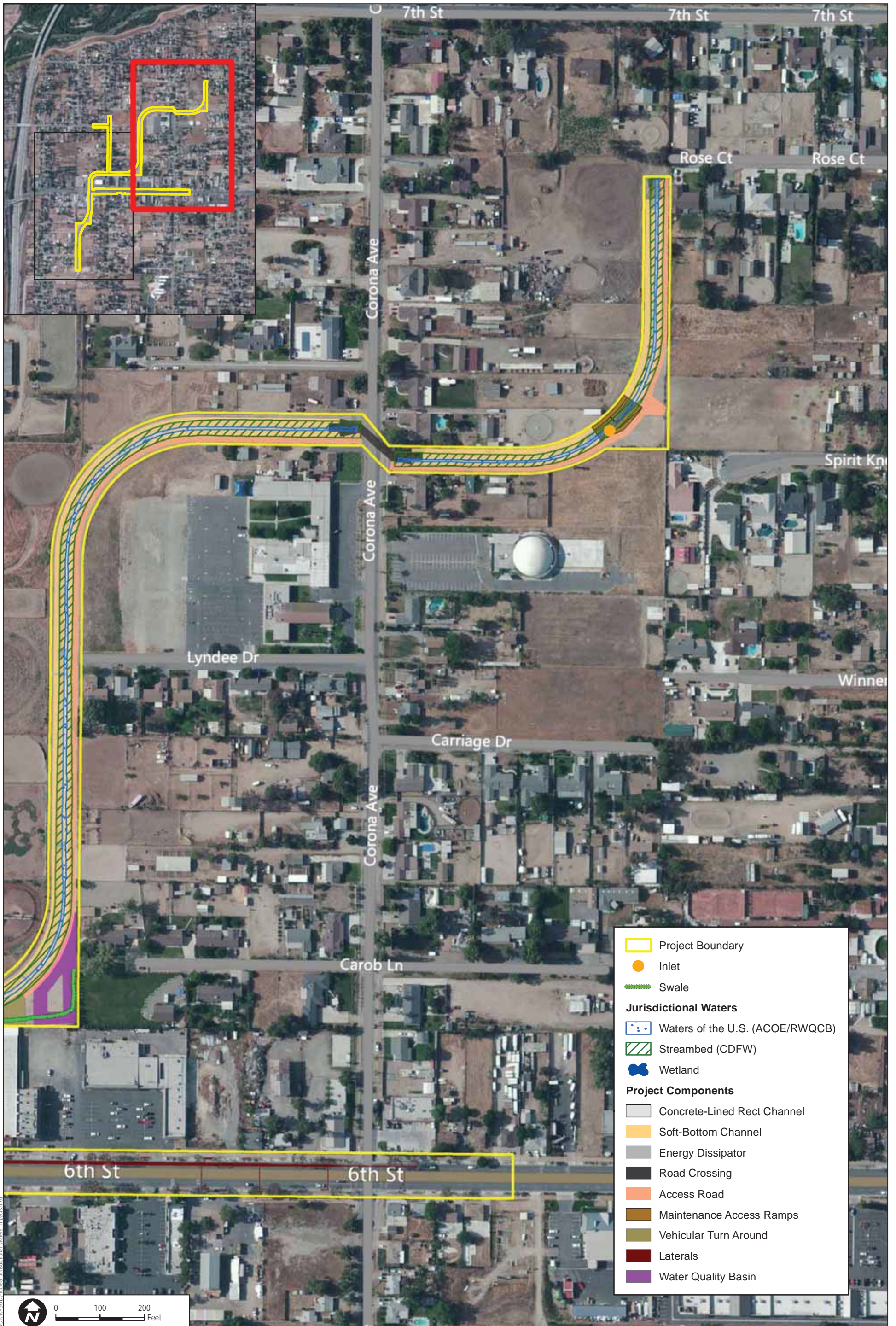
| Project Component | Waters of the United States | | Add'l CDFW-Jurisdictional Streambed ¹ | |
|---|-----------------------------|---------------------------|--|---------------------------|
| | Permanent Impacts (acres) | Temporary Impacts (acres) | Permanent Impacts (acres) | Temporary Impacts (acres) |
| Access Road | - | - | 0.77 | - |
| Rectangular Concrete Channel | 0.54 | - | 0.65 | - |
| Trapezoidal Earthen-Bottom Channel, concrete slopes | 0.37 ² | | 0.93 ³ | - |
| Trapezoidal Earthen-Bottom Channel, earthen bottom | - | 0.10 ⁴ | 0.50 ⁵ | - |
| Road Crossing, Corona Ave | 0.02 | - | 0.06 | - |
| Road Crossing, Valley View Ave | 0.01 | - | 0.01 | - |
| Road Crossing Sixth St | - | - | - | - |
| Energy Dissipators | 0.01 | - | 0.03 | - |
| Maintenance Access Ramps | 0.04 | - | 0.12 | - |
| Vehicular Turn Around | 0.04 | - | 0.04 | - |
| Construction Limits | - | - | - | 0.01 |
| Total | 1.01 | 0.10 | 3.11 | 0.01 |

Note:

- ¹ Represents additional impacts to the bank of the channel outside of waters of the United States.
- ² Represents conversion of waters of the United States to hardened channel slope.
- ³ Represents existing earthen slope that will be converted to hardened slope.
- ⁴ Represents the bed of the created soft bottom channel that overlaps existing waters of the United States.
- ⁵ Represents existing earthen slope that will be converted to the bed of the earthen channel (waters of the United States).

The Project would result in permanent impacts to approximately 1.01 acres of waters of the United States and temporary impacts to approximately 0.10 acre of waters of the United States. The Project will, therefore, require an Individual Permit from the ACOE pursuant to section 404 of the Clean Water Act and a Water Quality Certification from the RWQCB pursuant to section 401 of the Clean Water Act.

The Project would also result in permanent impacts to approximately 4.12 acres of CDFW-jurisdictional streambed and temporary impacts to approximately 0.11 acre of CDFW-jurisdictional streambed (of which 3.11 acres of permanent and 0.01 acre of temporary impacts are outside of waters of the United States), necessitating a Notification of a Streambed Alteration Agreement Mitigation.



| | |
|------------------------------|---------------------------------|
| | Project Boundary |
| | Inlet |
| | Swale |
| Jurisdictional Waters | |
| | Waters of the U.S. (ACOE/RWQCB) |
| | Streambed (CDFW) |
| | Wetland |
| Project Components | |
| | Concrete-Lined Rect Channel |
| | Soft-Bottom Channel |
| | Energy Dissipator |
| | Road Crossing |
| | Access Road |
| | Maintenance Access Ramps |
| | Vehicular Turn Around |
| | Laterals |
| | Water Quality Basin |



FIGURE 8a
Jurisdictional Waters Impacts

Path: Z:\Projects\GIS\2013\MapDocs\MapDocs\Jurisdictional_Waters_Impacts.mxd

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