APPENDIX A

Plant Compendium

Appendix A
Plant Compendium

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
		Eudicots								
AIZOACEAE—Fig-marigold Family	*Carpobrotus edulis*	hottentot fig	X	X	X	X		X		X
ANACARDIACEAE—Sumac Or Cashew Family	*Malosma laurina*	laurel sumac	X			X	X			
	Rhus chinensis	Chinese sumac				X				
	Rhus integrifolia	lemonade sumac	X		X	X	X			X
	Schinus molle	Peruvian peppertree			X	X	X	X		
	Schinus terebinthifolius	Brazilian peppertree	X	X		X	X	X		X
	Toxicodendron diversilobum	Pacific poison oak			X					
APIACEAE—Carrot Family	*Apium graveolens*	wild celery			X		X			
	Conium maculatum	poison hemlock			X					
	Foeniculum vulgare	sweet fennel	X	X	X	X	X			X
APOCYNACEAE—Dogbane Family	*Nerium oleander*	oleander				X	X			
ARALIACEAE—Ginseng Family	*Hedera helix*	English ivy		X			X			X
ASTERACEAE—Sunflower Family	*Ambrosia monogyra*	singlewhorl burrobrush				X	X			X
	Ambrosia psilostachya	Cuman ragweed			X	X	X			
	Artemisia californica	coastal sagebrush				X				
	Artemisia dracunculus	tarragon		X	X					
	Artemisia palmeri	San Diego sagewort	X		X	X	X			
	Baccharis pilularis	Coyote brush						X		

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
	Baccharis pilularis ssp. *consanguinea*	coyotebrush			X					X
	Baccharis salicifolia ssp. *salicifolia*	mulefat		X	X	X	X			X
	Baccharis salicina	willow baccharis			X		X			
	Baccharis sarothroides	desertbroom			X	X	X	X		X
	Bahiopsis laciniata	San Diego County viguiera	X		X	X	X			X
	Corethrogyne filaginifolia var. *incana*	San Diego sand aster					X			
	Cotula australis	Australian waterbuttons			X					
	Encelia californica	California brittlebush			X	X	X			X
	Erigeron canadensis	Canadian horseweed	X							
	Euthamia occidentalis	western goldentop					X			
	Glebionis coronaria	crowndaisy				X	X			
	Isocoma menziesii	Menzies' goldenbush			X	X	X			
	Isocoma menziesii var. *menziesii*	Menzies' goldenbush					X			
	Iva hayesiana	San Diego marsh-elder	X		X	X	X			X
	Lactuca serriola	prickly lettuce	X		X	X	X		X	X
	Pseudognaphalium stramineum	cottonbatting plant			X					
	Stephanomeria diegensis	San Diego wirelettuce				X				

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
	Xanthium strumarium	rough cocklebur		X		X	X	X		X
BRASSICACEAE—Mustard Family	*Brassica nigra*	black mustard					X			X
	Nasturtium officinale	watercress	X		X		X		X	
	Raphanus sativus	cultivated radish		X		X				X
CACTACEAE—Cactus Family	*Cylindropuntia californica* var. *parkeri*	brownspined pricklypear				X				
	Opuntia littoralis	coastal pricklypear	X			X				
	Opuntia sp.					X				X
CAPRIFOLIACEAE—Honeysuckle Family	*Lonicera hispidula*	pink honeysuckle					X			
	Lonicera sp.			X						
CHENOPODIACEAE—Goosefoot Family	*Atriplex canescens* var. *canescens*	fourwing saltbush				X				
	Atriplex canescens var. *laciniata*	fourwing saltbush								X
	Atriplex semibaccata	Australian saltbush			X					X
	Salsola tragus	prickly Russian thistle			X	X		X		X
CONVOLVULACEAE—Morning-glory Family	*Calystegia purpurata* ssp. *purpurata*	Pacific false bindweed								X
CUCURBITACEAE—Gourd Family	*Marah macrocarpa*	Cucamonga manroot				X				
EUPHORBIACEAE—Spurge Family	*Ricinus communis*	castorbean	X	X	X	X	X	X		X
	Acacia cyclops	coastal wattle	X							
	Acacia sp.			X		X		X		X

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
	Euphorbia misera	cliff spurge								X
	Acmispon glaber	common deerweed				X				
	Medicago lupulina	black medick				X				
	Medicago polymorpha	burclover	X							
	Melilotus albus	yellow sweetclover			X		X			
	Parkinsonia florida	blue paloverde	X							
FAGACEAE—Oak Family	*Quercus agrifolia*	California live oak	X		X	X				
	Quercus agrifolia var. *agrifolia*	California live oak			X	X				
	Quercus dumosa	Nuttall's scrub oak	X		X	X	X			
GERANIACEAE—Geranium Family	*Erodium moschatum*	musky stork's bill			X					
HYDROPHYLLACEAE—Waterleaf Family	*Eriodictyon altissimum*	Indian Knob mountainbalm					X			
LAMIACEAE—Mint Family	*Salvia mellifera*	black sage					X			
MALVACEAE—Mallow Family	*Malacothamnus fasciculatus*	Mendocino bushmallow				X				
	Malva parviflora	cheeseweed mallow	X	X		X	X			X
MONTIACEAE—Montia Family	*Cistanthe maritima*	seaside cistanthe								X
MYRTACEAE—Myrtle Family	*Melaleuca viminalis*	weeping bottlebrush	X				X			
	Eucalyptus sp.			X		X				
OLEACEAE—Olive Family	*Olea europaea*	olive	X							
	Camissoniopsis hirtella	Santa Cruz Island suncup				X				

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
ONAGRACEAE—Evening Primrose Family	*Epilobium brachycarpum*	tall annual willowherb	X							
	Oenothera elata ssp. *hookeri*	Hooker's evening primrose					X			
OXALIDACEAE—Oxalis Family	*Oxalis californica*	California woodsorrel			X	X				
	Oxalis pes-caprae	Bermuda buttercup	X	X	X	X	X			X
PHRYMACEAE—Lopseed Family	*Mimulus* sp.					X				
PLANTAGINACEAE—Plantain Family	*Plantago erecta*	dotseed plantain				X				
	Plantago major	common plantain		X						
PLATANACEAE—Plane Tree, Sycamore Family	*Platanus racemosa*	California sycamore	X		X	X	X			
PLUMBAGINACEAE—Leadwort Family	*Limonium perezii*	Perez's sea lavender								X
POLYGONACEAE—Buckwheat Family	*Eriogonum fasciculatum*	Eastern Mojave buckwheat	X		X	X				
	Persicaria lapathifolia	curlytop knotweed	X							
	Rumex crispus	curly dock	X	X	X	X	X			X
RHAMNACEAE—Buckthorn Family	*Adolphia californica*	California adolphia					X			
ROSACEAE—Rose Family	*Heteromeles arbutifolia*	toyon	X		X	X	X			
	Prunus virginiana var. *demissa*	western chokecherry				X				
SALICACEAE—Willow Family	*Populus fremontii* ssp. *fremontii*	Fremont cottonwood				X	X			
	Salix exigua var. *exigua*	narrowleaf willow				X	X			X

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
	Salix gooddingii	Goodding's willow		X	X	X	X	X		X
	Salix laevigata	red willow	X	X	X	X	X	X		X
	Salix lasiolepis	arroyo willow		X	X	X	X			X
SIMAROUBACEAE—Quassia Or Simarouba Family	*Ailanthus altissima*	tree of heaven				X	X	X		X
SOLANACEAE—Nightshade Family	*Nicotiana glauca*	tree tobacco		X		X				
TAMARICACEAE—Tamarisk Family	*Tamarix ramosissima*	saltcedar			X		X	X		X
TROPAEOLACEAE—Nasturtium Family	*Tropaeolum majus*	nasturtium				X	X			
URTICACEAE—Nettle Family	*Urtica urens*	dwarf nettle				X				
		Monocots								
AGAVACEAE—Agave Family	*Yucca schidigera*	Mojave yucca	X				X			
ARECACEAE—Palm Family	*Phoenix canariensis*	Canary Island date palm		X		X	X			
CYPERACEAE—Sedge Family	*Cyperus acuminatus*	tapertip flatsedge	X		X		X			
	Cyperus eragrostis	tall flatsedge	X	X	X	X	X	X	X	X
	Cyperus erythrorhizos	redroot flatsedge								X
	Eleocharis macrostachya	pale spikerush	X	X		X	X			X
	Schoenoplectus californicus	California bulrush		X						X
JUNCACEAE—Rush Family	*Juncus acuminatus*	tapertip rush				X				
	Juncus acutus ssp. *leopoldii*	southwestern spiny rush	X		X	X	X			

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
	Juncus balticus ssp. *ater*	mountain rush	X							
	Juncus effusus	common rush	X							
	Juncus sp.				X					
	Juncus tenuis	poverty rush					X			
POACEAE—Grass Family	*Agrostis pallens*	seashore bentgrass		X						
	Arundo donax	giant reed		X		X	X			
	Avena sp.									X
	Bouteloua gracilis	blue grama				X				
	Bromus madritensis	compact brome								X
	Cortaderia selloana	Uruguayan pampas grass			X	X	X			
	Cynodon dactylon	Bermudagrass	X	X		X	X			
	Distichlis spicata	saltgrass			X			X		
	Paspalum dilatatum	dallisgrass					X			
	Pennisetum setaceum	crimson fountaingrass		X	X	X	X		X	X
	Phalaris canariensis	annual canarygrass		X			X			
	Phragmites australis	common reed	X							
	Sorghum halepense	Johnsongrass	X			X	X			X
TYPHACEAE—Cattail Family	*Typha angustifolia*	narrowleaf cattail			X		X			X
	Typha latifolia	broadleaf cattail	X	X	X	X	X		X	X
	Typha sp.				X					

Family	Scientific Name	Common Name	Mission Bay	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
Ferns and Fern Allies										
SELAGINELLACEAE—Spike-moss Family	*Selaginella cinerascens*	ashy spike-moss				X				
Gymnosperms and Gnetophytes										
PINACEAE—Pine Family	*Pinus torreyana* ssp. *torreyana*	Torrey pine	X		X	X	X			

APPENDIX B

Wildlife Compendium

Appendix B
Wildlife Compendium

Family	Scientific Name	Common Name	Mission Bay /La Jolla	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
Birds										
ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES	*Accipiter cooperii*	Cooper's hawk	X		X	X				X
	Buteo jamaicensis	Red-tailed hawk			X	X				X
	Buteo lineatus	Red-shouldered hawk			X	X	X			X
	Circus hudsonius	northern harrier								X
	Elanus leucurus	white-tailed kite			X					
AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS	*Psaltriparus minimus*	Bushtit	X		X	X	X	X		X
ALCEDINIDAE—KINGFISHERS	*Megaceryle alcyon*	belted kingfisher				X				
ANATIDAE—DUCKS, GEESE, AND SWANS	*Anas platyrhynchos*	Mallard			X		X			X
	Mareca americana	American wigeon				X				
APODIDAE—SWIFTS	*Aeronautes saxatalis*	white-throated swift			X		X			
ARDEIDAE—HERONS, BITTERNS, AND ALLIES	*Ardea herodias*	great blue heron				X				
	Butorides virescens	green heron				X				X
	Egretta thula	snowy egret		X		X	X			
BOMBYCILLIDAE—WAXWINGS	*Bombycilla cedrorum*	Cedar waxwing		X			X			
CATHARTIDAE—CARDINALS AND ALLIES	*Cathartes aura*	turkey vulture								X
CHARADRIIDAE—LAPWINGS AND PLOVERS	*Charadrius vociferus*	Killdeer			X					X
COLUMBIDAE—PIGEONS AND DOVES	*Columba livia*	Rock pigeon (rock dove)				X				X
	Streptopelia decaocto	Eurasian collared-dove				X				
	Zenaida macroura	Mourning dove	X	X	X	X	X		X	X

Family	Scientific Name	Common Name	Mission Bay /La Jolla	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
CORVIDAE—CROWS AND JAYS	*Aphelocoma californica*	California scrub-jay				X				
	Calocitta colliei	black-throated magpie-jay								X
	Corvus brachyrhynchos	American crow	X	X	X	X	X	X	X	X
	Corvus corax	Common raven				X	X			
ESTRILDIDAE—WAXBILLS	*Lonchura punctulata*	scaly-breasted munia						X		
FALCONIDAE—CARACARAS AND FALCONS	*Falco sparverius*	American kestrel				X				
FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES	*Spinus psaltria*	Lesser goldfinch			X	X	X	X		X
	Spinus tristis	American goldfinch				X				X
	Haemorhous mexicanus	House finch	X		X	X	X	X		X
HIRUNDINIDAE—SWALLOWS	*Riparia riparia*	bank swallow								X
	Stelgidopteryx serripennis	northern rough-winged swallow			X		X			
	Tachycineta thalassina	violet-green swallow			X					
ICTERIDAE—BLACKBIRDS	*Agelaius phoeniceus*	Red-winged blackbird		X						X
LARIDAE—GULLS, TERNS, AND SKIMMERS	*Larus californicus*	California gull		X			X			
	Larus occidentalis	western gull				X				
MIMIDAE—MOCKINGBIRDS AND THRASHERS	*Mimus polyglottos*	Northern mockingbird				X	X			

Family	Scientific Name	Common Name	Mission Bay /La Jolla	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
PARULIDAE—WOOD-WARBLERS	*Icteria virens*	yellow-breasted chat								X
	Geothlypis trichas	Common yellowthroat			X	X	X			X
	Oreothlypis celata	Orange-crowned warbler	X					X		X
	Setophaga coronata	Yellow-rumped warbler	X		X	X	X	X		X
	Setophaga petechia	yellow warbler								X
	Setophaga townsendi	Townsend's warbler								X
PASSERELLIDAE—NEW WORLD SPARROWS	*Junco hyemalis*	dark-eyed junco				X				
	Melospiza melodia	Song sparrow	X		X	X	X	X		X
	Melozone crissalis	California towhee	X			X	X		X	X
	Pipilo maculatus	Spotted towhee	X				X			
	Zonotrichia leucophrys	White-crowned sparrow				X				X
PASSERIDAE—OLD WORLD SPARROWS	*Passer domesticus*	House sparrow		X	X	X			X	X
PICIDAE—WOODPECKERS AND ALLIES	*Colaptes auratus*	Northern flicker				X	X			X
	Picoides nuttallii	Nuttall's woodpecker			X	X	X			X
	Picoides pubescens	downy woodpecker								X
PSITTACIDAE—African and New World Parrots	*Amazona viridigenalis*	red-crowned parrot				X				
RALLIDAE—RAILS, GALLINULES, AND COOTS	*Rallus obsoletus levipes*	Ridgway's rail			X					
SCOLOPACIDAE—SANDPIPERS, PHALAROPES, AND ALLIES	*Calidris mauri*	western sandpiper			X					
	Gallinago delicata	Wilson's snipe			X					
	Tringa melanoleuca	greater yellowlegs			X					
STURNIDAE—STARLINGS	*Sturnus vulgaris*	European starling			X					
SYLVIIDAE—SYLVIID WARBLERS	*Polioptila californica californica*	Coastal California gnatcatcher					X			X

Family	Scientific Name	Common Name	Mission Bay /La Jolla	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
TIMALIIDAE—BABBLERS	*Chamaea fasciata*	Wrentit			X		X			
TROCHILIDAE—HUMMINGBIRDS	*Calypte anna*	Anna's hummingbird	X	X	X	X	X	X		X
TROGLODYTIDAE—WRENS	*Thryomanes bewickii*	Bewick's wren				X	X	X		X
TURDIDAE—THRUSHES	*Sialia mexicana*	Western bluebird	X							
TYRANNIDAE—TYRANT FLYCATCHERS	*Sayornis nigricans*	Black phoebe	X			X	X	X	X	X
	Sayornis saya	Say's phoebe				X	X			X
	Tyrannus verticalis	Western kingbird								X
	Tyrannus vociferans	Cassin's kingbird	X		X	X		X		
Mammals										
CRICETIDAE—RATS, MICE, AND VOLES	*Cricetidae* sp.						X			
LEPORIDAE—HARES AND RABBITS	*Sylvilagus audubonii*	desert cottontail								X
PROCYONIDAE—RACCOONS AND RELATIVES	*Procyon lotor*	raccoon			X					X
SCIURIDAE—SQUIRRELS	*Spermophilus (Otospermophilus) beecheyi*	California ground squirrel								X
Reptile										
ANGUIDAE—ALLIGATOR LIZARDS	*Elgaria multicarinata*	southern alligator lizard							X	
EMYDIDAE—BOX AND WATER TURTLES	*Trachemys scripta elegans*	Red-eared slider								X
PHRYNOSOMATIDAE—IGUANID LIZARDS	*Sceloporus occidentalis*	western fence lizard							X	X
Amphibian										
RANIDAE—TONGUELESS FROGS	*Xenopus laevis*	African clawed frog			X					

Family	Scientific Name	Common Name	Mission Bay /La Jolla	Otay	Peñasquitos	Pueblo San Diego	San Diego River	San Dieguito	Sweetwater	Tijuana River
Invertebrate										
NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES	*Adelpha bredowii*	California sister			X					
	Danaus plexippus	monarch			X					X
HESPERIIDAE—SKIPPERS	*Erynnis funeralis*	funereal duskywing			X					
PAPILIONIDAE—SWALLOWTAILS	*Papilio rutulus*	western tiger swallowtail			X					
Fish										
POECILIIDAE—POECILIIDS	*Gambusia affinis*	mosquitofish			X					

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APPENDIX C

Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report

September 13, 2017

Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
U.S. Fish and Wildlife Service
2177 Salk Avenue, Ste. 250
Carlsbad, CA 92008

Subject: 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report, San Diego, California

Dear Ms. Love:

Balk Biological, Inc. submits this letter report summarizing the results of focused surveys conducted to determine the presence/absence of the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*: SWFL) and least Bell's vireo (*Vireo bellii pusillus*: LBVI) for the City of San Diego's Waterways Maintenance Plan (WMP) Project located in the City of San Diego (City), San Diego County, California.

Project Description

The City WMP is being developed to replace the current Master Storm Water System Maintenance Program (MMP). Through evaluation of the City's storm water maintenance program and consultation with resource agencies and stakeholders, the City is currently examining approximately 25 miles of channels and 23 outlet and inlet structures in the WMP.

The extent of proposed maintenance activities at each of these facilities is currently being assessed, but the nature of the activities is expected to be similar to those proposed under the MMP including channel excavation, dredging, vegetation management, concrete repair/replacement, bank repair/stabilization, and invasive plant species management. For the purposes of this report, "vicinity" refers to a facility and the surrounding 300-foot buffer area.

Survey Determination

The potential for SWFL and LBVI to be present at a particular facility was determined upon the following four criteria: 1) presence of suitable habitat (*e.g.,* willow scrub); 2) habitat connectivity, both onsite and directly offsite; 3) size of suitable habitat in vicinity of the facility; 4) historical record of occurrence in the vicinity; and 5) potential for significant impacts from maintenance. Following the evaluation of the WMP facilities based on the above criteria, it was determined that twelve channel facility groups were suitable for SWFL and one basin facility group and sixteen channel facility groups were suitable for LBVI (Figures 1 and 2). No outlet/inlet facilities were included for focused

avian surveys. Facilities where SWFL and LBVI focused surveys occurred are listed in Table 1.

The vegetation communities surveyed for SWFL and LBVI include: southern riparian woodland, southern riparian forest, riparian scrub, southern arroyo willow riparian forest, southern coast live oak riparian forest, and southern willow scrub. Non-native riparian vegetation was also present in the surveyed vegetation communities.

Table 1
Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Facilities

WATERSHED MANAGEMENT AREA Facility Group Name	Figure Nos.	WMP Acronym(s)	Least Bell's Vireo	Southwestern Willow Flycatcher
PENASQUITOS WMA				
Concrete				
Soledad Canyon Creek	3f	Sol_Ros2	x	x
Penasquitos Lagoon - Industrial	3c	PenUnTri_Ind	x	x
Earthen				
Los Penasquitos Canyon Creek	3d	LosPen_SorVal	x	x
Los Penasquitos Canyon Creek - Black Mountain	3a, 3b	LosPenUnTri_BlaMou1, LosPenUnTri_BlaMou2	x	x
Soledad Canyon Creek	3e	Sol_Ros1	x	x
Carroll Canyon Creek	3g	CarCan_CarCan	x	
SAN DIEGO RIVER				
Concrete				
Alvarado Canyon Creek - Alvarado	3o	Alv_AlvCan2	x	
Murphy Canyon Creek	3i, 3j, 3k	MurCan_Qua1, MurCan_MurQua2, MurCanUnTri_Sto1, MurCan_MurCan1	x	x

WATERSHED MANAGEMENT AREA Facility Group Name	Figure Nos.	WMP Acronym(s)	Least Bell's Vireo	Southwestern Willow Flycatcher
San Diego River - Camino del Rio	3l, 3m	SanUnTri_CamArr, SanUnTri_CamRio	x	x
San Diego River - Valeta	3p	SanUnTri_Val2	x	x
Earthen				
Alvarado Canyon Creek - Alvarado	3n	Alv_AlvCan1		
San Diego River - Valeta	3p	SanUnTri_Val1		
Murphy Canyon Creek	3h, 3i	MurCan_MurCan2	x	x
PUEBLO SAN DIEGO				
Earthen				
South Chollas Creek - Southcrest	3q, 3r, 3s	SouCho_Alp, SouCho_OceVie	x	x
OTAY				
Concrete				
Nestor Creek	3w	Nes_Gro2,	x	x
Earthen				
Nestor Creek	3t, 3u, 3v	Nes_Gro1, Nes_Cer, Nes_Ced1	x	x
TIJUANA				
Concrete				
Spring Canyon Creek	3ac	Spr_Cac2	x	
Earthen				
Tijuana River*	3x, 3y, 3z, 3aa, 3ab	Tij_Pilot, Tij_SmuGul,		x
Spring Canyon Creek	3ad	Spr_Cac1	x	
Tijuana River - La Media	3ae	TijUnTri_LaMed	x	

WATERSHED MANAGEMENT AREA Facility Group Name	Figure Nos.	WMP Acronym(s)	Least Bell's Vireo	Southwestern Willow Flycatcher
Tijuana River - Siempre Viva	3af, 3ag	TijUnTri_SieViv	x	

*Least Bell's vireo (LBVI) surveys not proposed as LBVI locations are documented during weekly nesting bird surveys for a concurrent City project (Tijuana River Valley Channel Maintenance Project)

Survey Methodology

Permitted biologist Brian Lohstroh (TE-063608-6) conducted the SWFL surveys, which followed the current survey protocol adopted by USFWS (Sogge et al. 2010). The protocol requires five survey visits during three survey periods: one visit during the first survey period (May 15 through May 31), two visits during the second survey period (June 1 through June 24), and two visits during the third survey period (June 24 through July 17). It is important to note that the first SWFL survey period was missed for the Valeta facility due to an accidental omission in the survey schedule. Surveys were conducted at least 5 days apart between dawn and 11 a.m. The biologist walked through suitable habitat, stopping frequently to listen for SWFL vocalizations. If no SWFL were detected after a few minutes of passive listening, recorded SWFL vocalizations were broadcast within the habitat (active surveys) to elicit a response. SWFL surveys were also conducted with the aid of 8x42 or similar power binoculars.

Biologists conducted LBVI surveys beginning on May 11 through July 31, 2017. According to USFWS survey guidelines for the species (USFWS 2001), eight visits are required between April 10 and July 31; however, due to the late initiation date of LBVI surveys (May 11), only one facility was surveyed eight times. The remaining facilities were surveyed either five, six, or seven times. Surveys were conducted at least 10 days apart and completed between dawn and 11 a.m. LBVI surveys consisted of walking meandering transects through potential LBVI habitat and conducting passive surveillance (*i.e.*, listening and looking for the species). LBVI surveys were conducted with the aid of 8x42 or similar power binoculars. Focused surveys for LBVI and SWFL were conducted concurrently when possible, with an effort made to complete the SWFL survey portion (*i.e.*, the more SWFL-suitable habitat) earlier in the morning hours.

Results

No SWFL were detected during the 2017 WMP protocol surveys. A total of three migrant willow flycatchers (*Empidonax traillii* ssp.) were documented during the surveys: two individuals were observed on the 5/18/17 survey of the Nestor Creek facility, and one individual was observed during the 5/31/17 survey of the Tijuana River facility.

LBVIs were detected incidentally at 24 different locations during the focused SWFL surveys of the Tijuana River facility; however, this facility was not included in focused

LBVI surveys because this area is known-occupied LBVI habitat, hosting a core breeding population. Furthermore, this facility is currently part of an on-going City project (Tijuana River Valley Channel Maintenance Project), and LBVIs are being monitored through that project. A large portion of this facility is also designated as Critical Habitat for LBVI by the USFWS (1994).

No LBVIs were detected during focused LBVI surveys of the remainder of the WMP channels (i.e., LBVI detected at the Tijuana River facility only).

A summary of survey dates, times, weather conditions, surveyors, and observations are provided in Table 2. Locations of willow flycatchers and LBVI detected are provided in Figures 3a – 3ag.

In addition to willow flycatcher and LBVI, nine special status wildlife species (CDFW 2017) were detected during focused SWFL and LBVI surveys: California horned lark, California least tern, coastal California gnatcatcher, Cooper's hawk, northern harrier, southern California rufous-crowned sparrow, yellow-breasted chat, yellow warbler, and white-tailed kite. Brown-headed cowbirds (*Molothrus ater*; BHCO) were detected at seven of the facilities, and documented to successfully parasitize nests at two facilities. A common yellowthroat (*Geothlypis trichas*; COYE) was observed feeding a BHCO fledgling at the Los Peñasquitos Canyon Creek - Black Mountain facility (6/27/17) and a Hutton's vireo (*Vireo huttoni*; HUVI) was observed feeding a BHCO at the Soledad Canyon/Los Peñasquitos facility (6/27/17).

A list of wildlife species observed during surveys can be found in Appendix A.

Table 2
Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey – Date, Time, Weather Conditions, Surveyors, and Observations

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F, cloud cover, wind speed)	Results/Observations
Soledad Canyon Creek and Los Peñasquitos Canyon Creek	1	5/24/2017	LBVI/ SWFL	BSL	615	915	64F, 100% CC, 0-1 mph	No LBVI or SWFL observed; 8 yellow warblers (YWAR), 6 yellow-breasted chats (YBCH), 1 Cooper's hawk (COHA), 4 BHCO observed.
	2	6/5/2017	LBVI/ SWFL	BSL	605	920	64F, 100%, 0-1 mph	No LBVI or SWFL observed; YWARs, YBCHs, 2 COHA, 3 BHCO observed.
	3	6/19/2017	LBVI/ SWFL	BSL	610	920	67-74F, 100-0% CC, 0-4 mph	No LBVI or SWFL observed; YWARs, YBCHs, 2 COHA, 3 BHCO, Swainson's thrush (SWTH) observed.
	4	6/27/2017	SWFL	BSL	607	930	59-79F, 0% CC, 0-2 mph	No LBVI or SWFL observed; 6 BHCO, COHA fledges, SWTH, YWAR, YBCH, HUVI feeding BHCO fledge observed.

