APPENDIX A

Plant Species Observed within the Project Study Area

Scientific Name	Common Name	Family Name	Status
	Gymnosperms and Gnetophytes		
**Cupressus sempervirens*	Italian cypress	Cupressaceae	–
**Pinus* sp.	ornamental pine	Pinacae	–
	Angiosperms - Monocots		
**Agave* sp.	ornamental agave	Agavaceae	–
**Agave americana*	century plant	Agavaceae	–
**Yucca elephantipesis*	spineless yucca	Agavaceae	–
**Phoenix canariensis*	Canary Island date palm	Arecaceae	–
**Syagrus romanzoffiana*	Queen palm	Arecaceae	–
**Washingtonia robusta*	Washington fan palm	Arecaceae	–
Eleocharis palustris	common spike-rush	Cyperaceae	–
**Cynodon dactylon*	Bermuda grass	Poaceae	–
**Polypogon monspeliensis*	rabbitsfoot grass	Poaceae	–
Typha latifolia	broadleaf cattail	Typhaceae	–
	Angiosperms -Eudicots		
**Aptenia cordifolia*	heartleaf iceplant	Aizoaceae	–
**Carpobrotus edulis*	hottentot fig	Aizoaceae	–
**Malephora crocea*	red-flowered iceplant	Aizoaceae	–
**Liquidambar styraciflua*	American sweetgum	Altingiaceae	–
**Schinus molle*	Peruvian peppertree	Anacardiaceae	–
**Schinus terebinthifolia*	Brazilian peppertree	Anacardiaceae	–
**Vinca major*	bigleaf periwinkle	Apocynaceae	–
**Hedera helix*	English ivy	Araliaceae	–
Artemisia californica	California sagebrush	Asteraceae	–
Encelia californica	California brittlebush	Asteraceae	–
**Catalpa bignonioides*	common catalpa	Bignoniaceae	–
**Jacaranda mimosifolia*	jacaranda	Bignoniaceae	–
**Echium candicans*	Pride of Madeira	Boraginaceae	–
**Nasturtium officinale*	watercress	Brassicaceae	–
Cylindropuntia sp.	cane cholla	Cactaceae	–
**Opuntia ficus-indica*	Barbary fig	Cactaceae	–

Scientific Name	Common Name	Family Name	Status
**Pachycereus* sp.	Pachycereus cactus	Cactaceae	–
**Carica papaya*	papaya	Caricaceae	–
**Ipomoea purpurea*	common morning glory	Convolvulaceae	–
**Crassula ovata*	jade plant	Crassulaceae	–
**Albizia julibrissin*	mimosa tree	Fabaceae	–
**Acacia cyclops*	coastal wattle	Fabaceae	–
**Acacia longifolia*	Sydney golden wattle	Fabaceae	–
**Acacia redolens*	bank catclaw	Fabaceae	–
**Parkinsonia aculeata*	Mexican palo verde	Fabaceae	–
Quercus agrifolia	California live oak	Fagaceae	–
**Pelargonium x hortorum*	common geranium	Geraniaceae	–
**Carya illinoinensis*	pecan	Juglandaceae	–
Salvia apiana	white sage	Lamiaceae	–
Salvia clevelandii	Cleveland sage	Lamiaceae	–
** Salvia rosmarinus*	rosemary	Lamiaceae	–
**Lagerstroemia indica*	crepe myrtle	Lythraceae	–
**Punica granatum*	pomegranate	Lythraceae	–
**Magnolia grandiflora*	southern magnolia	Magnoliaceae	–
**Pittosporum undulatum*	Victorian box	Myoporaceae	–
**Lysimachia arvensis*	scarlet pimpernel	Myrsinaceae	–
**Eucalyptus sideroxylon*	red ironbark	Myrtaceae	–
**Melaleuca viminalis*	weeping bottlebrush	Myrtaceae	–
**Mirabilis jalapa*	four o'clock	Nyctaginaceae	–
**Olea europaea*	olive	Oleaceae	–
**Fraxinus uhdei*	evergreen ash	Oleaceae	–
**Oenothera speciosa*	pinkladies	Onagraceae	–
**Plumbago auriculata*	cape leadwort	Plumbaginaceae	–
** Afrocarpus gracilior*	fern pine	Podocarpaceae	–
**Cotoneaster pannosus*	silverleaf cotoneaster	Rosaceae	–
Heteromeles arbutifolia	toyon	Rosaceae	–
**Cupaniopsis anacardioides*	carrot wood	Sapindaceae	–

Scientific Name	Common Name	Family Name	Status
**Koelreuteria paniculata*	golden rain tree	Sapindaceae	–
**Ailanthus altissima*	tree of heaven	Simaroubaceae	–
**Ulmus parvifolia*	Chinese elm	Ulmaceae	–

*Non-native species

APPENDIX B

Wildlife Species Observed within the Project Study Area

Common Name	Scientific Name	Order	Family	Status
		Invertebrates		
Cloudless sulfur butterfly	*Phoebis sennae*	Lepidoptera	Pieridae	-
		Avian		
White-faced ibis	*Plegadis chihi*	Pelicaniformes	Threskiornithidae	WL (nesting colony)
Mourning dove	*Zenaida macroura*	Columbiformes	Columbidae	-
Black phoebe	*Sayornis nigricans*	Passeriformes	Tyrannidae	-
American crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae	-
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae	-
House sparrow*	*Passer domesticus*	Passeriformes	Passeridae	-

WL – California Department of Fish and Wildlife (CDFW) WatchList species
*Naturalized or Vagrant Species

APPENDIX C

Special-Status Plant Species Potentially Occurring within the Study Area

SCIENTIFIC NAME & COMMON NAME	MHCP-COVERED	SENSITIVITY CODE AND STATUS (FEDERAL/ STATE/ CRPR LIST)*	PRIMARY HABITAT ASSOCIATIONS/LIFE FORM/ BLOOMING PERIOD	STATUS OR POTENTIAL TO OCCUR ONSITE
Acanthomintha ilicifolia San Diego thorn-mint	Yes	FT/CE/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/clay soils/annual herb/Apr-Jun	Not observed. No potential to occur given lack of suitable habitat and soils.
Ambrosia pumila San Diego ambrosia	No	FE/None/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools, often disturbed areas/perennial rhizomatous herb/Apr-Oct	Not observed. Low potential to occur due to very low quantity of suitable habitat.
Arctostaphylos glandulosa ssp. *crassifolia* Del Mar manzanita	Yes	FE/None/1B.1	Chaparral (maritime, sandy)/perennial evergreen shrub/Jun-Apr	Not observed. No potential to occur given lack of suitable habitat. If present within the survey area, this large perennial species likely would have been observed during surveys.
Arctostaphylos rainbowensis Rainbow manzanita	No	None/None/1B.2	Chaparral/perennial evergreen shrub/Dec-Mar	Not observed. No potential to occur given lack of suitable habitat. If present within the survey area, this large perennial species likely would have been observed during surveys.
Atriplex parishii Parish's saltbush	No	None/ None/1B.1	Chenopod scrub, playas, vernal pools/annual herb/ Jun-Oct	Not observed. No potential to occur given lack of suitable habitat.
Baccharis vanessae Encinitas baccharis	Yes	FT/SE/1B.1	Chaparral, cismontane woodland; sandstone/ perennial deciduous shrub/ Aug, Oct, Nov	Not observed. Low potential to occur; although woodland habitat is present onsite, habitat is of very low quality and quantity.
Berberis nevinii Nevin's barberry	No	None/SE/1B.1	Chaparral; sandy to gravelly soils, washes/shrub/Mar-Jun	Not observed. No potential to occur given lack of suitable habitat. If present within the survey area, this large perennial species likely would have been observed during surveys.
Brodiaea filifolia Thread-leaved brodiaea	No	FE/SE/1B.1	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Mar-Jun	Not observed. No potential to occur given lack of suitable soils (clay).
Brodiaea orcuttii Orcutt's brodiaea	No	None/None/1B.1	Chaparral, cismontane woodland, closed-cone coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/perennial bulbiferous herb/May-Jul	Not observed. Low potential to occur; although woodland habitat is present onsite, habitat is of very low quality and quantity.
Ceanothus verrucosus wart-stemmed ceanothus	Yes	None/None/2B.2	Chaparral/perennial evergreen shrub/Dec-May	Not observed. No potential to occur given lack of suitable habitat. If present within the survey area, this large perennial species likely would have been observed during surveys.
Centromadia parryi ssp. *australis* Southern tarplant	No/ No	None/ None/1B.1	Marshes and swamps, valley and foothill grasslands, vernal pools/annual herb/ May-Nov	Not observed. No potential to occur given lack of suitable habitat.
Centromadia pungens ssp. *laevis* Smooth tarplant	No	None/None/1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland/annual herb/Apr-Sep	Not observed. No potential to occur given lack of suitable habitat. If present within the survey area, this large species likely would have been observed during surveys.

SCIENTIFIC NAME & COMMON NAME	MHCP-COVERED	SENSITIVITY CODE AND STATUS (FEDERAL/ STATE/ CRPR LIST) *	PRIMARY HABITAT ASSOCIATIONS/LIFE FORM/ BLOOMING PERIOD	STATUS OR POTENTIAL TO OCCUR ONSITE
Chloropyron maritimum ssp. *Maritimum* salt marsh bird's-beak	No	FE/CE/1B.2	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May-Oct (Nov)	Not observed. No potential to occur due to lack of suitable habitat.
Chorizanthe orcuttiana Orcutt's spineflower	No	FE/CE/1B.1	Chaparral (maritime), closed-cone coniferous forest, coastal scrub/annual herb/Mar-May	Not observed. No potential to occur due to lack of suitable habitat.
Clarkia delicata delicate clarkia	No	None/None/1B.2	Chaparral, cismontane woodland/annual herb/Apr-Jun	Not observed. Low potential to occur. Although cismontane woodland habitat is present, the habitat is of low quality and unlikely to support this species.
Comarostaphylis diversifolia ssp. *diversifolia* summer holly	Yes	None/None/1B.2	Chaparral, cismontane woodland/perennial evergreen shrub/Apr-Jun	Not observed. Low potential to occur; although cismontane woodland habitat is present, the habitat is of low quality. If present within the survey area, this large perennial species would likely have been observed during surveys.
Ericameria palmeri var. *palmeri* Palmer's goldenbush	No	None/None/1B.1	Chaparral, coastal scrub/perennial evergreen shrub/(Jul) Sep-Nov	Not observed. Low potential to occur due to lack of suitable habitat. If present within the survey area, this large perennial species would likely have been observed during surveys.
Eryngium aristulatum var. *parishii* San Diego button-celery	No	FE/CE/1B.1	Coastal scrub, valley and foothill grassland, vernal pools/annual/perennial herb/Apr-Jun	Not observed. Low potential to occur; suitable habitat is not present.
Hazardia orcuttii Orcutt's hazardia	No	FSC/ST/1B.1	Chaparral, coastal scrub; often clay soils/perennial evergreen shrub/Aug-Oct	Not observed. Low potential to occur due to lack of suitable habitat. If present onsite this large perennial species would likely have been observed.
Horkelia truncata Ramona horkelia	No	None/None/1B.3	Chaparral, cismontane woodland/ perennial herb/ May-Jun	Not observed. Low potential to occur; although suitable cismontane woodland habitat is present, the habitat is of low quality and would not be expected to support this species.
Isocoma menziesii var. *decumbens* decumbent goldenbush	No	None/None/1B.2	Chaparral, coastal scrub (often disturbed areas, sandy)/perennial shrub/Apr-Nov	Not observed. No potential to occur due to lack of suitable habitat. If present onsite this large perennial species would likely have been observed.
Navarretia fossalis Spreading navarretia	Yes	FT/None/1B.1	Chenopod scrub, marshes and swamps (shallow freshwater), playas, vernal pools/annual herb/Apr-Jun	Not observed. No potential to occur due to lack of suitable habitat.
Quercus dumosa Nuttall's scrub oak	Yes	None/None/1B.1	Chaparral, closed-cone coniferous forest, coastal scrub/perennial evergreen shrub/Feb-Apr (May-Aug)	Not observed. No potential to occur due to lack of suitable habitat. In addition, if present within the survey area, this tree species would likely have been observed during surveys.
Tetracoccus dioicus Parry's tetracoccus	Yes	None/None/1B.2	Chaparral, coastal scrub/perennial deciduous shrub/Apr-May	Not observed. No potential to occur due to lack of suitable habitat. In addition, if present within the survey area, this large perennial species would likely have been observed during surveys.

Legend:

***Status:**
FEDERAL/STATE LISTED:
FE: Federally-listed as endangered
FT: Federally-listed as threatened
FSC: Federally-listed as species of concern
CE: California state-listed as endangered
CT: California state-listed as threatened

California Native Plant Society Rare Plant Ranking system:
1B – rare, threatened, or endangered in California and elsewhere
2 – rare, threatened, or endangered in California, but more common elsewhere
3 – plants about which more information is needed – a review list
4 – plants of limited distribution—a watch list

CRPR Threat Ranks:
Threat Ranks
0.1--Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2--Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3--Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

APPENDIX D

Special-Status Wildlife Species Observed or Potentially Occurring within the Project Study Area

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
INVERTEBRATES			
Branchinecta sandiegonensis San Diego fairy shrimp	FE	Small, shallow vernal pools, occasionally ditches and road ruts	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Bombus crotchii Crotch's bumblebee	SC	Scrub, chaparral, open grasslands, desert margins, developed areas	Not observed onsite. Low potential to occur due to lack of suitable native habitat in proximity to developed areas.
Euphydryas editha quino Quino checkerspot butterfly	FE, MHCP	Patchy coastal sage scrub, chaparral, juniper woodland, semi-desert scrub, grasslands.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Euphyes vestris harbisoni Harbison's dunn skipper	MHCP	Chaparral, oak woodland, and riparian areas that have narrow canyons or drainages. Requires host plant, San Diego sedge (*Carex spissa*).	Not observed onsite. No potential to occur due to lack of required host plant onsite.
Lycaena hermes Hermes copper butterfly	FT, USFS, MHCP	Cismontane coastal sage scrub and chaparral. Larval host plant is exclusively spiny redberry (*Rhamnus crocea*).	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Pyrgus ruralis lagunae Laguna Mountains skipper	FE	Montane meadows and openings from 4,000 to 6,000 feet elevation. Larval host plant is exclusively Cleveland's horkelia (*Horkelia clevelandii*).	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Streptocephalus woottoni Riverside fairy shrimp	FE	Small, shallow vernal pools, occasionally ditches and road ruts	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
REPTILES AND AMPHIBIANS			
Anniella stebbinsi Southern California legless lizard	SSC, USFS	Coastal sand dunes, sandy washes, and alluvial fans	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Aspidoscelis hyperythra Orange-throated whiptail	WL, USFS, MHCP	Coastal sage scrub, chaparral, grassland, juniper and oak woodland with loose soils.	Not observed onsite. Low potential to occur within small patch of coast live oak woodland onsite.

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
Aspidoscelis tigris stejnegeri Coastal whiptail	SSC	Mostly hot, dry cismontane chaparral, woodland, and riparian areas with sparse vegetation.	Not observed onsite. Low potential to occur within small patch of coast live oak woodland onsite.
Anaxyrus californicus Arroyo toad	FE, SSC	Riparian habitat with sandy streambeds. Occurring from sea level to 8,000 feet in elevation.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Coleonyx switaki Barefoot banded gecko	ST, BLM	Arid, sparsely vegetated desert areas with boulders and rock outcrops.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Actinemys pallida Southwestern pond turtle	FPT, SSC, BLM, MHCP	Lakes, streams, ponds where water persists year-round from near sea level to 5,500 feet in elevation.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Phrynosoma blainvillei Coast horned lizard	SSC, BLM, MHCP	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest, with open areas for sunning and presence of harvester ants.	Not observed onsite. No potential to occur due to lack of open areas within the oak woodland for sunning, and absence of harvester ants.
Pleistodon skiltonianus interparietalis Coronado skink	WL, BLM	Grassland, woodlands, pine forests, chaparral, especially in open sunny areas such as clearings and the edges of creeks and rivers. Prefers rocky areas near streams with lots of vegetation.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Rana aurora draytonii California red-legged frog	FT, SSC, MHCP	Streamsides with plant cover, or near ponds; in grasslands, forests, woodlands, and scrub. Mostly found in foothills and lowlands. Breeding habitat may be ephemeral or permanent wetlands, but ephemerally wet areas must be located adjacent to moist refugia for use when wetlands are dry.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Spea hammondii Western spadefoot	FPT, SSC, BLM, MHCP	Temporary ponds, vernal pools, and backwaters of slow-flowing creeks for required for breeding and egg-laying. Also upland habitats such as grasslands and coastal sage scrub where burrows are constructed.	Not observed onsite. No potential to occur to due lack of suitable habitat onsite.

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
BIRDS			
Accipiter cooperii Cooper's hawk	WL, MHCP	Oak woodlands, willows, and commonly in eucalyptus trees in urban areas.	Not observed onsite. Low potential to occur within the small patch of coast live oak woodland and scattered eucalyptus trees surrounded by development.
Agelaius tricolor Tricolored blackbird	ST, SSC, BLM (nesting colony), MHCP	Nests in dense colonies in freshwater marshes and forages in nearby grasslands, pastures, or agricultural fields.	Not observed onsite. Low potential to occur, foraging, within the freshwater marsh onsite; however, the small patch of freshwater marsh onsite is unlikely to support a large nesting colony, and this area is not one of the 20-30 documented nesting colonies in San Diego County. The most recent record of this species within five miles of the Project is from 1906 (CNDDB).
Ammodramus savannarum Grasshopper sparrow	SSC (nesting), MHCP	Partial migrant restricted to native grassland habitat, typically dominated by bunchgrasses of the genus *Nassella*.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Aimophila ruficeps Southern California Rufous-crowned sparrow	WL, MHCP	Xeric, rocky slopes in coastal sage scrub, broken or burned chaparral, and grassland with scattered shrubs.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Amphispiza belli belli Bell's sage sparrow	WL, MHCP	Year-round resident in chaparral and sage scrub.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Aquila chrysaetos Golden eagle	CFP, WL, BLM, CDF (nesting and wintering), MHCP	Most pairs nest on cliff ledges, the rest in trees on steep slopes. Hunts in nearby grassland, sage scrub, or broken chaparral.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Athene cunicularia Burrowing owl	SC, SSC, BLM, BCC (burrow sites and some wintering areas), MHCP	Annual and perennial grasslands, deserts, agricultural areas, disturbed habitat, and scrublands, characterized by low-growing vegetation.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
Buteo swainsoni Swainson's hawk	ST, BLM (nesting)	Open plains and prairie.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Campylorhynchus brunneicapillus sandiegensis Coastal cactus wren	SSC, USFS, BCC, MHCP	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Charadrius nivosus nivosus Western snowy plover	FT, SSC (nesting)	Nests entirely on beaches, dunes, and salt flats.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Circus hudsonius Northern harrier	SSC, BCC (nesting), MHCP	Marshes, grasslands, fields, and prairies. Found in of open, unfragmented terrain, both wet and dry habitats, where there is sufficient ground cover for nest concealment.	Not observed onsite. Low potential to occur, foraging, in the freshwater marsh onsite. The small patch of freshwater marsh is unsuitable for nesting due to insufficient ground cover and habitat fragmentation. There are no records of this species within five miles of the Project.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT, SE, BLM USFS (nesting)	Always in or near significant stands of riparian woodland, dominated by willows and cottonwoods.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Empidonax traillii extimus Southwestern willow flycatcher	FE, SE, USFS (nesting), MHCP	Riparian woodlands and thickets associated with the presence of very moist soil conditions and/or surface water, and understory vegetation.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Icteria virens Yellow-breasted chat	SSC (nesting), MHCP	Dense riparian woodland.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Laterallus jamaicensis coturniculus California black rail	ST, CFP, BLM	Freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays.	Not observed onsite. No potential to occur due to extirpation of the species in the County (San Diego County Bird Atlas). The most recent record of this species within five miles of the Project is from 1907 (CNDDB).

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
Numenius americanus Long-billed curlew	WL (nesting), MHCP	Breed in shortgrass and mixed-grass prairies as well as agricultural fields. Migrate along the coast and interior Mexico through shortgrass prairies, alkali lakes, wet pastures, tidal mudflats, and agricultural fields. Winter in wetlands, tidal estuaries, mudflats, flooded fields less than 6 inches deep, and beaches.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Pandion haliaetus Osprey	WL (nesting), CDF, MHCP	Primarily along rivers, lakes, reservoirs, and seacoasts, occurring widely in migration, often crossing land between bodies of water. Nests in dead snags, live trees, cliffs, utility poles, wooden platforms, channel buoys, chimneys, windmills, etc. Usually near or above water.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Plegadis chihi White-faced ibis	WL (nesting colony), MHCP	Found in shallow areas of freshwater marshes and wet grass.	Observed onsite in concrete-lined Escondido Creek under Rose Street crossing. Suitable foraging habitat is present within Escondido Creek but no suitable nesting habitat occurs onsite. This species nests in colonies and the small patch of freshwater marsh onsite is not suitable for a nesting colony.
Polioptila californica californica Coastal California gnatcatcher	FT, SSC, MHCP	Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Rallus obsoletus levipes Light-footed Ridgway's rail	FE, SE, CFP	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Sialia mexicana Western bluebird	MHCP	Woodlands, farmlands, and orchards.	Not observed onsite. Low potential to occur within small patch of coast live oak woodland onsite or in residential landscaping where tree cavities or cavity nest boxes may be present. .
Sternula antillarum browni California least tern	FE, SE, CFP	Sea beaches, bays, large rivers, salt flats.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
Vireo bellii pusillus Least Bell's vireo	FE, SE (nesting), MHCP	Nests in southern willow scrub with dense cover within 1-2 meters above the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry, or mesquite in desert areas	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
MAMMALS			
Antrozous pallidus Pallid bat	SSC, BLM, USFS, WBWG - H	Found in arid or semi-arid habitats, often in mountainous or rocky areas near water, and open, sparsely vegetated grasslands. Roost in cracks and crevices, which may include tile roofs, exfoliating bark of trees, or rocky outcrops.	Not observed onsite. Low potential to occur onsite under bridges that traverse Escondido Creek. Recent records (2014) of roosting colonies of this species have been recorded on Camp Pendleton and Chula Vista (San Diego County Mammal Atlas), and the most recent record of this species within five miles of the Project is from 1968 (CNDDB). No roosting bats or guano were observed during the survey.
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	State vulnerable, MHCP	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Corynorhinus townsendii Townsend's big-eared bat	SSC, BLM, USFS, WBWG – H, MHCP	Obligate cave-roosting species and will roost in rocky crevices, caves, tunnels, mineshafts, loose tree bark, hollow trees, and derelict buildings in forest and edge habitats.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite. No roosting bats or guano were observed during the survey, and the most recent record of this species within five miles of the Project is from 1931 (CNDDB).
Dipodomys stephensi *Stephens' kangaroo rat*	FT, ST, MHCP	Open grassland dominated by annual forbs or sparse coastal sage scrub and extensive bare ground with friable and loamy soils.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.
Eumops perotis californica Western mastiff bat	SSC, BLM, MHCP	Roosts in small colonies in crevices and cracks in the face of steep rocky cliffs, rocky outcrops, and abandoned quarries. It is strongly associated with its preferred roosting habitat: steep rocky cliffs, rock quarries, and areas with large granitic boulders. Requires a minimum of three meters of unobstructed space below its roost so it can fall before taking flight.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite. There are no records of this species within five miles of the Project. No roosting bats or guano were observed during the survey.

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
Lasiurus xanthinus Western yellow bat	SSC	Strongly associated with native groves of California fan palm. Roosts primarily in "skirts" of dead fronds, but also in cottonwoods and yuccas	Not observed onsite. No potential to occur due to lack of suitable habitat onsite. No roosting bats or guano were observed during the survey, and the most recent record of this species within five miles of the Project is from 1984 (CNDDB).
Lepus californicus bennettii San Diego black-tailed jackrabbit	State vulnerable, MHCP	Grasslands or open areas with patches of scrub; require cover for shade and escape.	Not observed onsite. No potential to occur due lack of suitable habitat onsite.
Neotoma lepida intermedia San Diego desert woodrat	SSC	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth	Not observed onsite. No potential to occur due lack of suitable habitat onsite.
Nyctinomops femorosaccus Pocketed free-tailed bat	SSC, WBWG – M	Pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.. No roosting bats or guano were observed during the survey, and the most recent record of this species within five miles of the Project is from 1988 (CNDDB).
Nyctinomops macrotis Big free-tailed bat	SSC	Rocky cliffs and outcrops in pinyon-juniper and Douglas fir forests, chaparral and oak forests in mountains and foothills where rocky cliffs and crevices are present. Rugged, rocky canyons.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite. No roosting colonies have been documented in San Diego County and records appear to be of rare migrants (San Diego County Mammal Atlas). No roosting bats or guano were observed during the survey, and the most recent record of this species within five miles of the Project is from 1988 (CNDDB).
Odocoileus hemionus fulginata Southern mule deer	MHCP	Coastal sage scrub, chaparral, oak woodland, riparian woodland, montane conifer-hardwood forest, and desert scrub. Distribution is determined by vegetation type, water availability, and quality and quantity of forage. The home range of this species is typically 5.9 km² to 14.8 5.9 km².	Not observed onsite. No potential to occur due to fragmented habitat and lack of spatial requirements onsite.
Puma concolor *Mountain lion*	MHCP	Rugged mountains, forests, and swamps.	Not observed onsite. No potential to occur due to lack of suitable habitat onsite.

SCIENTIFIC NAME/COMMON NAME	SPECIAL STATUS[a]	PRIMARY HABITAT ASSOCIATIONS	STATUS OR POTENTIAL TO OCCUR ONSITE
Taxidea taxus American badger	SSC	Open and sandy openings in coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, and montane meadow. Prefers open, undeveloped areas and avoids urbanization. Requires friable soils. The home range of this species is typically 194 to 1123 hectares.	Not observed onsite. No potential to occur due to lack of suitable open habitat and spatial requirements onsite.

[a] Status:
FEDERAL/STATE LISTED:
FE = Federally listed endangered
FT = Federally listed threatened
FPT = Federally proposed for listing as threatened
SE = State listed endangered
ST = State listed threatened
SC = State candidate for listing as endangered or threatened

OTHER:
BCC = United States Fish and Wildlife Service Birds of Conservation Concern
BLM = Bureau of Land Management Sensitive
CDF = California Department of Forestry and Fire Protection Sensitive
CFP = California Department of Fish and Wildlife Fully Protected Species
G = Global Rank
IUCN = International Union for Conservation of Nature
MHCP = Final Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista
S = State Rank
SSC = California Department of Fish and Wildlife Species of Special Concern
USFS = United States Forest Service Sensitive Animal
WL = California Department of Fish and Wildlife Watch List
WBWG – H = Western Bat Working Group - High Priority
WBWG - M = Western Bat Working Group - Medium Priority

APPENDIX E

Photo Document

Photo 1: Representative photo of developed land: Southwest-facing view of E. Lincoln Road, southwest of El Norte Parkway.

Photo 2: Representative photo of landscaping/ornamental: Northeast corner of E. Lincoln Road and Nightingale Place.

Photo 3: Representative photo of developed land: South-facing view of N. Midway Drive and E. Lincoln Avenue.

Photo 4: Representative photo of developed land: East-facing view of E. Mission Avenue and N. Midway Drive.

Photo 5: Representative photo of concrete-lined channel: East-facing view of Escondido Creek, south of Washington Avenue.

Photo 6: Representative photo of landscaping/ornamental: West-facing view on N. Midway Drive, south of E. Grand Avenue.

Photo 7: Representative photo of landscaping/ornamental: East-facing view on Bear Valley Parkway and S. Midway Drive.

Photo 8: Representative photo of coast live oak woodland: North-facing view on N. Midway Drive, north of Oak Hill Drive.

Photo 9: Representative photo of landscaping/ornamental: South-facing view on N. Midway Drive, north of mapped coast live oak woodland habitat, south of E. Grand Drive.

Photo 10: White-faced ibis wading in the concrete-lined channel of Escondido Creek at N. Rose Street.

Photo 11: Representative photo of freshwater marsh (circled in blue) in Escondido Creek at N. Rose Street. White-faced ibis are circled in yellow.

Photo 12: Representative photo of developed land and landscaping/ornamental: South-facing view of N. Citrus Avenue at Prescott Glen.

Photo 13: Representative photo of concrete-lined channel: East-facing view of Escondido Creek at N. Citrus Avenue.

Photo 14: Representative photo of bare ground: Northwest-facing view on N. Midway Drive, north of E. Valley Parkway.

December 13, 2024

Melissa J. Whittemore
Michael Baker International
9635 Granite Ridge Drive
San Diego, CA 92123

Subject: **Aquatic Resources Delineation for the East Valley Parkway and Midway Drive Drainage Improvements Project, City of Escondido, California**

Balk Biological, Inc. (Balk Biological) was retained by Michael Baker International on behalf of the City of Escondido (City) Development Services Department to perform a formal aquatic resources delineation for the Proposed East Valley Parkway and Midway Drive Drainage Improvement Project (Project).

The Project would involve increasing the capacity of the storm drain systems in the central portion of the City of Escondido in northern San Diego County (Figure 1, Project Vicinity and Figure 2, Survey Area). The existing storm drainage systems in the project area are undersized and unable to collect and convey anticipated flow rates, resulting in more than 1,600 properties being completely or partially within a Federal Emergency Management Agency (FEMA) 100-year floodplain. Localized flooding occurs within the Project area, triggering deployment of sandbags and road closures an average of five times per year since 2019.

The proposed Project would involve the construction of approximately 28,500 linear feet of reinforced concrete box culverts and approximately 1,500 linear feet of reinforced concrete pipelines beneath existing roadways and adjacent public rights-of-way (e.g., sidewalks) and five new stormwater inlets into Escondido Creek. Escondido Creek is a concrete-lined channel in the Project area that has been improved to convey runoff from a 100-year storm. The culverts would range in size from 8-foot by 4-foot (32 square feet in area) to 12-foot by 8-foot (96 square feet in area), and the pipelines would be 54 inches in diameter (about 16 square feet in area). The Project would require relocation of some of the existing underground utility lines to accommodate the proposed storm drain culverts. After relocation of existing utilities and installation of the proposed storm drain culverts and pipes, the affected roadways/sidewalks would be resurfaced. Road resurfacing would include the provision of storm drain inlets along both sides of the roads to collect runoff. The Project would also include bio-retention areas to provide filtration and treatment of runoff before discharging into Escondido Creek.

Construction of the proposed Project is anticipated to commence in February 2026 and be completed in approximately 24 months. Given the linear nature of the Project, the active construction area would continuously move along the Project site at a rate of approximately 50 to 80 liner feet per day. Culvert/pipe installation would be completed in trenches. After culvert/pipe installation, the trenches would be backfilled, and the road would be repaved. Excess fill soil would be hauled to Miramar Landfill for disposal.

Once construction of the Project is completed, the new culverts/pipelines and inlets would be maintained in a manner similar to the existing facilities.

Project Location and Survey Area

The proposed Project is located within the central portion of the City of Escondido, San Diego County, California (Figures 1 and 2). The Project includes the alignments of multiple stormwater drainage culverts that collectively connect to the concrete-lined Escondido Creek channel. Three primary Project alignments follow North Rose Street, Midway Drive and Citrus Avenue, all of which intersect with the Escondido Creek channel. The Midway Drive culvert is fed by culverts that follow East Lincoln Avenue and East Mission Avenue on the north side of Escondido Creek and by a culvert along Bear Valley Parkway on the south side of Escondido Creek. The North Rose Street alignment is fed by a culvert that follows East Grand Avenue on the south side of Escondido Creek. There are also minor culvert alignments that connect to the Escondido Channel along alleys/unnamed access roads near Aster Street, Begonia Street, and west of the Pacific Palms Apartment Complex.

The Aquatic Resources Delineation Report (ARDR) Survey Area (Survey Area) includes a 100-foot buffer from proposed Project impact areas along the above alignments and totals approximately 203.29 acres. The Survey Area is primarily within Section 00 of Township 12 South, Range 2 West of the United States Geological Survey (USGS) Valley Center, California 7.5-minute quadrangle map (Figure 1). The elevation within the Survey Area ranges from 660 feet above mean sea level (amsl) to 730 feet amsl.

Directions from Los Angeles: Take I-5 South for approximately 85 miles before taking Exit 51B for SR-78 East. Continue another 18 miles before taking a right at the intersection with Broadway Street. Take the first left after 0.2 miles onto East Mission Avenue. Continue another 1.7 miles to make a right onto North Rose Street. The Escondido Creek channel will be located 0.4 miles further south, next to Washington Park.

Directions from San Diego: Take SR-163 North and continue for 11 miles before merging with the I-15 North. Continue north for another 19 miles then take Exit 32 for east bound SR-78. Follow SR-78 E for roughly 1 mile then turn left at the intersection with Broadway Street. Take the first left after 0.2 miles onto East Mission Avenue. Continue another 1.7 miles to make a right onto Rose Street. The Escondido Creek channel will be located 0.4 miles further south, next to Washington Park.

The proposed Project applicant would accompany regulatory agencies to the proposed Project site upon request. Contact information for the Project applicant is:

City of Escondido
Development Services Department, Engineering Division
201 North Broadway
City Hall, First Floor
Escondido, CA 92025
Contact: Matt Souttere, Project Manager
760-214-4718; matt.souttere@escondido.gov

Survey Methods

Prior to performing field surveys, a preliminary desktop analysis was performed using the following sources to provide a baseline understanding of the Survey Area:

- USGS 7.5-minute topographic quadrangle maps,
- Aerial and satellite imagery of the Survey Area,
- The National Wetlands Inventory (NWI; USFWS 2024),
- The National Hydrography Dataset (NHD; USGS 2024), and
- The Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2024a).

The NWI, NHD and soils maps are provided in Figures 3, NWI and FEMA; 4, NHD; and 5, Soils and Topography, respectively.

The desktop analysis was followed up with a field survey conducted by Balk Biological aquatic resource specialists Brian Lohstroh and Mark Wolford on September 18, 2024. Mark Wolford conducted a follow-up visit on October 11, 2024. The field survey involved evaluation of potential aquatic resources identified within the Survey Area. Aquatic resources were mapped using the Environmental Systems Research Institute (ESRI) Field Maps application for ArcGIS running on a smartphone connected to a sub-meter-accuracy global positioning system (GPS) receiver. Spatial data collected was imported into ArcMap software for post-field processing.

Topographic data providing two-foot contours was referenced to supplement the GPS collected delineation data, where applicable. A desktop delineation was completed for areas not accessible due to security fences, other obstructions, and/or safety concerns by analyzing topographic contours and aerial imagery combined with field verification of portion(s) of a potential feature.

Mapped aquatic resources are presented in Figure 6, Aquatic Resources. Representative photos of aquatic resources are provided in Attachment B. Photo numbers were assigned post-field in the order that is presented in Figure 6 and Attachment B.

This ARDR provides the necessary data to support a jurisdictional determination from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). Delineation methods and definitions of waters and wetlands for each federal, state, and regional agency are provided below.

Delineation of Federal Waters

Waters of the U.S. regulated by the USACE include those waters listed in 33 Code of Federal Regulations (CFR) Part 328 (Definitions of Waters of the United States). All potential waters of the U.S. were delineated to their jurisdictional limits as defined by 33 CFR § 328.4 (Limits of Jurisdiction). Pre-field analysis confirmed the potential presence of both non-wetland waters and wetland waters of the U.S. Therefore, field surveys evaluated the potential for wetland waters of the U.S. pursuant to the three-parameter methods according to the following:

(1) Corps of Engineers Wetland Delineation Manual (Manual; Environmental Laboratory 1987),

(2) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0; Environmental Laboratory 2008), and

(3) Applicable USACE Regulatory Guidance Letters (RGLs).

Unless paired with a wetland location, if one of the three wetland parameters (*i.e.,* dominance of hydrophytic vegetation, hydric soils, hydrology indicators) was not observed, no Wetland Determination Data Forms were completed and aquatic resources were therefore evaluated for presence of an ordinary high water mark (OHWM), as described below.

Aquatic resources were delineated as non-wetland waters of the U.S. in the absence of federal wetlands exhibiting all three wetland parameters, based on field indicators used to define and identify the lateral extent of the OHWM. The OHWM is defined by 33 CFR 328.3and was delineated according to the following:

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (Lichvar and McColley 2008),
- National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams-Interim Version (David *et al.* 2022).
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Curtis and Lichvar 2010),
- Distribution of Ordinary High Water Mark (OHWM) Indicators and their Reliability in Identifying the Limits of "Waters Of The United States" in Arid Southwestern Channels (Lichvar *et al.* 2006),
- Channel Classification across Arid West Landscapes in Support of OHW Delineation (Lefebvre *et al.* 2013), and
- Applicable USACE RGLs.