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F, cloud cover, wind speed)	Results/Observations
	5	6/30/2017	LBVI	SML	755	1100	69-77F, 100-10% CC, 1-5 mph	No LBVI or SWFL observed; 1 BHCO, lesser goldfinch (LEGO) fledges, YWAR fledges, YBCH observed.
	6	7/12/2017	LBVI/ SWFL	BSL	608	910	71-79F, 100-10% CC, 0-3 mph	No LBVI or SWFL observed; 10 BHCO, YBCH, YWAR, SWTH, COHA fledges observed. Coastal California gnatcatcher (CAGN) pair adjacent.
	7	7/24/2017	LBVI	SML	750	935	69F, 100% CC, 0-4 mph	No LBVI or SWFL observed; 2 BHCO, COHA adult, SWTH, YBCH observed. CAGN calling adjacent.
Peñasquitos Lagoon - Industrial	1	5/24/2017	LBVI/ SWFL	BSL	545	610	64F, 100% CC, 0-1 mph	No LBVI or SWFL observed; 1 YWAR, 2 YBCH, 1 BHCO observed.
	2	6/5/2017	LBVI/ SWFL	BSL	545	600	64F, 100% CC, 0-2 mph	No LBVI or SWFL observed; YWAR, YBCH observed.
	3	6/19/2017	LBVI/ SWFL	BSL	545	607	67F, 100% CC, 0-1 mph	No LBVI or SWFL observed; YWAR, YBCH observed.
	4	6/27/2017	SWFL	BSL	545	605	60F 0% CC, 0-1 mph	No LBVI or SWFL observed; YWAR, YBCH, 1 BHCO observed.
	5	6/29/2017	LBVI	ACT	615	640	63F, 100% CC, 0-5 mph	No LBVI or SWFL observed; 1 BHCO observed.
	6	7/12/2017	LBVI/ SWFL	BSL	545	605	73F, 100% CC, 0-1 mph	No LBVI or SWFL observed; YWAR, YBCH observed.
	7	7/24/2017	LBVI	SML	945	1000	71F, 100% CC, 0-4 mph	No LBVI or SWFL observed; YBCH observed.
Los Peñasquitos Canyon Creek - Black Mountain	1	5/11/2017	LBVI	SGR	950	1050	64F, 100% CC, 1-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	5/24/2017	LBVI/ SWFL	BSL	930	1100	64-67F, 100-70% CC, 0-3 mph	No LBVI or SWFL observed; 1 YWAR, 3 BHCO observed.
	3	6/5/2017	LBVI/ SWFL	BSL	930	1100	65-67F, 100% CC, 0-4 mph	No LBVI or SWFL observed; 1 YWAR, 1 YBCH, 4 BHCO observed.
	4	6/19/2017	LBVI/ SWFL	BSL	930	1100	75-78F, 0% CC, 0-3 mph	No LBVI or SWFL observed; YWAR, YBCH, 2 BHCO observed.
	5	6/27/2017	SWFL	BSL	945	1100	82-83F, 0% CC, 0-2 mph	No LBVI or SWFL observed; YWAR, 2 BHCO observed.COYE feeding BHCO fledge observed.
	6	6/29/2017	LBVI	ACT	700	820	64F, 50% CC, 0-5 mph	No LBVI or SWFL observed; 1 BHCO observed.
	7	7/12/2017	LBVI/ SWFL	BSL	925	1050	79F, 0% CC, 0-3 mph	No LBVI or SWFL observed; 1 BHCO, YWAR observed.
	8	7/24/2017	LBVI	SML	1015	1100	74F, 100% CC, 04 mph	No LBVI or SWFL observed; 1 BHCO, 1 YBCH observed.
Carroll Canyon Creek	1	5/18/2017	LBVI	BLM	900	935	64 F, 10% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F, cloud cover, wind speed)	Results/Observations
								observed.
	2	6/1/2017	LBVI	BLM	925	950	65 F, 100% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	3	6/12/2017	LBVI	BLM	630	700	56 F, 10% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	4	6/22/2017	LBVI	BLM	930	1000	65 F, 100% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	5	7/3/2017	LBVI	BLM	1000	1025	75 F, 0% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	6	7/13/2017	LBVI	BLM	915	945	76 F, 30% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	7	7/24/2017	LBVI	BLM	930	1000	75 F, 80% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
Alvarado Canyon Creek - Alvarado	1	5/23/2017	LBVI	BLM	940	1000	75 F, 5% CC, 2-4 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	6/2/2017	LBVI	BLM	1015	1035	73 F, 0% CC, 3-5 mph	No LBVI or SWFL observed. YWAR observed.
	3	6/13/2017	LBVI	BLM	900	930	67 F, 0% CC, 2-5 mph	No LBVI or SWFL observed. YWAR observed.
	4	6/23/2017	LBVI	BLM	540	610	65 F, 100% CC, 0-1 mph	No LBVI or SWFL observed. YWAR observed.
	5	7/5/2017	LBVI	BLM	1000	1025	75 F, 50% CC, 3-5 mph	No LBVI or SWFL observed. YWAR observed.
	6	7/16/2017	LBVI	BLM	845	910	70 F, 100% CC, 0-2 mph	No LBVI or SWFL observed. YWAR observed.
Murphy Canyon Creek /	1	5/26/2017	LBVI/ SWFL	BSL	900	1100	64-74F, 100-95%, 0-1 mph	No LBVI or SWFL observed. 6 YWAR, 3 BHCO observed.
	2	6/7/2017	LBVI/ SWFL	BSL	820	1050	64-67F, 100% 0-2	No LBVI or SWFL observed. YWARs, 1 COHA observed.
	3	6/21/2017	LBVI/ SWFL	BSL	845	1100	73-75F, 0% CC, 0-2 mph	No LBVI or SWFL observed. YWARs, 1 BHCO, CAGN family group (at least 2 fledges) observed.
	4	7/6/2017	LBVI/ SWFL	BSL	810	1030	73-75F, 0% CC, 0-1 mph	No LBVI or SWFL observed. YWARs observed.
	5	7/17/2017	LBVI/ SWFL	BSL	845	1045	75-79F, 80-0% CC, 0-3 mph	No LBVI or SWFL observed. YWARs, juvenile CAGN observed.
	6	7/27/2017	LBVI	SML	850	1045	78F, 70% CC, 0-3 mph	No LBVI or SWFL observed. 1 BHCO, YWARs observed.
San Diego River - Camino del Rio	1	5/26/2017	LBVI/ SWFL	BSL	600	845	65F, 100% CC, 0-1 mph	No LBVI or SWFL observed. 7 YWAR, 4 BHCO observed.
	2	6/7/2017	LBVI/ SWFL	BSL	550	815	64F, 100% CC, 0-1 mph	No LBVI or SWFL observed. YWARs (one tending fledge), 4

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F, cloud cover, wind speed)	Results/Observations
								BHCO observed.
	3	6/21/2017	LBVI/ SWFL	BSL	630	830	67-71F, 100% CC, 0-2 mph	No LBVI or SWFL observed. YWARs, 2 BHCO, red-eyed vireo (REVI) observed.
	4	7/6/2017	LBVI/ SWFL	BSL	625	800	67-69F, 10-0% CC, 0-1 mph	No LBVI or SWFL observed. YWARs, 2 BHCO observed.
	5	7/17/2017	LBVI/ SWFL	BSL	625	840	74F, 100% CC, 0-1 mph	No LBVI or SWFL observed. YWARs, 3 BHCO observed.
	6	7/27/2017	LBV	SML	645	830	73F, 100% CC, 0-1 mph	No LBVI or SWFL observed. 1 BHCO, YWARs observed.
San Diego River - Valeta	1	6/15/2017	LBVI/ SWFL	BSL	545	630	61F, 20% CC, 0-1 mph	No LBV, SWFL, BHCO, or any other sensitive species observed.
	2	6/21/2017	SWFL	BSL	550	620	65F, 100% CC, 0-1 mph	No LBVI or SWFL observed. 1 BHCO observed.
	3	6/26/2017	LBVI/ SWFL	BSL	545	615	64F, 0% CC, 0-1 mph	No LBVI or SWFL observed. California least tern (LETE) feeding in slough.
	4	7/6/2017	LBVI/ SWFL	BSL	545	610	67F, 50% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	5	7/17/2017	LBVI/ SWFL	BSL	545	610	71F, 100% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	6	7/27/2017	LBVI	SML	600	620	71F, 100% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
South Chollas - Southcrest	1	5/18/2017	LBVI/ SWFL	BSL	745	1100	62-68F, 40-0% CC, 0-2 mph	No LBVI or SWFL observed. 9 YWAR observed.
	2	6/2/2017	LBVI/ SWFL	BSL	545	730	66F, 100% CC, 0-1 mph	No LBVI or SWFL observed. CAGN pair, YWARs observed.
	3	6/15/2017	LBVI/ SWFL	BSL	640	830	64-65F, 100%-90%, 0-1 mph	No LBVI or SWFL observed. YWARs observed.
	4	6/26/2017	LBVI/ SWFL	BSL	630	830	70-73F, 0% CC, 0-1 mph	No LBVI or SWFL observed. YWARs observed.
	5	7/11/2017	LBVI/ SWFL	BSL	600	750	72-73F, 100-90% CC, 0-1 mph	No LBVI or SWFL observed. YWARs observed.
	6	7/21/2017	LBVI	BSL	630	820	71-72F, 100-70% CC, 0-3 mph	No LBVI or SWFL observed. 3 YWAR observed.
	7	7/31/2017	LBVI	SML	600	750	69F, 80% CC, 0-5mph	No LBVI or SWFL observed. YWARs observed.
Nestor Creek	1	5/11/2017	LBVI	SGR	830	930	61F, 100% CC, 1-3 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	5/18/2017	LBVI/ SWFL	BSL	600	715	60-62F, 20% CC, 0-1 mph	No LBVI observed. 2 WIFL (likely migrants), 1 COHA, 5 YWAR observed.
	3	6/2/2017	LBVI/ SWFL	BSL	745	900	65-66F, 100% 0-1	No LBVI or SWFL observed. YWARs observed.
	4	6/15/2017	LBVI/ SWFL	BSL	845	945	67F, 80% CC, 0-4 mph	No LBVI or SWFL observed. YWARs observed.

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F, cloud cover, wind speed)	Results/Observations
	5	6/26/2017	LBVI/ SWFL	BSL	840	915	73F, 0% CC, 0-3 mph	No LBVI or SWFL observed. YWARs observed.
	6	7/11/2017	LBVI/ SWFL	BSL	800	850	73F, 80-50% CC, 0-2 mph	No LBVI or SWFL observed. YWARs observed.
	7	7/21/2017	LBVI	BSL	830	920	73F, 50% CC, 0-5 mph	No LBVI or SWFL observed. 1 YWAR observed.
	8	7/31/2017	LBVI	SML	800	850	74F, 80% CC, 2-5 mph	No LBVI or SWFL observed. YWARs observed.
Spring Canyon Creek	1	5/31/2017	LBVI	PL	645	845	59-60F, 100% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	6/2/2017	LBVI	BSL	910	955	66F, 100% CC, 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	3	6/15/2017	LBVI	BSL	955	1020	72F, 0% CC, 2-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	4	6/26/2017	LBVI	BSL	930	1020	72-75F, 10% CC, 2-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	5	7/11/2017	LBVI	BSL	900	955	78-79F, 0% CC, 0-1 mph	No LBVI or SWFL observed; 1 BHCO observed.
	6	7/21/2017	LBVI	BSL	925	1015	74F, 0% CC, 0-4 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	7	7/31/2017	LBVI	SML	900	955	76F, 0% CC, 2-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
Tijuana River	1	5/31/2017	SWFL	BSL	600	1100	61-71F, 100% CC, 0-4 mph	1 WIFL (likely migrant), LBVIs YWARs, YBCHs, NOHA, COHAs, observed.
	2	6/14/2017	SWFL	BSL	600	1030	63-70F, 50-0% CC, 0-5 mph	No SWFL observed. LBVIs, YWARs, YBCHs, northern harrier (NOHA), CA horned lark, COHA, 5 BHCO observed.
	3	6/22/2017	SWFL	BSL	600	1030	60-68F, 100-0% CC, 0-4 mph	No SWFL observed. LBVIs, YWARs, YBCHs, NOHA, white-tailed kite (WTKI), COHA, SWTH, 1 BHCO observed.
	4	7/7/2017	SWFL	BSL	600	1030	68-84F, 100-0% CC, 0-5 mph	No SWFL observed. LBVIs, YWARs, YBCHs, 2 NOHA, 3 BHCO, COHA observed.
	5	7/14/2017	SWFL	BSL	600	1030	72-81F, 100-50% CC, 0-5 mph	No SWFL observed. LBVIs, YWARs, YBCHs, NOHA, 1 BHCO, COHA fledges observed.
Tijuana - La Media	1	5/18/2017	LBVI	SML	700	800	61F, wind 3-5MPH, 10 % cloud	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	6/2/2017	LBVI	ACT	805	855	64F, 100% CC, 0-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F, cloud cover, wind speed)	Results/Observations
	3	6/12/2017	LBVI	SML	730	815	60F, wind 0-3MPH, 30% cloud	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	4	6/22/2017	LBVI	ACT	550	630	60F, 100% CC, 0-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	5	7/3/2017	LBVI	ACT	620	700	63F, 90% CC, 0-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	6	7/13/2017	LBVI	SML	800	845	70F, 60% CC, 0-4 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	7	7/24/2017	LBVI	SML	600	640	71F, 100% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
Tijuana River - Siempre Viva	1	5/31/2017	LBVI	PL	900	1100	61-63F, 100% CC, 2-6 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	6/2/2017	LBVI	BSL	1000	1100	68-70F, 20-0% CC, 1-4 mph	No LBVI or SWFL observed; 1 YWAR observed.
	3	6/15/2017	LBVI	BSL	1023	1100	73F, 0% CC, 2-4 mph	No LBVI or SWFL observed; YWAR observed.
	4	6/26/2017	LBVI	BSL	1025	1100	76-79F, 0% CC, 2-4 mph	No LBVI or SWFL observed; YWAR observed.
	5	7/11/2017	LBVI	BSL	1000	1045	79-80F, 0% CC, 0-3 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	6	7/21/2017	LBVI	BSL	1020	1100	75-76F, 0% CC, 0-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	7	7/31/2017	LBVI	SML	1000	1045	78F, 0% CC, 0-4 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.

Surveyor: BSL = Brian Lohstroh, SML = Shelley Lawrence, ACT = Amy Trexler, SGR = Scott Gressard, BLM = Brynne Mulrooney, PL = Paul Lemons

Discussion

The willow flycatchers detected at Nestor Creek and at the Tijuana River/Smuggler's Gulch facilities were only observed once and are determined to be migrants. It is likely these individuals were of the northwestern subspecies (*E.t. brewsteri*) because they were observed during the typical willow flycatcher migration period and because the dialect of their 'fitzbew' call resembled that of the northwestern subspecies. In addition, these individuals were not using habitat typically associated with SWFL breeding colonies. The habitat at Nestor Creek is surrounded by urban area, and supports relatively small, disjointed patches of willows. The Tijuana River/Smuggler's Gulch individual was detected within a large, monotypic patch of dense mulefat (*Baccharis salicifolia*) adjacent to the primary riparian corridor.

The most SWFL-suitable riparian habitat surveyed consisted of a well-developed overstory of mature willows and oaks with an understory of mulefat and herbaceous species such as nettle (*Urtica* sp.) and mugwort (*Artemisia douglasiana*); however, few facilities supported good quality SWFL habitat. The facilities with the most suitable habitat included the Los Peñasquitos Lagoon/Soledad Creek facility, the San Diego River Facility, and the Tijuana River facility. However, the San Diego River and Los Peñasquitos Lagoon/ Soledad Creek facilities are within urbanized areas with high levels of rail and freeway noise. Conversely, the Tijuana River facility is much less affected by urbanization and noise, therefore, other factors appear to be contributing to its absence. Numerous BHCOs were also detected at all three of these facilities.

No LBVI were detected during focused LBVI surveys of the facilities; however, several LBVIs were incidentally detected during the focused SWFL surveys at the Tijuana River and Smuggler's Gulch facilities. The LBVIs were documented throughout the breeding season during the SWFL surveys and monitoring of the concurrent Tijuana River Valley Channel Maintenance Project. The majority of the LBVI locations likely represent breeding territories. These individuals were primarily documented within riparian scrub, riparian woodland, and riparian forest habitat. These communities showed a characteristic overstory of large mature trees with a dense understory of willows and mulefat.

If you have any questions about these surveys, please contact me at 305-849-2765.

Sincerely,

Brynne Mulrooney

Brynne Mulrooney
Senior Biologist
Balk Biological Consulting, Inc.
bmulrooney@balkbiological.com

Attachments:

Figures 1-2	Project Location Map
Figure 3a-3ag	Survey Results
Appendix A	Wildlife Species Detected
Appendix B	Willow Flycatcher Survey and Detection Forms
Appendix C	USGS Topographical Maps
Appendix D	Survey Site Photos

Citations

California Department of Fish and Wildlife, Natural Diversity Database. July 2017. Species Animals List. Periodic publication. 51 pp.

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U.S. Fish and Wildlife Service. 1994. Designation of Critical Habitat for the Least Bell's Vireo. 59 FR 4845 4867.

U.S. Fish and Wildlife Service. 2001. Least Bell's Vireo Survey Guidelines. Carlsbad Fish and Wildlife Office. January 19.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

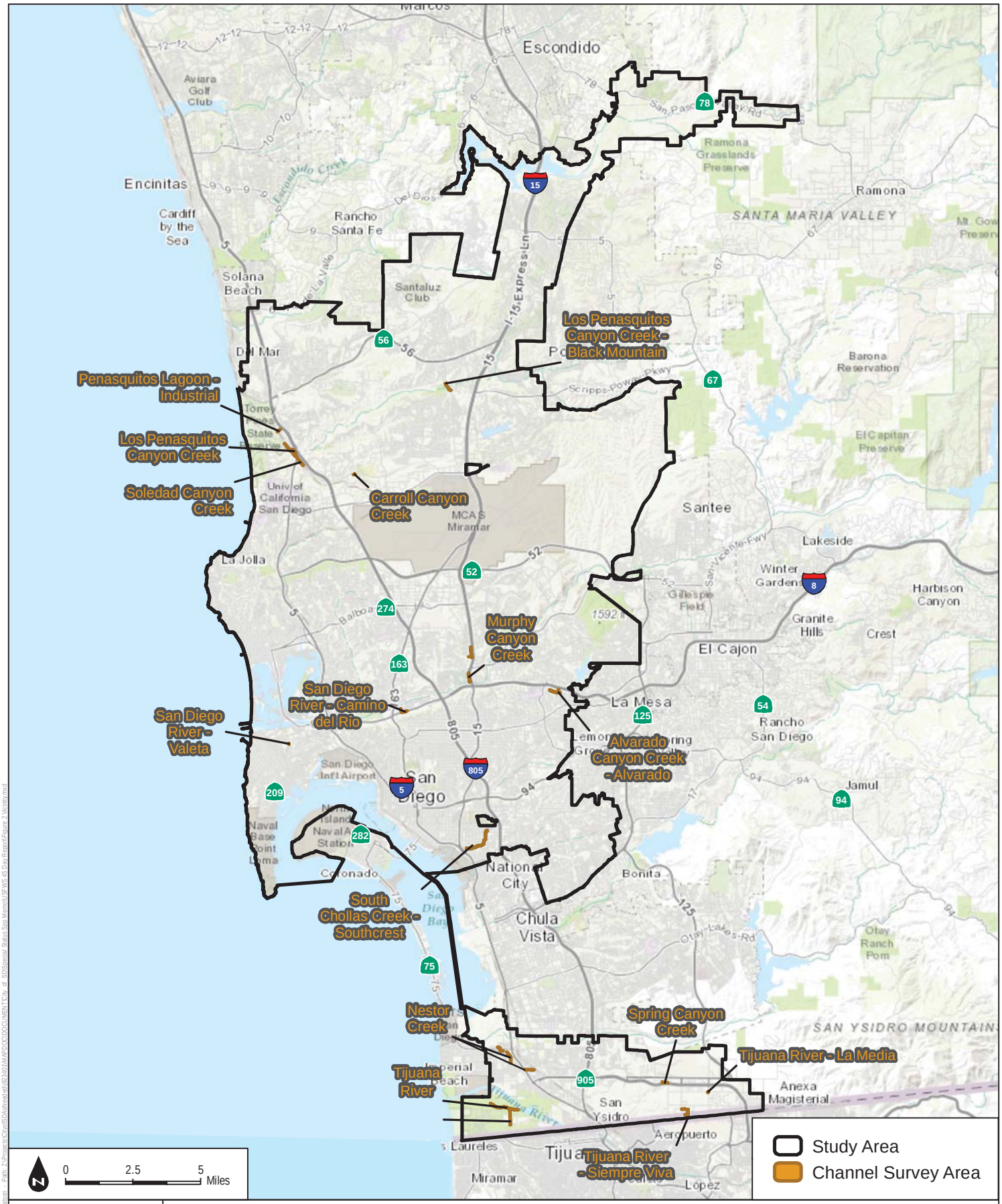
Brian Lohstroh TE-063608-6 September 13, 2017

Z:\Projects\City of SD\As Needed\923401\MAPDOC\DOCUMENT\City of SD\Special Status Spp Memo\USFWS 45 Day Report\Figure 1 Regional.mxd

DUDEK

FIGURE 1
Regional Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report



SOURCE: USGS 7.5-Minute Series San Pasqual, Escondido, Rancho Santa Fe, San Vicente Reservoir, Poway, Del Mar, La Mesa, La Jolla, National City, Point Loma, Otay Mesa, & Imperial Beach Quadrangles

FIGURE 2
Vicinity Map

DUDEK

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_PD, Disturbed Wetland (palm-dominated)

EUC, Eucalyptus Woodland

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub

RS_MFS, Riparian Scrub (mulefat scrub)

0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3a

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Los Penasquitos Canyon Creek - Black Mountain

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

- CC, Chamise Chaparral
- CSS, Diegan Coastal Sage Scrub
- CSS_BS, <Null>
- DEV, Urban/Developed
- DL, Disturbed Land
- EUC, Eucalyptus Woodland
- FWM, Freshwater Marsh
- NFC, Natural Flood Channel
- ORN, Ornamental Planting
- RF_SWF, Riparian Forest (southern willow forest)
- RS_MFS, Riparian Scrub (mulefat scrub)
- dCHP, (disturbed) Chaparral

0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3b

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Los Penasquitos Canyon Creek - Black Mountain

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

FWM, Freshwater Marsh

FWM_CC, Freshwater Marsh (concrete-lined channel)

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)

0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3c

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Penasquitos Lagoon - Industrial

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3d

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub

0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3e

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Los Penasquitos Canyon Creek, Soledad Canyon Creek

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

NFC, Natural Flood Channel

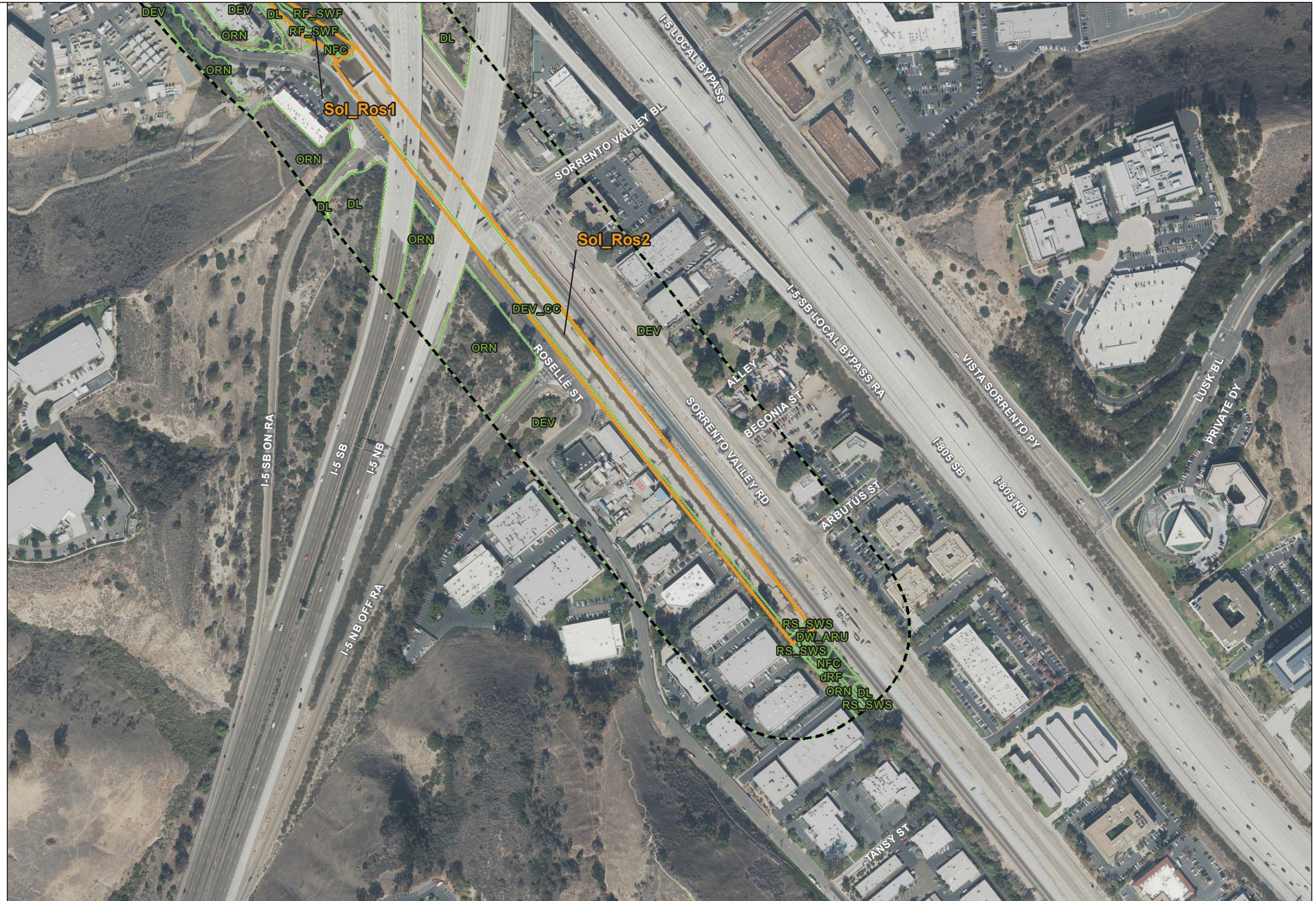
ORN, Ornamental Planting

RF, Riparian Forest

RF_SWF, Riparian Forest (southern willow forest)

RS_SWS, Riparian Scrub (southern willow scrub)

dRF, (disturbed) Riparian Forest



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3f

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Soledad Canyon Creek

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DL, Disturbed Land

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RF_SYC, Riparian Forest (southern riparian forest)

RS, Riparian Scrub

dCSS, (disturbed) Coastal Sage Scrub

dFWM, (disturbed) Freshwater Marsh

dRF_SYC, (disturbed) Riparian Forest (southern riparian forest)

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3g

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Carroll Canyon Creek

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urbanized/Developed

DL, Disturbed Land

EUC, Eucalyptus Woodland

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

0 130 260 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3h

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

EUC, Eucalyptus Woodland

FWM_CC, Freshwater Marsh (concrete-lined channel)

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_SWS, Riparian Scrub (southern willow scrub)

dCSS, (disturbed) Coastal Sage Scrub

0 130 260 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3i

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

DW_ARU, Disturbed Wetland (Arundo)

ORN, Ornamental Planting

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3j

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Murphy Canyon Creek

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DL, Disturbed Land

DW, Disturbed Wetland

DW_ARU, Disturbed Wetland (Arundo)

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3k

WMP LBVI/SWFL Focused Survey Results

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300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

EUC, Eucalyptus Woodland

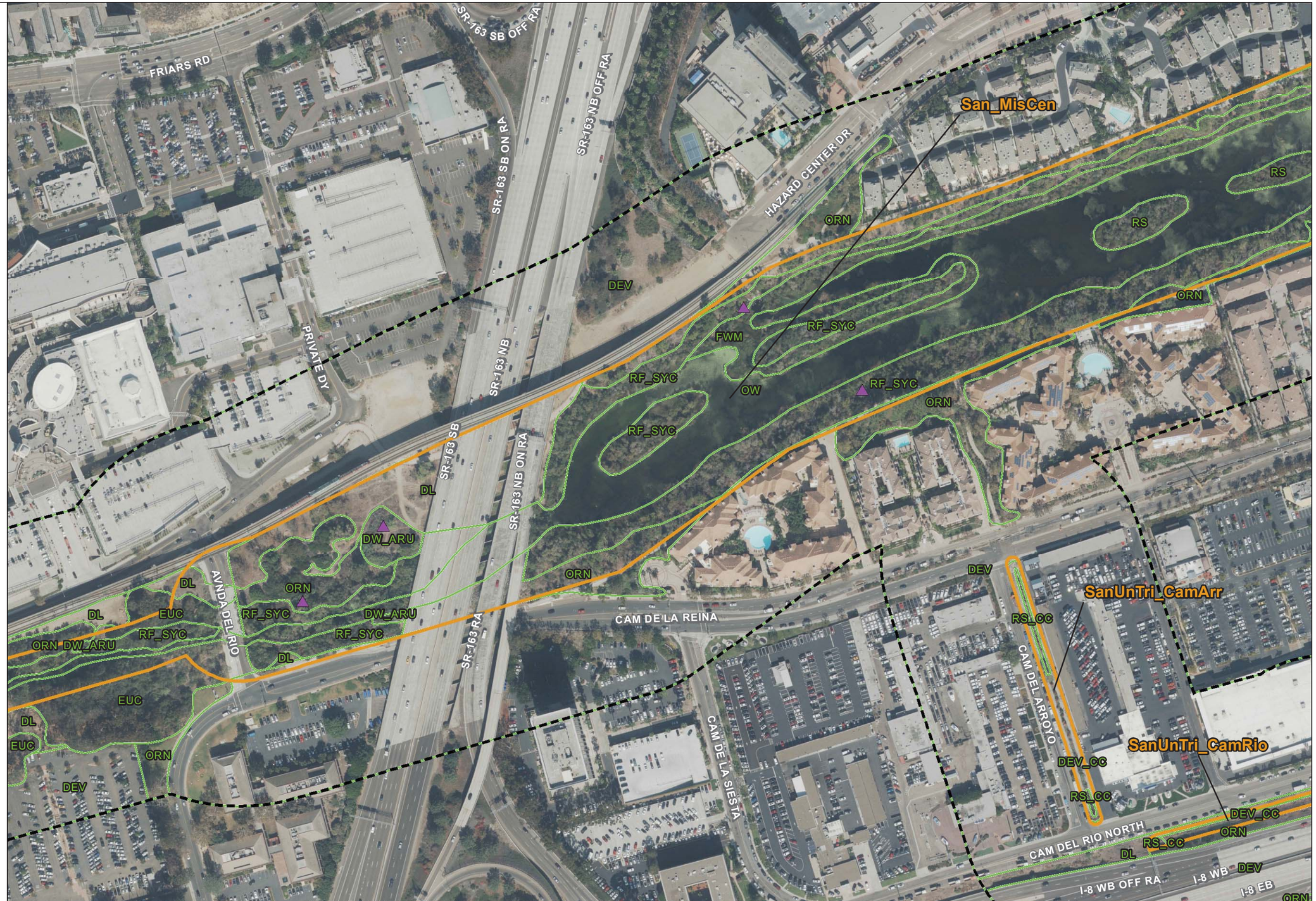
FWM, Freshwater Marsh

ORN, Ornamental Planting

RF_SYC, Riparian Forest (southern riparian forest)

RS, Riparian Scrub

RS_CC, Riparian Scrub (concrete-lined)



0 115 230 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3l

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

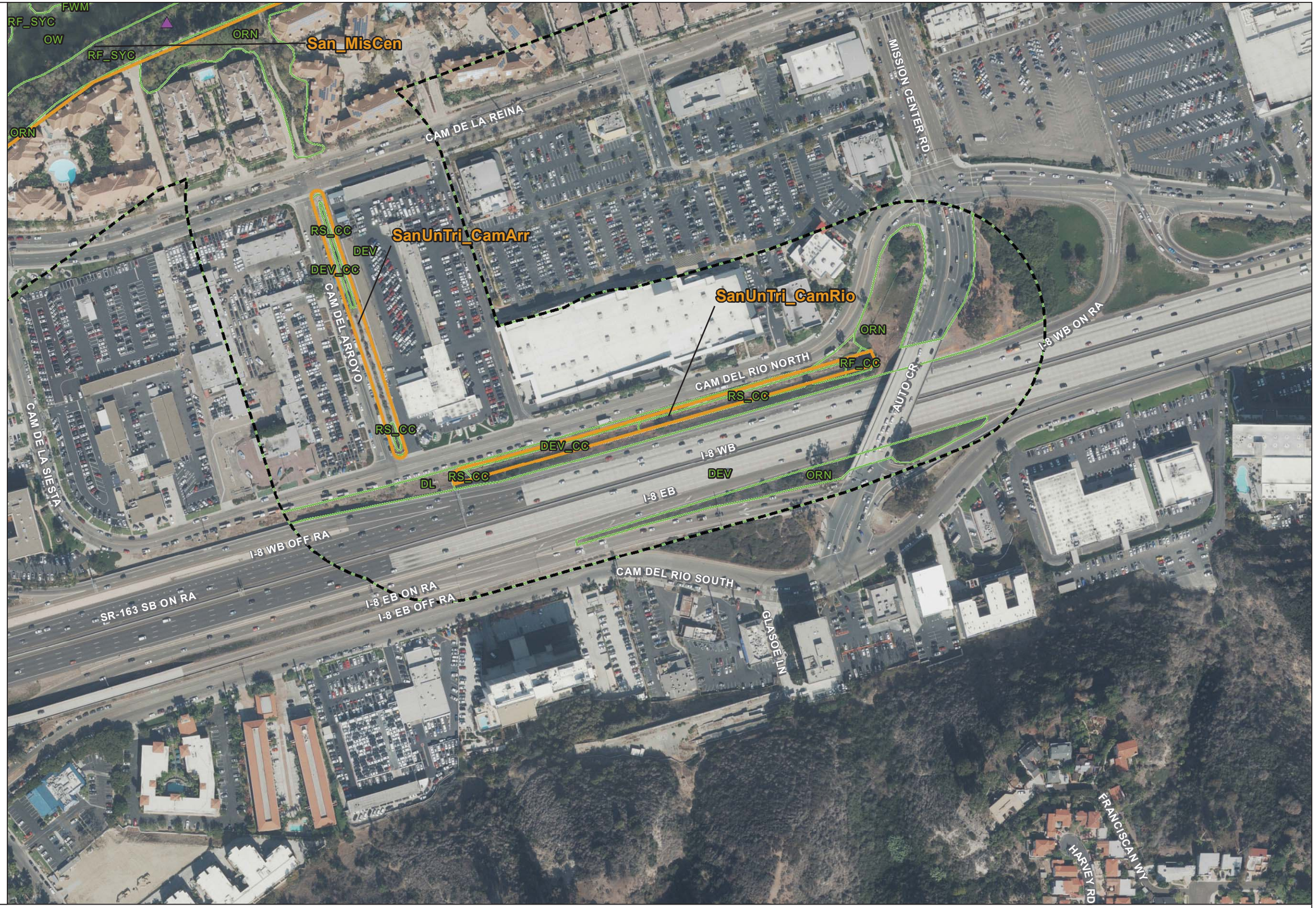
FWM, Freshwater Marsh

ORN, Ornamental Planting

RF_CC, Riparian Forest (concrete-lined)

RF_SYC, Riparian Forest (southern riparian forest)

RS_CC, Riparian Scrub (concrete-lined)



0 115 230 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3m

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): San Diego River - Camino del Rio

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

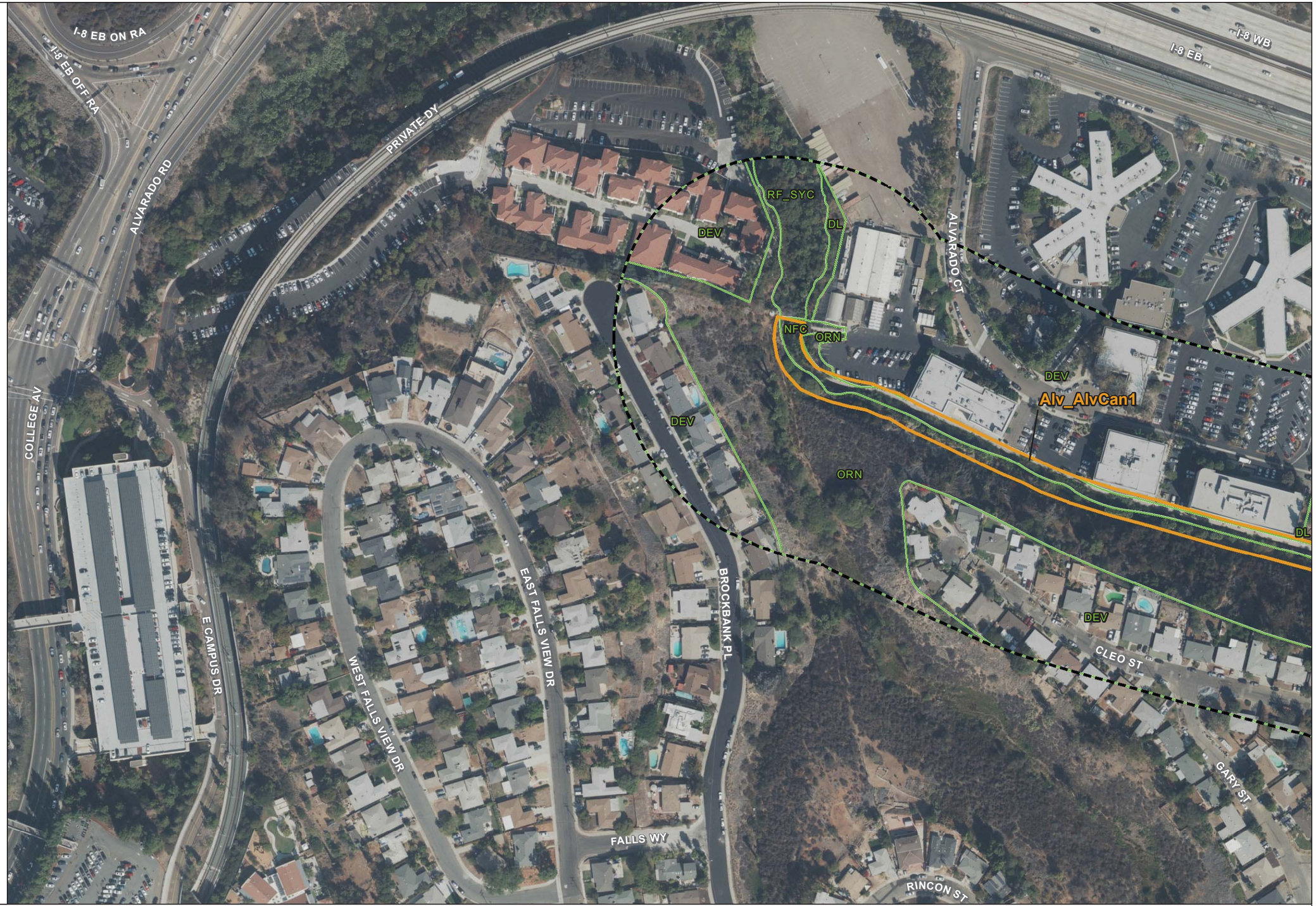
DEV, Urban/Developed

DL, Disturbed Land

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SYC, Riparian Forest (southern riparian forest)



0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3n

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Alvarado Canyon Creek - Alvarado

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300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

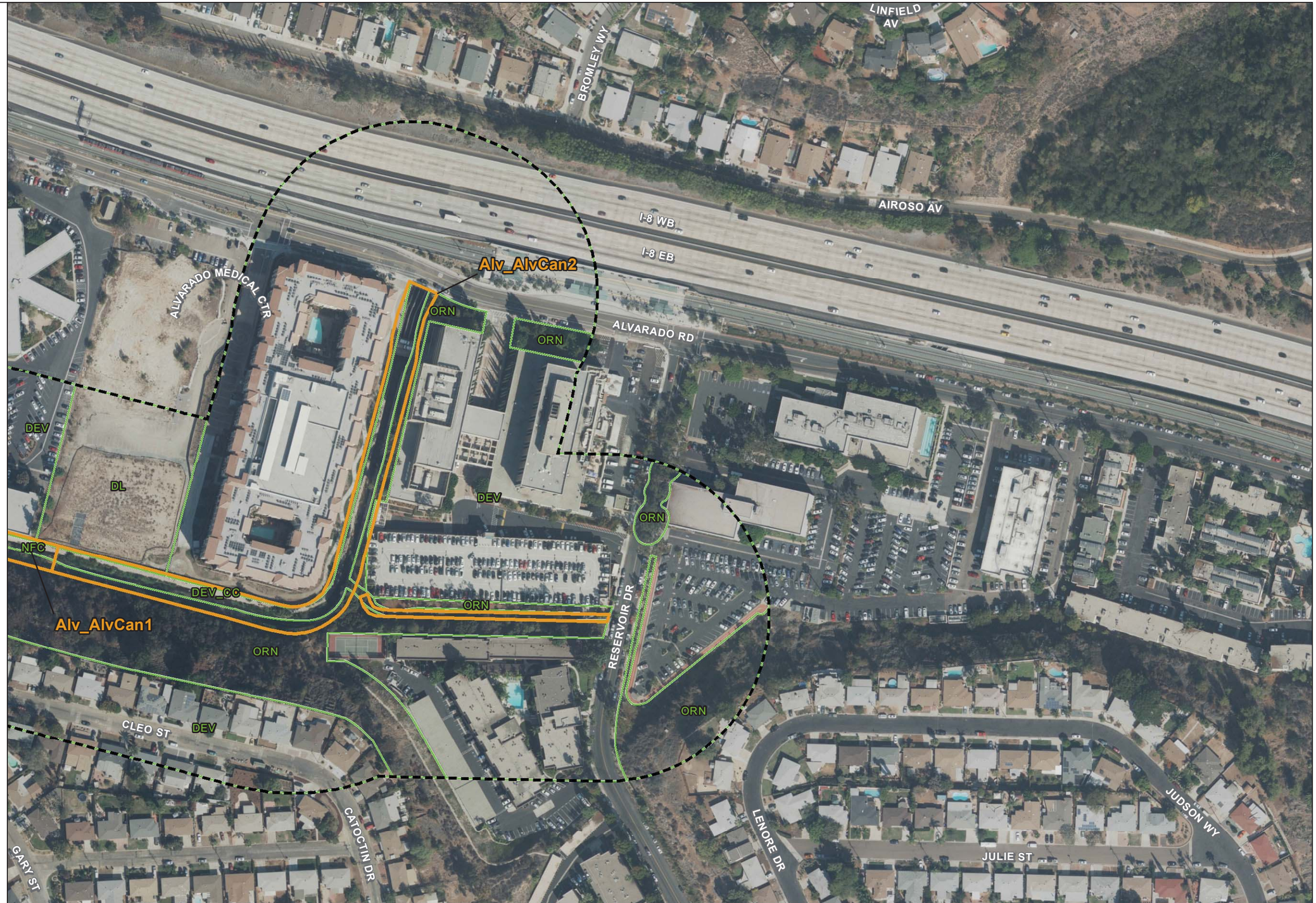
DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

NFC, Natural Flood Channel

ORN, Ornamental Planting



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3o

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urbanized/Developed

DL, Disturbed Land

FWM, Freshwater Marsh

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3p

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): San Diego River - Valeta

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

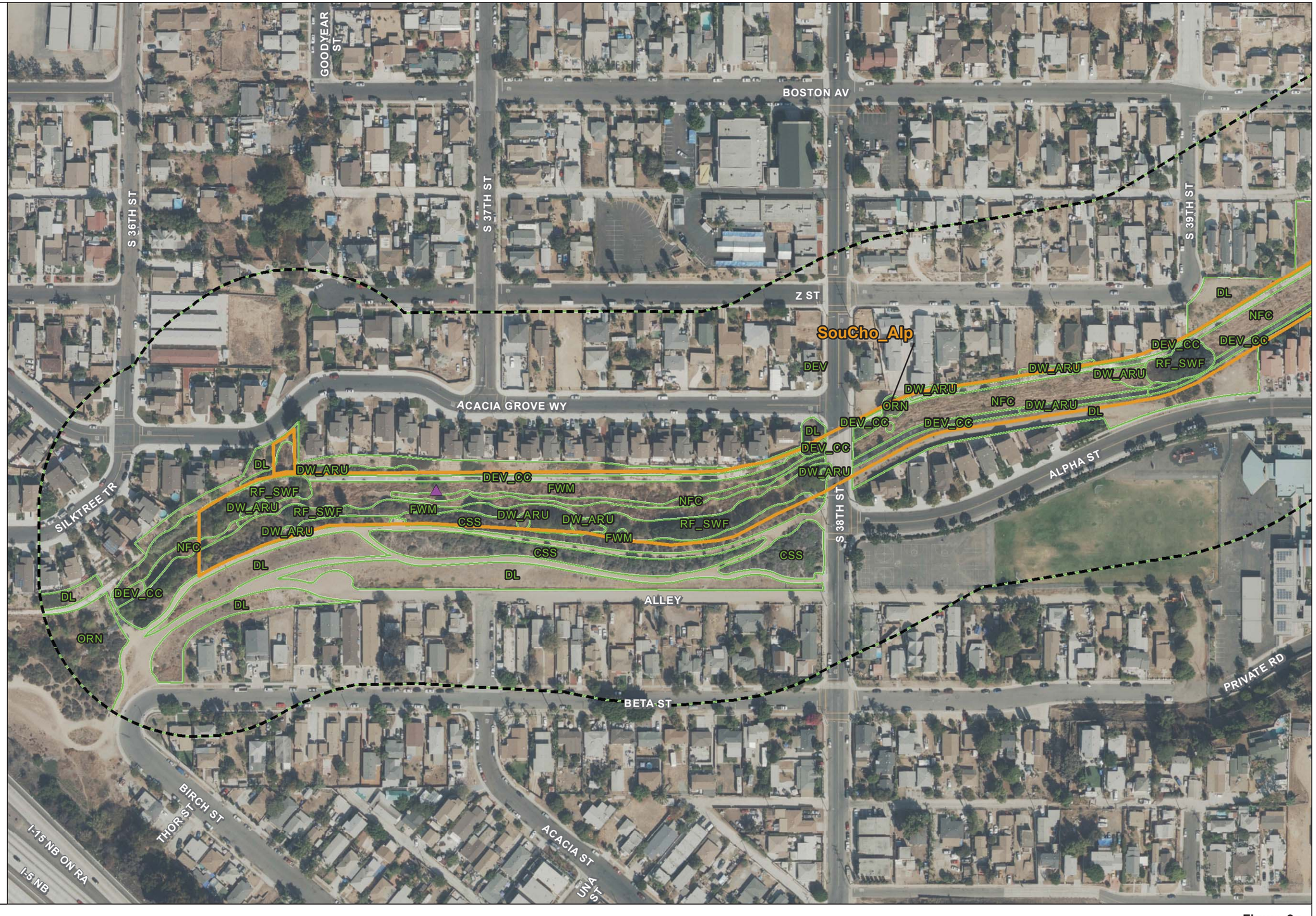
DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3q

WMP LBVI/SWFL Focused Survey Results

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300-Foot Survey Area

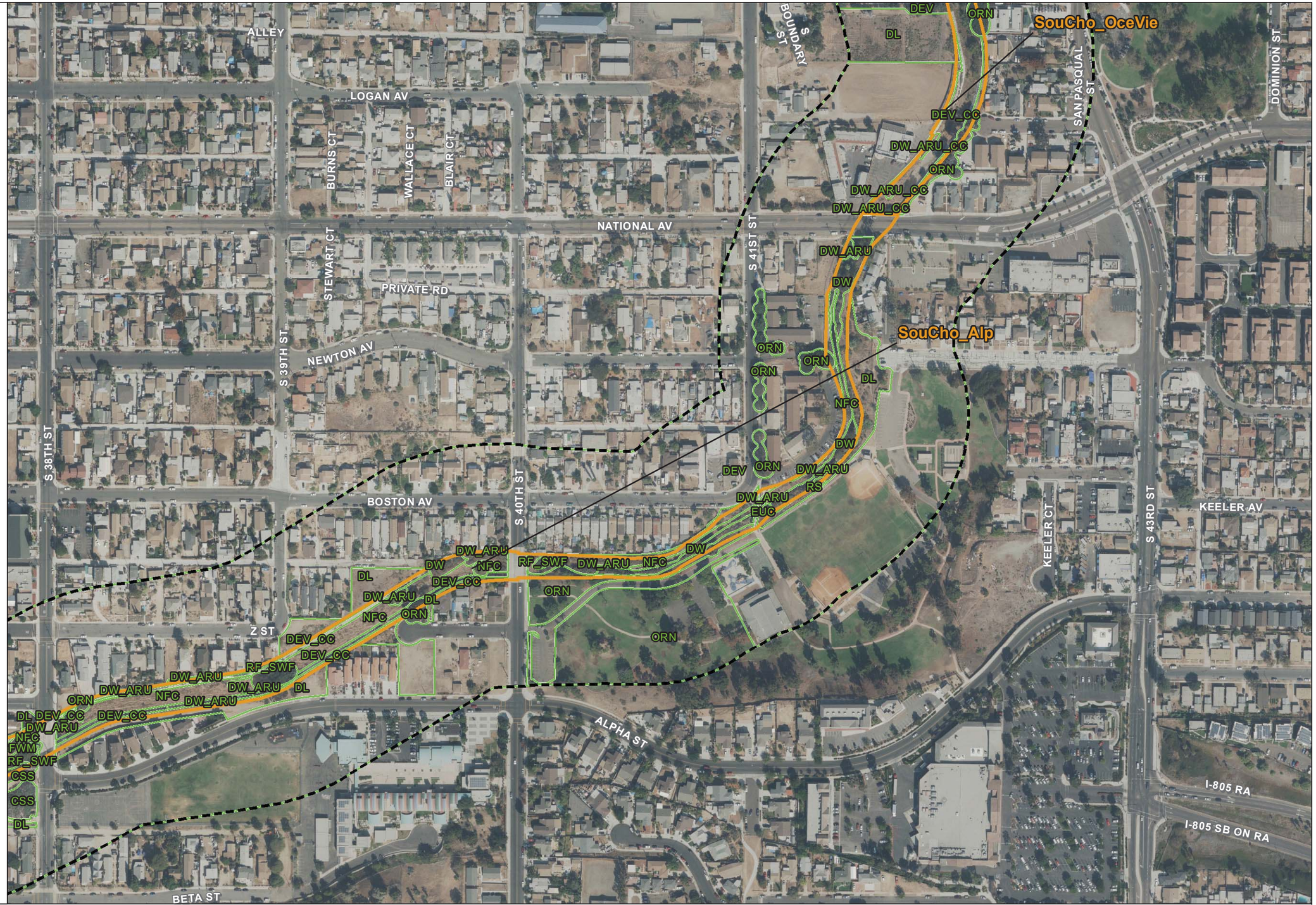
Channels

WMP Acronym

Vegetation

(Code, Common Name)

- CSS, Diegan Coastal Sage Scrub
- DEV, Urban/Developed
- DEV_CC, Developed concrete-lined channel
- DL, Disturbed Land
- DW, Disturbed Wetland
- DW_ARU, Disturbed Wetland (Arundo)
- DW_ARU_CC, Disturbed Wetland (Arundo; concrete-lined)
- EUC, Eucalyptus Woodland
- FWM, Freshwater Marsh
- NFC, Natural Flood Channel
- ORN, Ornamental Planting
- RF_SWF, Riparian Forest (southern willow forest)
- RS, Riparian Scrub



0 135 270 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3r

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): South Chollas Creek - Southcrest

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU_CC, Disturbed Wetland (Arundo; concrete-lined)

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3s

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): South Chollas Creek - Southcrest

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

NFC, Natural Flood Channel

ORN, Ornamental Planting

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3t

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

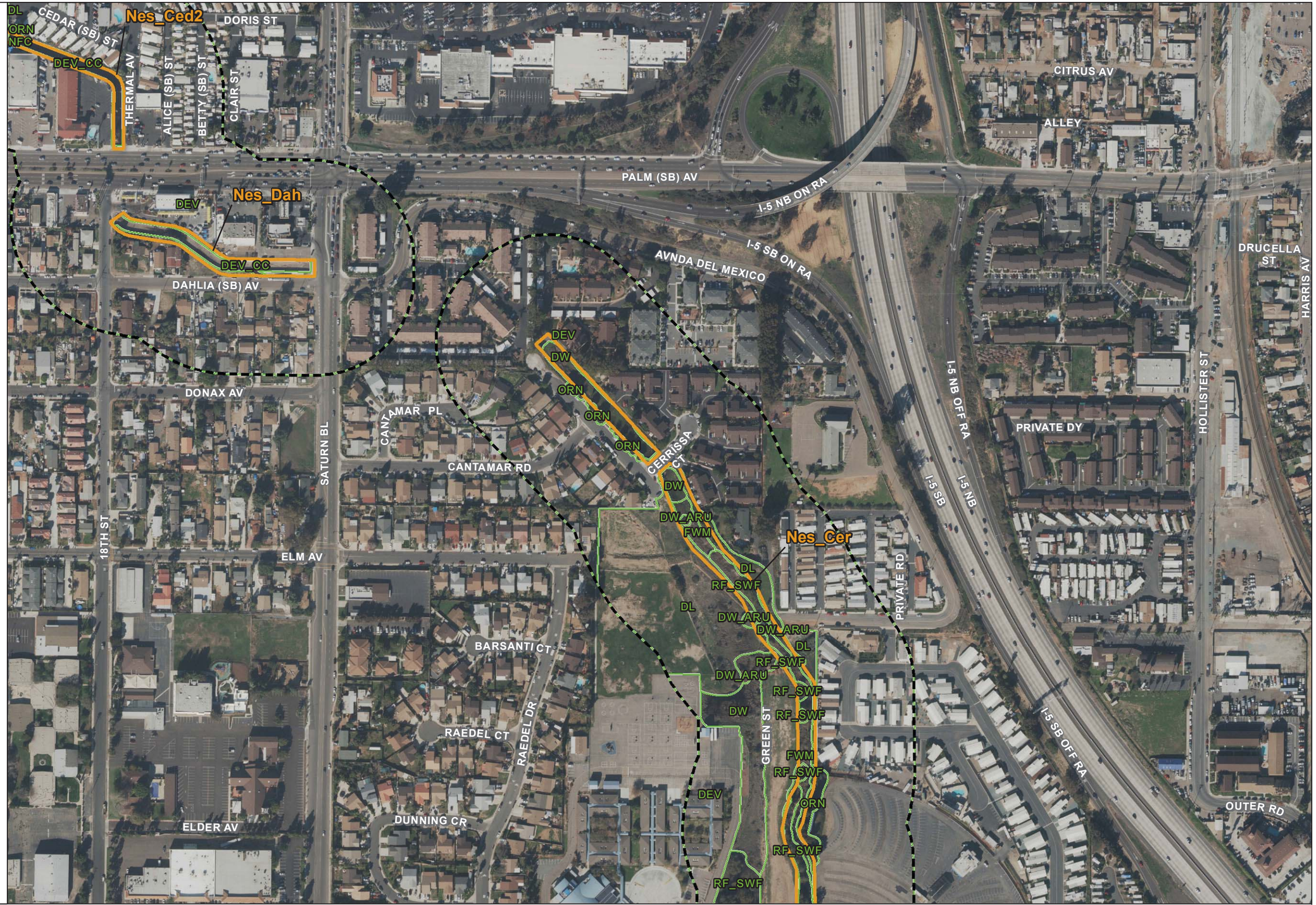
DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3u