Changes in regulations have transpired somewhat recently relating to defining waters of the U.S. On August 30, 2021, in the case of Pascua Yaqui Tribe v. U.S. Environmental Protection Agency, No. CV-20-00266-TUC-RM, a U.S. District Judge for the District of Arizona vacated and remanded the Navigable Waters Protection Rule (NWPR), that went into effect on June 22, 2020. In light of this order, the U.S. Environmental Protection Agency (EPA) and USACE halted implementation of the NWPR and interpreted waters of the U.S. consistent with the pre-2015 regulatory regime until further notice. The pre-2015 regulations require following the guidance developed in 2007 and 2008 for implementing the definition of waters of the U.S. following the Rapanos v. United States, and Carabell v. United States Supreme Court decisions. On January 18, 2023, the final "Revised Definition of 'Waters of the United States'" rule was published in the Federal Register and was set to become effective on March 20, 2023. The revised definition of Waters of the U.S. codified both the Relatively Permanent test and Significant Nexus test from the Rapanos v. United States, and Carabell v. United States Supreme Court decisions. However, most recently on May 25, 2023, the U.S. Supreme Court ruled in Sackett v. Environmental Protection Agency that the definition of "waters" in §1362(7) of the Clean

Water Act (CWA) refers only to "geographic[al] features that are described in ordinary parlance as 'streams, oceans, rivers, and lakes'" and to adjacent wetlands that are "indistinguishable" from those bodies of water due to a continuous surface connection.

On August 29, 2023, the EPA and USACE issued a final rule to define waters of the U.S. in conformance with the Sackett decision (the Conforming Rule), specifically removing the significant nexus test from consideration when identifying tributaries and other waters, and also revising the adjacency test when identifying jurisdictional wetlands. The Conforming Rule became effective upon publication in the Federal Register. Under the Conforming Rule, the USACE regulates tributaries to Traditional Navigable Waters (TNWs) that exhibit "relatively permanent flow" and include streams, lakes, and ponds that support surface flow or ponding seasonally but does not include streams or other aquatic features that only support surface flow or ponding during precipitation and is not present once the precipitation event ends (*i.e.,* ephemeral features).

This ARDR was prepared in accordance with USACE Los Angeles District Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2017) and Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (USACE 2016).

Delineation of State Waters

Regional Water Quality Control Board (RWQCB)

Potential aquatic features under the jurisdiction of the RWQCB were delineated pursuant to the federal methodology for wetland and non-wetland waters of the U.S. (see Delineation of Federal Waters, above) and Section 13000 *et seq.* of the California Water Code (CWC; 1969 Porter-Cologne Water Quality Control Act). The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (CWC § 13050[e]). Waters of the state include those waters also under the jurisdiction of the federal government; however, the definition of waters of the state is broader than that for waters of the U.S. in that all waters are considered to be a water of the state regardless of circumstances or condition, including isolated waters pursuant to the California Porter-Cologne Act. However, waters of the state must still show wetland parameters (defined below) to be considered wetland waters, or OHWM-indicators to be considered non-wetland waters.

Additionally, the State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State (California Wetland Policy) adopted by the State Water Resources Control Board (SWRCB) on April 2, 2019 became effective May 28, 2020 and stipulates additional procedures and requirements for obtaining approval from water resource control boards for discharge of dredged or fill materials to state waters (SWRCB 2019). The California Wetland Policy largely models the USACE guidance for defining a wetland, but includes areas with wetland hydrology, wetland soils, and (if vegetated) wetland plants—an area may be a wetland even if it does not support vegetation. Therefore, an area may be considered a state wetland even if it is unvegetated at the time of delineation if it has wetland hydrology and hydric soils.

RWQCB jurisdiction was based on the definition of waters of the State and the California Wetland Policy, but also considered whether resources present a 'beneficial use' as outlined in the Water Quality Control Plan for the San Diego Basin Plan (RWQCB 1994,

as amended). Aquatic resources were considered under the jurisdiction of RWQCB if it was determined that any type of aquatic and/or aquatic-related features occurring within the Survey Area with wetland parameters or OHWM-indicators would also present a 'beneficial use,' and therefore, be considered a substantial aquatic feature that persists at least seasonally rather than a short duration event occurring infrequently over spans of decades. In this case, the delineation of RWQCB waters is concurrent with the lateral extent of the OHWM as described above for delineation of federal waters; no potential isolated waters were encountered during the field delineation.

California Department of Fish and Wildlife (CDFW)

Potential aquatic features under the jurisdiction of CDFW were delineated pursuant to Section 1600 *et seq.* of the California Fish and Game Code (CFGC). CDFW usually extends its jurisdictional limit to the top of a stream bank, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider. Therefore, jurisdictional boundaries subject to CFGC §§ 1600-1617 typically encompass an area that is greater than the lateral extent of the OHWM. Delineation of CDFW jurisdictional waters were mapped to include the streambed and, if applicable, the lateral extent of the top of bank above the streambed. Adjacent riparian habitat, if present, was also mapped as CDFW-exclusive jurisdiction where it extends beyond the top of bank to edge of canopy.

Agency Forms

The 2008 Supplement Wetland Determination Data Form-Arid West Region (Environmental Laboratory 2008) was used to document the presence/absence of potential wetlands at representative locations within the Survey Area. The December 2022 Interim Draft Rapid OHWM Field Identification Data Sheet (USACE 2022) was completed to document the OHWM at representative locations for non-wetland waters. The November 2023 Field form for the beta Arid Streamflow Duration Assessment Method was completed to determine streamflow duration in accordance with the user manual (Mazor *et. al.* 2023). All data forms are included in Attachment C. Due to the delineation of less than three types of federal aquatic resources within the Survey Area, an Operations and Maintenance Business Information Link (OMBIL) Regulatory Module (ORM) Bulk Upload Spreadsheet for USACE jurisdictional waters is not required.

Environmental Setting & Climate

General Land Use

The Survey Area is characterized as developed lands within the central portion of the City of Escondido. The Survey Area includes industrial, commercial, residential, and school zones, along with the associated infrastructure.

Hydrology

Surface Water

The Survey Area is within the Escondido Hydrologic Sub Area ([HSA] 904.62) of the Escondido Creek Hydrologic Area ([HA] 904.10) of the Carlsbad Hydrologic Unit ([HU] 904.00), and is within the Escondido Creek Watershed (HU Code [HUC] 180703030401). The USGS watershed boundary is identified on Figure 4. The Upper Escondido Creek

watershed (HUC 180703030401) includes an area of approximately 44.1 square miles (114.2 square kilometers) and is a part of the overall Escondido Creek Watershed.

Within the Survey Area, Escondido Creek takes the form of a concrete-lined flood control channel. Surface flows in the Creek are primarily fed by three sources: water releases from the Lake Wohlford Reservoir upstream, surface runoff from surrounding agricultural and residential land uses, and the City of Escondido's stormwater drainage system. Surface water approximately two inches in depth was present within the channel during the September 18, 2024 field visit and based on the beta Stream Duration Assessment Method (SDAM) for the Arid West Region, the flow duration of the Escondido Creek is determined to be perennial due to the presence of both hydrophytic plants and aquatic invertebrates (see SDAM Form in Attachment C).

Flows in the Escondido Creek channel generally follow a northeast-to-southwest route through Escondido before the channel ceases to be concrete-lined downstream near the community of Harmony Grove. Flow continues to the southwest where the creek feeds into the San Elijo Lagoon and eventually the Pacific Ocean, both TNWs.

A second tributary to Escondido Creek is present in the southwestern portion of the survey area near East Grand Avenue and also takes the form of a concrete lined channel. Surface flow was also apparent during the field visit in September and the SDAM determined flows to be intermittent (see SDAM Form in Attachment C).

NWI mapping (USFWS 2024, Figure 3) indicates the only aquatic resource that occurs with the Survey Area is Escondido Creek, with a Cowardin code of R4SBCx. This code indicates that this portion of Escondido Creek is a riverine, intermittent streambed that is seasonally flooded and excavated. NHD similarly indicates Escondido Creek as a stream/river within the Survey Area (USGS 2024, Figure 4).

Beneficial Uses

Beneficial uses pertaining to Escondido Creek include municipal and domestic supply, agricultural supply, potential industrial service supply, hydropower generation, contact and non-contact water recreation, warm and cold freshwater habitat, and wildlife habitat (RWQCB 1994, as amended).

Beneficial uses pertaining to other potential receiving waters (lower Escondido Creek, San Elijo Lagoon, and tributaries) include municipal and domestic supply; agricultural supply; potential industrial service supply; contact and non-contact water recreation; preservation of biological habitats of special significance; warm and cold freshwater habitat; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; and spawning, reproduction, and/or early development (RWQCB 1994, as amended).

FEMA Floodplain

According to the Federal Emergency Management Agency (FEMA) Flood Hazard maps, the Survey Area encompasses five FEMA designated flood zones. The Escondido Creek channel and some additional tributaries are designated as Zone A: areas of high-risk flood hazard. The Industrial areas immediately north and south of the Creek channel are designated as Zone AH: areas with a one percent annual chance flood hazard with base flood elevations ranging from 673 to 695 feet. Additional areas outside the AH zone are

designated as Zone AO and have a one percent annual chance flood hazard with a depth of one foot. Outside these areas, a significant portion of the Survey Area is designated as Zone X with a 0.2 percent chance of a flood hazard and very small outlying portions of the Survey Area are Zone X: areas of minimal flood hazard (FEMA 2024; Figure 3).

Soils

Soils within and near the Survey Area are displayed on Attachment A, Figure 5. Eleven (11) soil series types occur within the Survey Area, as noted in Table 1 (NRCS 2024a). Of these, four are listed as hydric by the NRCS (NRCS 2024b). Two of these hydric soil types are typically associated with depressions: Placentia sandy loam, thick surface, 0 to 2 percent slopes and Placentia sandy loam, thick surface, 2 to 9 percent slopes. Visalia sandy loam, 0 to 2 percent slopes and Visalia sandy loam, 2 to 5 percent slopes are hydric soils typically associated with floodplains. These hydric soils make up 41 percent (84.33 acres) of the Survey Area. It is important to note that the Survey Area exists within developed land and soils are either highly manipulated or covered over with concrete and asphalt.

Table 1. Soils Series Occurring Within the Survey Area

Soil Map Unit	Listed as Hydric by NRCS	Area (Acres)
Fallbrook sandy loam, 9 to 15 percent slopes, eroded	No	3.99
Greenfield sandy loam, 0 to 2 percent slopes	No	18.52
Placentia sandy loam, thick surface, 0 to 2 percent slopes	**Yes**	11.76
Placentia sandy loam, thick surface, 2 to 9 percent slopes	**Yes**	52.08
Ramona sandy loam, 0 to 2 percent slopes, MLRA 19[1]	No	36.91
Ramona sandy loam, 2 to 5 percent slopes	No	10.31
Ramona sandy loam, 5 to 9 percent slopes	No	0.84
Reiff fine sandy loam, 0 to 2 percent slopes	No	45.77
Visalia sandy loam, 0 to 2 percent slopes	**Yes**	18.21
Visalia sandy loam, 2 to 5 percent slopes	**Yes**	2.28
Vista coarse sandy loam, 9 to 15 percent slopes, MLRA 20[1]	No	2.62
	Total	**203.29**

1. MLRA: Major Land Resource Area (USDA 2022).

Hydrophytic Vegetation

The Survey Area occurs within developed and disturbed land associated with the City of Escondido and lacks native, undisturbed habitat. The portion of Escondido Creek that flows through the Survey Area is concrete-lined and maintained, so it generally lacks vegetation. However, occasional sediment deposits accumulate within the channel bottom and some emergent hydrophytic vegetation has colonized these areas. Only plant species with hydrophytic indicators of Obligate (OBL), Facultative Wetland (FACW), and Facultative (FAC) will be considered for the federal definition of wetlands to meet the hydrophytic plant community wetland parameter (Environmental Laboratory 1987). Dominant hydrophytic plant species (USACE 2020) documented within potential aquatic resources (*i.e.,* the concrete-lined channel associated with Escondido Creek and the East Grand Avenue tributary channel) included broad-leaved cattail (*Typha latifolia*; OBL), watercress (*Nasturtium officinale*, OBL), common spikerush (*Eleocharis palustris*, OBL), umbrella

sedge (*Cyperus eragrostis,* FACW), and rabbitsfoot grass (*Polypogon monspeliensis*; FACW).

Climate

In the three months prior to the initiation of the field delineation effort (performed on September 18, 2024), no significant rainfall was recorded (no precipitation in June, July, or August, and 0.03" of rain fell on September 16, 2024) according to the Natural Resource Conservation Service (NRCS) Climate Analysis for Wetlands Table (WETS Table) for the Escondido No. 2 weather station (National Oceanic and Atmospheric Administration [NOAA] 2024) that is provided in Attachment D. Total rainfall recorded as of September 18 in 2024 (13.10 inches) is above the 30-year average rainfall of 10.39 inches for the same portion of the year. The rainfall recorded the prior year (2023) totaled 27.36 inches and is a significant outlier, well above the 30-year average for the area (14.41 inches). Although the amount of rain in June through August 2024 is below the 30-year average precipitation for those months, the lack of rainfall in all three months is within the normal range for those summer months.

The Antecedent Precipitation Tool (APT; Version 2.0) is a desktop tool developed by the USACE to support decisions as to whether field data collection and other site-specific observations occurred under normal climatic conditions. The APT (Version 2.0) was used to evaluate climatic conditions of the Escondido Creek (HUC 180703030401) that encompasses the Survey Area. The APT Watershed Sampling Summary provided in Attachment D summarizes precipitation and climatic data for five random sampling points within HUC 180703030401 for the three months prior to the delineation fieldwork date of September 18, 2024. These data show that four of the sampling points exhibited precipitation and climate within the normal range of conditions recorded within HUC 180703030401, whereas the remaining sampling point exhibited precipitation and climate with drier than normal conditions. The Antecedent Precipitation Score (derived from the Antecedent Condition Calculation of the three prior months) of 11.4 indicates that climatic conditions recorded within the HUC 180703030401 and surrounding areas were normal, and all five sampling points exhibited a corresponding drought index (PDSI; based on data from NOAA) indication of mild wetness.

Results

The type and amount of potential aquatic resources occurring within the Survey Area are summarized in Table 1 and illustrated in Attachment A, Figure 6. Overall, 3.01 acres of potential aquatic resources were delineated within the Survey Area. Total aquatic resources potentially regulated by both the USACE and RWQCB included 0.60 acres of non-wetland waters of the U.S., consisting of 0.59 acres of open water/concrete-lined channel and 0.01 acres of three-parameter wetlands below the OHWM. Total aquatic resources potentially regulated by the CDFW included 3.01 acres of streambed below the top of bank.

Table 2. Summary of Potential Aquatic Resources within the Survey Area

Aquatic Resource Type	Cowardin Code	Vegetation Type	Coordinates	Amount	
				Acres[1]	Linear feet
Non-wetland Waters of the U.S./State (USACE, RWQCB)					
Escondido Creek Channel	R4SBCx	Developed/ concrete-lined channel	33.14048, -117.05339	0.57	1,768
Escondido Creek: Federal 3-Parameter Wetland Below OHWM	R4SB7Cx	Freshwater Marsh	33.13542, -117.05984	0.02	135
Grand Ave Channel	R4SBCx	Developed/ concrete-lined channel	33.13153, -117.05538	0.01	112
Subtotal Waters of the U.S./State (USACE/RWQCB)				*0.60*	*2,014*
Waters of the State (CDFW)					
Escondido Creek, Concrete-lined Channel	R4SBCx	Developed/ concrete-lined channel	33.14048, -117.05339	2.95	1,768
Escondido Creek, Freshwater Marsh	R4SB7Cx	Freshwater Marsh	33.13542, -117.05984	0.02	135
Grand Ave Channel, Concrete-lined Channel	R4SBCx	Developed/ concrete-lined channel	33.13153, -117.05538	0.04	112
Subtotal Waters of State (CDFW)				*3.01*	*2,014*
Total USACE/RWQCB Aquatic Resources				**0.60**	**2,014**
Total CDFW Aquatic Resources				**3.01**	**2,014**
Grand Total Aquatic Resources				**3.01**	**2,014**

1 All acreages are rounded to the nearest hundredth (0.01) and totals reflect this.

Federal Aquatic Resources

Wetland Waters

No potential federal wetland waters occur within the Survey Area. Aquatic resources exhibiting all three wetland parameters (*i.e.,* evidence of hydrophytic vegetation, hydric soils, and wetland hydrology) were largely absent throughout the Survey Area since the only features present were concrete-lined channels. Only one Wetland Sample Point (WDP-1; Attachment B, Photo 2) representing the emergent freshwater marsh within a sediment deposit in the Escondido Creek channel exhibited all three wetland parameters, but because the freshwater marsh occurs below the OHWM and is likely a temporary situation (as a storm event or routine maintenance will likely remove it), this aquatic resource is delineated as a potential non-wetland water of the U.S., as discussed below.

Non-wetland Waters

Boundaries of potential non-wetland waters of the U.S. within the Survey Area were determined by the presence of an OHWM and "relatively permanent flow" (Mazor *et al.* 2023). Linear aquatic resources delineated within the Survey Area include the concrete-lined Escondido Creek channel supporting perennial flows and a smaller tributary to Escondido Creek near East Grand Avenue, which supported intermittent flows. Two OHWM Datasheets were completed (Attachment C), representing the boundary of the federal non-wetland waters associated with the channels, including one along Escondido Creek at the N. Rose Street crossing (ODP-1; Photo 3), one along the tributary channel near East Grand Avenue (ODP-2; Photo 4). Indicators of the OHWM consisted of water stains and evidence of fallen debris being washed away (see Photo 3). The water staining indicator was consistently observed throughout channels within the Survey Area. Due to the clear connection to downstream waters and the strong evidence of surface flow below the OHWM, both channels would be considered potential RPWs that are tributaries to a TNW (see also Surface Water description, above).

An area of freshwater marsh present within the Escondido Creek channel is also considered to be potential non-wetland waters because it is below the OHWM. As noted above, the marsh is associated with a temporary sediment deposit within the concrete-lined channel and despite it qualifying as a three-parameter wetland (WDP-1), it is established well below the OHWM.

State Aquatic Resources

All federal waters described above also fall within the CWA Section 401 authority of the RWQCB and Section 1602 authority of the CDFW. Additionally, the CDFW takes jurisdiction of aquatic resources extending beyond the OHWM to the top of bank and/or edge of riparian canopy.

Potential aquatic resources subject to CDFW jurisdiction but not USACE or RWQCB jurisdiction consist of the engineered channel banks above the OHWM. The top of bank associated with the non-wetland waters mapped throughout the Survey Area was delineated at the crest of the channel slope. The CDFW-jurisdictional streambed mapped in this ARDR includes areas of open water, a small area of freshwater marsh within the concrete-lined channel, and the area of concrete-lined channel located below the top of bank.

Non-Jurisdictional Features

Four concrete-lined ditches were evaluated as part of the field delineation and these were determined to be non-jurisdictional brow ditches constructed in uplands that were not associated with any historically mapped features (NWI 2024, NHD 2024). Three of these brow ditches are located near El Norte Parkway in the northern portion of the Survey Area and are visible on Figure 6 page 1 and Photos 7-9. The fourth brow ditch is present near East Grand Avenue on Figure 6 page 6 and Photo 10. The ditches function to prevent erosion, capturing runoff and channeling it around a new housing development and an undeveloped lot. All the brow ditches discharge into the City storm drain system, with one of them entering a relatively small bioretention basin (Photo 5), before doing so.

A larger bioretention basin is present west of East Lincoln Avenue and appears to capture the bulk of the runoff from the adjacent housing development (Photo 6). The constructed

basins are landscaped and maintained, do not support hydrophytic vegetation within the Survey Area, and are therefore not considered to be potential jurisdictional aquatic resources.

Deviation from NWI

Most of the potential aquatic resources delineated within the Survey Area were mapped in similar locations by both the NWI (USFWS 2024) and NHD (USGS 2024), as shown in Figures 3 and 4. The Escondido Creek channel corresponds to the "Riverine intermittent streambed" mapped by the NWI and "streambed" mapped by the NHD. However, a minor drainage channel located near East Grand Avenue in the southwestern portion of the Survey Area is not included in either the NWI or NHD mapping.

Regulatory Discussion

Authorizations from the USACE, RWQCB, and CDFW may be required for implementation of the proposed Project if it will involve alteration of or impacts to potentially jurisdictional aquatic resources identified in the Survey Area. Aquatic resources within the Survey Area would be subject to USACE Los Angeles District jurisdiction, RWQCB Region 9 (San Diego) jurisdiction, and CDFW Region 5 (South Coast Region) jurisdiction.

Under Section 404 of the CWA, USACE regulates any activity that would result in the discharge of dredged or fill material into waters of the U.S., which include those waters listed in 33 CFR 328.3. Therefore, a permit from USACE will be required for discharge of dredge or fill material, which would include fill materials such engineered fill and concrete, etc., into waters of the U.S.

Because the proposed Project is being proposed by one entity, the City of Escondido Development Services Department, each of the Project features must be combined as one single and complete project. In other words, each facility improvement cannot be divided into separate projects for the purposes of lowering impacts to be within the limits of a particular Nationwide Permit (NWP). If the impacts for the proposed Project are less than 0.50-acre, then the Project would qualify for NWP No. 43 (Stormwater Management Facilities). However, it is possible that USACE would approve the use of multiple NWPs for the proposed Project based on different aspects of the Project. For example, if any dewatering, staging or construction access will be required within the aquatic resources, those activities could be authorized under NWP No. 33 Temporary Construction, Access, and Dewatering, which does not have an impact acreage limit. When multiple NWP are used for one single and complete project, the acreage loss of waters of the U.S. authorized by those NWPs cannot exceed their respective specified acreage limits. Each of the NWPs mentioned herein would require submittal of a Pre-Construction Notification (PCN) package to USACE. Balk Biological recommends scheduling a pre-application meeting with USACE and the other agencies to determine the best permitting strategy and whether multiple NWPs may be required. Please note that if impacts would be greater than 0.50-acre, it is likely that the proposed Project would require an Individual Permit; therefore, it is recommended to reduce impacts as much as possible to meet NWP limits.

Section 401 of the CWA (33 U.S.C. § 1341) requires any applicant for a federal license or permit that may result in a discharge into waters of the U.S. to provide the licensing or permitting federal agency with certification that the Project will comply with water quality

standards and implementation plans promulgated pursuant to section 303 of the CWA (33 U.S.C. § 1313). Therefore, because a USACE permit will be required, a Section 401 Certification will also be required. The SWRCB and its nine RWQCBs are collectively the State's Water Boards responsible for CWA section 401 Certification in California (Wat. Code, § 13160). If the proposed Project involves regulated activities that could result in a discharge of waste and fill materials to waters of the State, including wetlands, that are not covered by a 401 Certification, a Report of Waste Discharge Requirement (WDR) may be required pursuant to Section 13263 of the 1969 Porter-Cologne Water Quality Control Act. A WDR can be issued by the SWRCB/RWQCB concurrently with a Section 401 Certification.

If the proposed Project involves regulated activities that could result in any alteration to riparian habitat and/or streambed, a Lake or Streambed Alteration Agreement from CDFW may be required pursuant to CFGC Sections 1600-1617. Under CFGC Sections 1600 *et seq*., CDFW regulates activities that would result in (1) any potentially detrimental impacts associated with the substantial diversion or the obstruction of the natural flow of a stream; (2) substantial changes to the bed, channel, or banks of a stream, or the use of any material from the bed, channel, or banks; and (3) the disposal of debris or waste materials that may pass into a stream. The proposed Project will require submittal of a Notification of Lake or Streambed Alteration to CDFW.

Conclusion

The findings presented in this report, including the location and extent of aquatic resource areas subject to regulatory jurisdiction, represent the professional opinion of Balk Biological. These findings should be considered preliminary and at final discretion of the applicable resource agency. The USACE, RWQCB, and CDFW typically would need to review and verify to make a formal determination of the preliminary delineation results.

Sincerely,

Brian Lohstroh
Senior Biologist
Balk Biological, Inc.
blohstroh@balkbiological.com

Enclosures:

Attachment A, Figures

Figure 1	Project Vicinity
Figure 2	Survey Area
Figure 3	NWI and FEMA
Figure 4	NHD
Figure 5	Soils
Figure 6	Aquatic Resources

Attachment B, Representative Photos
Attachment C, Data Forms
Attachment D, Climatological Data

References

Cowardin, L.M., Carter, V., Golet, F.C., and LaRoe, E.T. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS 79/31. December. Available at https://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf

Curtis, K., and R.W. Lichvar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (ERDC/CRREL TN-101) USACE Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire. July.

David, G. C. L., K. Fritz, T. Nadeau, B.J. Topping, A. O. Allen, P. H. Trier, S. L. Kichekski, L. A. James, E. Wohl, and D. Hamill. National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams-Interim Version (ERDC/CRREL TR-22-26). Prepared for Wetlands Regulatory Assistance Program USACE Vicksburg, MS. November.

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Environmental Laboratory. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). September.

Federal Emergency Management Agency (FEMA). 2024. Flood Map Service Center. Available at: https://msc.fema.gov/portal

Lefebvre, L., R.W. Lichvar, K. Curtis, and J. Gillrich. 2013. Channel Classification across Arid West Landscapes in Support of OHW Delineation. (ERDC/CRREL TR-13-3). USACE Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.

Lichvar, R.W., D.C. Finnegan, M.P. Ericsson, and W. Ochs. 2006. Distribution of Ordinary High Water Mark (OHWM) Indicators and their Reliability in Identifying the Limits of "Waters Of The United States" in Arid Southwestern Channels. (ERDC/CRREL TR-08-12.). USACE Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.

Lichvar, R. W., and S. M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual. USACE ERDC/CRREL TR-08-12. August.

Mazor, R.D., Topping, B., Nadeau, T.-L., Fritz, K.M., Kelso, J., Harrington, R., Beck, W., McCune, K., Lowman, H., Allen, A., Leidy, R., Robb, J.T., and David, G.C.L. 2023. User Manuel for a Beta Streamflow Duration Assessment Method for the Arid West of the United States. Version 1.1. Document No. EPA-800-5-21001

National Oceanic and Atmospheric Administration (NOAA) Regional Climate Centers (RCCs). 2024. Agricultural Applied Climate Information System (AgACIS). Available at: http://agacis.rcc-acis.org/

National Resource Conservation Service (NRCS). 2024a. Web Soil Survey. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

NRCS. 2024b. National List of Hydric Soils. December. Available at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

NETR Online. 2024. Historic Aerials. Available at: http://historicaerials.com/viewer

Regional Water Quality Control Board (RWQCB). 1994. Water Quality Control Plan for the San Diego Basin. September 8; Amended September 1, 2021. Available at: https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/

State Water Resources Control Board (SWRCB). 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State. Adopted April 2. Available at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf

United States Army Corps of Engineers (USACE). 2016. Updated Map and Drawing Standards for the South Pacific Division Regulatory Program. February 5. Available at: https://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/

USACE. 2017. Special Public Notice: Minimum Standards for Acceptance of Aquatic Resources Delineation Reports. Los Angeles District. March 16. Available at: https://www.spl.usace.army.mil/Portals/17/Users/251/43/2043/Final%20Delin%20report%20standards%203-16-2017.pdf?ver=2017-03-16-170513-523

USACE. 2020. National Wetland Plant List (NWPL), version 3.5.-Arid West 2020 Regional Wetland Plant List: 2020 Wetland Ratings. Available at: http://wetland-plants.usace.army.mil/

USACE. 2022. Interim Draft Rapid Ordinary High Water Mark (OHWM) Field Identification Data Sheet. December. OMB No. 0710-0025. Available at: https://media.defense.gov/2022/Dec/27/2003137646/-1/-1/1/ENG_FORM_6250_2022DEC.PDF

U.S. Department of Agriculture (USDA). 2022. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. USDA Agriculture Handbook 296. May.

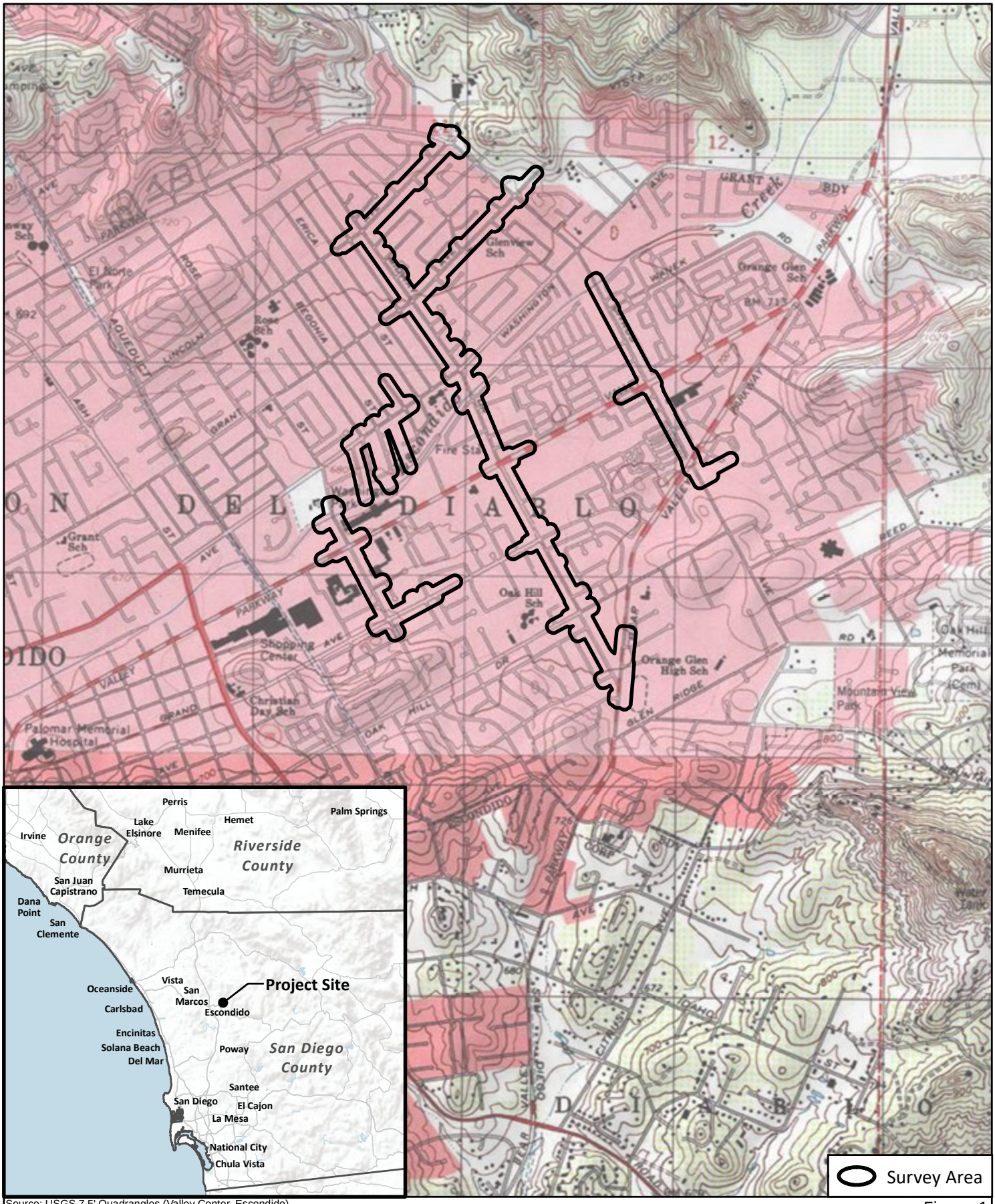
United States Geological Survey (USGS). 2024. National Hydrography Dataset: The National Map. Available at:

https://viewer.nationalmap.gov/basic/?basemap=b1&category=nhd&title=NHD%20View

U.S. Fish and Wildlife Service (USFWS). 2024. National Wetland Inventory. Available at: https://www.fws.gov/wetlands/

Attachment A

Figures



Source: USGS 7.5' Quadrangles (Valley Center, Escondido)

Figure 1

Project Vicinity

East Valley Parkway & Midway Drive
Drainage Improvements

Balk Biological, Inc.

N

0 2,000 Feet

Aerial Photo: USDA NAIP 2022

Figure 2

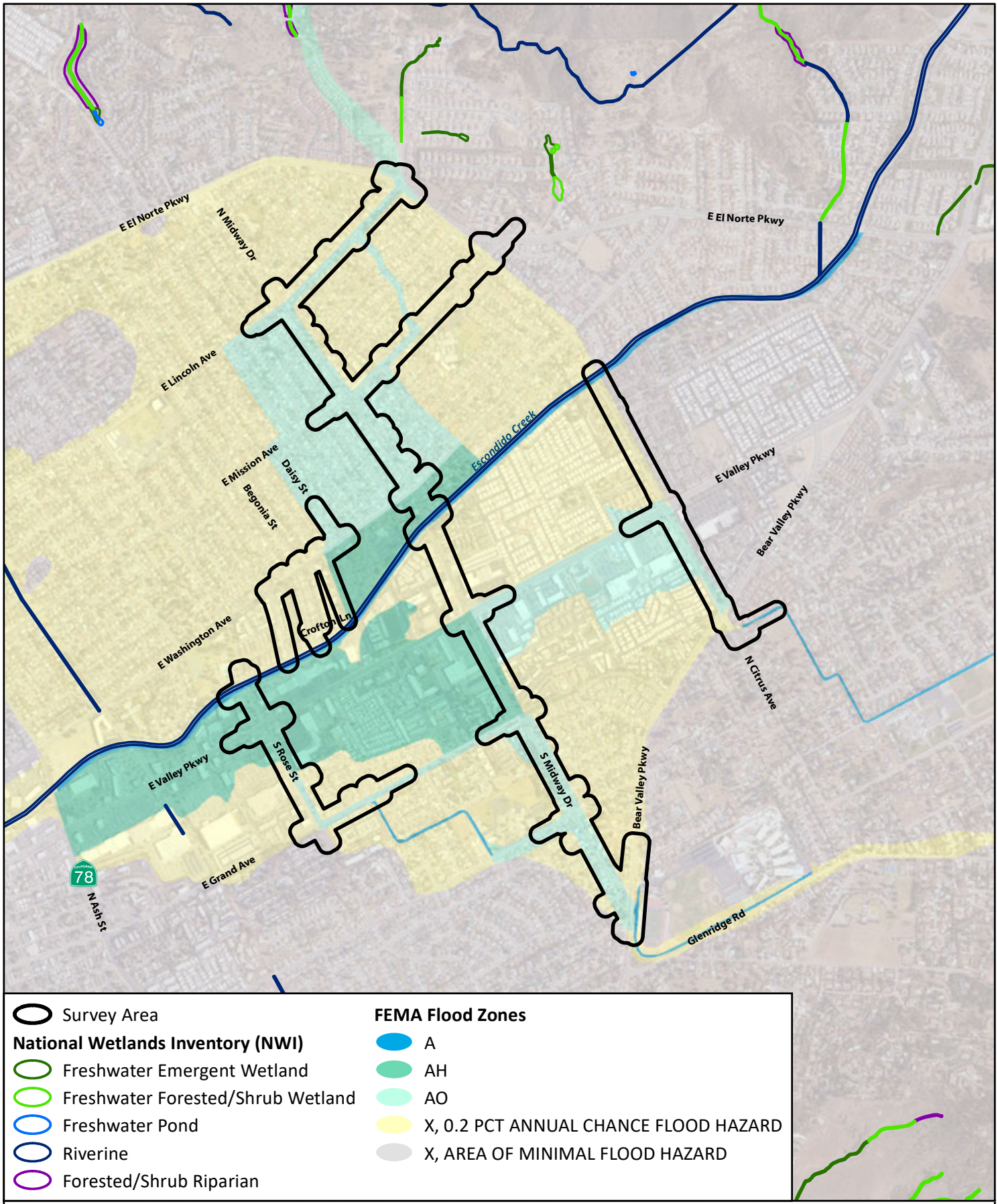
Survey Area

East Valley Parkway & Midway Drive
Drainage Improvements

Balk Biological, Inc.