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

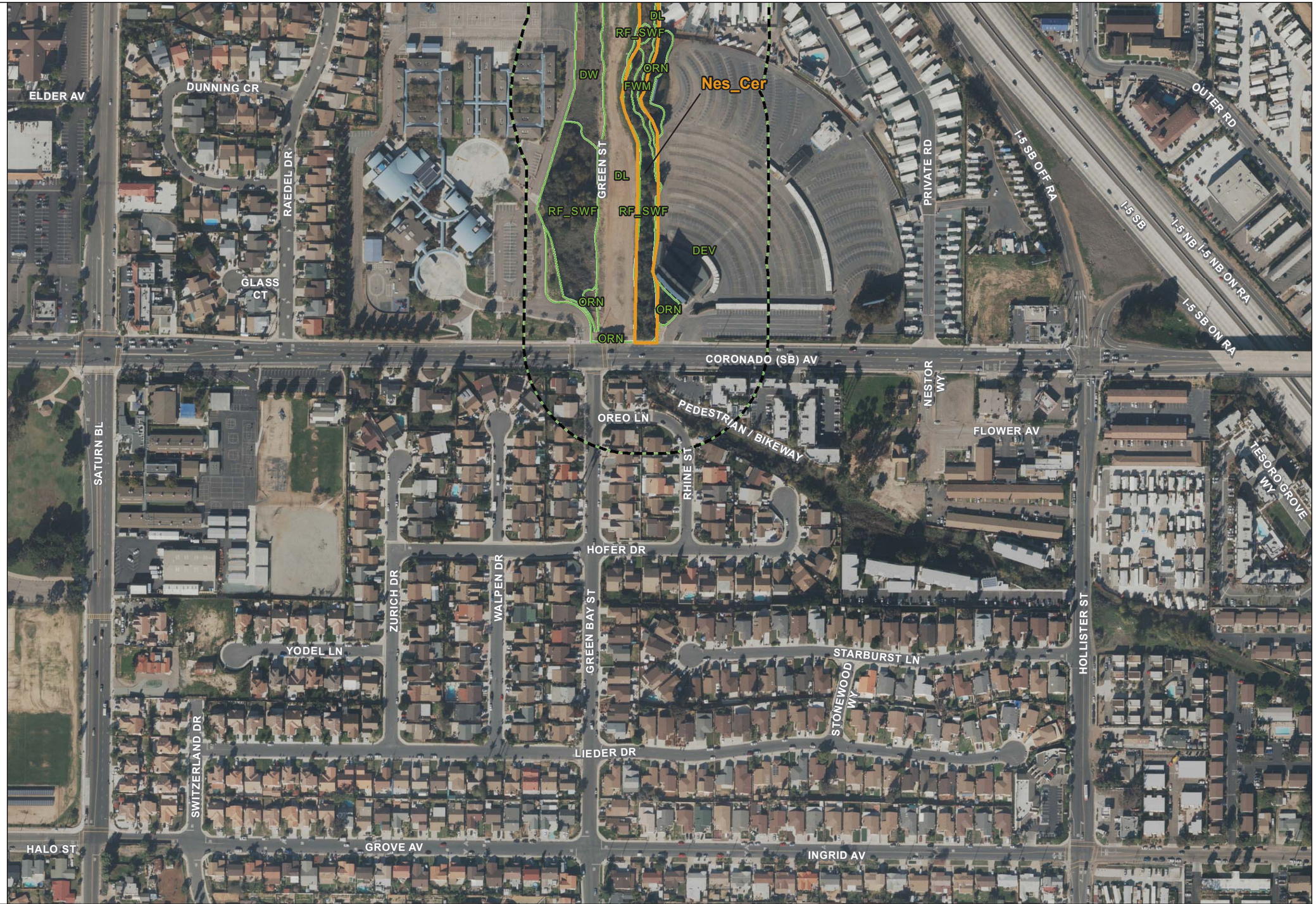
DL, Disturbed Land

DW, Disturbed Wetland

FWM, Freshwater Marsh

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3v

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

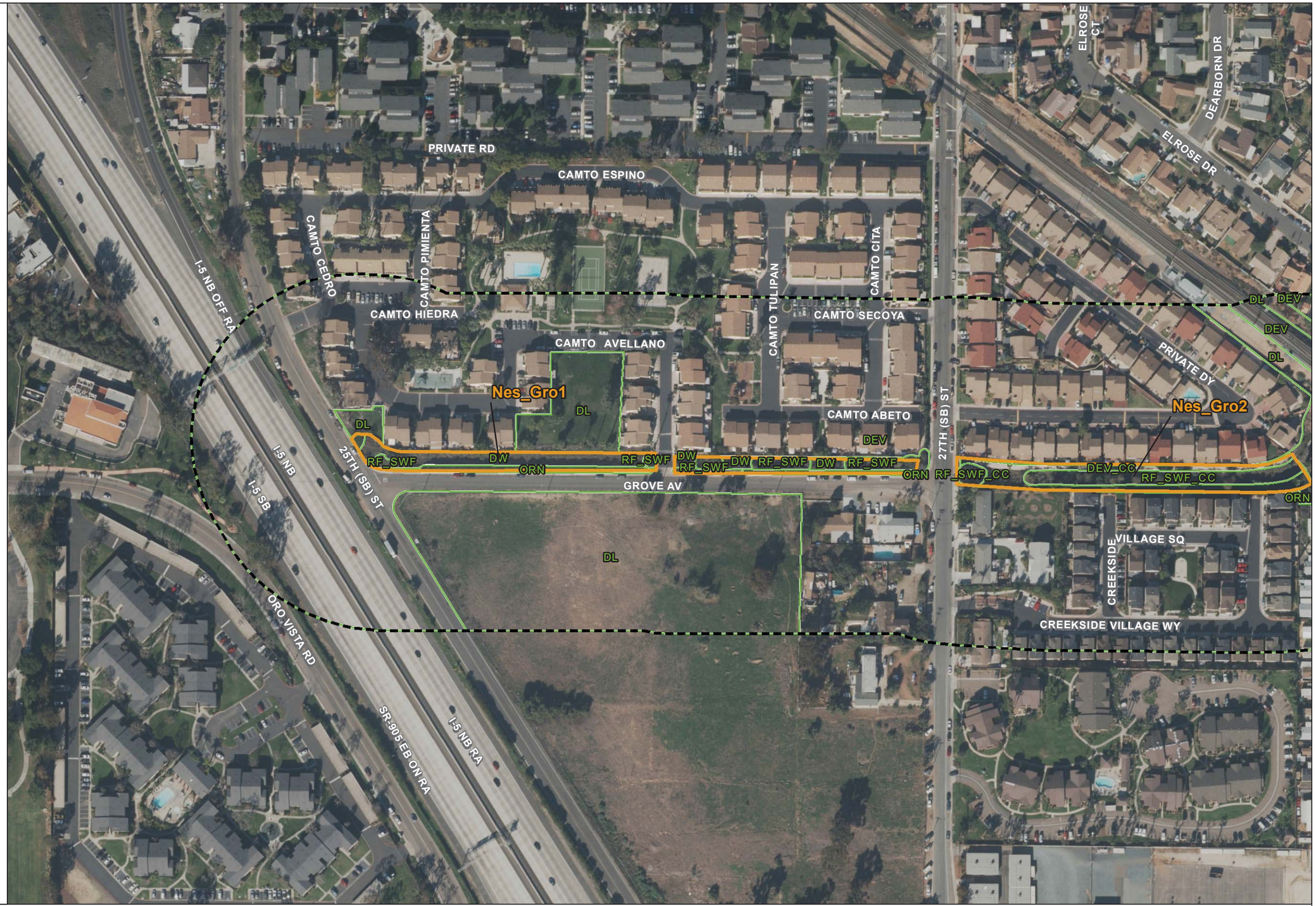
DL, Disturbed Land

DW, Disturbed Wetland

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)



0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3w

WMP LBVI/SWFL Focused Survey Results

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300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

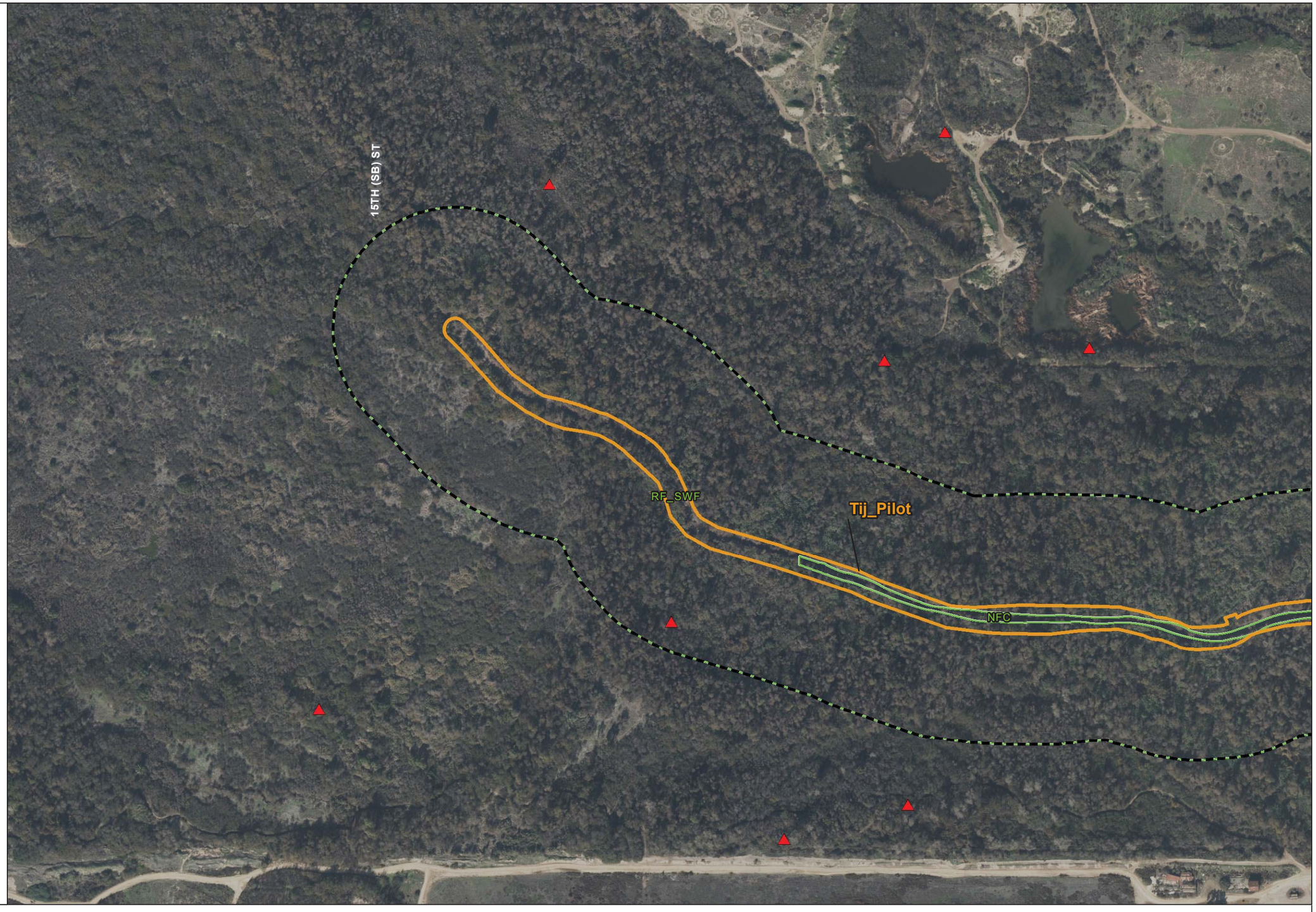
least Bell's vireo

Vegetation

(Code, Common Name)

NFC, Natural Flood Channel

RF_SWF, Riparian Forest (southern willow forest)



0 130 260 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3x

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

least Bell's vireo

Vegetation

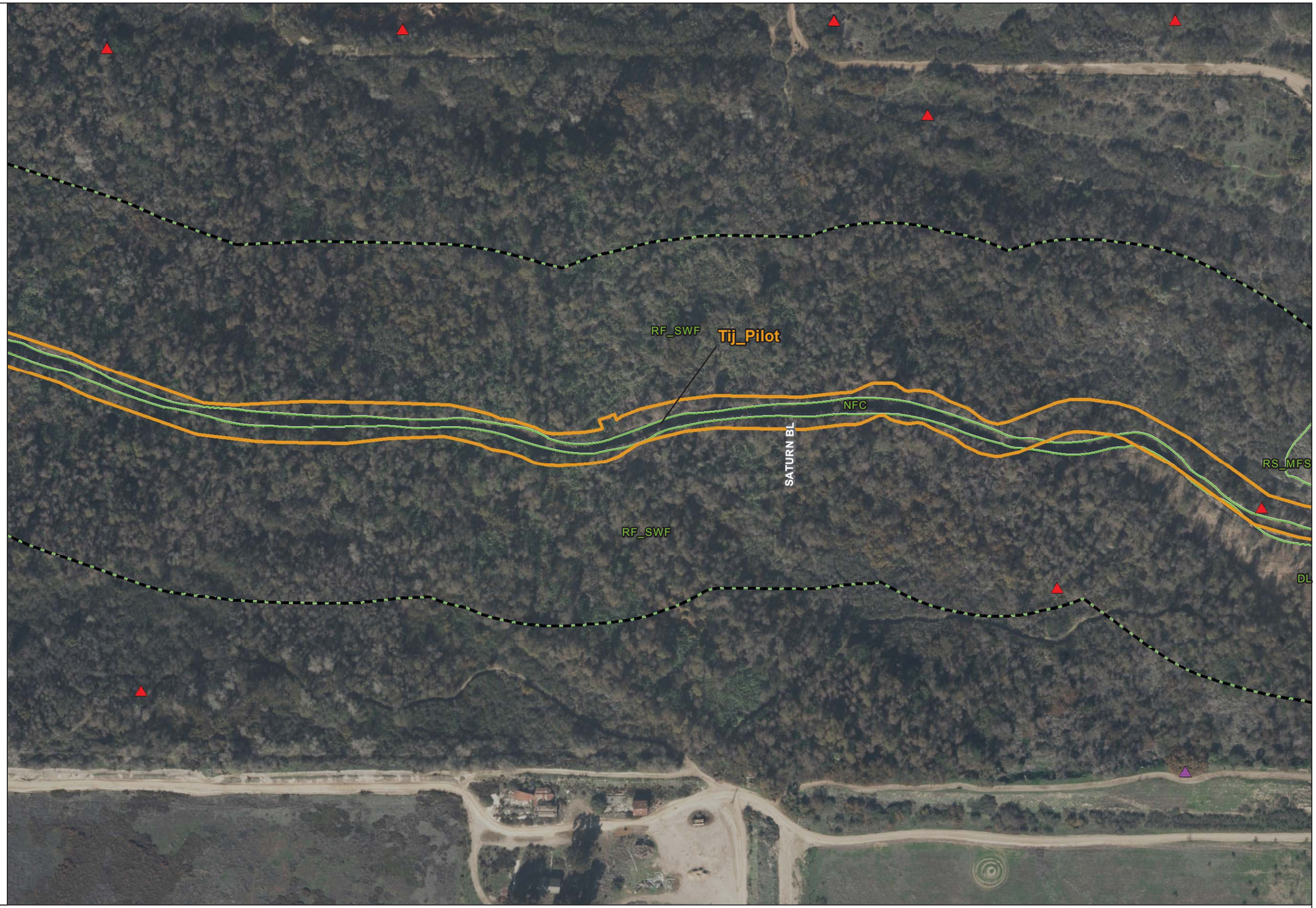
(Code, Common Name)

DL, Disturbed Land

NFC, Natural Flood Channel

RF_SWF, Riparian Forest (southern willow forest)

RS_MFS, Mule Fat Scrub



0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3y

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

least Bell's vireo

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

EUC, Eucalyptus Woodland

NFC, Natural Flood Channel

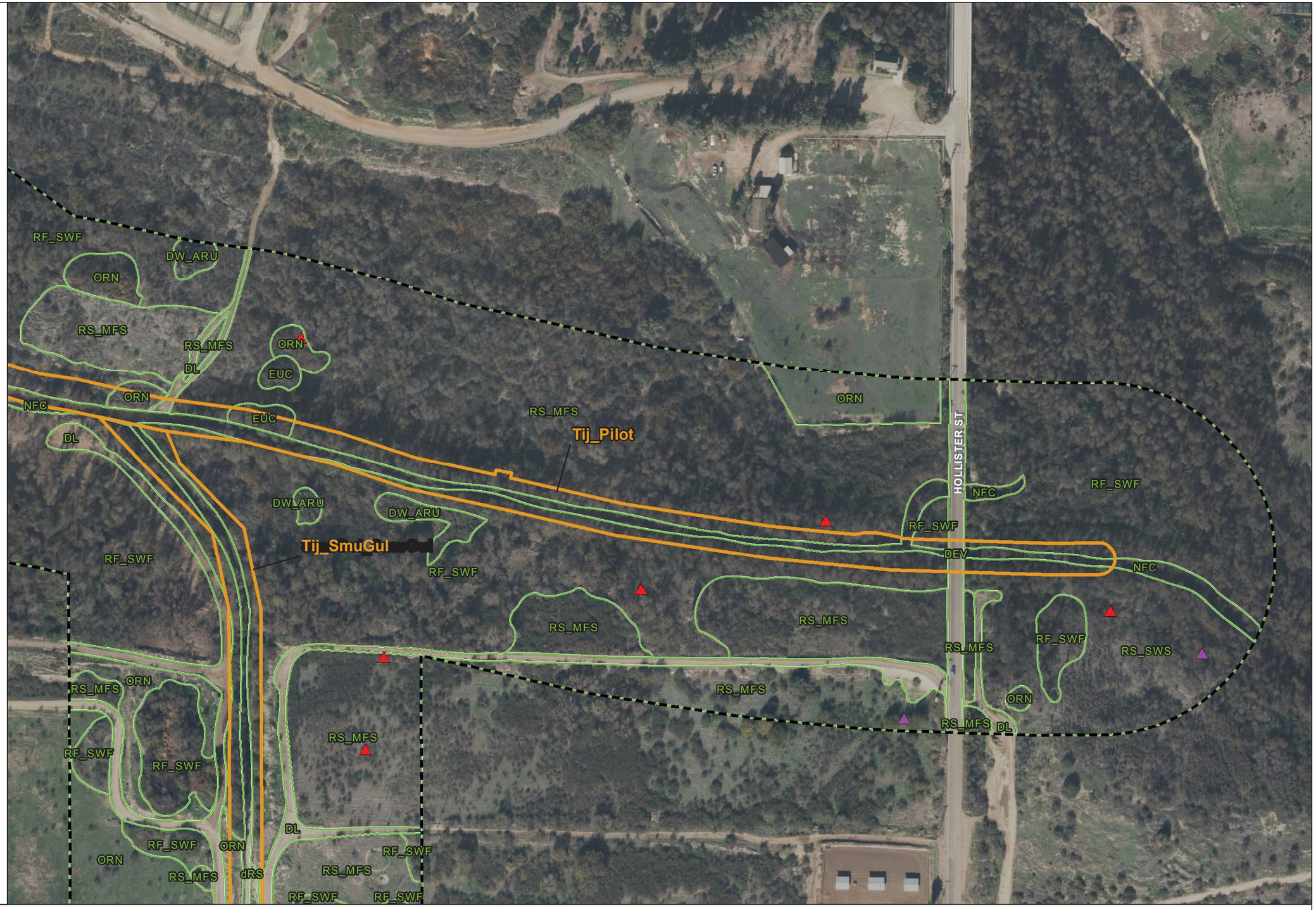
ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_MFS, Mule Fat Scrub

RS_SWS, Riparian Scrub (southern willow scrub)

dRS, (disturbed) Riparian Scrub



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3z

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

least Bell's vireo

Vegetation

(Code, Common Name)

AGR, Agriculture

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

EUC, Eucalyptus Woodland

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_MFS, Mule Fat Scrub

dRS, (disturbed) Riparian Scrub

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3aa

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

least Bell's vireo

Vegetation

(Code, Common Name)

AGR, Agriculture

CC, Chamise Chaparral

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

EUC, Eucalyptus Woodland

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_MFS, Mule Fat Scrub

dRS, (disturbed) Riparian Scrub

0 130 260 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3ab

WMP LBVI/SWFL Focused Survey Results

300-Foot Survey Area

Channels

WMP Acronym

WMP Survey Species Occurrence

Brown-headed cowbirds

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

EUC, Eucalyptus Woodland

ORN, Ornamental Planting

ORN_CC, Ornamental Planting (concrete-lined channel)

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)

RS, Riparian Scrub

0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3ac

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Spring Canyon Creek

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300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

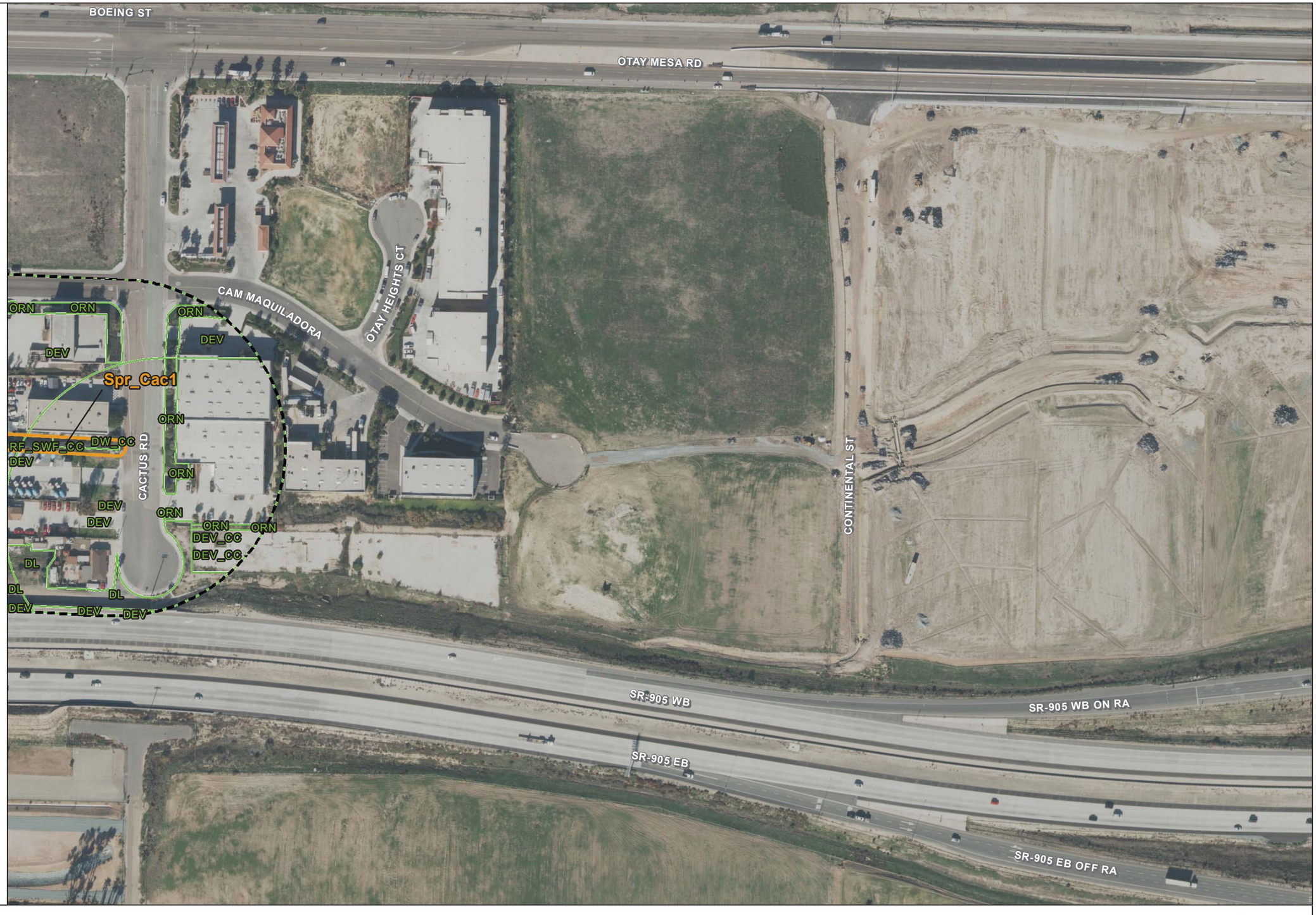
DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

ORN, Ornamental Planting

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)



0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3ad

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Spring Canyon Creek

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_SWS, Riparian Scrub (southern willow scrub)

dFWM, (disturbed) Freshwater Marsh

0 130 260 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3ae

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River - La Media

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)

RS, Riparian Scrub

RS_SWS, Riparian Scrub (southern willow scrub)

dFWM, (disturbed) Freshwater Marsh

dFWM_CC, (disturbed) Freshwater Marsh (concrete-lined channel)

0 90 180 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3af

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River - Siempre Viva

300-Foot Survey Area

Channels

WMP Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DL, Disturbed Land

DW, Disturbed Wetland

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub

RS_SWS, Riparian Scrub (southern willow scrub)

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3ag

WMP LBVI/SWFL Focused Survey Results

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River - Siempre Viva

APPENDIX A

Wildlife Species Detected During City of San Diego's Waterways Maintenance Plan Project SWFL/LBVI Surveys 2017

Common Name	Scientific Name	Order	Family	Status
Reptiles and Amphibians				
Baja California Chorus Frog	*Pseudacris hypochondriaca*	Anura	Hylidae	None
Bullfrog (invasive alien)	*Lithobates catesbeianus*	Anura	Ranidae	None
African Clawed Frog (alien)	*Xenopus laevis*	Anura	Pipidae	None
Red-eared Slider	*Trachemys scripta elegans*	Testudines	Emydidae	None
Great Basin Fence Lizard	*Sceloporus occidentalis longipes*	Squamata	Phrynosomatidae	None
California Side-blotched Lizard	*Uta stansburiana elegans*	Squamata	Phrynosomatidae	None
Avian				
Gadwall	*Anas strepera*	Anseriformes	Anatidae	None
Mallard	*Anas platyrhynchos*	Anseriformes	Anatidae	None
Pied-billed Grebe	*Podilymbus podiceps*	Podicipediformes	Podicipedidae	None
Rock Pigeon	*Columba livia*	Columbiformes	Columbidae	None
Eurasian Collared-Dove	*Streptopelia decaocto*	Columbiformes	Columbidae	None
Common Ground-Dove	*Columbina passerina*	Columbiformes	Columbidae	None
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae	None
Greater Roadrunner	*Geococcyx californianus*	Cuculiformes	Cuculidae	None
White-throated Swift	*Aeronautes saxatalis*	Caprimulgiformes	Apodidae	None
Black-chinned Hummingbird	*Archilochus alexandri*	Apodiformes	Trochilidae	None
Anna's Hummingbird	*Calypte anna*	Apodiformes	Trochilidae	None
Selasphorus Hummingbird	*Selasphorus* sp.	Apodiformes	Trochilidae	None
American Coot	*Fulica americana*	Gruiformes	Rallidae	None
Black-necked Stilt	*Himantopus mexicanus*	Charadriiformes	Recurvirostridae	None
Killdeer	*Charadrius vociferus*	Charadriiformes	Charadriidae	None
Ring-billed Gull	*Larus delawarensis*	Charadriiformes	Laridae	None
Western Gull	*Larus occidentalis*	Charadriiformes	Laridae	None
California Least Tern	*Sternula antillarum*	Charadriiformes	Laridae	FE, SE, FP
Great Blue Heron	*Ardea herodias*	Pelecaniformes	Ardeidae	None
Great Egret	*Ardea alba*	Pelecaniformes	Ardeidae	None
Snowy Egret	*Egretta thula*	Pelecaniformes	Ardeidae	None
Green Heron	*Butorides virescens*	Pelecaniformes	Ardeidae	None
Black-crowned Night-Heron	*Nycticorax nycticorax*	Pelecaniformes	Ardeidae	None
Turkey Vulture	*Cathartes aura*	Accipitriformes	Cathartidae	None
White-tailed Kite	*Elanus leucurus*	Accipitriformes	Accipitridae	FP
Northern Harrier	*Circus cyaneus*	Accipitriformes	Accipitridae	SSC (nesting)
Cooper's Hawk	*Accipiter cooperii*	Accipitriformes	Accipitridae	WL
Red-shouldered Hawk	*Buteo lineatus*	Accipitriformes	Accipitridae	None
Red-tailed Hawk	*Buteo jamaicensis*	Accipitriformes	Accipitridae	None
Barn Owl	*Tyto alba*	Strigiformes	Tytonidae	None
Acorn Woodpecker	*Melanerpes formicivorus*	Piciformes	Picidae	None
Nuttall's Woodpecker	*Picoides nuttallii*	Piciformes	Picidae	None
Downy Woodpecker	*Picoides pubescens*	Piciformes	Picidae	None
American Kestrel	*Falco sparverius*	Falconiformes	Falconidae	None