N

0 1,200 Feet



Source: USFWS, FEMA; Aerial Photo: USDA NAIP 2022

Figure 3

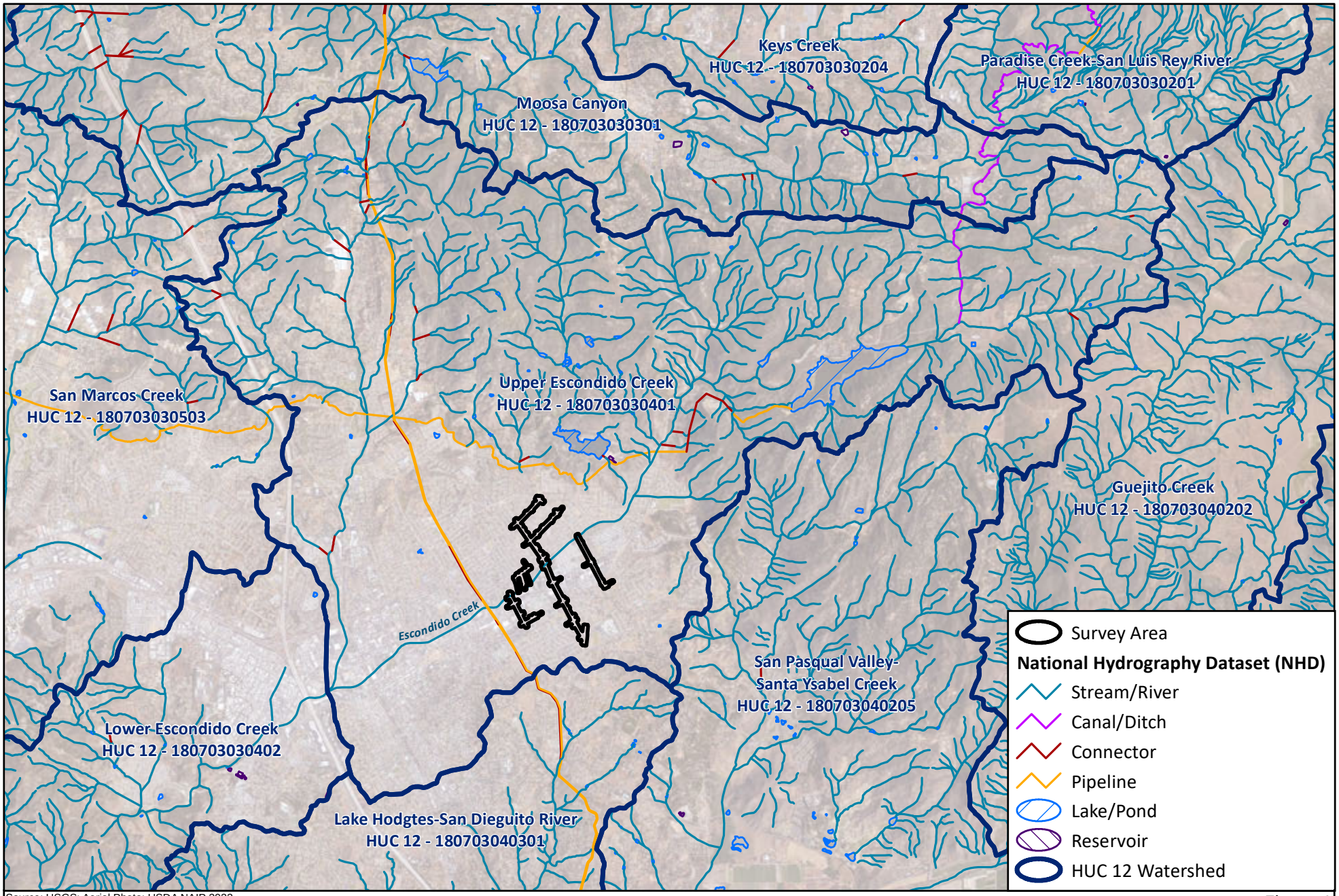
NWI and FEMA

East Valley Parkway & Midway Drive
Drainage Improvements

Balk Biological, Inc.

N

0 1,500 Feet



Source: USGS; Aerial Photo: USDA NAIP 2022

Figure 4

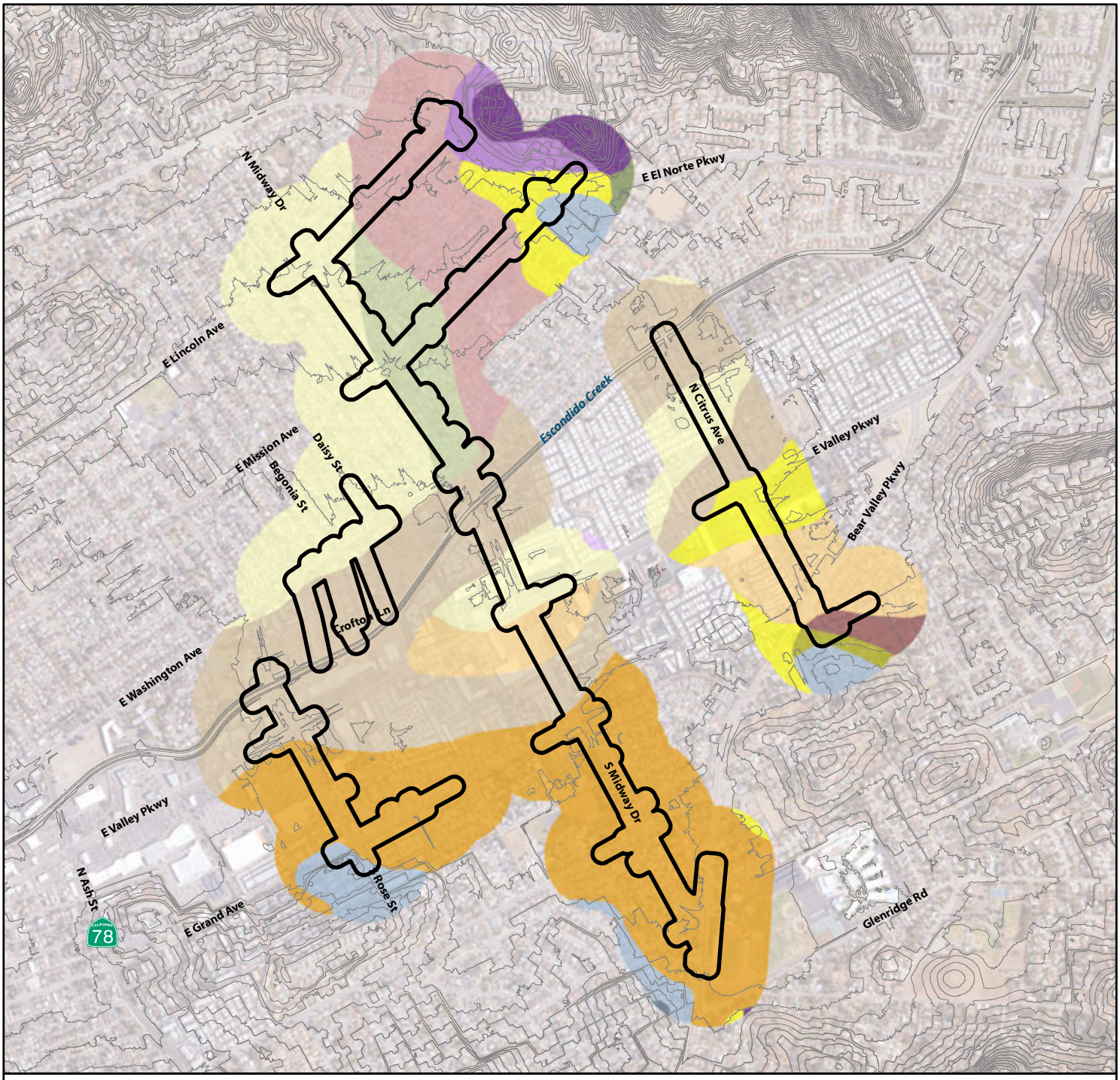
NHD

East Valley Parkway & Midway Drive
Drainage Improvements

Balk Biological, Inc.

N

0 1.5 Miles



Survey Area

Soils

- Fallbrook sandy loam, 9 to 15 percent slopes, eroded
- Fallbrook sandy loam, 15 to 30 percent slopes, eroded
- Greenfield sandy loam, 0 to 2 percent slopes
- Greenfield sandy loam, 2 to 5 percent slopes
- Placentia sandy loam, thick surface, 0 to 2 percent slo pes
- Placentia sandy loam, thick surface, 2 to 9 percent slo pes
- Ramona sandy loam, 0 to 2 percent slopes, MLRA 19
- Ramona sandy loam, 2 to 5 percent slopes
- Ramona sandy loam, 5 to 9 percent slopes
- Reiff fine sandy loam, 0 to 2 percent slopes
- Visalia sandy loam, 0 to 2 percent slopes
- Visalia sandy loam, 2 to 5 percent slopes
- Vista coarse sandy loam, 5 to 9 percent slopes
- Vista coarse sandy loam, 9 to 15 percent slopes, MLRA 20
- Vista coarse sandy loam, 15 to 30 percent slopes, MLRA 20

Source: USDA NRCS; Aerial Photo: USDA NAIP 2022

Figure 5

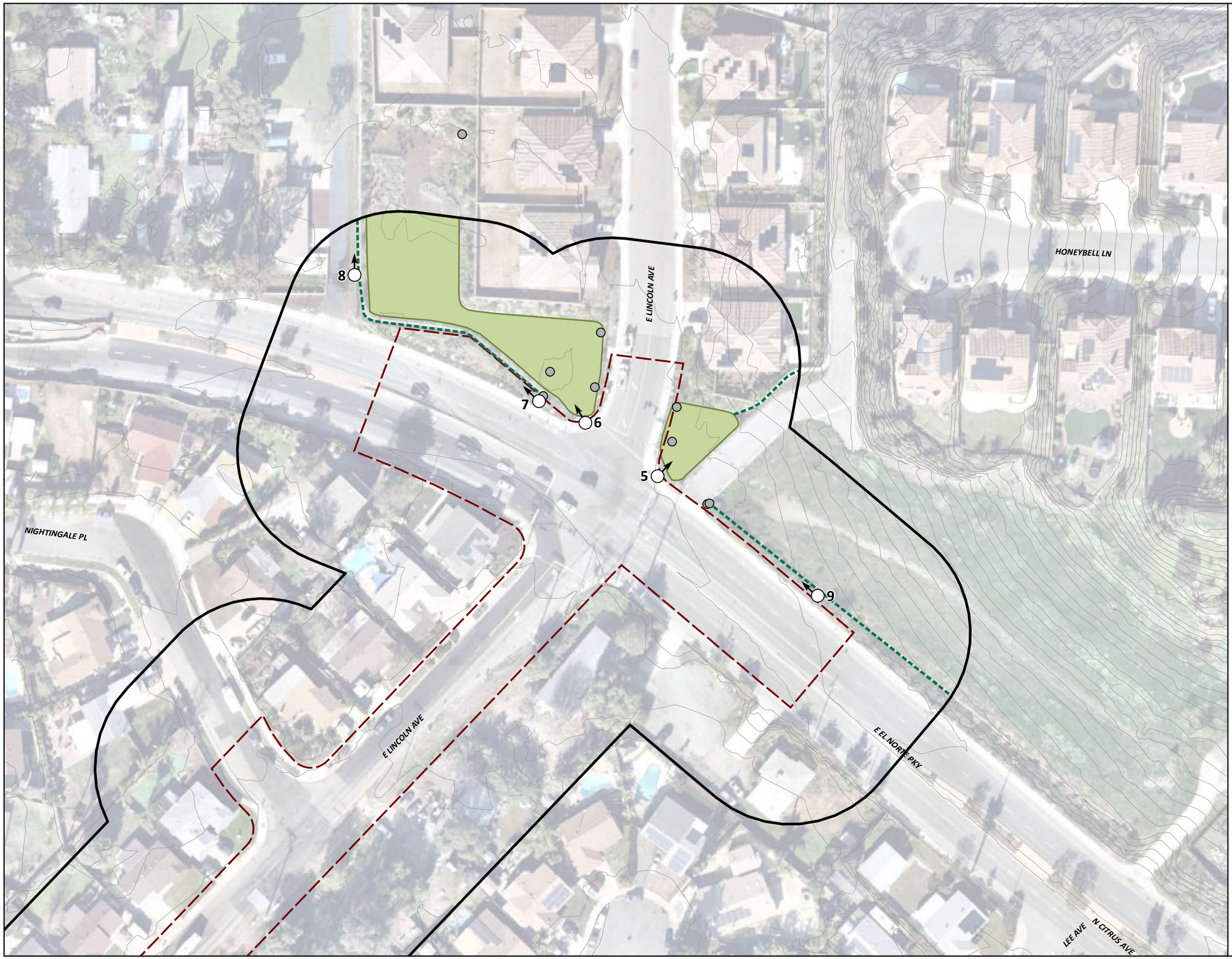
Soils and Topography

East Valley Parkway & Midway Drive
Drainage Improvements

Balk Biological, Inc.

N

0 1,500 Feet



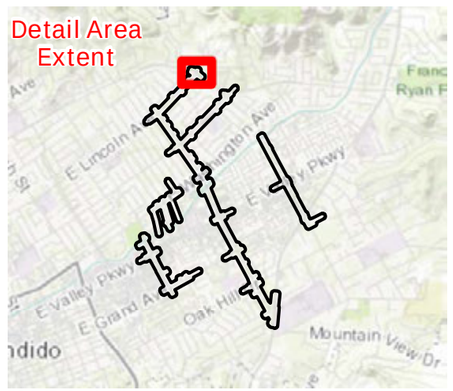


Figure 6 - Page 1 of 7

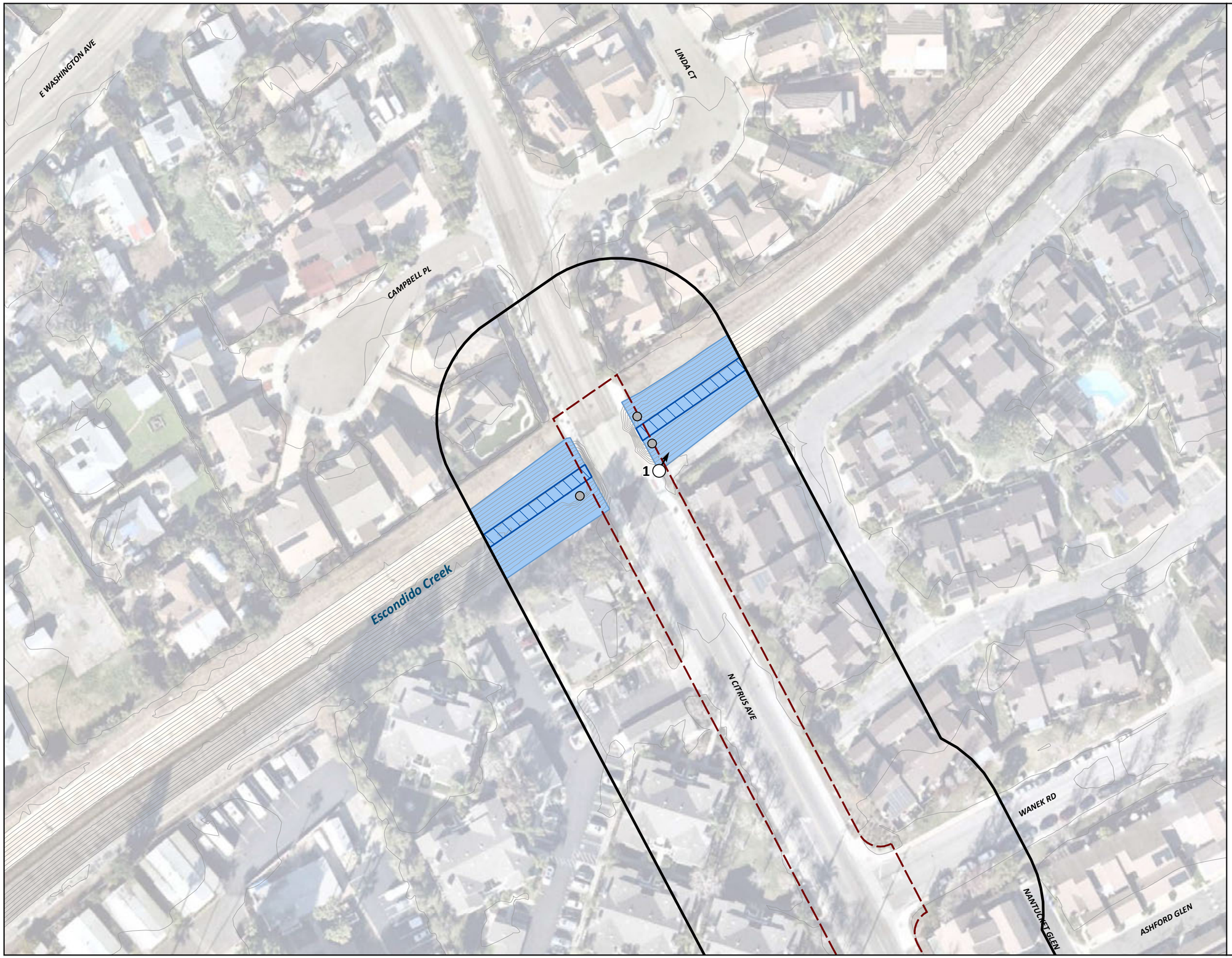
Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE
DRAINAGE IMPROVEMENTS

N
0 80 Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023



Survey Area
Project Impacts
Photo Location
Culvert
Topographic Contour (2-foot Interval)

Corps/RWQCB Aquatic Resources

Non-wetland Waters

CDFW Streambed

Concrete-lined Channel

Figure 6 - Page 2 of 7

Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE
DRAINAGE IMPROVEMENTS

N
0 80 Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023

Survey Area
Project Impacts
Culvert
Topographic Contour (2-foot Interval)

Corps/RWQCB Aquatic Resources

Non-wetland Waters

CDFW Streambed

Concrete-lined Channel

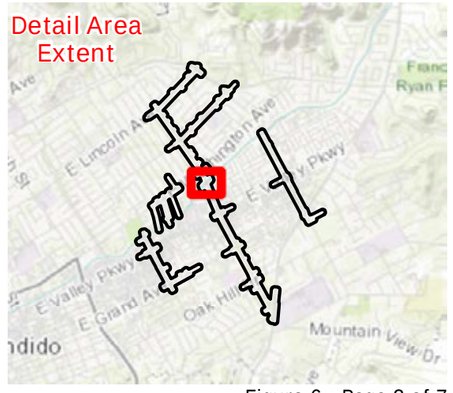


Figure 6 - Page 3 of 7

Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE
DRAINAGE IMPROVEMENTS

N
0
80
Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023

ASTER ST
BEGONIA ST
CROFTON LN
Escondido Creek
E VALLEY PKY

Survey Area
Project Impacts
Culvert
Topographic Contour (2-foot Interval)

Corps/RWQCB Aquatic Resources

Non-wetland Waters

CDFW Streambed

Concrete-lined Channel

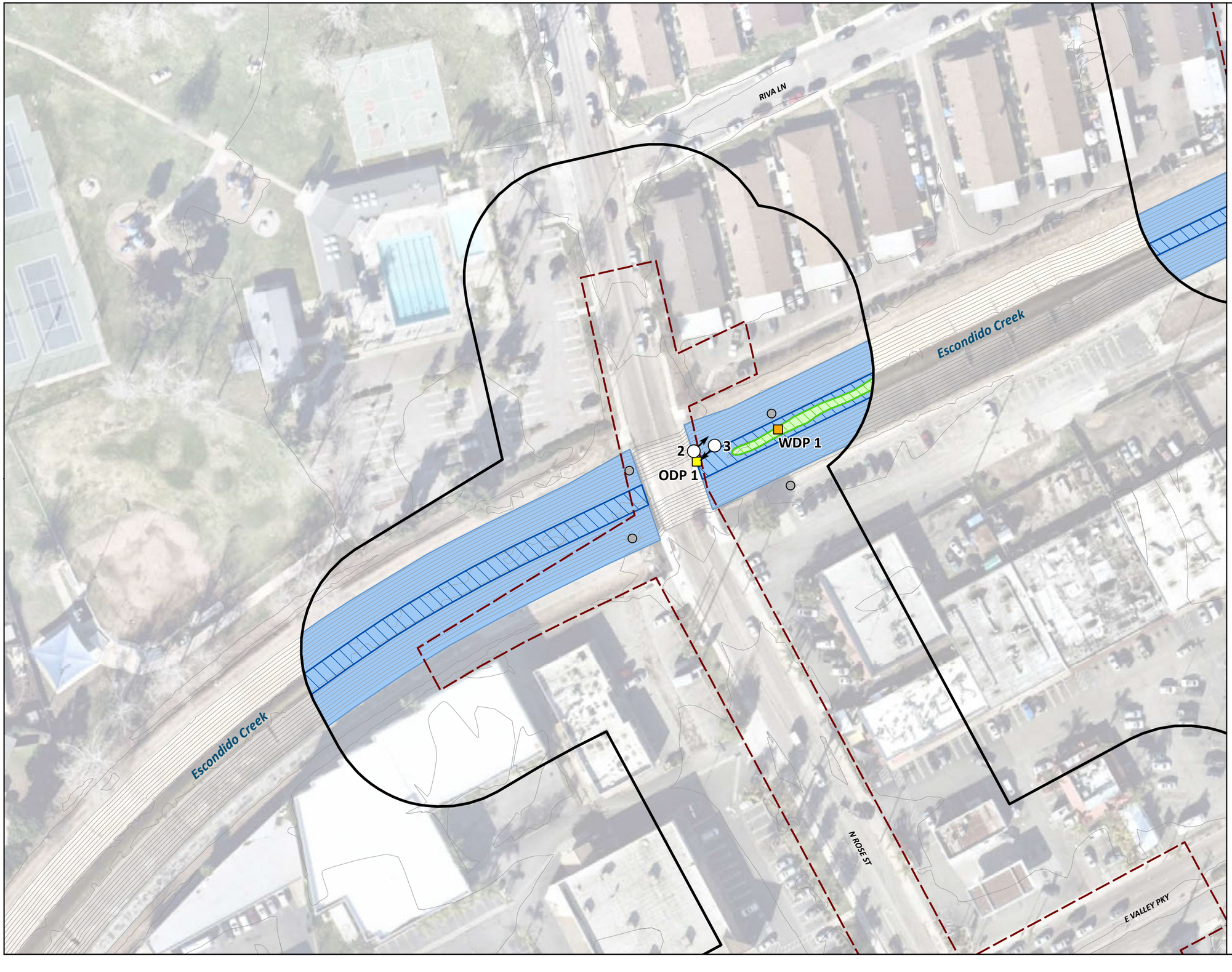
Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE
DRAINAGE IMPROVEMENTS

N
0
80
Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023



Survey Area
Project Impacts
Photo Location
OHWM Datasheet Point (ODP)
Wetland Data Form Point (WDP)
Culvert
Topographic Contour (2-foot Interval)

Corps/RWQCB Aquatic Resources

Non-Wetland Waters - Federal Wetland (Three parameter wetland within OHWM)
Non-wetland Waters

CDFW Streambed

Freshwater Marsh
Concrete-lined Channel

Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE DRAINAGE IMPROVEMENTS

N
0
80
Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023

Survey Area
Project Impacts
Photo Location
OHWM Datasheet Point (ODP)
Culvert
Topographic Contour (2-foot Interval)

Corps/RWQCB Aquatic Resources

Non-wetland Waters

CDFW Streambed

Concrete-lined Channel

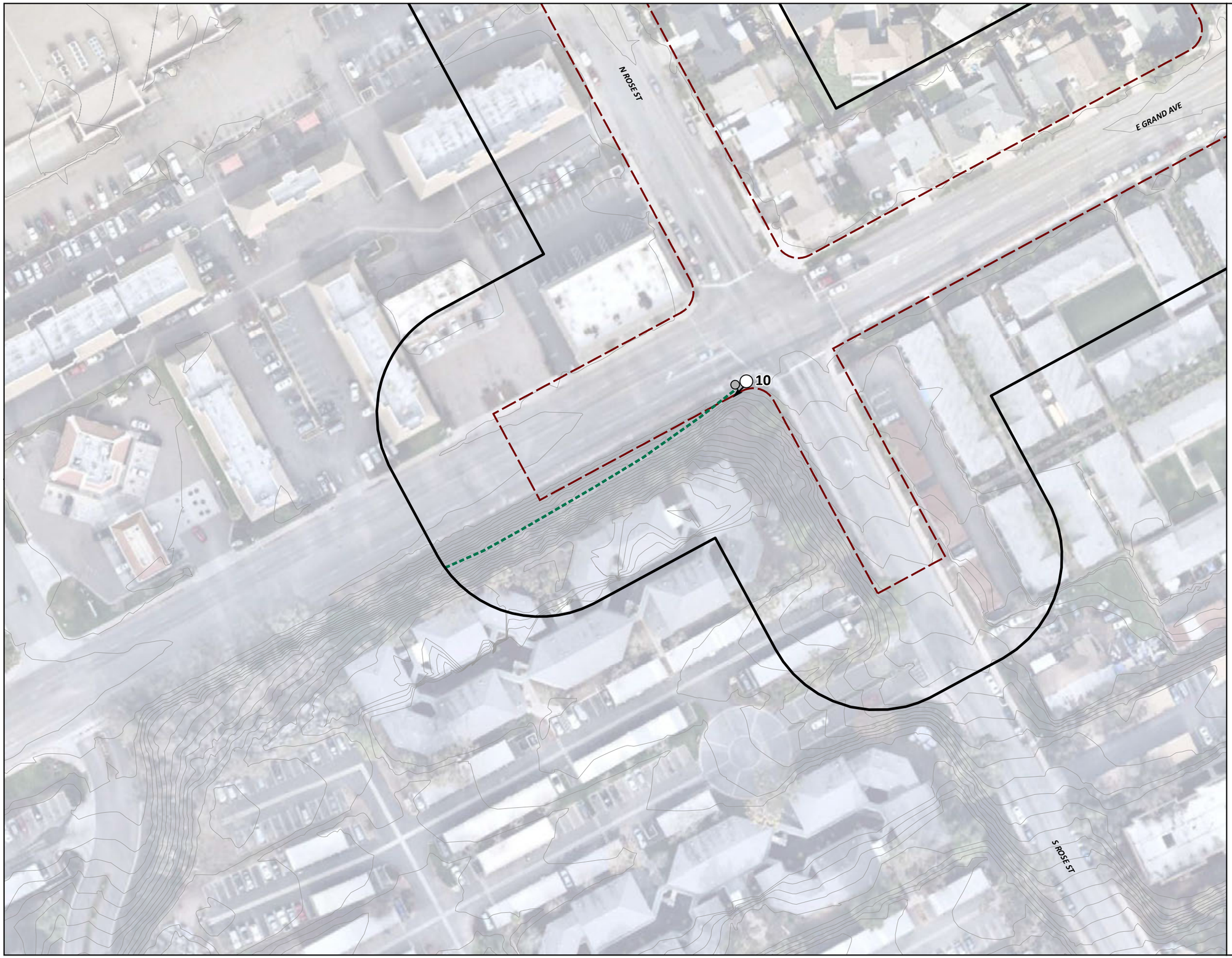
Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE
DRAINAGE IMPROVEMENTS

N
0 80 Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023



Survey Area
Project Impacts
Photo Location
Culvert
Topographic Contour (2-foot Interval)

Non-Jurisdictional Features

Brow Ditch

Aquatic Resources

EAST VALLEY PARKWAY & MIDWAY DRIVE
DRAINAGE IMPROVEMENTS

N
0
80
Feet

Balk Biological, Inc.

Aerial Photo: SANDAG, SanGIS, Nearmap 2023

Attachment B

Representative Photographs

Photo 1: View facing northeast across the Escondido Creek channel at the North Citrus Avenue crossing. Escondido Creek is a concrete-lined channel at this location that conveys perennial surface flows. Culvert outlets are visible at center.

Photo 2: View facing east/upstream along the Escondido Creek channel at the North Rose Street crossing. Sediment deposits have allowed emergent freshwater marsh vegetation to persist. This is also the location of WDP-1.

Photo 3: View facing southwest along the Escondido Creek channel showing debris (rodent scat) washed away and therefore indicating the location of the OHWM at location ODP-1. Water staining along the channel banks is also visible.

Photo 4: View facing south along the tributary channel at East Grand Avenue and location of ODP-2. This concrete-lined channel also supports intermittent flows and some hydrophytic vegetation (umbrella sedge) colonizing a sediment deposit.

Photo 5: View facing northeast at detention basin/bio-swale located on the northeast side of intersection of El Norte Parkway and East Lincoln Avenue. Basin is landscaped with ornamentals and planted natives. A concrete brow ditch is just visible entering the basin at right.

Photo 6: View facing west at second larger detention basin/bio-swale located on the northwest side of intersection of El Norte Parkway and East Lincoln Avenue. Basins is maintained and similarly landscaped as the other basin.

Photo 7: View facing northwest at concrete brow ditch entering a storm drain next to the large detention basin.

Photo 8: View facing north of concrete-lined brow ditch west of the large detention basin/bioswale.

Photo 9: View facing northwest of concrete brow ditch located along edge of undeveloped lot and El Norte Parkway.

Photo 10: View facing southwest of concrete brow ditch (at left) entering culvert along East Grand Avenue.

Attachment C

Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: E. Valley PKWY & Midway Dr Drainage Imp. City/County: Escondido, San Diego Sampling Date: 9/18/24

Applicant/Owner: City of Escondido State: CA Sampling Point: WDP-1

Investigator(s): Brian Lohstroh, Mark Wolford Section, Township, Range: Sec 00, T12S, R2W

Landform (hillslope, terrace, etc.): Channel bottom Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): C - Mediterranean California Lat: 33.135352N Long: -117.0599816W Datum: WGS84

Soil Map Unit Name: Reiff fine sandy loam, 0-2% slopes NWI classification: R4SBCx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: Sediment deposits in artificial, concrete-lined channel have allowed riparian vegetation to persist

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. Nasturtium officinale	60	Yes	OBL
2. Eleocharis palustris	20	Yes	OBL
3. Polypogon monspeliensis	5	No	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % % Cover of Biotic Crust 15 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	5	x 2 =	10
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	85 (A)		90 (B)

Prevalence Index = B/A = 1.06

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: Growing in sediment deposit within concrete-lined channel

SOIL

Sampling Point: WDP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
3	GL1 2.5/5GY	100					loamy sand	sediment deposit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [x] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: concrete

Depth (inches): 3

Hydric Soil Present? Yes (●) No ( )

Remarks: Sediment deposit within concrete-lined channel

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Thin Muck Surface (C7)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [x] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	1
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number:
East Valley Parkway and Midway Drive Drainage Improvments

Site code or identifier:
Rose St and Escondido Creek

Assessor(s):
B. Lohstroh and M. Wolford

Waterway name:
Escondido Creek

Visit date:
9/18/24

Current weather conditions (check one)
- ☐ Storm/heavy rain
- ☐ Steady rain
- ☐ Intermittent rain
- ☐ Snowing
- ☑ Cloudy (95 % cover)
- ☐ Clear/Sunny

Notes on current or recent weather conditions (e.g., precipitation in previous week): No recent significant rain events

Coordinates at downstream end (decimal degrees):
Lat (N): 33.135124
Long (W): -117.060516
Datum: WGS84

Surrounding land-use within 100 m (check one or two):
- ☑ Urban/industrial/residential
- ☐ Agricultural (farmland, crops, vineyards, pasture)
- ☐ Developed open-space (e.g., golf course)
- ☐ Forested
- ☐ Other natural
- ☐ Other: _____

Describe reach boundaries:
Escondido Creek between N. Citrus Ave and N. Rose Street in Escondido, CA

Mean channel width (m):
25

Reach length (m):
40x width; min 40 m; max 200 m.
1750 (uniform channel)

Enter photo ID, or check if completed
Top down: _____ Mid down: _____
Mid up: _____ Bottom up: _____
See attached ARDR.

Disturbed or difficult conditions (check all that apply):
- ☐ Recent flood or debris flow
- ☑ Stream modifications (e.g., channelization)
- ☐ Diversions
- ☐ Discharges
- ☐ Drought
- ☐ Vegetation removal/limitations
- ☐ Other (explain in notes)
- ☐ None

Notes on disturbances or difficult site conditions:
Constructed concrete-lined channel

Observed hydrology:
100 % of reach with surface flow
N/A % of reach with sub-surface or surface flow
N/A # of isolated pools

Comments on observed hydrology:
Dry season surface flow present, approximately 5 cm depth.

Site sketch:

1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area ☐ No hydrophytes in assessment area

Species	Odd distribution?	Notes	Photo ID
Nasturtium officiale	Yes	Colonized sediment deposit	
Typha latifolia	Yes	Colonized sediment deposit	
Eleocharis palustris	Yes	Colonized sediment deposit	

Notes on hydrophytic vegetation:

Growing within sediment deposits that

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

Number of individuals quantified:
☐ None
☐ 1 to 19
☑ 20 +

(Do not count mosquitos)

Photo ID:_____

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes / No

Ephemeroptera larva
Image credit: Dieter Tracey

Plecoptera larva
Tracey Saxby

Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed?		Notes on algae cover:	Photo ID:
☐ Check if *all* observed algae appear to be deposited from an upstream source.	☐ Not detected ☐ Yes, < 10% cover ☑ Yes, ≥ 10% (check Yes in single indicator below)	Algae present throughout channel	

5. Are single indicators observed?

Indicator	Present	Notes	Photo ID
Fish	☐ Yes ☑ No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☑ Yes ☐ No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description
	See ARDR

Additional notes about the assessment:

Classification: Perennial

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present		**Intermittent**
	Few (1-19)	Absent	Absent	Absent	**Less than Perennial**
				Present	**At least intermittent**
			Present		**At least intermittent**
		Present	Absent		**Intermittent**
			Present		**Perennial**
	Many (20+)	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Ephemeral**
				Present	**At least intermittent**
		Present			**Intermittent**
Few (1-2)	None				**Intermittent**
	Few (1-19)	Absent			**Intermittent**
		Present	Absent		**Intermittent**
			Present		**Perennial**
	Many (20+)	Absent			**Intermittent**
		Present	Absent		**Perennial**
			Present		**Intermittent**
Many (3+)	None				**Intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**Perennial**
		Present			**Perennial**
	Many (20+)				**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number: East Valley Parkway and Midway Drive Drainage Improvments		
Site code or identifier: East Grand Avenue Tributary	Assessor(s): B. Lohstroh and M. Wolford	
Waterway name: Minor tributary to Escondido Creek		Visit date: 9/18/24
Current weather conditions (check one) ☐ Storm/heavy rain ☐ Steady rain ☐ Intermittent rain ☐ Snowing ☐ Cloudy (___ % cover) ☑ Clear/Sunny	Notes on current or recent weather conditions (e.g., precipitation in previous week): No recent significant rain events	Coordinates at downstream end (decimal degrees): Lat (N): 33.1315188 Long (W): -117.0554272 Datum: WGS84
Surrounding land-use within 100 m (check one or two): ☑ Urban/industrial/residential ☐ Agricultural (farmland, crops, vineyards, pasture) ☐ Developed open-space (e.g., golf course) ☐ Forested ☐ Other natural ☐ Other: _____	Describe reach boundaries: Minor tributary to Escondido Creek at E. Grand avenue in Escondido, CA	
Mean channel width (m) 12	Reach length (m): 40x width; min 40 m; max 200 m. 10 (uniform channel)	Enter photo ID, or check if completed Top down: _____ Mid down: _____ Mid up: _____ Bottom up: _____ See attached ARDR.
Disturbed or difficult conditions (check all that apply): ☐ Recent flood or debris flow ☑ Stream modifications (e.g., channelization) ☐ Diversions ☐ Discharges ☐ Drought ☐ Vegetation removal/limitations ☐ Other (explain in notes) ☐ None	Notes on disturbances or difficult site conditions: Constructed concrete-lined channel	
Observed hydrology: 100 % of reach with surface flow N/A % of reach with sub-surface or surface flow N/A # of isolated pools	Comments on observed hydrology: Dry season surface flow present, approximately 5 cm depth.	