Common Name	Scientific Name	Order	Family	Status
Red-crowned Parrot*	*Amazona viridigenalis*	Psittaciformes	Psittacidae	None
Willow Flycatcher (migrant)	*Empidonax traillii*	Passeriformes	Tyrannidae	SE-Nesting
Pacific-slope Flycatcher	*Empidonax difficilis*	Passeriformes	Tyrannidae	None
Black Phoebe	*Sayornis nigricans*	Passeriformes	Tyrannidae	None
Say's Phoebe	*Sayornis saya*	Passeriformes	Tyrannidae	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	Passeriformes	Tyrannidae	None
Cassin's Kingbird	*Tyrannus vociferans*	Passeriformes	Tyrannidae	None
Western Kingbird	*Tyrannus verticalis*	Passeriformes	Tyrannidae	None
Least Bell's Vireo	*Vireo bellii pusillus*	Passeriformes	Vireonidae	FE, SE
Hutton's Vireo	*Vireo huttoni*	Passeriformes	Vireonidae	None
Warbling Vireo	*Vireo gilvus*	Passeriformes	Vireonidae	None
Red-eyed Vireo (RV)	*Vireo olivaceus*	Passeriformes	Vireonidae	None
Black-throated Magpie-Jay*	*Calocitta colliei*	Passeriformes	Corvidae	None
California Scrub-Jay	*Aphelocoma californica*	Passeriformes	Corvidae	None
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae	None
Common Raven	*Corvus corax*	Passeriformes	Corvidae	None
California Horned Lark	*Eremophipa alpestris actia*	Passeriformes	Alaudidae	WL
Tree Swallow	*Tachycineta bicolor*	Passeriformes	Hirundinidae	None
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Passeriformes	Hirundinidae	None
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae	None
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae	None
House Wren	*Troglodytes aedon*	Passeriformes	Troglodytidae	None
Marsh Wren	*Cistothorus palustris*	Passeriformes	Troglodytidae	None
Bewick's Wren	*Thryomanes bewickii*	Passeriformes	Troglodytidae	None
Blue-gray Gnatcatcher	*Polioptila caerulea*	Passeriformes	Polioptilidae	None
Coastal California Gnatcatcher	*Polioptila californica californica*	Passeriformes	Polioptilidae	FT, SSC
Wrentit	*Chamaea fasciata*	Passeriformes	Sylviidae	None
Western Bluebird	*Sialia mexicana*	Passeriformes	Turdidae	None
Swainson's Thrush	*Catharus ustulatus*	Passeriformes	Turdidae	None
American Robin	*Turdus migratorius*	Passeriformes	Turdidae	None
California Thrasher	*Toxostoma redivivum*	Passeriformes	Mimidae	None
Northern Mockingbird	*Mimus polyglottos*	Passeriformes	Mimidae	None
European Starling	*Sturnus vulgaris*	Passeriformes	Sturnidae	None
Northern Red Bishop*	*Euplectes franciscanus*	Passeriformes	Ploceidae	None
Scaly-breasted Munia*	*Lonchura punctulata*	Passeriformes	Estrildidae	None
House Sparrow*	*Passer domesticus*	Passeriformes	Passeridae	None
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae	None
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae	None
Orange-crowned Warbler	*Oreothlypis celata*	Passeriformes	Parulidae	None
Common Yellowthroat	*Geothlypis trichas*	Passeriformes	Parulidae	None
Yellow Warbler	*Setophaga petechia*	Passeriformes	Parulidae	SSC

Common Name	Scientific Name	Order	Family	Status
Wilson's Warbler	*Cardellina pusilla*	Passeriformes	Parulidae	None
Yellow-breasted Chat	*Icteria virens*	Passeriformes	Parulidae	SSC
Spotted Towhee	*Pipilo maculatus*	Passeriformes	Emberizidae	None
Southern California Rufous-crowned Sparrow	*Aimophila ruficeps*	Passeriformes	Emberizidae	WL
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae	None
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae	None
Western Tanager	*Piranga ludoviciana*	Passeriformes	Cardinalidae	None
Northern Cardinal*	*Cardinalis cardinalis*	Passeriformes	Cardinalidae	None
Black-headed Grosbeak	*Pheucticus melanocephalus*	Passeriformes	Cardinalidae	None
Blue Grosbeak	*Passerina caerulea*	Passeriformes	Cardinalidae	None
Lazuli Bunting	*Passerina amoena*	Passeriformes	Cardinalidae	None
Red-winged Blackbird	*Agelaius phoeniceus*	Passeriformes	Icteridae	None
Brown-headed Cowbird	*Molothrus ater*	Passeriformes	Icteridae	None
Hooded Oriole	*Icterus cucullatus*	Passeriformes	Icteridae	None
Bullock's Oriole	*Icterus bullockii*	Passeriformes	Icteridae	None
Mammals				
Opossum	*Didelphis virginiana*	Didelphimorphia	Didelphidae	None
Desert (Audubon) Cottontail	*Sylvilagus auduboni*	Lagomorpha	Leporidae	None
Woodrat	*Neotoma* sp.	Rodentia	Muridae	None
California Ground Squirrel	*Spermophilus beecheyi nudipes*	Rodentia	Sciuridae	None
Southern Pocket Gopher	*Thomomys bottae sanctidiegi*	Rodentia	Geomyidae	None
Coyote	*Canis latrans*	Carnivora	Canidae	None
Bobcat	*Felis rufus*	Carnivora	Felidae	None
Striped Skunk	*Mephitis mephitis holzneri*	Carnivora	Mephitidae	None
Raccoon	*Procyon lotor psora*	Carnivora	Procyonidae	None
Southern Mule Deer	*Odocoileus hemionus fulignata*	Artiodactyla	Cervidae	None

FE –Federally Endangered, FT-Federally Threatened, SE- State Endangered, FP – CDFW Fully Protected species, WL – California Department of Fish and Wildlife (CDFW) Watch List species, SSC – CDFW Species of Special Concern
*Naturalized or Vagrant Species
RV – Rare vagrant

APPENDIX B

Willow Flycatcher Survey and Detection Forms
City of San Diego's Waterways Maintenance Plan Project
SWFL Surveys 2017

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/Black Mountain State CA County San Diego
USGS Quad Name Del Mar Elevation 74 (meters)
Creek, River, Wetland, or Lake Name Los Penasquitos Creek at Black Mountian Road: WMP Maps 5, 6
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** X ***No*** ____

Survey Coordinates: Start: E 487818 N 3644985 UTM Datum WGS84 (See instructions)
Stop: E 488164 N 3644419 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/24/17 Start 0930 Stop 1100 Total hrs 1.5	0	0	0	N	3 BHCO				
Survey # 2 Observer(s) B. Lohstroh	Date 6/5/17 Start 0930 Stop 1100 Total hrs 1.5	0	0	0	N	4 BHCO				
Survey # 3 Observer(s) B. Lohstroh	Date 6/19/17 Start 0930 Stop 1100 Total hrs 1.5	0	0	0	N	2 BHCO				
Survey # 4 Observer(s) B. Lohstroh	Date 6/27/17 Start 0945 Stop 1100 Total hrs 1.25	0	0	0	N	2 BHCO				
Survey # 5 Observer(s) B. Lohstroh	Date 7/12/17 Start 0925 Stop 1050 Total hrs 1.5	0	0	0	N	1 BHCO				

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 7.25	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/Black Mountain Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown _x__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _x___ Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _x__ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _x___ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 0.74 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

x Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Arundo donax

Average height of canopy (Do not include a range): 10 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Site is adjacent to a recreation center, a horse park and a busy road. Brown-headed cowbird nest parasitism documented onsite. Surveys combined with least Bell's vireo survey.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/Chollas State CA County San Diego
USGS Quad Name National City Elevation 2-13 (meters)
Creek, River, Wetland, or Lake Name Chollas Creek: WMP Maps 57, 58, 59.
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes X No____

Survey Coordinates: Start: E 488944 N 3617048 UTM Datum WGS84 (See instructions)
Stop: E 490447 N 3618141 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/18/17 Start 0745 Stop 1100 Total hrs 3.25	0	0	0	N					
Survey # 2 Observer(s) B. Lohstroh	Date 6/2/17 Start 0545 Stop 0730 Total hrs 1.75	0	0	0	N					
Survey # 3 Observer(s) B. Lohstroh	Date 6/15/17 Start 0640 Stop 0830 Total hrs 1.8	0	0	0	N					
Survey # 4 Observer(s) B. Lohstroh	Date 6/26/17 Start 0630 Stop 0830 Total hrs 2	0	0	0	N	1 BHCO				
Survey # 5 Observer(s) B. Lohstroh	Date 7/11/17 Start 0600 Stop 0750 Total hrs 1.8	0	0	0	N					

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 10.6	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/Chollas Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown _X__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _X___ Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _X__ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _X___ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 2.27 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Arundo donax

Average height of canopy (Do not include a range): 5 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Concrete channel banks present, with occasional concrete bed at bridge underpasses. Highly urbanized, with occasional transient encampments.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/Nestor Creek State CA County San Diego
USGS Quad Name Imperial Beach Elevation 5 (meters)
Creek, River, Wetland, or Lake Name Nestor Creek
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes X No____

Survey Coordinates: Start: E 491496 N 3605006 UTM Datum WGS84 (See instructions)
Stop: E 491803 N 3604282 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1 Observer(s) B. Lohstroh	Date 5/18/17 Start 0600 Stop 0715 Total hrs 1.25	2	0	0	N	WIFLs responded to recorded vocalization, apparent migrants as their call resembled that of E.t. brewsteri.	# Birds	Sex	UTM E	UTM N
Survey # 2 Observer(s) B. Lohstroh	Date 6/2/17 Start 0745 Stop 0900 Total hrs 1.25	0	0	0	N		# Birds	Sex	UTM E	UTM N
Survey # 3 Observer(s) B. Lohstroh	Date 6/15/17 Start 0845 Stop 0945 Total hrs 1	0	0	0	N		# Birds	Sex	UTM E	UTM N
Survey # 4 Observer(s) B. Lohstroh	Date 6/26/17 Start 0840 Stop 0915 Total hrs 0.6	0	0	0	N		# Birds	Sex	UTM E	UTM N
Survey # 5 Observer(s) B. Lohstroh	Date 7/11/17 Start 0800 Stop 0850 Total hrs 0.8	0	0	0	N		# Birds	Sex	UTM E	UTM N

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 4.9	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/Nestor Creek Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown _X__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _X___ Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _X__ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _X___ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 0.9 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Arundo donax

Average height of canopy (Do not include a range): 7 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.
Site is surrounded by urban area, in between school and drive-in movie theater.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/SD River State CA County San Diego
USGS Quad Name La Jolla and La Mesa Quads Elevation 6-36 (meters)
Creek, River, Wetland, or Lake Name San Diego River and Murphy Canyon Creek: WMP Maps 23, 24, 27, 28, 30, 31
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** X ***No*** ____

Survey Coordinates: Start: E 484564 N 3625383 UTM Datum WGS84 (See instructions)
Stop: E 485261 N 3625691 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/26/17 Start 0600 Stop 1100 Total hrs 5	0	0	0	N	7 BHCO				
Survey # 2 Observer(s) B. Lohstroh	Date 6/7/17 Start 0550 Stop 1050 Total hrs 5	0	0	0	N	4 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 3 Observer(s) B. Lohstroh	Date 6/21/17 Start 0630 Stop 1100 Total hrs 4.5	0	0	0	N	3 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 4 Observer(s) B. Lohstroh	Date 7/6/17 Start 0625 Stop 1030 Total hrs 4	0	0	0	N	2 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 5 Observer(s) B. Lohstroh	Date 7/17/17 Start 0625 Stop 1045 Total hrs 4.25	0	0	0	N	3 BHCO	# Birds	Sex	UTM E	UTM N

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 22.75	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/SD River Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown _x__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _x___ Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _x__ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _x___ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 2.15 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

x Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Arundo donax

Average height of canopy (Do not include a range): 25 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Additional survey segments included:
Murphy Canyon Creek Survey Segment 1: Start: E 489362, N 3629140 Stop: E 489441, N 3628499.
Murphy Canyon Creek Survey Segment 2: Start: E 489251, N 3627723 Stop: E 489285, N 3626957.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/Soledad-Los Peñasquitos State CA County San Diego
USGS Quad Name Del Mar Elevation 8-5 (meters)
Creek, River, Wetland, or Lake Name Soledad Canyon Creek, Los Peñasquitos Lagoon: WMP Maps 7, 9, 11, 12
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** X ***No*** ____

Survey Coordinates: Start: E 479464 N 3639851 UTM Datum WGS84 (See instructions)
Stop: E 477724 N 3641968 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/24/17 Start 0545 Stop 0915 Total hrs 3.5	0	0	0	N	5 BHCO				
Survey # 2 Observer(s) B. Lohstroh	Date 6/5/17 Start 0545 Stop 0920 Total hrs 3.6	0	0	0	N	3 BHCO				
Survey # 3 Observer(s) B. Lohstroh	Date 6/19/17 Start 0545 Stop 0920 Total hrs 3.6	0	0	0	N	3 BHCO				
Survey # 4 Observer(s) B. Lohstroh	Date 6/27/17 Start 0545 Stop 0930 Total hrs 3.8	0	0	0	N	7 BHCO				
Survey # 5 Observer(s) B. Lohstroh	Date 7/12/17 Start 0545 Stop 0910 Total hrs 3.4	0	0	0	N	2 BHCO				

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 17.9	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/Soledad-Los Peñasquitos Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown X
Did you verify that this site name is consistent with that used in previous years? Yes ____ No X Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes X No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County X State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 2.1 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Arundo donax

Average height of canopy (Do not include a range): 10 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Nesting Cooper's hawks within survey area, brown-headed cowbird nest parasitism documented during surveys. Site is adjacent actively used rail alignment.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/Tijuana River and Smuggler's Gulch State CA County San Diego
USGS Quad Name Imperial Beach Elevation 5-14 (meters)
Creek, River, Wetland, or Lake Name Tijuana River and Smuggler's Gulch: WMP Maps 84-88
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** X ***No*** ____

Survey Coordinates: Start: E 492284 N 3601510 UTM Datum WGS84 (See instructions)
Stop: E 490487 N 3602024 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/31/17 Start 0600 Stop 1100 Total hrs 5	1	0	0	N	WIFL responded to recorded vocalization, apparent migrant as its call resembled that of E. t. brewsteri.				
Survey # 2 Observer(s) B. Lohstroh	Date 6/14/17 Start 0600 Stop 1030 Total hrs 4.5	0	0	0	N	5 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 3 Observer(s) B. Lohstroh	Date 6/22/17 Start 0600 Stop 1030 Total hrs 4.5	0	0	0	N	1 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 4 Observer(s) B. Lohstroh	Date 7/7/17 Start 0600 Stop 1030 Total hrs 4.5	0	0	0	N	3 BHCO	# Birds	Sex	UTM E	UTM N
Survey # 5 Observer(s) B. Lohstroh	Date 7/14/17 Start 0600 Stop 1030 Total hrs 4.5	0	0	0	N	1 BHCO	# Birds	Sex	UTM E	UTM N

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 23	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/Tijuana River and Smuggler's Gulch Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown X
Did you verify that this site name is consistent with that used in previous years? Yes ____ No X Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes X No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County X State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 3.15 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Arundo donax

Average height of canopy (Do not include a range): 10 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Smuggler's Gulch Segment: Start E 491734, N 3600480 Stop: E 491632, N 3601637.
Horse farms and agriculture adjacent to survey area. USGS also surveying site for WIFL. Several least Bell's vireos detected.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name City of San Diego Waterways Maintenance Plan/Valeta State CA County San Diego
USGS Quad Name Point Loma Elevation 2 (meters)
Creek, River, Wetland, or Lake Name Famosa Slough: WMP Map 44
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes X No____

Survey Coordinates: Start: E 478521 N 3623336 UTM Datum WGS84 (See instructions)
Stop: E 478499 N 3623489 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 6/15/17 Start 0545 Stop 0630 Total hrs 0.75	0	0	0	N					
Survey # 2 Observer(s) B. Lohstroh	Date 6/21/17 Start 0550 Stop 0620 Total hrs 0.5	0	0	0	N	1 BHCO				
Survey # 3 Observer(s) B. Lohstroh	Date 6/26/17 Start 0545 Stop 0615 Total hrs 0.5	0	0	0	N					
Survey # 4 Observer(s) B. Lohstroh	Date 7/6/17 Start 0545 Stop 0610 Total hrs 0.4	0	0	0	N					
Survey # 5 Observer(s) B. Lohstroh	Date 7/17/17 Start 0545 Stop 0610 Total hrs 0.4	0	0	0	N					

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 2.55	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed September 2017
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # CA SCP-4230
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological, under contract with Dudek, Inc. E-mail brian@lohstrohbio.com
Site Name City of San Diego Waterways Maintenance Plan/Valeta Date Report Completed September 2017
Was this site surveyed in a previous year? Yes___ No ___ Unknown _x__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _x___ Not Applicable ___
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _x__ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _x___ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 0.15 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

x Native broadleaf plants (entirely or almost entirely, > 90% native)

_____ Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Platanus racemosa

Average height of canopy (Do not include a range): 4 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.
Small patch of willows associated with Famosa Slough, likely ocean/salt water influenced.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

APPENDIX C

USGS Topographical Maps
City of San Diego's Waterways Maintenance Plan Project
SWFL Surveys 2017

300-Foot Survey Area

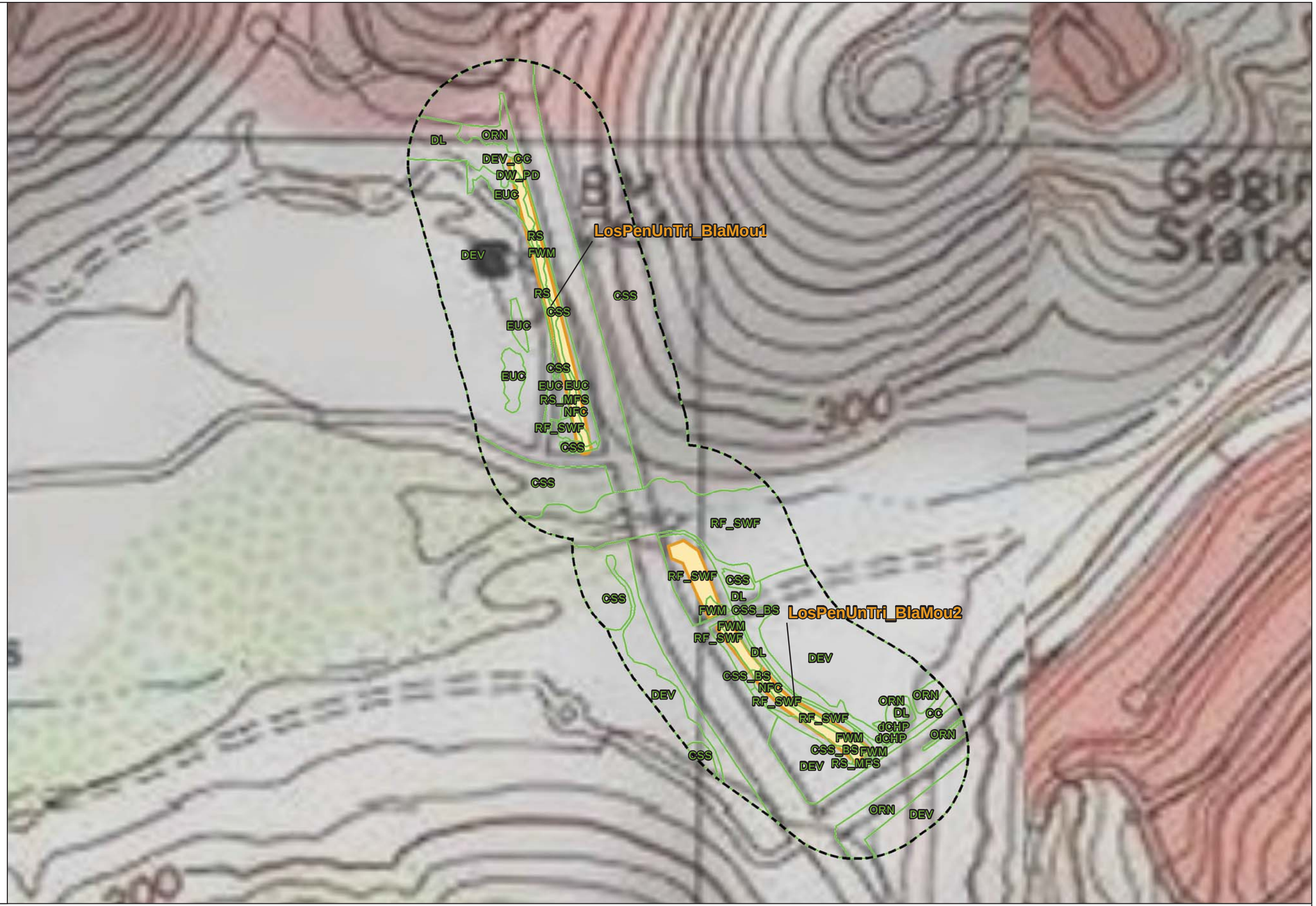
Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

- CC, Chamise Chaparral
- CSS, Diegan Coastal Sage Scrub
- CSS_BS, <Null>
- DEV, Urban/Developed
- DEV_CC, Developed concrete-lined channel
- DL, Disturbed Land
- DW_PD, Disturbed Wetland (palm-dominated)
- EUC, Eucalyptus Woodland
- FWM, Freshwater Marsh
- NFC, Natural Flood Channel
- ORN, Ornamental Planting
- RF_SWF, Riparian Forest (southern willow forest)
- RS, Riparian Scrub
- RS_MFS, Riparian Scrub (mulefat scrub)
- dCHP, (disturbed) Chaparral



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Los Penasquitos Canyon Creek - Black Mountain

Datum WGS84

Date: 6/13/2017 - Last saved by: mwatson - Path: Z:\Projects\City of SD Multiwaterbody\2017\01\MAPDOCS\DOCS\MEXTC\ts_sf_SDSwwtd Survey Area Base Maps\USGS 45 Day Report\Figure 4 WMP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

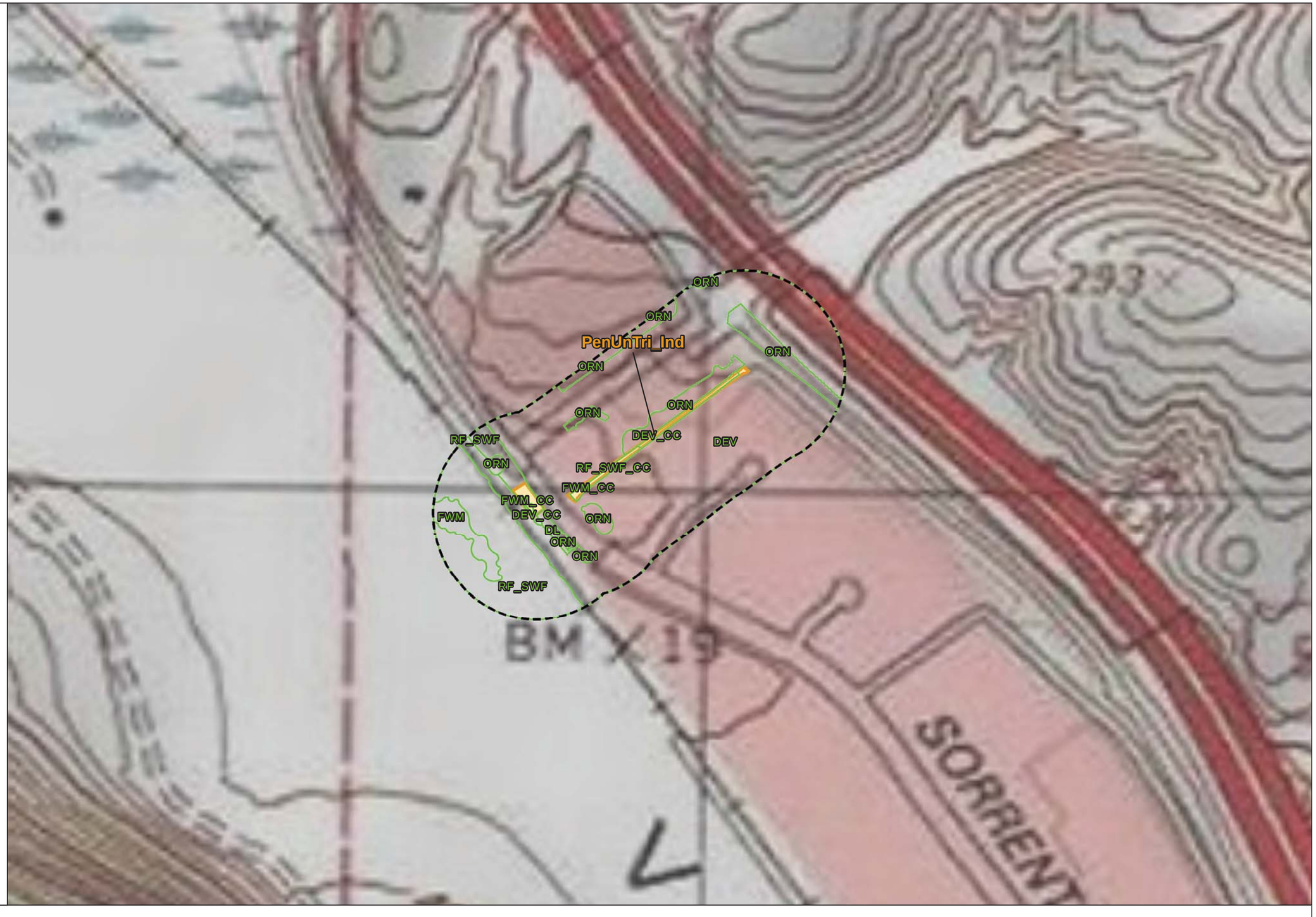
FWM, Freshwater Marsh

FWM_CC, Freshwater Marsh (concrete-lined channel)

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)



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SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Penasquitos Lagoon - Industrial, Penasquitos Lagoon - Tripp

Datum WGS84

Date: 8/1/2017 - Last saved by: mwatson - Path: P:\Projects\City\of\SD\Activities\8231401\MA\SDOC\DOC\MEMO\Ch_4_4\SD\Special Status Sp\Maps\USFWS 45 Day Report\Figure 4.1\MXD (SWF) Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub

0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Los Penasquitos Canyon Creek

Datum WGS84

Date: 8/17/2017 Last saved by: mmyers Path: T:\Projects\City\MSCP\Admin\wetlands\2016\MXD\PROJECTS\City_of_SD\Southwestern_Willow_Flycatcher_Survey_Area_Maps\USGS_45-Day_Report\Figure_4_WMP_SWFL_Focused_Survey_Topo_Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