Site sketch:

1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area ☐ No hydrophytes in assessment area

Species	Odd distribution?	Notes	Photo ID
Cyperus eragrostis	Yes	Colonized sediment deposit	

Notes on hydrophytic vegetation:

Growing within sediment deposits that

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

Number of individuals quantified: ☐ None ☑ 1 to 19 ☐ 20 +

(Do not count mosquitos)

Photo ID:_____

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes / No

Ephemeroptera larva
Image credit: Dieter Tracey

Plecoptera larva
Tracey Saxby

Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed?		Notes on algae cover:	Photo ID:
☐ Check if *all* observed algae appear to be deposited from an upstream source.	☐ Not detected ☐ Yes, < 10% cover ☑ Yes, ≥ 10% (check Yes in single indicator below)	Algae present throughout channel	

5. Are single indicators observed?

Indicator	Present	Notes	Photo ID
Fish	☐ Yes ☑ No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☑ Yes ☐ No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description
	See ARDR

Additional notes about the assessment:

Classification: Intermittent

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present		**Intermittent**
	Few (1-19)	Absent	Absent	Absent	**Less than Perennial**
				Present	**At least intermittent**
			Present		**At least intermittent**
		Present	Absent		**Intermittent**
			Present		**Perennial**
	Many (20+)	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Ephemeral**
				Present	**At least intermittent**
		Present			**Intermittent**
Few (1-2)	None				**Intermittent**
	Few (1-19)	Absent			**Intermittent**
		Present	Absent		**Intermittent**
			Present		**Perennial**
	Many (20+)	Absent			**Intermittent**
		Present	Absent		**Perennial**
			Present		**Intermittent**
Many (3+)	None				**Intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**Perennial**
		Present			**Perennial**
	Many (20+)				**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: ODP-1	Site Name: E. Valley Pkwy & Midway Dr. Drainage	Date and Time: 9/18/2024, 0940
Location (lat/long): 33.135275N, -117.060211W	Investigator(s): B. Lohstroh, M. Wolford	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

gage data	LiDAR	geologic maps
X climatic data	X satellite imagery	X land use maps
X aerial photos	X topographic maps	X Other: NWI, NRCS soils

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Concrete-lined channel, within an urban environment. No recent flood events.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Channel supports approximately 2 inches surface flow depth. Some sediment deposits present, which have been colonized by obligate hydrophytes.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- **Break in slope:**
  - *on the bank:*
  - *undercut bank:*
  - *valley bottom:*
  - Other: _____
- **Shelving:**
  - *shelf at top of bank:*
  - *natural levee:*
  - *man-made berms or levees:*
  - *other berms:* _____
- **Channel bar:**
  - *shelving (berms) on bar:*
  - *unvegetated:*
  - *vegetation transition (go to veg. indicators)*
  - *sediment transition (go to sed. indicators)*
  - *upper limit of deposition on bar:*
- **Instream bedforms and other bedload transport evidence:**
  - *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - *bedforms (e.g., pools, riffles, steps, etc.):*
  - *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- **Secondary channels:**

Sediment indicators

- X **Soil development:** b
- **Changes in character of soil:**
- **Mudcracks:**
- X **Changes in particle-sized distribution:** b
  - *transition from* _____ to _____
  - *upper limit of sand-sized particles*
- X *silt deposits:*

Vegetation Indicators

- **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- *vegetation absent to:*
- *moss to:*
- *forbs to:*
- *graminoids to:*
- *woody shrubs to:*
- *deciduous trees to:*
- *coniferous trees to:*
- **Vegetation matted down and/or bent:**
- **Exposed roots below intact soil layer:**

Ancillary indicators

- X **Wracking/presence of organic litter:** b
- **Presence of large wood:**
- X **Leaf litter disturbed or washed away:** x
- X **Water staining:** x
- **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Mouse scat deposited under bridge (leaf litter surrogate) washed away at OHWM, see photo.

Project ID #: ODP-1

Step 4 Is additional information needed to support this determination? Yes [X] No If yes, describe and attach information to datasheet:

Step 5 Describe rationale for location of OHWM

Water stains obvious along smooth concrete lining of channel, with dry season surface flows present.

Additional observations or notes

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? [X] Yes No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	Photo log provided in ARDR.

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

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Project ID #: ODP-2	Site Name: E. Valley Pkwy & Midway Dr. Drainage	Date and Time: 9/18/2024, 1240
Location (lat/long): 33.1315188N, -117.0554272W	Investigator(s): B. Lohstroh, M. Wolford	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

gage data	LiDAR	geologic maps
X climatic data	X satellite imagery	X land use maps
X aerial photos	X topographic maps	X Other: NWI, NRCS soils

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Concrete-lined channel, within an urban environment. No recent flood events.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Channel supports approximately 0.5-1 inch surface flow depth. Some sediment deposits present, which have been colonized by hydrophytes.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- **Break in slope:**
  - *on the bank:*
  - *undercut bank:*
  - *valley bottom:*
  - Other: _____
- **Shelving:**
  - *shelf at top of bank:*
  - *natural levee:*
  - *man-made berms or levees:*
  - *other berms:* _____
- **Channel bar:**
  - *shelving (berms) on bar:*
  - *unvegetated:*
  - *vegetation transition (go to veg. indicators)*
  - *sediment transition (go to sed. indicators)*
  - *upper limit of deposition on bar:*
- **Instream bedforms and other bedload transport evidence:**
  - *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - *bedforms (e.g., pools, riffles, steps, etc.):*
  - *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- **Secondary channels:**

Sediment indicators

- X **Soil development:** b
- **Changes in character of soil:**
- **Mudcracks:**
- X **Changes in particle-sized distribution:** b
  - *transition from* _____ to _____
  - *upper limit of sand-sized particles*
- X *silt deposits:*

Vegetation Indicators

- **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- *vegetation absent to:*
- *moss to:*
- *forbs to:*
- *graminoids to:*
- *woody shrubs to:*
- *deciduous trees to:*
- *coniferous trees to:*
- **Vegetation matted down and/or bent:**
- **Exposed roots below intact soil layer:**

Ancillary indicators

- X **Wracking/presence of organic litter:** b
- **Presence of large wood:**
- X **Leaf litter disturbed or washed away:** x
- X **Water staining:** x
- **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Mouse scat deposited under bridge (leaf litter surrogate) washed away at OHWM, see photo.

Project ID #: ODP-2

Step 4 Is additional information needed to support this determination? Yes [X] No If yes, describe and attach information to datasheet:

Step 5 Describe rationale for location of OHWM

Water stains obvious along smooth concrete lining of channel, with dry season surface flows present.

Additional observations or notes

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? [X] Yes No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
	Photo log provided in ARDR.

Attachment D

Climatological Data

Monthly Total Precipitation for ESCONDIDO NO. 2, CA

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1994	1.22	4.91	3.72	2.29	0.11	0.00	0.74	T	0.00	T	0.61	1.05	14.65
1995	9.47	1.84	8.81	1.84	0.67	0.97	0.00	0.00	0.00	0.00	0.13	1.17	24.90
1996	2.30	4.08	1.53	0.60	0.03	0.00	0.09	0.00	0.00	0.60	0.71	2.53	12.47
1997	6.07	0.80	0.00	T	0.04	T	0.06	0.00	2.00	0.01	2.88	1.86	13.72
1998	3.89	11.34	3.89	2.41	1.46	0.06	0.00	T	0.10	0.12	1.56	0.88	25.71
1999	2.27	0.56	0.68	2.09	0.00	0.31	0.10	0.13	0.00	0.00	0.01	0.47	6.62
2000	0.67	M	1.41	1.11	0.08	0.03	0.00	0.00	0.14	M	0.40	0.07	M
2001	1.85	3.63	1.51	1.57	0.23	0.00	0.00	0.00	0.02	0.00	1.73	1.14	M
2002	0.49	0.13	1.28	0.90	0.20	0.00	0.00	0.00	0.00	0.03	0.75	2.05	M
2003	M	M	1.94	2.99	0.61	0.22	0.05	0.00	0.00	M	0.73	1.42	M
2004	0.33	5.18	0.56	M	0.00	M	0.00	0.00	0.00	4.73	0.50	3.19	M
2005	7.64	7.06	1.67	0.98	0.05	0.02	M	M	M	M	M	M	M
2006	1.50	2.04	M	M	M	T	0.52	M	M	0.01	0.00	M	M
2007	M	M	M	0.00	0.00	0.00	0.00	1.45	0.00	0.00	M	0.00	M
2008	M	M	M	M	M	M	M	M	0.00	M	M	M	M
2009	M	M	M	M	M	M	M	M	M	M	M	M	M
2010	M	M	M	M	M	M	0.00	0.00	0.08	4.14	1.33	8.85	M
2011	1.16	2.91	2.22	0.42	0.65	0.03	0.09	0.00	0.12	0.54	3.10	1.08	12.32
2012	0.69	1.82	2.34	1.74	0.11	0.00	0.00	0.02	0.06	0.71	0.69	2.82	11.00
2013	1.56	0.89	1.74	0.09	0.61	0.00	0.06	0.00	0.00	1.14	0.39	0.38	6.86
2014	0.19	2.13	0.44	1.02	0.00	0.00	0.06	0.11	0.02	0.00	0.79	3.63	8.39
2015	0.47	0.92	1.47	0.32	1.30	0.29	1.22	0.00	0.91	0.55	1.00	1.50	9.95
2016	4.42	0.22	1.27	1.07	0.39	0.00	0.00	0.00	0.66	0.05	2.24	4.79	15.11
2017	7.80	7.06	0.44	0.00	1.27	0.01	0.13	0.01	0.01	0.00	0.00	0.00	16.73
2018	2.78	0.94	2.15	0.03	0.14	0.00	0.00	0.00	0.00	0.77	2.29	2.26	11.36
2019	3.57	6.67	1.67	0.16	1.40	0.07	0.02	0.00	0.22	0.00	4.75	4.47	23.00
2020	0.47	0.79	5.61	5.27	0.02	0.14	0.00	0.00	0.00	0.07	0.73	0.92	14.02
2021	3.05	0.23	1.89	0.10	0.03	0.00	0.17	0.16	0.04	1.19	0.00	4.92	11.78
2022	0.32	0.99	1.86	0.15	0.00	0.07	0.00	0.00	0.29	0.23	2.01	1.88	7.80
2023	10.26	3.73	8.13	0.15	0.57	0.04	0.00	2.75	0.05	0.09	1.00	0.59	27.36
2024	3.39	5.70	3.48	0.38	0.12	0.00	0.00	0.00	0.03	M	M	M	M
Mean	2.99	3.06	2.37	1.06	0.37	0.08	0.12	0.17	0.17	0.60	1.17	2.07	14.41

Climatological Data for ESCONDIDO NO. 2, CA - September 2024

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2024-09-01	92	64	78.0	38	28	0.00	M	M
2024-09-02	94	66	80.0	40	30	0.00	M	M
2024-09-03	98	67	82.5	43	33	0.00	M	M
2024-09-04	96	68	82.0	42	32	0.00	M	M
2024-09-05	104	71	87.5	48	38	0.00	M	M
2024-09-06	112	75	93.5	54	44	0.00	M	M
2024-09-07	106	76	91.0	51	41	0.00	M	M
2024-09-08	109	79	94.0	54	44	0.00	M	M
2024-09-09	104	77	90.5	51	41	0.00	M	M
2024-09-10	98	68	83.0	43	33	0.00	M	M
2024-09-11	86	63	74.5	35	25	0.00	M	M
2024-09-12	85	61	73.0	33	23	0.00	M	M
2024-09-13	85	65	75.0	35	25	0.00	M	M
2024-09-14	83	65	74.0	34	24	0.00	M	M
2024-09-15	75	65	70.0	30	20	0.00	M	M
2024-09-16	74	59	66.5	27	17	0.03	M	M
2024-09-17	77	57	67.0	27	17	0.00	M	M
2024-09-18	81	57	69.0	29	19	0.00	M	M
2024-09-19	79	64	71.5	32	22	0.00	M	M
2024-09-20	75	61	68.0	28	18	0.00	M	M
2024-09-21	80	59	69.5	30	20	0.00	M	M
2024-09-22	85	61	73.0	33	23	0.00	M	M
2024-09-23	88	63	75.5	36	26	0.00	M	M
2024-09-24	87	64	75.5	36	26	0.00	M	M
2024-09-25	79	61	70.0	30	20	0.00	M	M
2024-09-26	83	61	72.0	32	22	0.00	M	M
2024-09-27	81	59	70.0	30	20	0.00	M	M
2024-09-28	86	58	72.0	32	22	0.00	M	M
2024-09-29	87	57	72.0	32	22	0.00	M	M
2024-09-30	91	54	72.5	33	23	0.00	M	M
Average|Sum	88.7	64.2	76.4	1098	798	0.03	M	M

Antecedent Precipitation Tool v2.0 - Watershed Sampling Summary

Generated on 2024-10-23

User Inputs

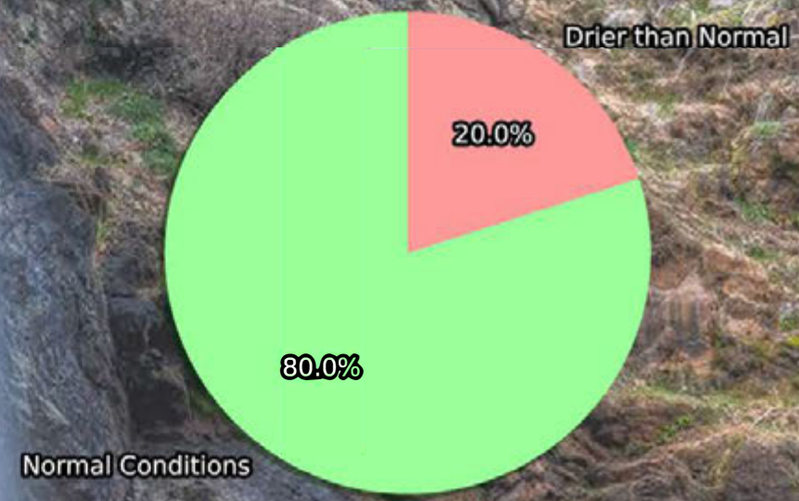
Coordinates	33.14048, -117.053393
Date	2024-09-18
Geographic Scope	HUC12
Used Gridded Precipitaton	False

Intermediate Data

Hydrologic Unit Code	180703030401
Watershed Size	43.54 mi^2
# Random Sampling Points	5

Preliminary Result

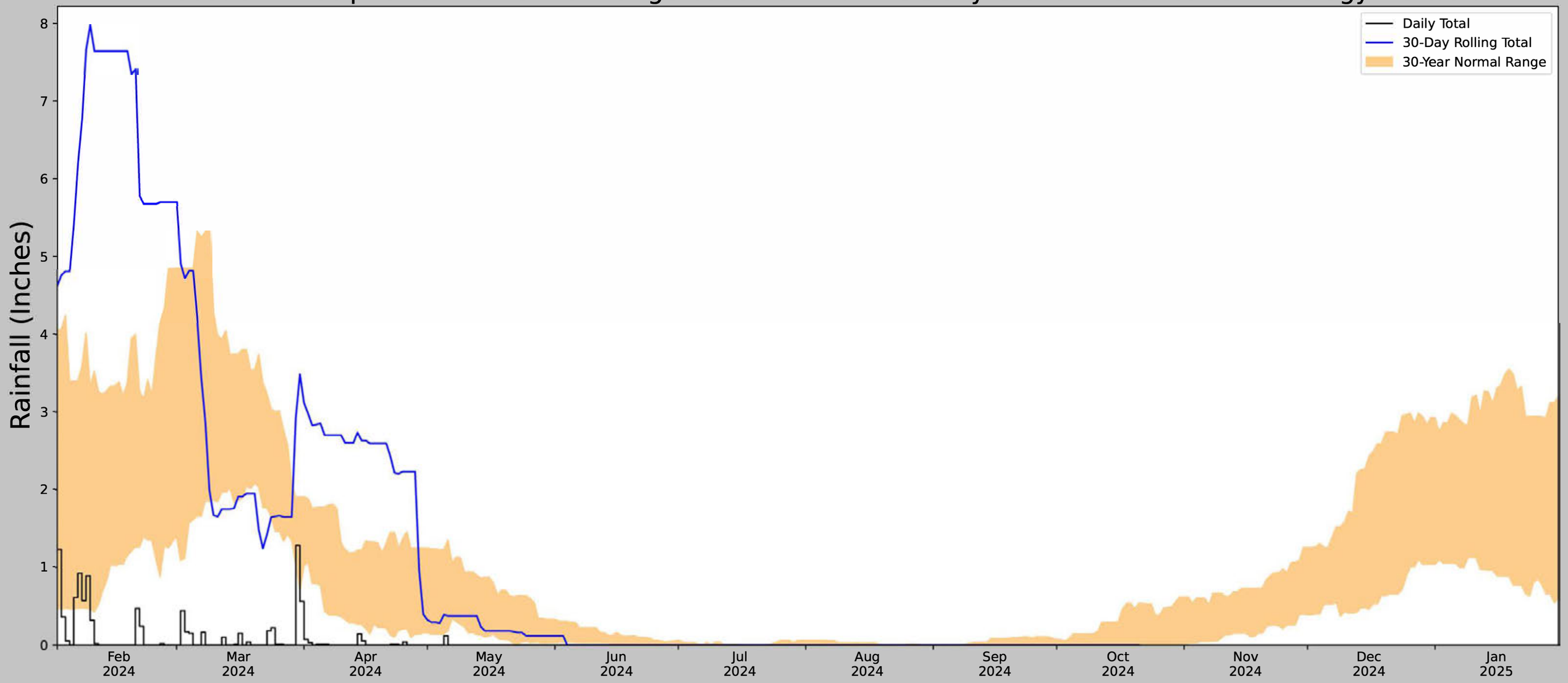
Average Antecedent Precipitation Score	11.4
Preliminary Determination	Normal Conditions



Sampling Point Breakdown

Antecedent Precipitation Score	Antecedent Precipitation Condition	WebWIMP H_2O Balance	Drought Index (PDSI)	# of Points
12	Normal Conditions	Dry Season	Mild wetness (2024-08)	4
9	Drier than Normal	Dry Season	Mild wetness (2024-08)	1

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.14048, -117.053393
Observation Date	2024-09-18
Elevation (ft)	673.869
Drought Index (PDSI)	Mild wetness (2024-08)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-18	0.0	0.079921	0.0	Normal	2	3	6
2024-08-19	0.0	0.005906	0.0	Normal	2	2	4
2024-07-20	0.0	0.003543	0.0	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