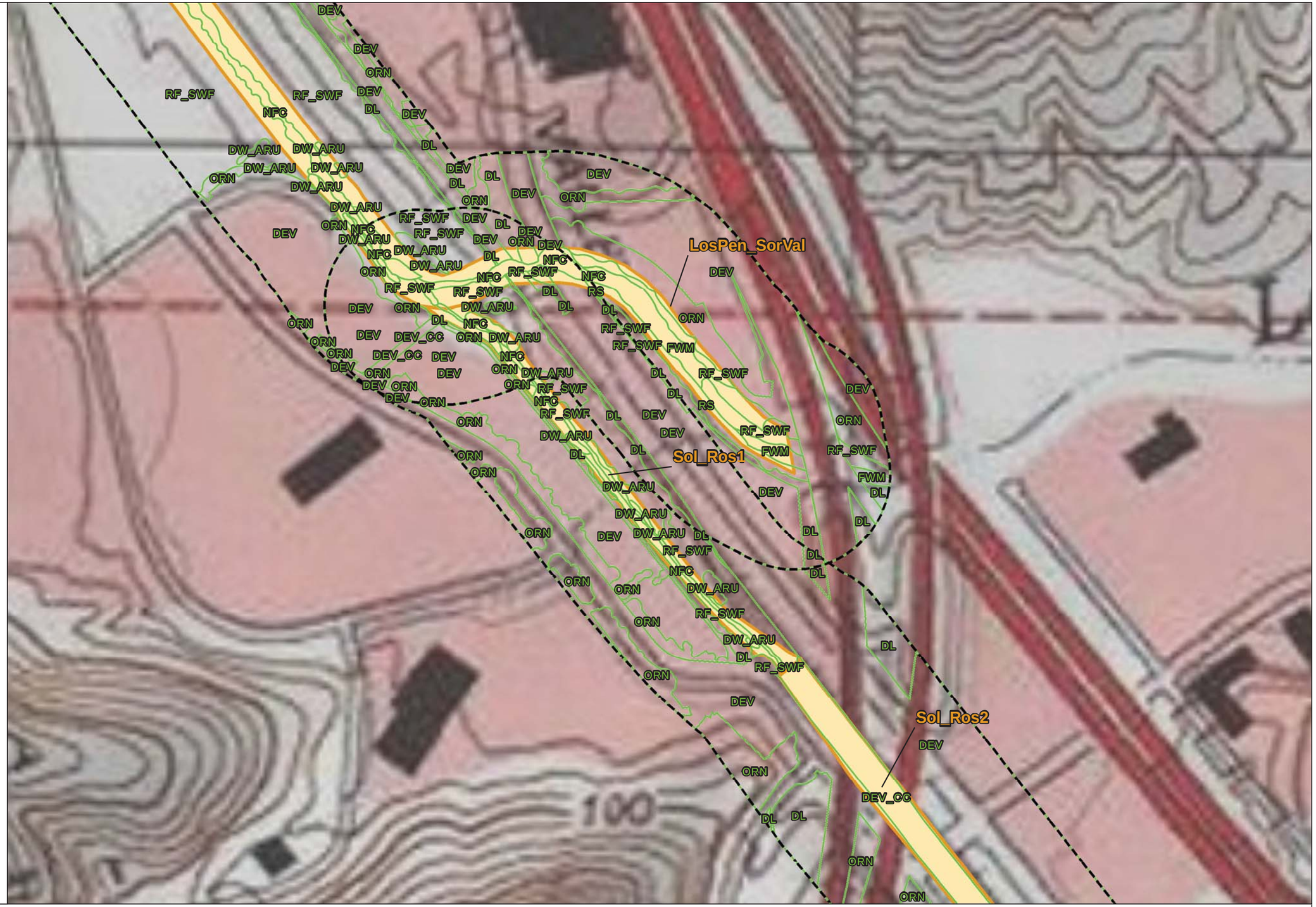
FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub



N

0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Soledad Canyon Creek - Dunhill, Soledad Canyon Creek - Flintkote, Los Penasquitos Canyon Creek, Soledad Canyon Creek Datum WGS84

Date: 6/27/2017 Last saved by: cmartinez Path: T:\Projects\City\of\SD\Activities\6924\01\MAPDOC\DOC\MEM\TCDy_of_SDSWeirs\Stand\Sole Mates\USGS\45 Day Report\Figure 4 WMP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

NFC, Natural Flood Channel

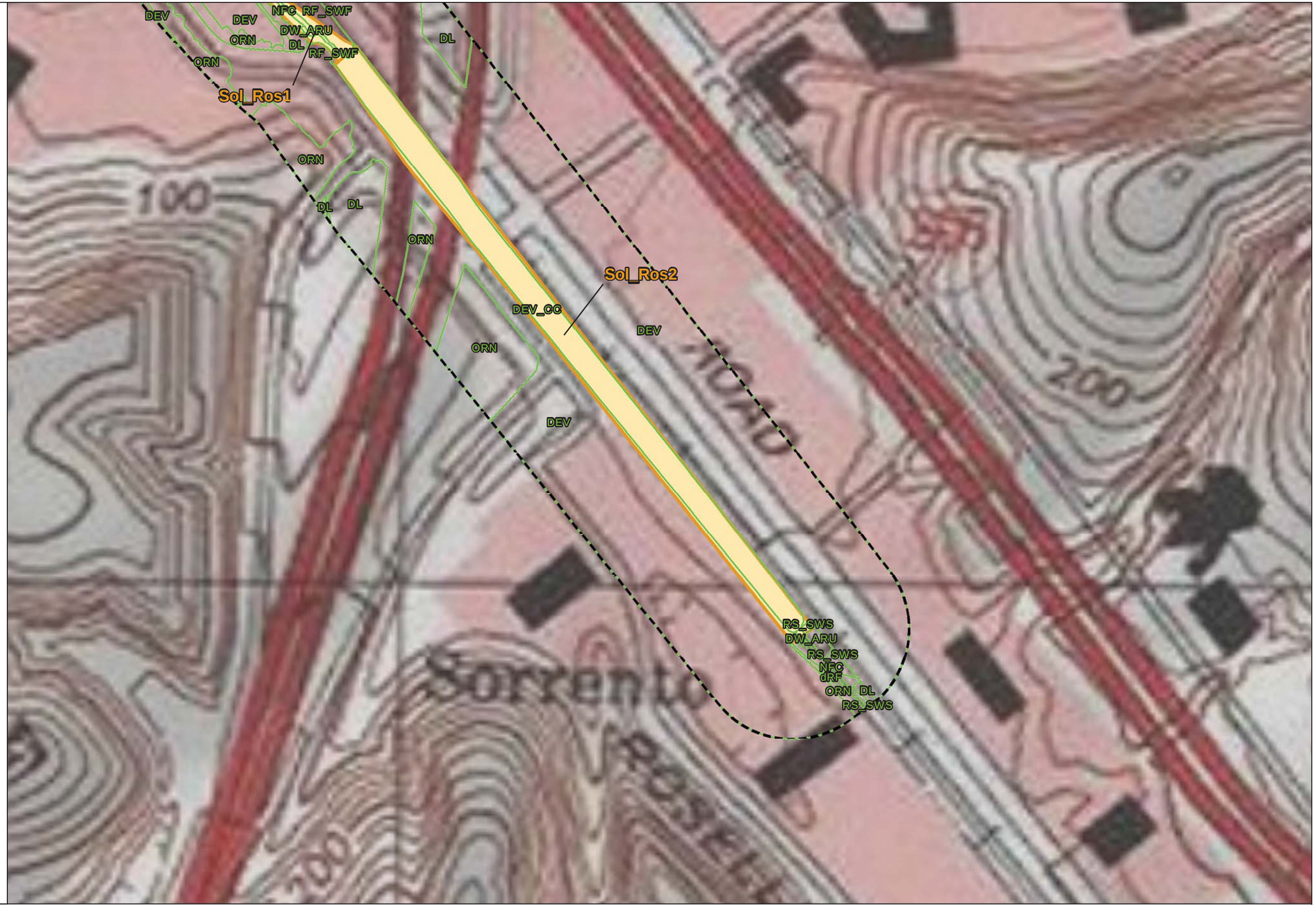
ORN, Ornamental Planting

RF, Riparian Forest

RF_SWF, Riparian Forest (southern willow forest)

RS_SWS, Riparian Scrub (southern willow scrub)

dRF, (disturbed) Riparian Forest



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Soledad Canyon Creek

Datum WGS84

Date: 10/17/2017 - Last saved by: mwynne - Path: Z:\Projects\CityofSDA\Activities\SW3101\MAPDOC\DOCUMENTS\Cty_of_SDDraining\Rates_Sup Mtnce\45DAS_45 Day Report\Figure 1\WMP SWFL Focused Survey Topo Mapped

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

AGR, Agriculture

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

EUC, Eucalyptus Woodland

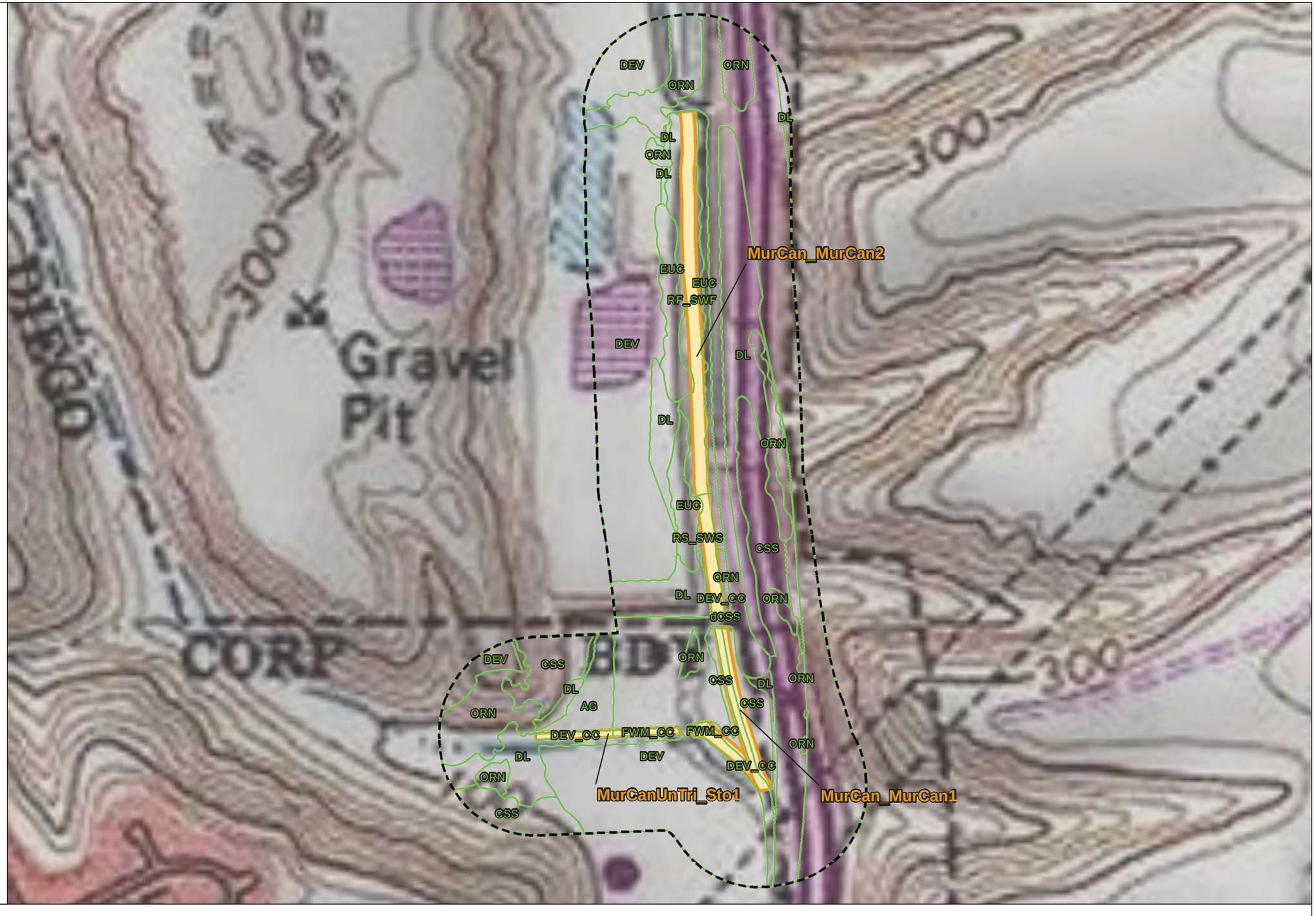
FWM_CC, Freshwater Marsh (concrete-lined channel)

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_SWS, Riparian Scrub (southern willow scrub)

dCSS, (disturbed) Coastal Sage Scrub



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Murphy Canyon Creek

Datum WGS84

Date: 8/1/2017 - Last saved by: mwilcox - Path: J:\Projects\Cityof\SDs\Waterfall\1810\MAPDOC\DOC1\MEMTC\Fig_xx_SDSpecial Status Spp Maps\USWS_FS Plus Round\Figure 4 MMP SWFL Focused Survey Tmpl.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

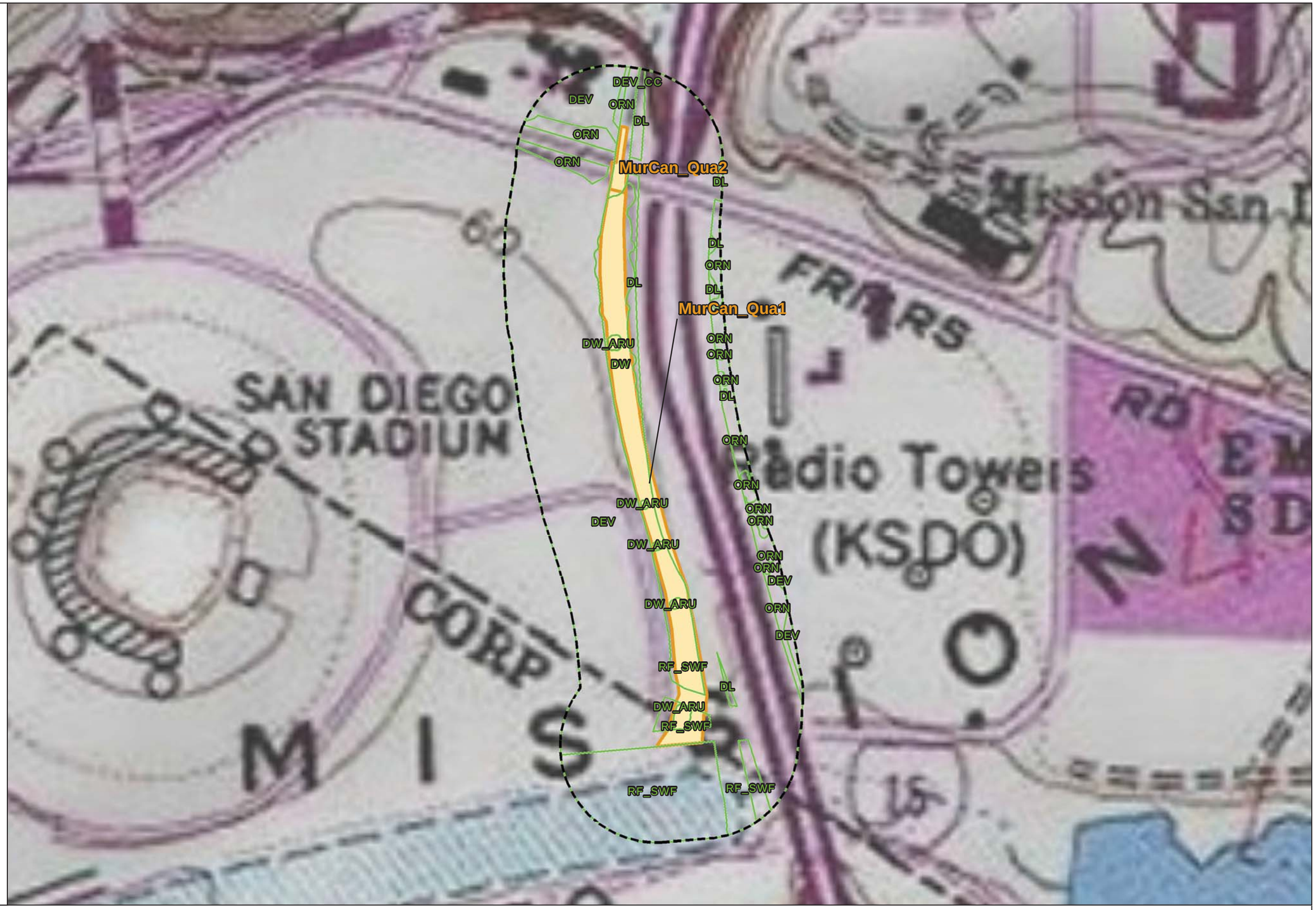
DL, Disturbed Land

DW, Disturbed Wetland

DW_ARU, Disturbed Wetland (Arundo)

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Murphy Canyon Creek

Datum WGS84

Date: 6/27/2017 - Last saved by: mwynne - Path: J:\Projects\Cox\SDIA\Activities\6923.01\01\MAPDOC\DOC\MSHTCTx_sf_SDSwsnyl Rptrs Spp Maps\45SWS_45 Day Report\Figure 1 WMP SWFL Focused Survey Topo Mapped

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

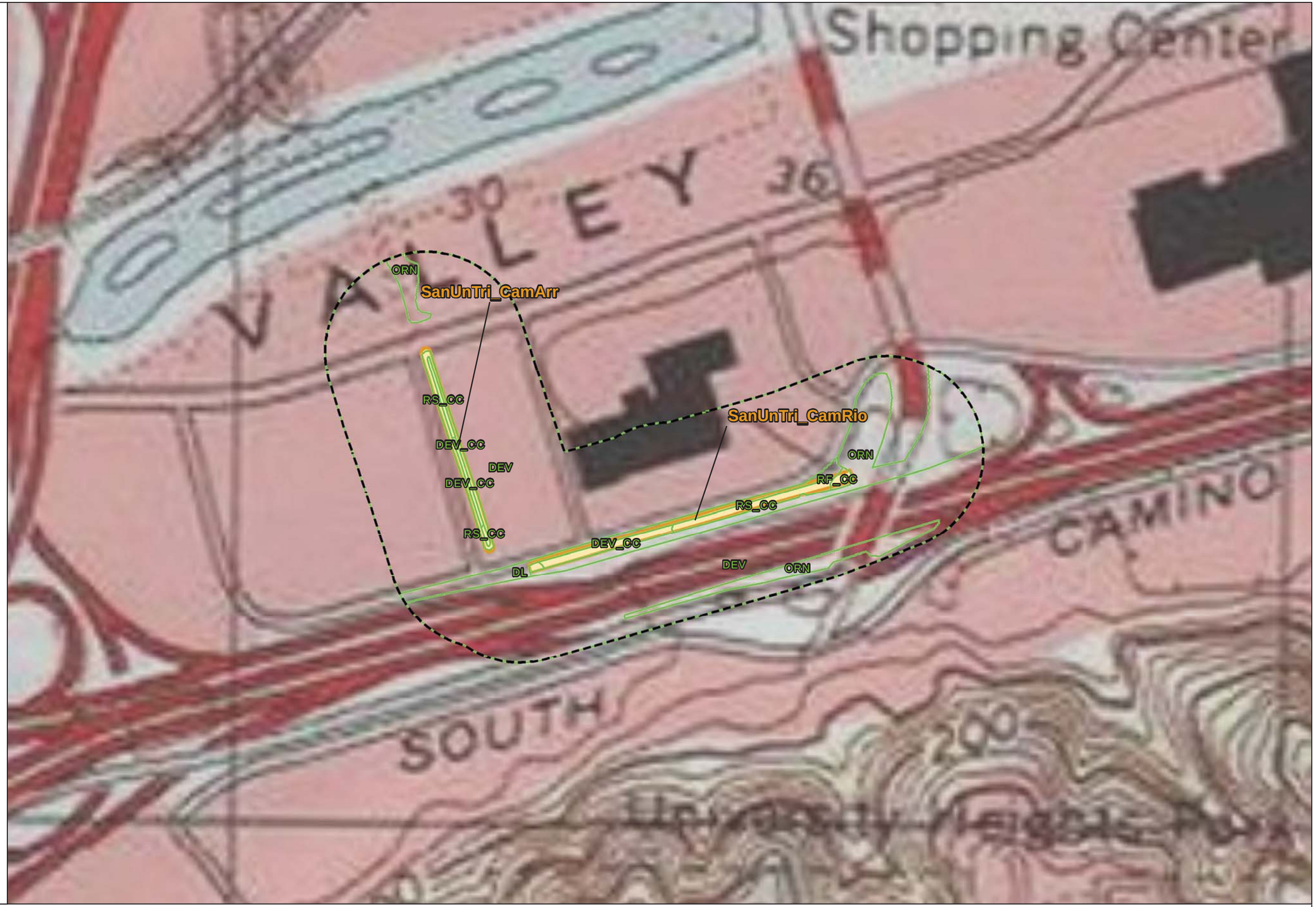
DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

ORN, Ornamental Planting

RF_CC, Riparian Forest (concrete-lined)

RS_CC, Riparian Scrub (concrete-lined)



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): San Diego River - Camino del Rio

Datum WGS84

Date: 8/17/2017 Last saved by: mwilcox Path: P:\Projects\City\SDCityWaterMgt\2016\MAPDOC\DOC\MGMTCity_of_SDDiscretionaryStatus\Spp Maps\USFWS 45 Day Report\Figure 4 WMP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

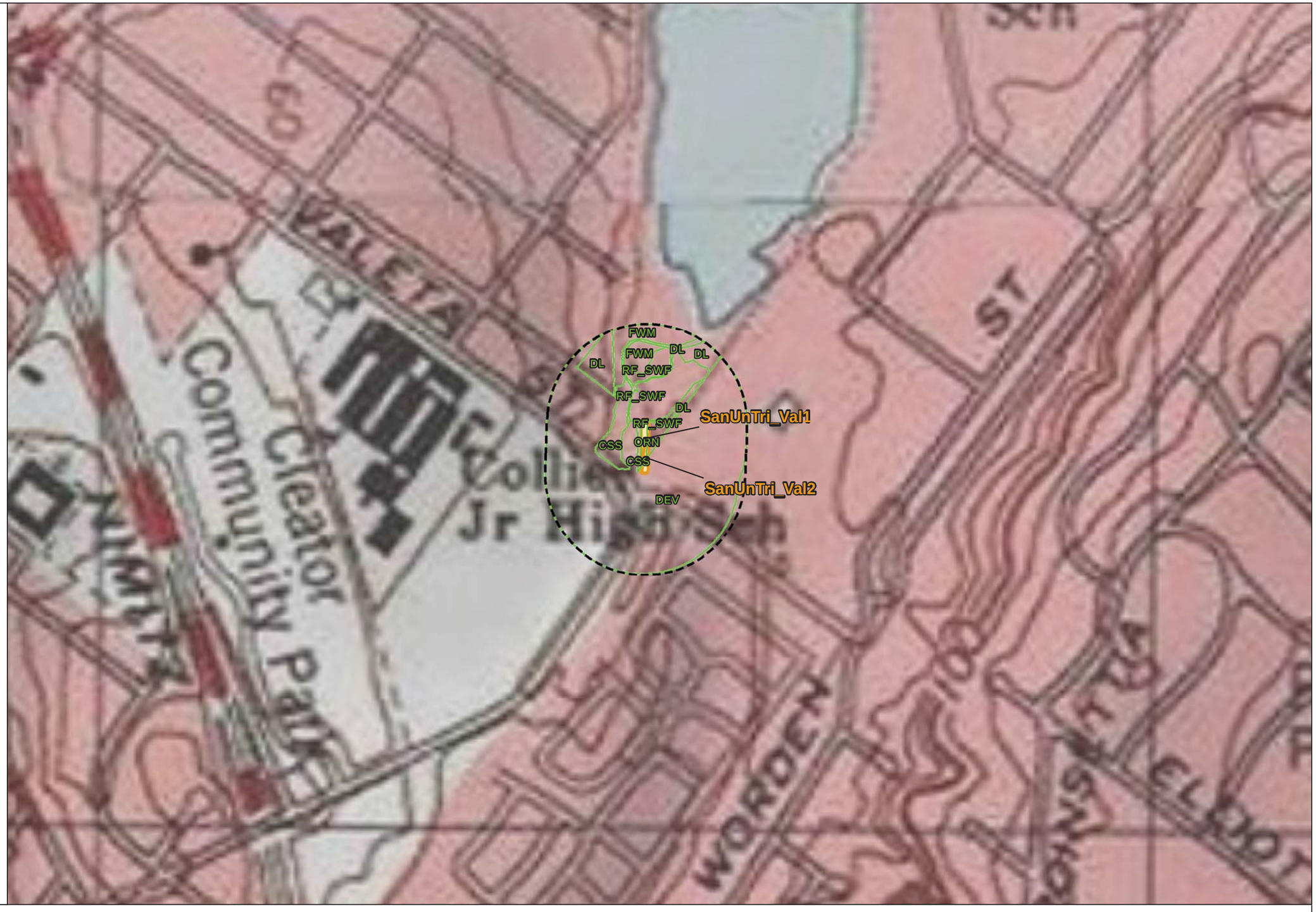
DEV, Urban/Developed

DL, Disturbed Land

FWM, Freshwater Marsh

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): San Diego River - Valeta

Datum WGS84

Date: 8/17/2017 - Last saved by: mwilson - Path: T:\Projects\City\MSCities\Waterfield\2016\MAPS\CCOC\MEXT\City_of_SD\Reports\San Diego River\Figures & WMP SWFL Focused Survey\Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

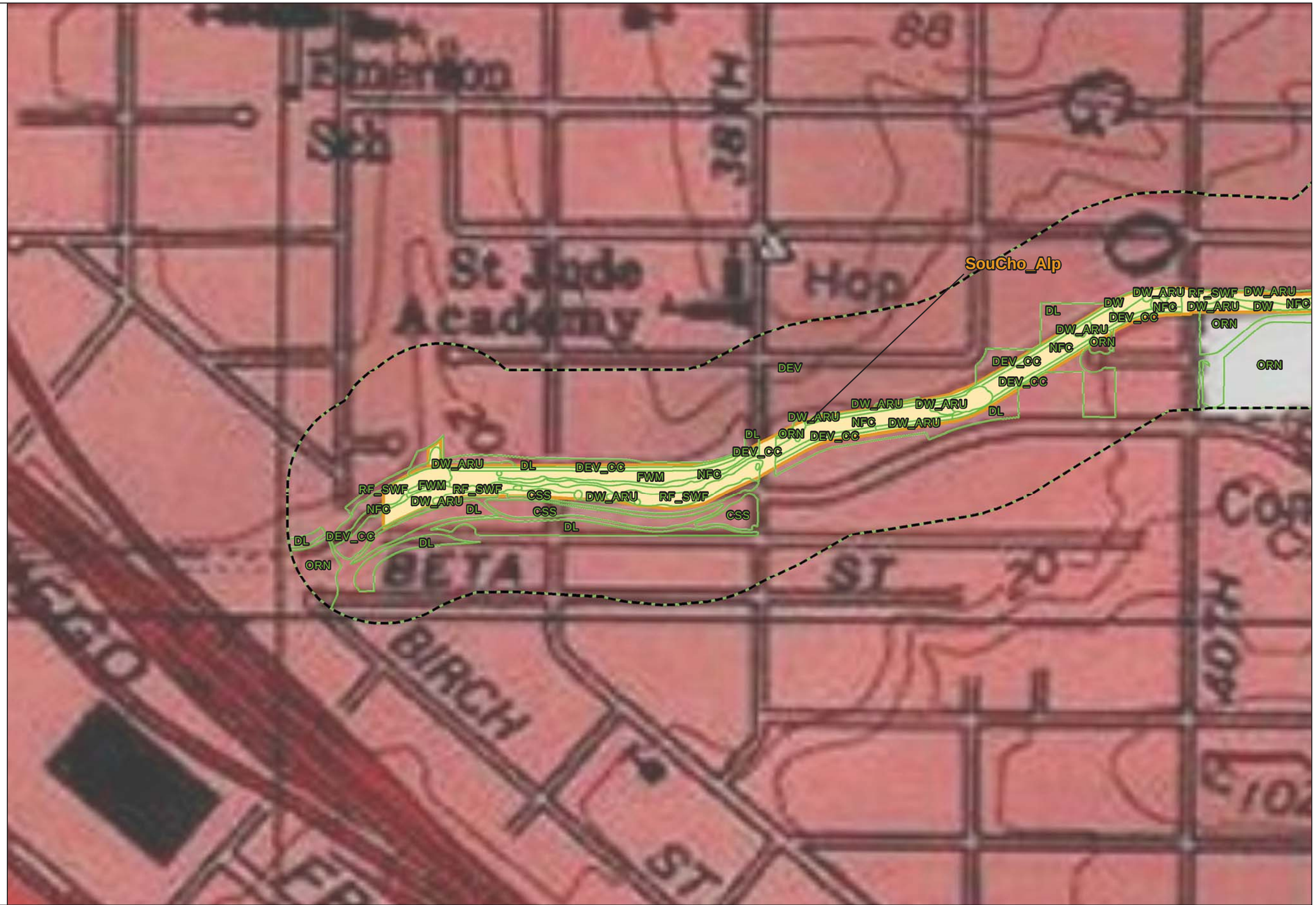
DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): South Chollas Creek - Southcrest

Datum WGS84

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

DW_ARU, Disturbed Wetland (Arundo)

DW_ARU_CC, Disturbed Wetland (Arundo; concrete-lined)

EUC, Eucalyptus Woodland

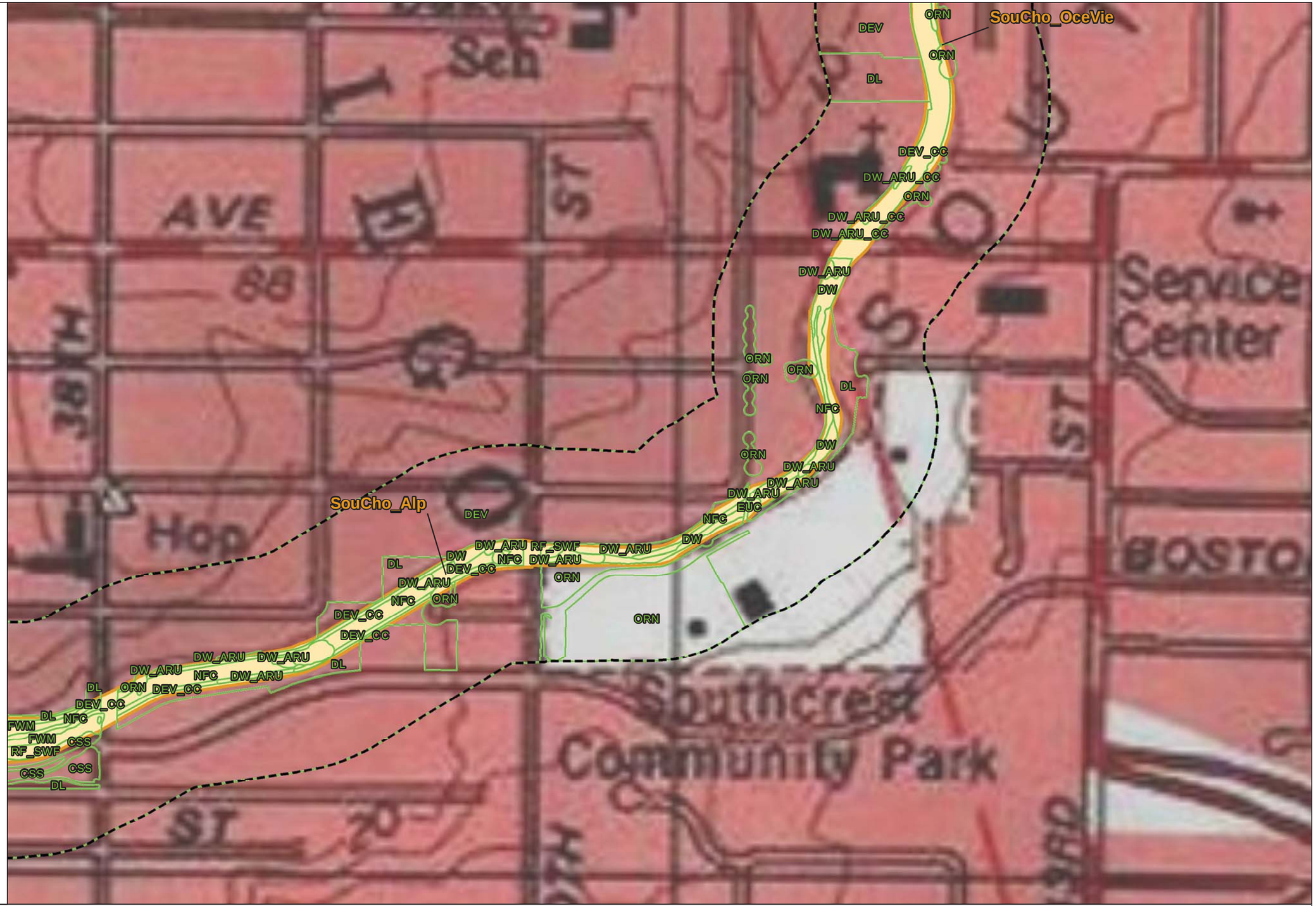
FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS, Riparian Scrub



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

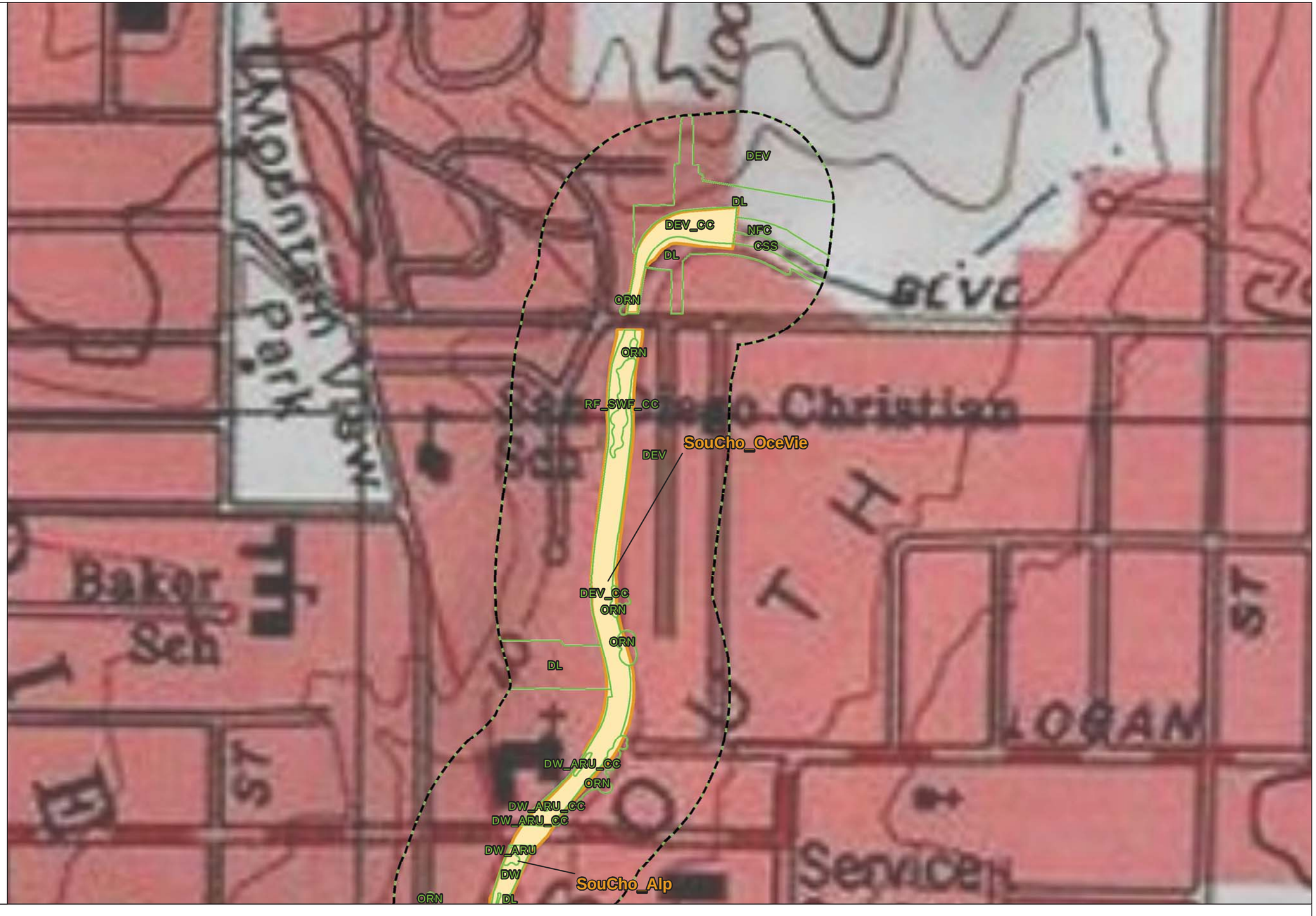
DW_ARU, Disturbed Wetland (Arundo)

DW_ARU_CC, Disturbed Wetland (Arundo; concrete-lined)

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)



SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): South Chollas Creek - Southcrest

Datum WGS84

Date: 8/1/2017 - Last saved by: mwatson - Path: P:\Projects\CityofSD\Activities\923401\MA\SDOC\DOC\MXD\TOs_of_ 45DSpecial Status Sum Mxds\SERVS #8 Day Report\Figure 4 MWP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW, Disturbed Wetland

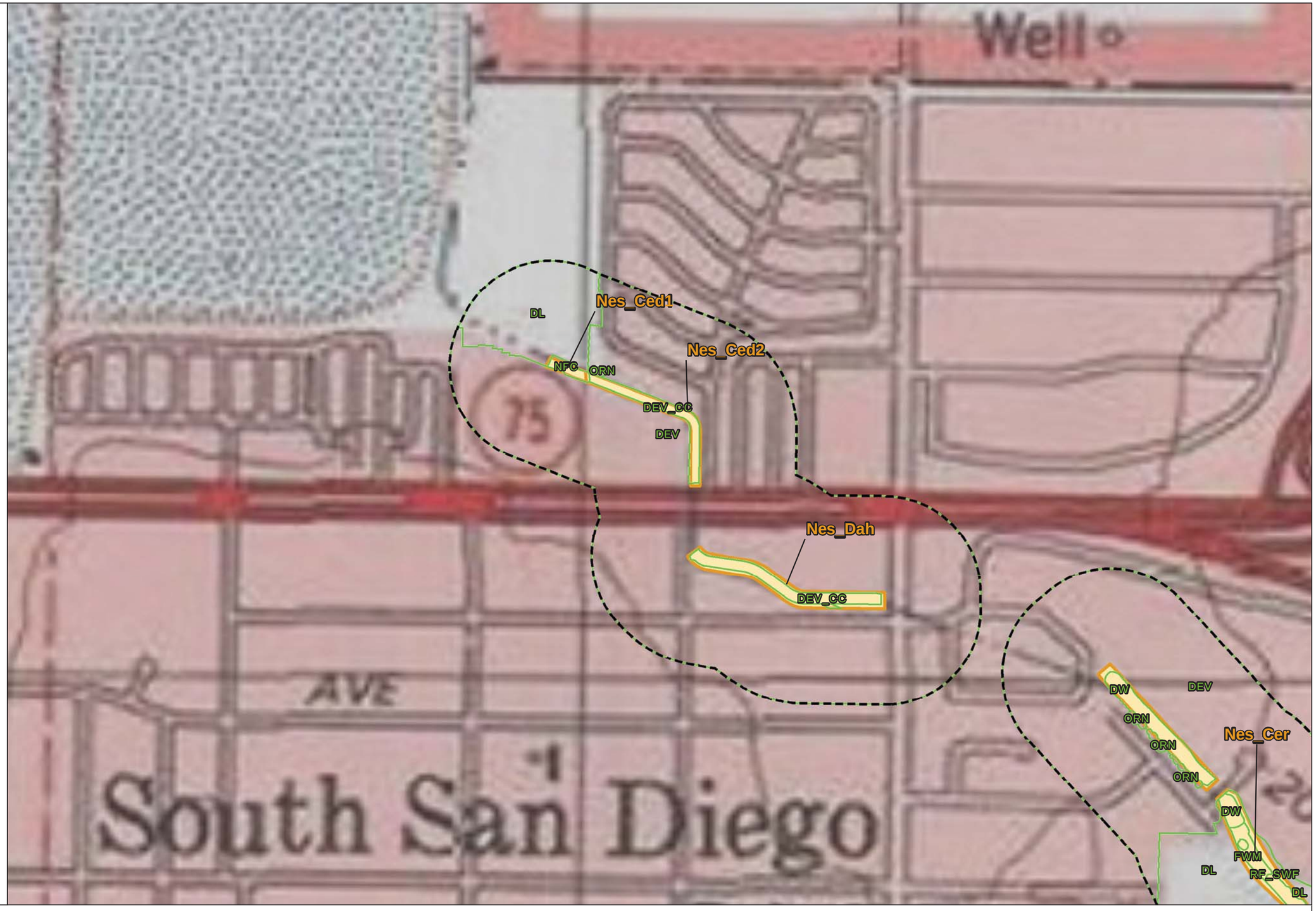
DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Nestor Creek

Datum WGS84

Date: 8/17/2017 - Last saved by: mwilcox - Path: Z:\Projects\PCity\PDO\Activities\8372\MXD\DOCUMENT\Ch_4_ENDsocial Entire Site Map\EndSWS_45 Day Report\Figure 4.1MAP SWS Focused Survey Area Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

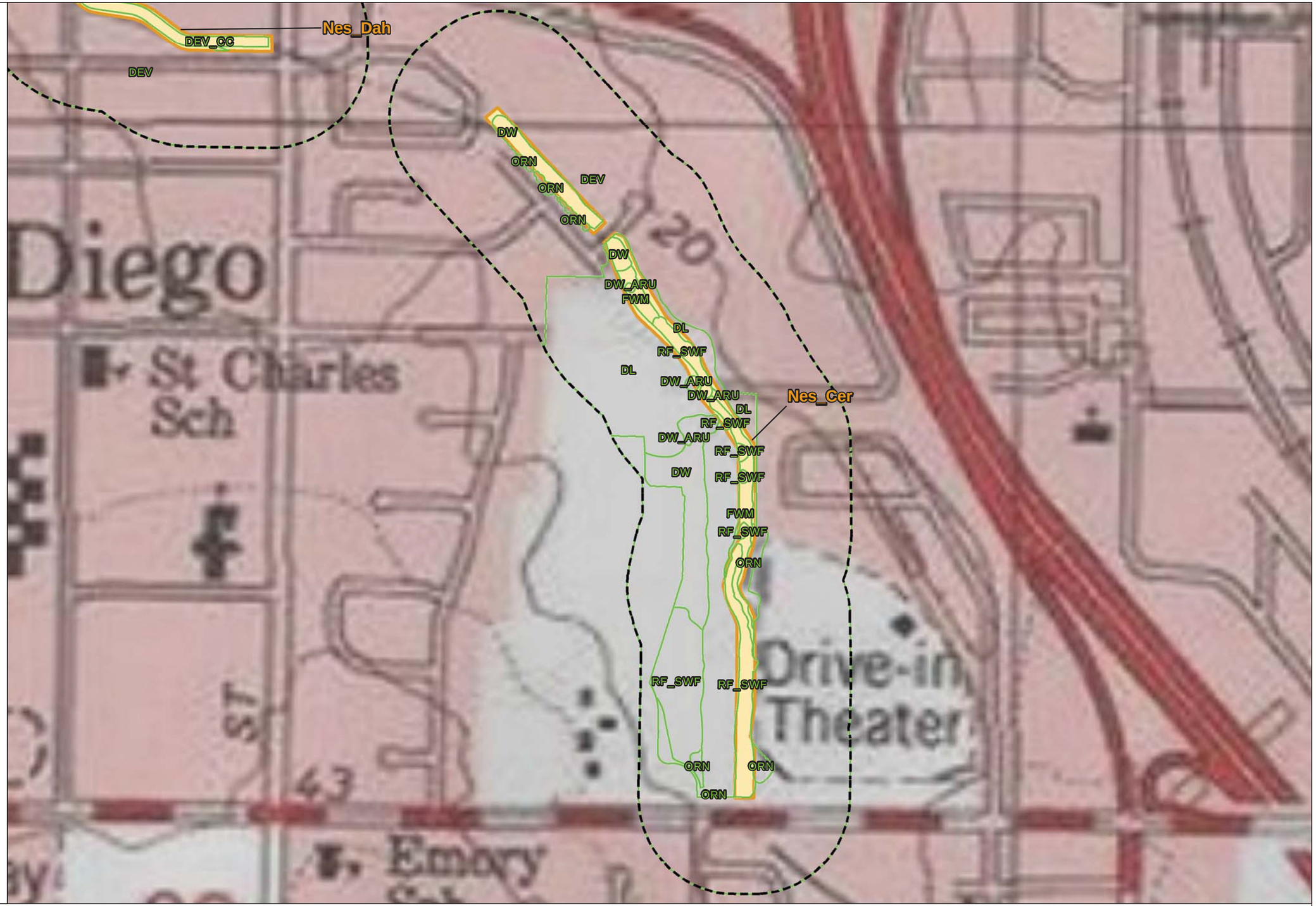
DW, Disturbed Wetland

DW_ARU, Disturbed Wetland (Arundo)

FWM, Freshwater Marsh

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Nestor Creek

Datum WGS84

Date: 8/1/2017 - Last saved by: mwallace - Path: T:\Projects\City\SD\Activities\8213\01\MAPDOC\DOC\MEM\TCTV_sf_ 570\Second Status Sea Marsh\USGS 45 Day Report\Figure 4 MWP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

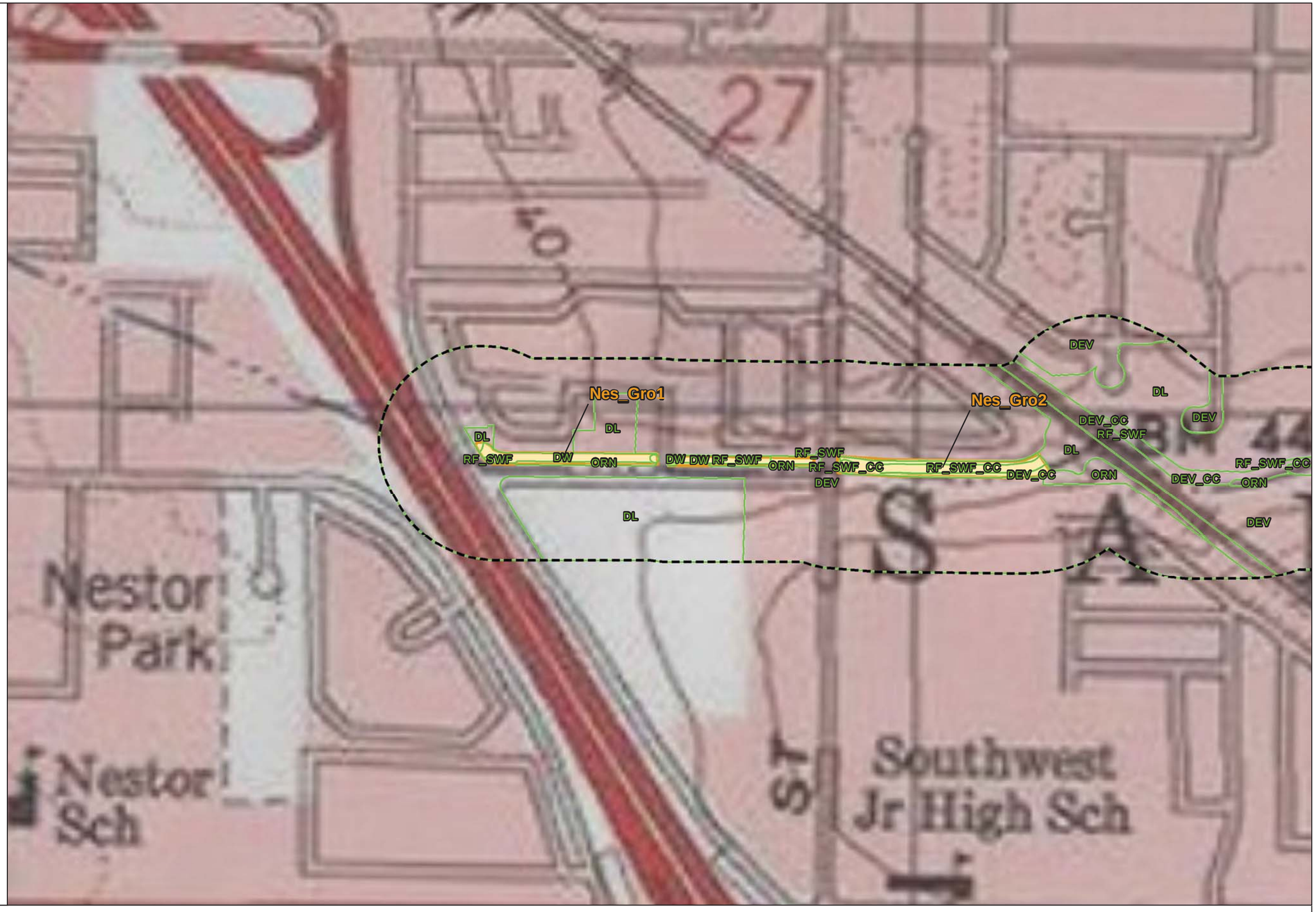
DL, Disturbed Land

DW, Disturbed Wetland

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RF_SWF_CC, Riparian Forest (southern willow forest; concrete-lined)



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Nestor Creek

Datum WGS84

Date: 6/13/2017 - Last saved by: mwelton - Path: Z:\Projects\City of SD\Activities\6923401\MAPDOCS\DOCUMENTS\Fig_4f_SDSweetd Sirtus Eve Marsh\USGNS 45 Day Report\Figure 4 WMP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

NFC, Natural Flood Channel

RF_SWF, Riparian Forest (southern willow forest)

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River

Datum WGS84

Date: 8/1/2017 - Last saved by: mwatkins - Path: T:\Projects\City\SDWaterMaint\MXD\2017\MAPDOCS\DOCUMENT\City_of_SD\Special Status Species Maps\USGS_45 Day Report\Figure 4 WMP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

DEV, Urban/Developed

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

EUC, Eucalyptus Woodland

NFC, Natural Flood Channel

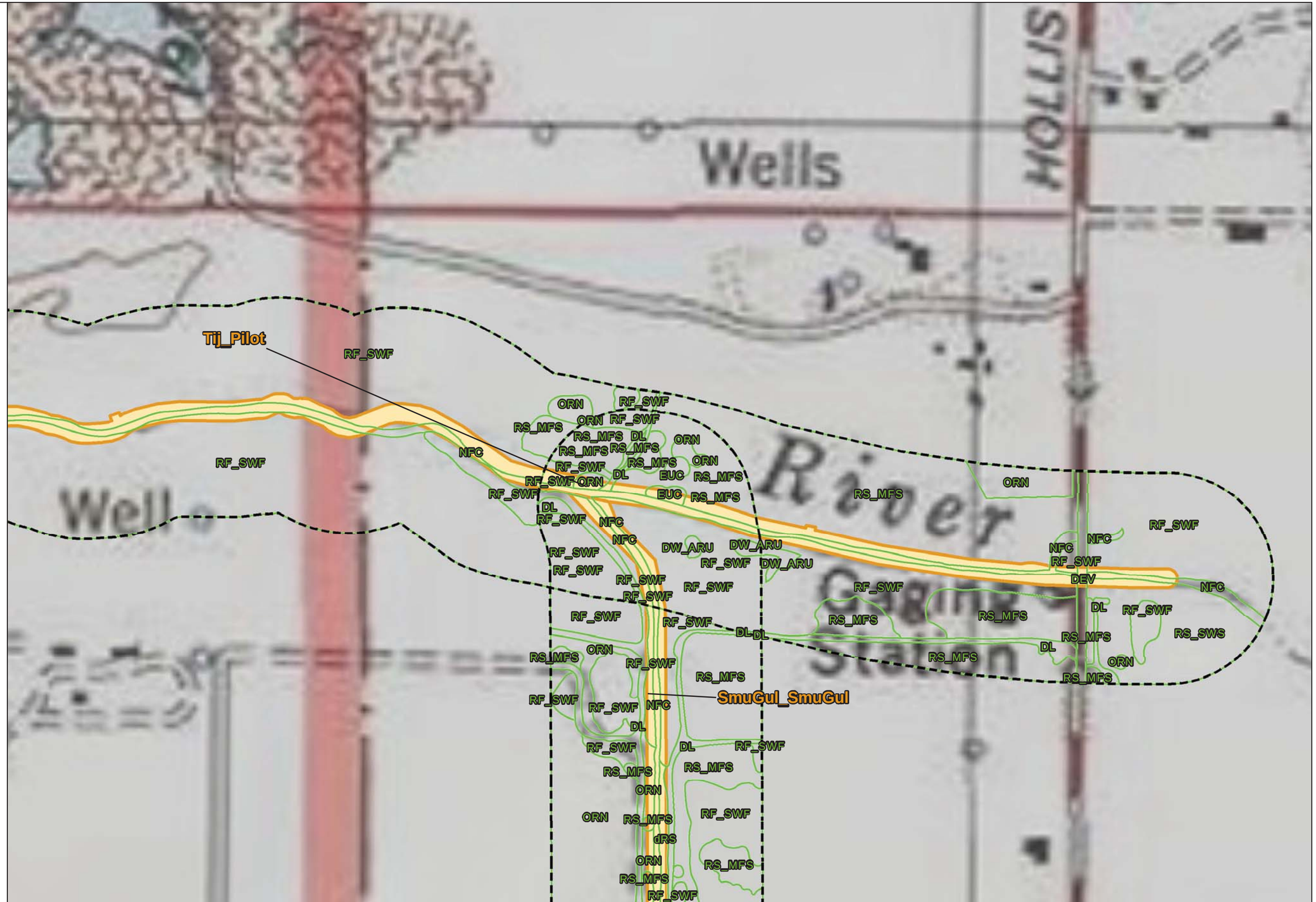
ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_MFS, Mule Fat Scrub

RS_SWS, Riparian Scrub (southern willow scrub)

dRS, (disturbed) Riparian Scrub



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River

Datum WGS84

Date: 8/1/2017 - Last saved by: mwallace - Path: Z:\Projects\CivilSD\Activities\6012\01\MAPDOC\DOCUMENT\Civil_sf_670\Second Status Sve Maps\USGWS 45 Day Report\Figure 4 MWP SWFL Focused Survey Topo Map.mxd

300-Foot Survey Area

Channels

Facility Group Acronym

Vegetation

(Code, Common Name)

AGR, Agriculture

CC, Chamise Chaparral

CSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DEV_CC, Developed concrete-lined channel

DL, Disturbed Land

DW_ARU, Disturbed Wetland (Arundo)

EUC, Eucalyptus Woodland

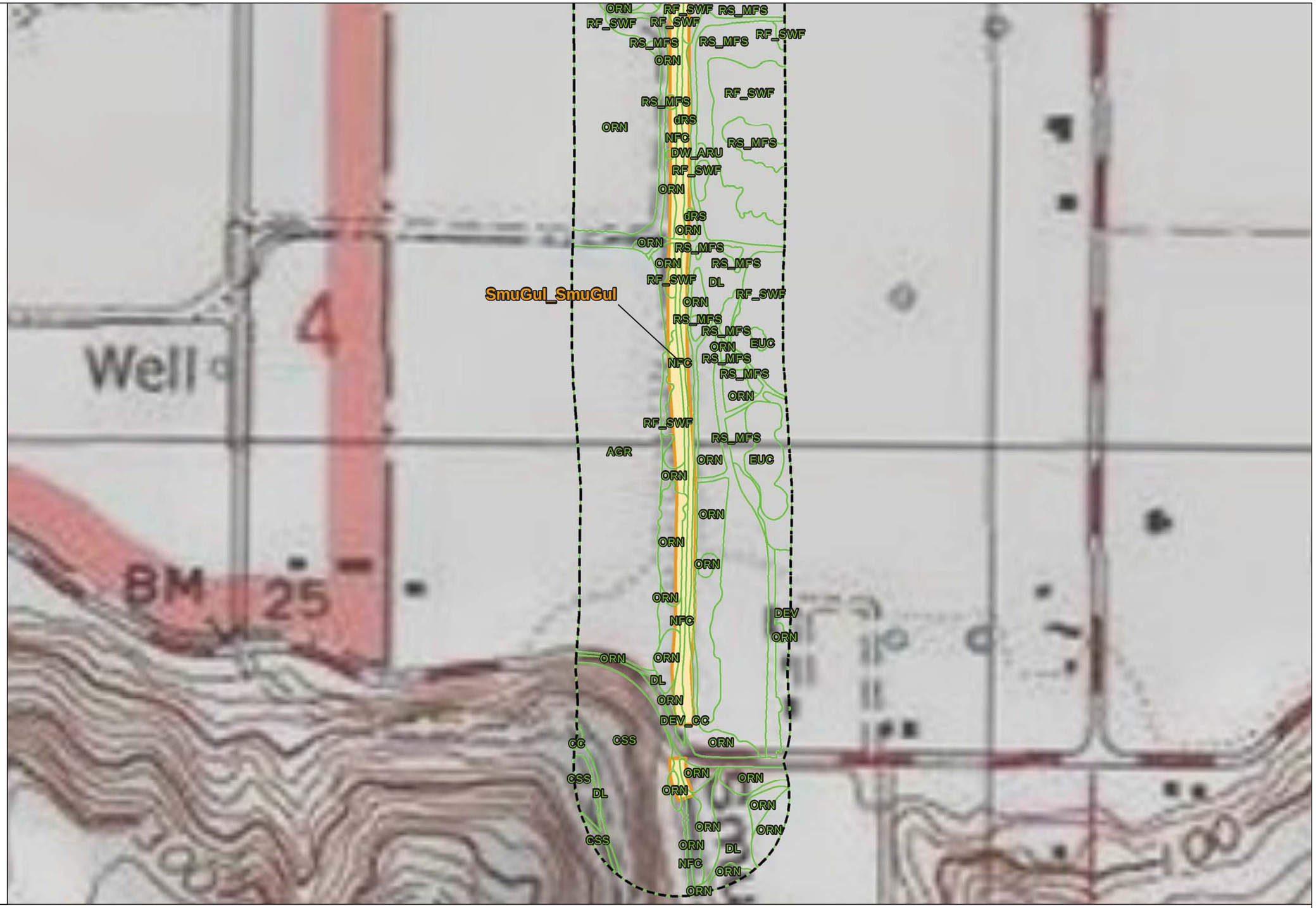
NFC, Natural Flood Channel

ORN, Ornamental Planting

RF_SWF, Riparian Forest (southern willow forest)

RS_MFS, Mule Fat Scrub

dRS, (disturbed) Riparian Scrub



0 150 300 Feet

SOURCE: Bing Maps, 2017; SANDAG, 2014

WMP SWFL Focused Survey USGS Quad/Topographical Map

Survey Results of the 2017 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Tijuana River

Datum WGS84

APPENDIX D

Survey Site Photos
City of San Diego's Waterways Maintenance Plan Project
SWFL Surveys 2017

Site Photographs
Waterways Maintenance Plan Project
Avian Surveys 2017

Photo 1: View facing northwest across the riparian habitat associated with the Tijuana River near its confluence with Smuggler's Gulch. A migrant willow flycatcher was detected in this area.