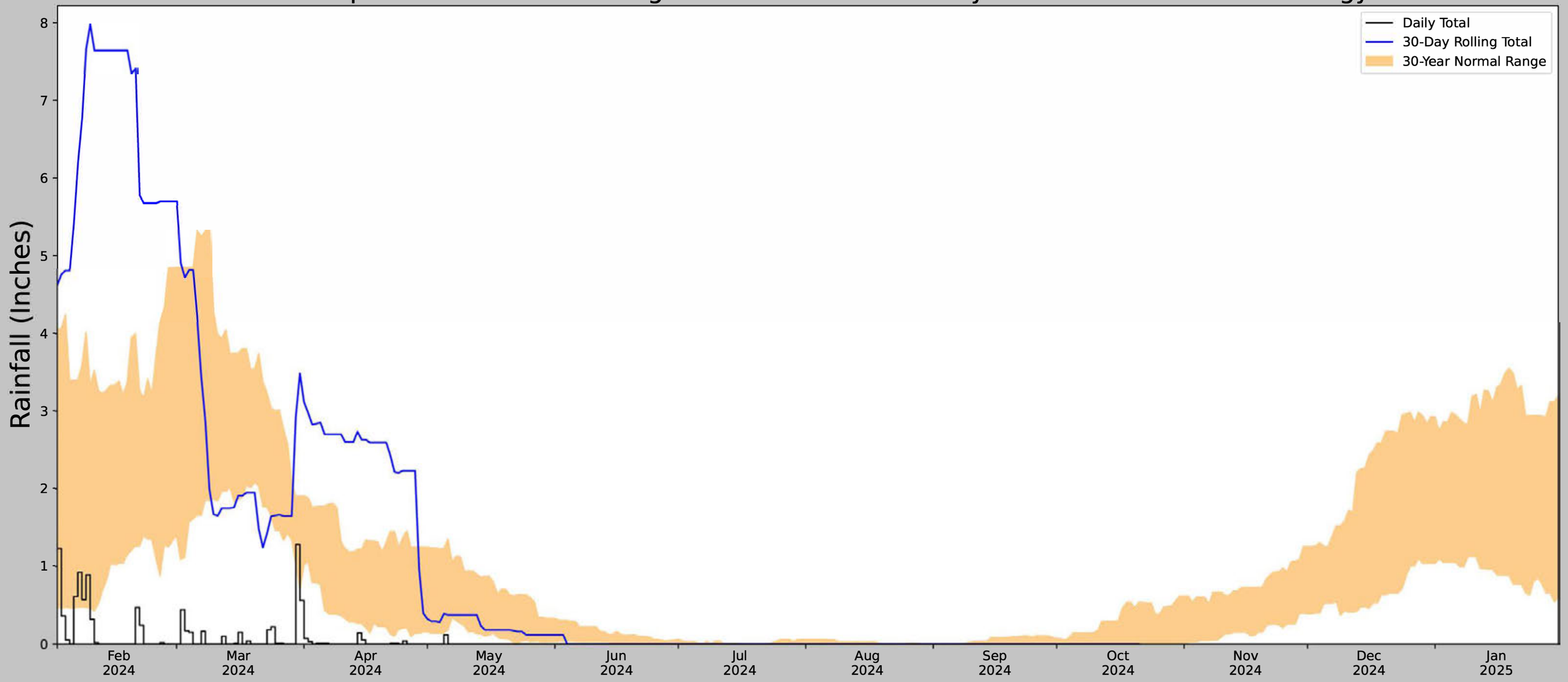
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ESCONDIDO #2	33.1211, -117.09	600.066	2.506	73.803	1.313	10094	72
ESCONDIDO 0.8 NNE	33.1474, -117.0656	733.924	2.301	133.858	1.343	0	18
ESCONDIDO 2.5 SSE	33.1055, -117.0482	689.961	2.648	89.895	1.43	650	0
SAN MARCOS 2.5 ENE	33.1472, -117.1316	666.011	3.008	65.945	1.552	50	0
SAN PASQUAL ANIMAL PK	33.0956, -116.9975	419.948	5.636	180.118	3.551	432	0
POWAY VALLEY	33.0194, -117.0308	647.966	7.818	47.9	3.893	95	0
CARLSBAD MCCLELLAN PALOMAR AP	33.13, -117.2764	312.992	10.803	287.074	7.963	31	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.14155, -117.02338
Observation Date	2024-09-18
Elevation (ft)	673.869
Drought Index (PDSI)	Mild wetness (2024-08)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-18	0.0	0.079921	0.0	Normal	2	3	6
2024-08-19	0.0	0.005906	0.0	Normal	2	2	4
2024-07-20	0.0	0.003543	0.0	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

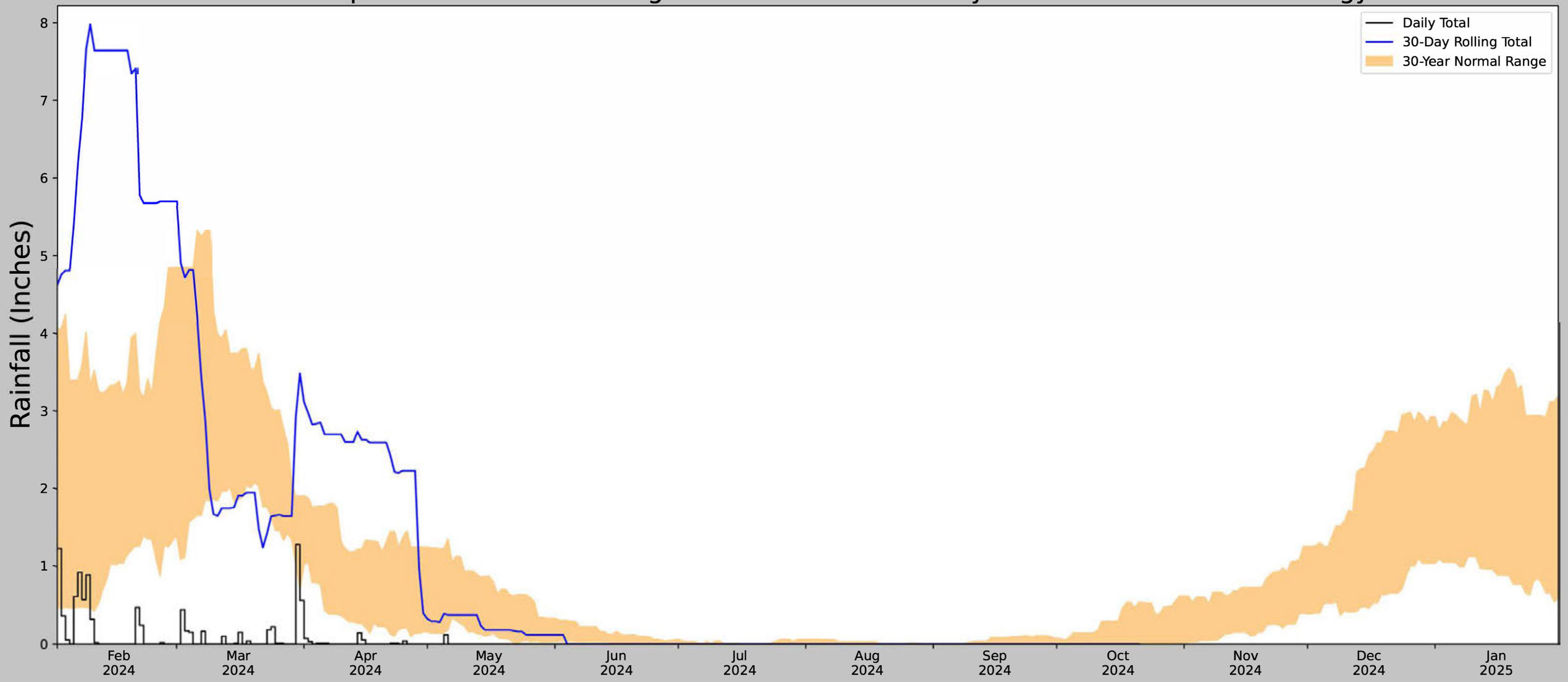
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ESCONDIDO #2	33.1211, -117.09	600.066	4.105	73.803	2.15	10094	72
ESCONDIDO 0.8 NNE	33.1474, -117.0656	733.924	2.301	133.858	1.343	0	18
ESCONDIDO 2.5 SSE	33.1055, -117.0482	689.961	2.648	89.895	1.43	650	0
SAN MARCOS 2.5 ENE	33.1472, -117.1316	666.011	3.008	65.945	1.552	50	0
SAN PASQUAL ANIMAL PK	33.0956, -116.9975	419.948	5.636	180.118	3.551	432	0
POWAY VALLEY	33.0194, -117.0308	647.966	7.818	47.9	3.893	95	0
CARLSBAD MCCLELLAN PALOMAR AP	33.13, -117.2764	312.992	10.803	287.074	7.963	31	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.210632, -117.091881
Observation Date	2024-09-18
Elevation (ft)	1088.542723
Drought Index (PDSI)	Mild wetness (2024-08)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-18	0.0	0.079921	0.0	Normal	2	3	6
2024-08-19	0.0	0.005906	0.0	Normal	2	2	4
2024-07-20	0.0	0.003543	0.0	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

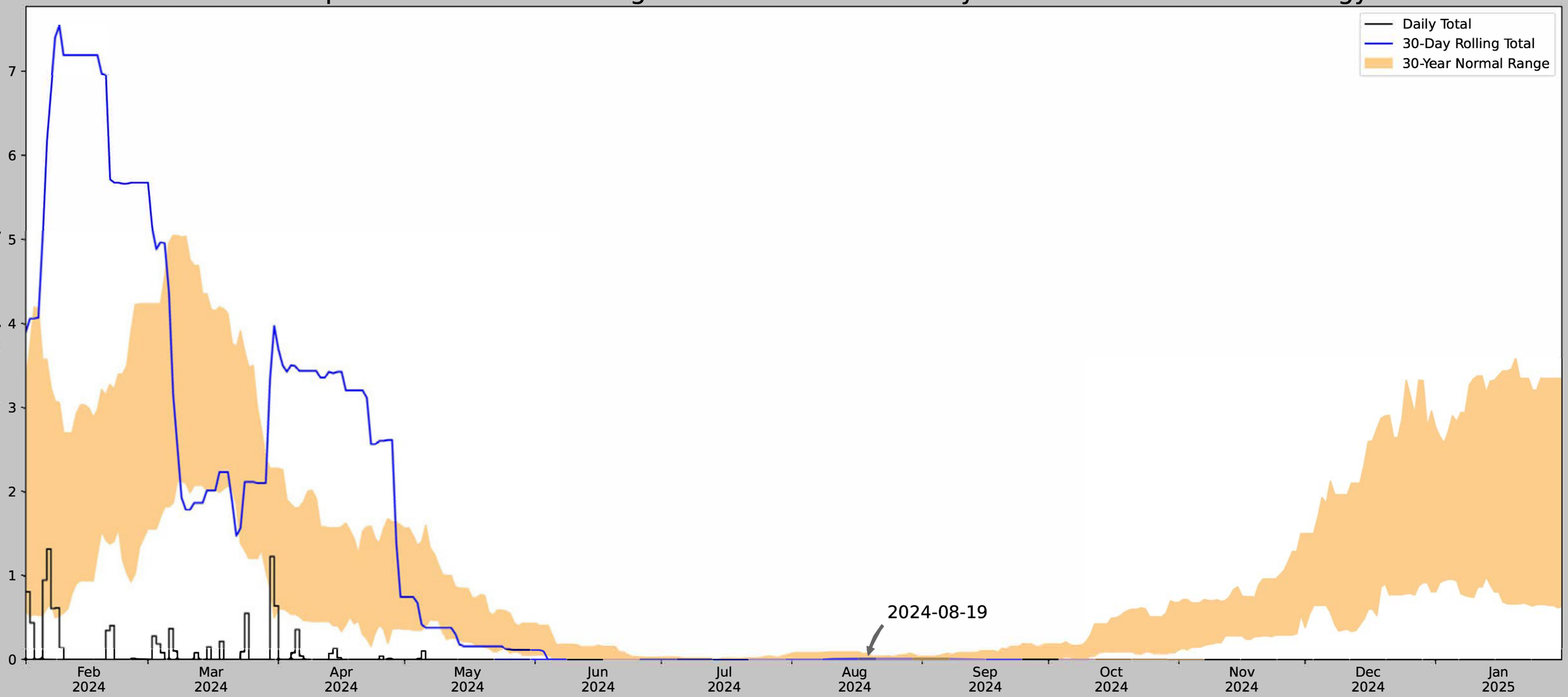
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ESCONDIDO #2	33.1211, -117.09	600.066	6.187	488.477	5.806	10094	72
ESCONDIDO 0.8 NNE	33.1474, -117.0656	733.924	2.301	133.858	1.343	0	18
ESCONDIDO 2.5 SSE	33.1055, -117.0482	689.961	2.648	89.895	1.43	650	0
SAN MARCOS 2.5 ENE	33.1472, -117.1316	666.011	3.008	65.945	1.552	50	0
SAN PASQUAL ANIMAL PK	33.0956, -116.9975	419.948	5.636	180.118	3.551	432	0
POWAY VALLEY	33.0194, -117.0308	647.966	7.818	47.9	3.893	95	0
CARLSBAD MCCLELLAN PALOMAR AP	33.13, -117.2764	312.992	10.803	287.074	7.963	31	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.187149, -116.98962
Observation Date	2024-09-18
Elevation (ft)	1773.856713
Drought Index (PDSI)	Mild wetness (2024-08)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-18	0.011811	0.101969	0.0	Dry	1	3	3
2024-08-19	0.0	0.073228	0.011811	Normal	2	2	4
2024-07-20	0.0	0.011811	0.0	Normal	2	1	2
Result							Drier than Normal - 9

US Army Corps of Engineers

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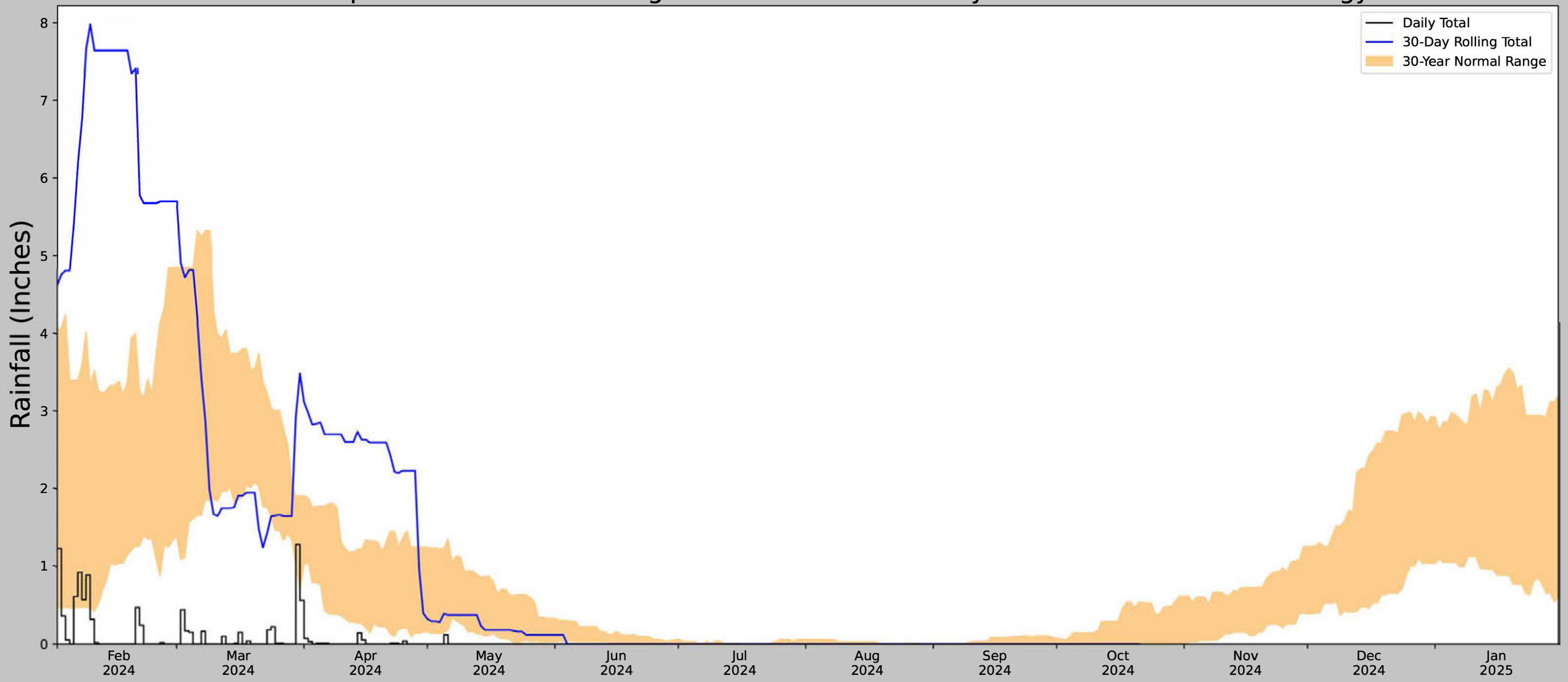
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RAMONA AP	33.0381, -116.9161	1384.843	11.143	389.014	9.349	9241	90
RAMONA 1.8 WSW	33.0256, -116.8976	1395.013	1.376	10.17	0.633	1	0
RAMONA FIRE DEPT	33.0114, -116.9081	1470.144	1.902	85.301	1.018	1940	0
ESCONDIDO 7.2 SE	33.0563, -116.9925	1584.974	4.6	200.131	2.991	1	0
SAN DIEGO COUNTRY ESTATES 1.5	33.0158, -116.8068	1474.081	6.516	89.238	3.514	9	0
POWAY 3.2NE	32.9956, -117.0044	1206.037	5.899	178.806	3.709	3	0
POWAY VALLEY	33.0194, -117.0308	647.966	6.769	736.877	8.034	157	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.146548, -117.10266
Observation Date	2024-09-18
Elevation (ft)	706.066595
Drought Index (PDSI)	Mild wetness (2024-08)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-18	0.0	0.079921	0.0	Normal	2	3	6
2024-08-19	0.0	0.005906	0.0	Normal	2	2	4
2024-07-20	0.0	0.003543	0.0	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ESCONDIDO #2	33.1211, -117.09	600.066	1.905	106.001	1.059	10094	72
ESCONDIDO 0.8 NNE	33.1474, -117.0656	733.924	2.301	133.858	1.343	0	18
ESCONDIDO 2.5 SSE	33.1055, -117.0482	689.961	2.648	89.895	1.43	650	0
SAN MARCOS 2.5 ENE	33.1472, -117.1316	666.011	3.008	65.945	1.552	50	0
SAN PASQUAL ANIMAL PK	33.0956, -116.9975	419.948	5.636	180.118	3.551	432	0
POWAY VALLEY	33.0194, -117.0308	647.966	7.818	47.9	3.893	95	0
CARLSBAD MCCLELLAN PALOMAR AP	33.13, -117.2764	312.992	10.803	287.074	7.963	31	0