Photo 2: View facing west/downstream from within the Tijuana River channel. Castor bean (*Ricinus communis*) and giant reed (*Arundo donax*) dominate the understory.

Photo 3: View facing north along habitat associated with Smuggler's Gulch. A northern cardinal (likely an escaped captive) is visible at center.

Photo 4: View facing west of habitat along Nestor Creek. Migrant willow flycatchers were observed in this area.

Photo 5: A migrant willow flycatcher (visible at center) detected at Nestor Creek.

Photo 6: View facing west of additional marsh vegetation (with giant reed in the foreground) at Nestor Creek.

Photo 7: View facing west along the habitat associated with the San Diego River. A restoration project involving the removal of giant reed is visible in the foreground.

Photo 8: Understory vegetation associated with the San Diego River, likely restored recently. Coast Live Oak (*Quercus agrifolia*), barberry (*Berberis* sp.) and cottonwoods (*Populus fremontii*) are visible.

Photo 9: View facing east showing an overview of the Valeta site at Famosa Slough. Arroyo willows (*Salix lasiolepis*) are visible at center, with cattails (*Typha* sp.) and other marsh vegetation visible at left.

Photo 10: View facing southeast from same vantage point as Photo 9 (Valeta). Taller cottonwoods are visible at center-right.

Photo 11: View facing southeast/upstream along the Los Peñasquitos Creek channel, downstream of its confluence with Soledad Canyon Creek. Willows and cattails are visible along the sides.

Photo 12: Evidence of a potential Polyphagous Shot Hole Borer infestation along Los Peñasquitos Creek.

August 30, 2019

Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
U.S. Fish and Wildlife Service
2177 Salk Avenue, Ste. 250
Carlsbad, CA 92008

Subject: 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report, San Diego, California

Dear Ms. Love:

Balk Biological, Inc. submits this letter report summarizing the results of focused surveys conducted to determine the presence/absence of the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*: SWFL) and least Bell's vireo (*Vireo bellii pusillus*: LBVI) for the City of San Diego's Municipal Waterways Maintenance Plan (MWMP) Project located in the City of San Diego (City), San Diego County, California (Figure 1).

Project Description

The City MWMP is being developed to replace the current Master Storm Water System Maintenance Program (MMP). Through evaluation of the City's storm water maintenance program and consultation with resource agencies and stakeholders, the City is currently examining six facilities; two channels, approximately 1.3 miles combined, and four drain structures in the MWMP (Figure 2).

The extent of proposed maintenance activities at each of these facilities is currently being assessed, but the nature of the activities is expected to be similar to those proposed under the MMP including channel excavation, dredging, vegetation management, concrete repair/replacement, bank repair/stabilization, and invasive plant species management. For the purposes of this report, "vicinity" refers to a facility and the surrounding 300-foot buffer area.

Survey Determination

The potential for SWFL and LBVI to be present at a particular facility was determined upon the following four criteria: 1) presence of suitable habitat (*e.g.,* willow scrub); 2) habitat connectivity, both onsite and directly offsite; 3) size of suitable habitat in vicinity

of the facility; 4) historical record of occurrence in the vicinity; and 5) potential for significant impacts from maintenance. Following the evaluation of the MWMP facilities based on the above criteria, it was determined that one channel and one drain structure were suitable for SWFL, and two channels and four drain structures were suitable for LBVI. Facilities where SWFL and LBVI focused surveys occurred are listed in Table 1.

The vegetation communities surveyed for SWFL and LBVI include: southern riparian forest, southern willow forest, and mulefat scrub. Non-native riparian vegetation was also present in the surveyed vegetation communities.

Table 1
Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Facilities

WATERSHED MANAGEMENT AREA Facility Group Name	Figure Nos.	MWMP Acronym(s)	Least Bell's Vireo	Southwestern Willow Flycatcher
LOS PENASQUITOS WMA				
5-805 Basin	3-1 & 4-1	LosPen_5-805	x	x
10405 Sorrento Valley Road	3-4 & 4-4	HW04220	x	
SAN DIEGO BAY WMA				
4202 J Street	3-3 & 4-3	HW04013	x	
SAN DIEGO RIVER WMA				
1660 Hotel Circle North	3-5 & 4-5	OT03321	x	
5505 Friars Road	3-6 & 4-6	SS-011513	x	x
MISSION BAY WMA				
Alta La Jolla-Vickie	3-2 & 4-2	AltLaJ_Vic	x	

Survey Methodology

Permitted biologist Brian Lohstroh (TE-063608-6) conducted the SWFL surveys, which followed the current survey protocol adopted by USFWS (Sogge et al. 2010). The protocol requires five survey visits during three survey periods: one visit during the first survey period (May 15 through May 31), two visits during the second survey period (June 1 through June 24), and two visits during the third survey period (June 24 through July 17). Surveys were conducted at least 5 days apart between dawn and 10 a.m. The biologist walked through suitable habitat, stopping frequently to listen for SWFL vocalizations. If no SWFL were detected after a few minutes of passive listening, recorded SWFL vocalizations were broadcast within the habitat (active surveys) to elicit a response. SWFL surveys were also conducted with the aid of 8x42 or similar power binoculars.

Biologists conducted LBVI surveys beginning on April 19 through July 16, 2019. According to USFWS survey guidelines for the species (USFWS 2001), eight visits are required between April 10 and July 31. Surveys were conducted at least 10 days apart and completed between dawn and 11 a.m. LBVI surveys consisted of walking meandering

transects through potential LBVI habitat and conducting passive surveillance (*i.e.,* listening and looking for the species). LBVI surveys were conducted with the aid of 8x42 or similar power binoculars. At sites that required both SWFL and LBVI surveys to be conducted by the same biologist, the SWFL survey pass was conducted first, followed by the LBVI survey pass.

Results

No SWFL were detected during the 2019 MWMP protocol surveys. One migrant willow flycatcher (*Empidonax traillii* ssp.) was documented during the 5/24/19 survey of 5505 Friars Road. No willow flycatchers were detected during the following survey visits this site.

LBVIs were detected during focused LBVI surveys at Los Peñasquitos Canyon Creek on 4/19, 4/29, 5/10, 5/24, 6/4, and 6/14/19. Two LBVI territories were detected total. These two territories were both detected on 5/24/19, and one of these territories was detected on subsequent visits on 6/4/19 and 6/14/19. No LBVIs were detected at the remainder of the MWMP facilities.

A summary of survey dates, times, weather conditions, surveyors, and observations are provided in Table 2. Locations of willow flycatcher and LBVI detected are provided in Figures 3-1 – 3-6.

In addition to willow flycatcher and LBVI, five special status wildlife species were detected during focused SWFL and LBVI surveys: light-footed Ridgway's rail (*Rallus obsoletus levipes*), Cooper's hawk (*Accipiter cooperii*), coastal California gnatcatcher (*Polioptila californica californica*), yellow-breasted chat (*Icteria virens*), and yellow warbler *(Setophaga petechia*). Brown-headed cowbirds (*Molothrus ater*; BHCO) were detected at three of the facilities. In order to maintain consistency with past summary reports for the MWMP (Balk 2017), only locations of SWFL, LBVI and BHCO are included in Figures 3-1 through 3-6 and 4-1 and 4 of this report. Special status species detection locations not shown in Figures 3-1 through 3-6 and 4-1 through 4-6 of this report will be provided in the Biological Resource Figure package that will be provided to the resource agencies, including USFWS, with the MWMP's EIR submittal and permit applications.

Survey results and a list of wildlife species observed during surveys can be found in Appendices A and B, respectively.

Discussion

The willow flycatcher detected at the 5505 Friars Road site on May 24 gave several 'whit' calls in response to the playback of the recorded vocalization. After additional investigation, it then departed to the east, away from the survey area. No willow flycatchers were detected during the following survey visits to this location and therefore this individual was determined to be a migrant. The habitat at this location is dominated by

arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and western sycamore (*Platanus racemosa*), with a significant coverage of naturalized ornamental species such as carrotwood (*Cupaniopsis anacardioides*), tree-of-heaven (*Ailanthus altissima*), Canary Island date palm (*Phoenix canariensis*) and giant reed (*Arundo donax*). Brown-headed cowbirds were regularly detected at this survey location.

SWFL surveys were also conducted at Los Peñasquitos Canyon Creek, and no SWFL were detected at this location. However, LBVI were detected at this site for all but the final two surveys. One LBVI pair was detected consistently within the dense willow scrub along the upstream, eastern portion of the survey area. A second pair was observed along the downstream, western portion of the survey area on May 24, but these birds were not observed in the area during the remainder of the survey visits. It is likely that the eastern pair at least attempted to breed, but there was no observed direct evidence of breeding success. Brown-headed cowbirds were detected intermittently at this site. The habitat at the Los Peñasquitos site is dominated by arroyo willow and mule fat (*Baccharis salicifolia*). Photos of these sites are provided in Appendix E.

If you have any questions about these surveys, please contact me at 760-607-2715.

Sincerely,

Shelley Lawrence

Shelley Lawrence
Biologist
Balk Biological Consulting, Inc.
slawrence@balkbiological.com

Attachments:

Figures 1-2	Project Location Maps
Figures 3-1 - 3-6	Focused Survey Results Maps
Figures 4-1 - 4-6	Focused Survey USGS Quad/Topographical Maps
Appendix A	Survey Results Table
Appendix B	Wildlife Species Detected
Appendix C	Willow Flycatcher Survey and Detection Forms
Appendix E	Survey Site Photos

Citations

California Department of Fish and Wildlife, Natural Diversity Database. July 2017. Species Animals List. Periodic publication. 51 pp.

Sogge, M.K., Ahlers, Darrell, and Sferra, S.J., 2010, A natural history summary and survey protocol for the Southwestern Willow Flycatcher: U.S. Geological Survey Techniques and Methods 2A-10, 38 p.

U.S. Fish and Wildlife Service. 1994. Designation of Critical Habitat for the Least Bell's Vireo. 59 FR 4845 4867.

U.S. Fish and Wildlife Service. 2001. Least Bell's Vireo Survey Guidelines. Carlsbad Fish and Wildlife Office. January 19.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

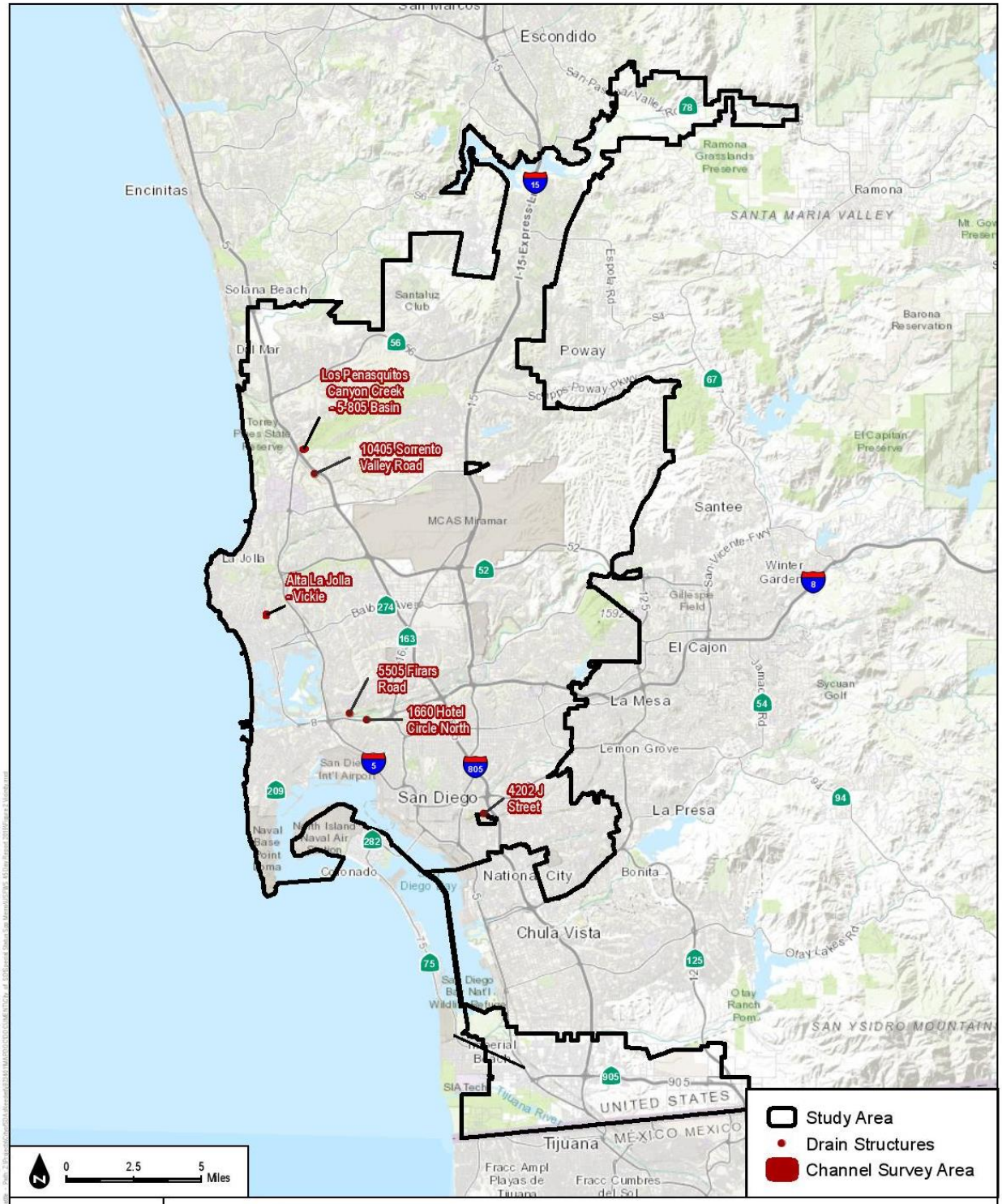
8/30/19

Brian Lohstroh TE-063608-6 DATE

DUDEK

FIGURE 1
Regional Map

City of San Diego Waterways Maintenance Plan - Special-Status Avian Species Memo



DUDEK

SOURCE: USGS 7.5-Minute Series San Pasqual, Escondido, Rancho Santa Fe, San Vicente Reservoir, Poway, Del Mar, La Mesa, La Jolla, National City, Point Loma, Otay Mesa, & Imperial Beach Quadrangles

FIGURE 2
Vicinity Map

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report

Figure 3-1
WMP LBVI/SWFL Focused Survey Results - Los Penasquitos Canyon Creek - 5-805 Basin

SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3-2
WMP LBVI/SWFL Focused Survey Results - Alta La Jolla - Vickie

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Alta La Jolla - Vickie

Figure 3-3
WMP LBVI/SWFL Focused Survey Results - 4202 J Street

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 4202 J Street

Figure 3-4
WMP LBVI/SWFL Focused Survey Results - 10405 Sorrento Valley Road

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 10405 Sorrento Valley Road

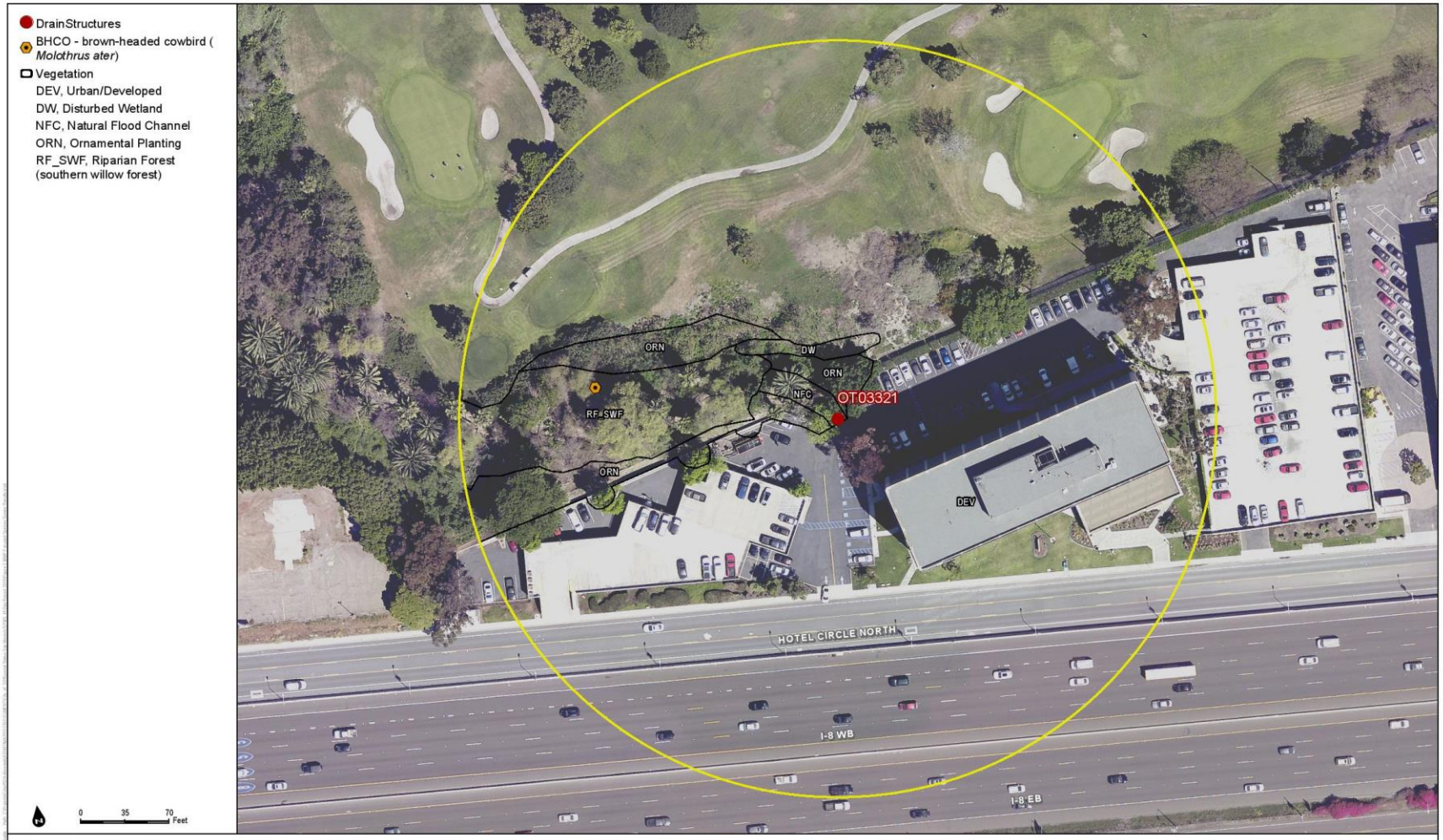
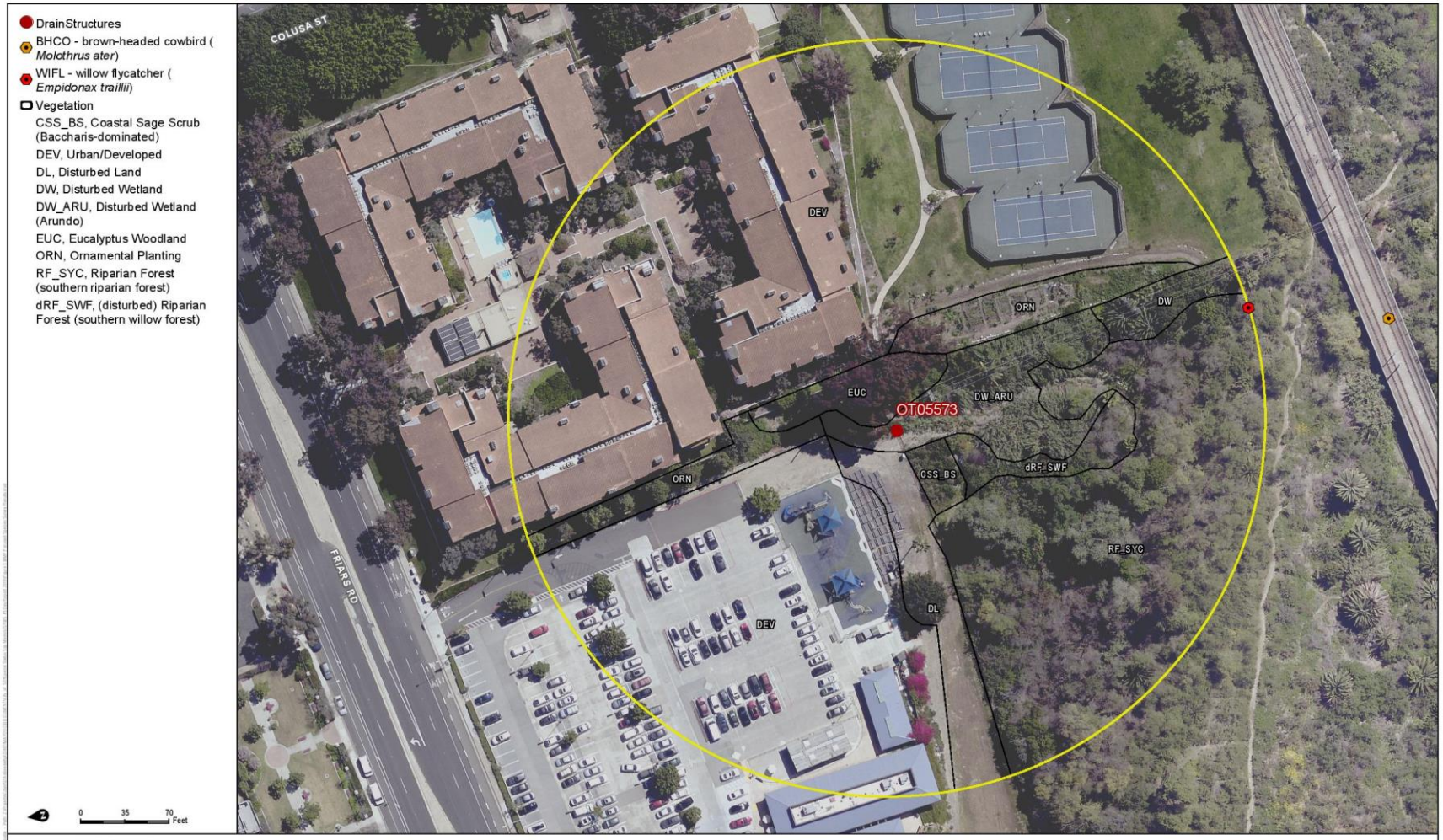


Figure 3-5
WMP LBVI/SWFL Focused Survey Results - 1660 Hotel Circle North

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 1660 Hotel Circle North



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 3-6
WMP LBVI/SWFL Focused Survey Results - 5505 Friars Road

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 5505 Friars Road

Balk Biological, Inc.

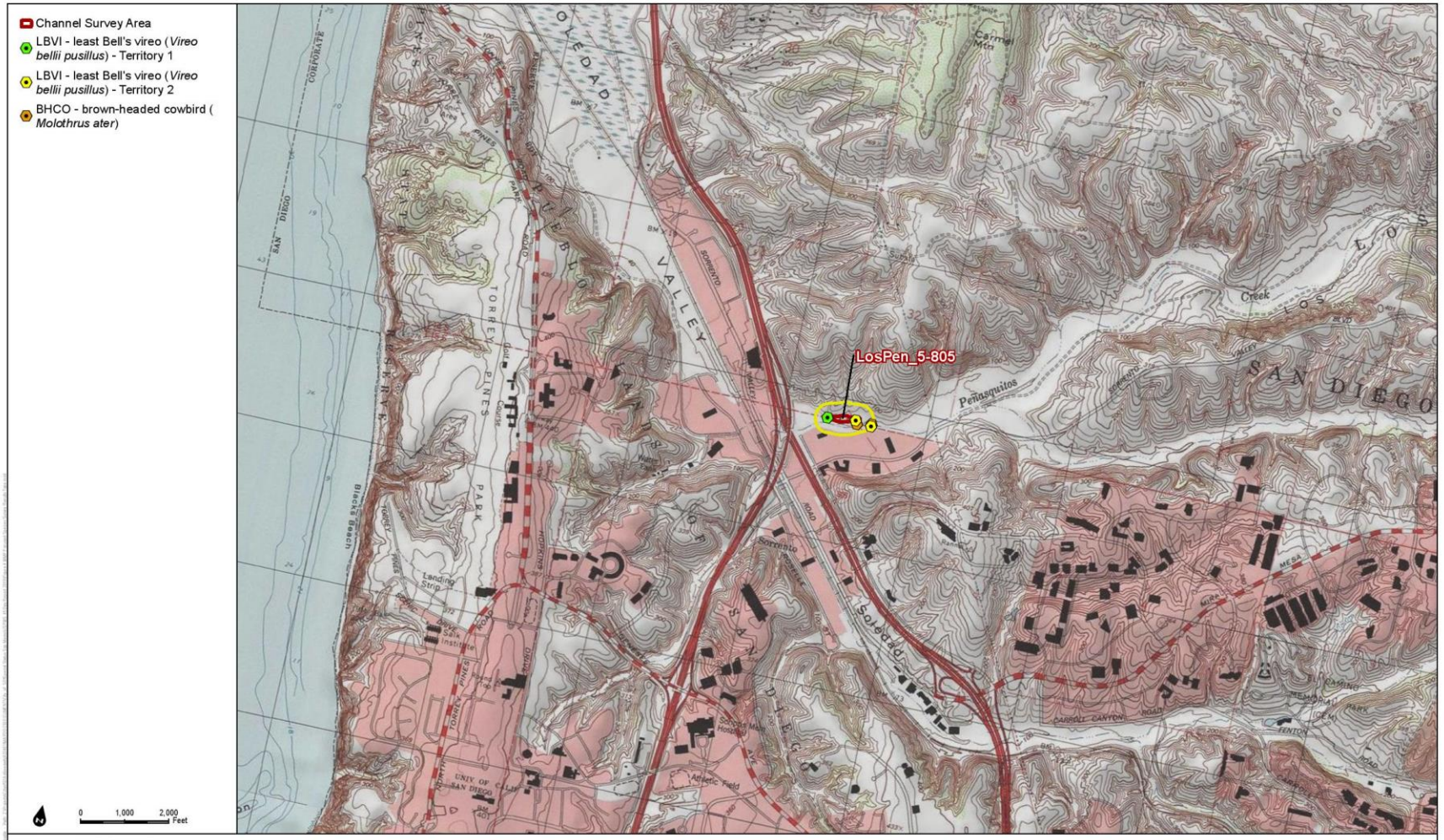
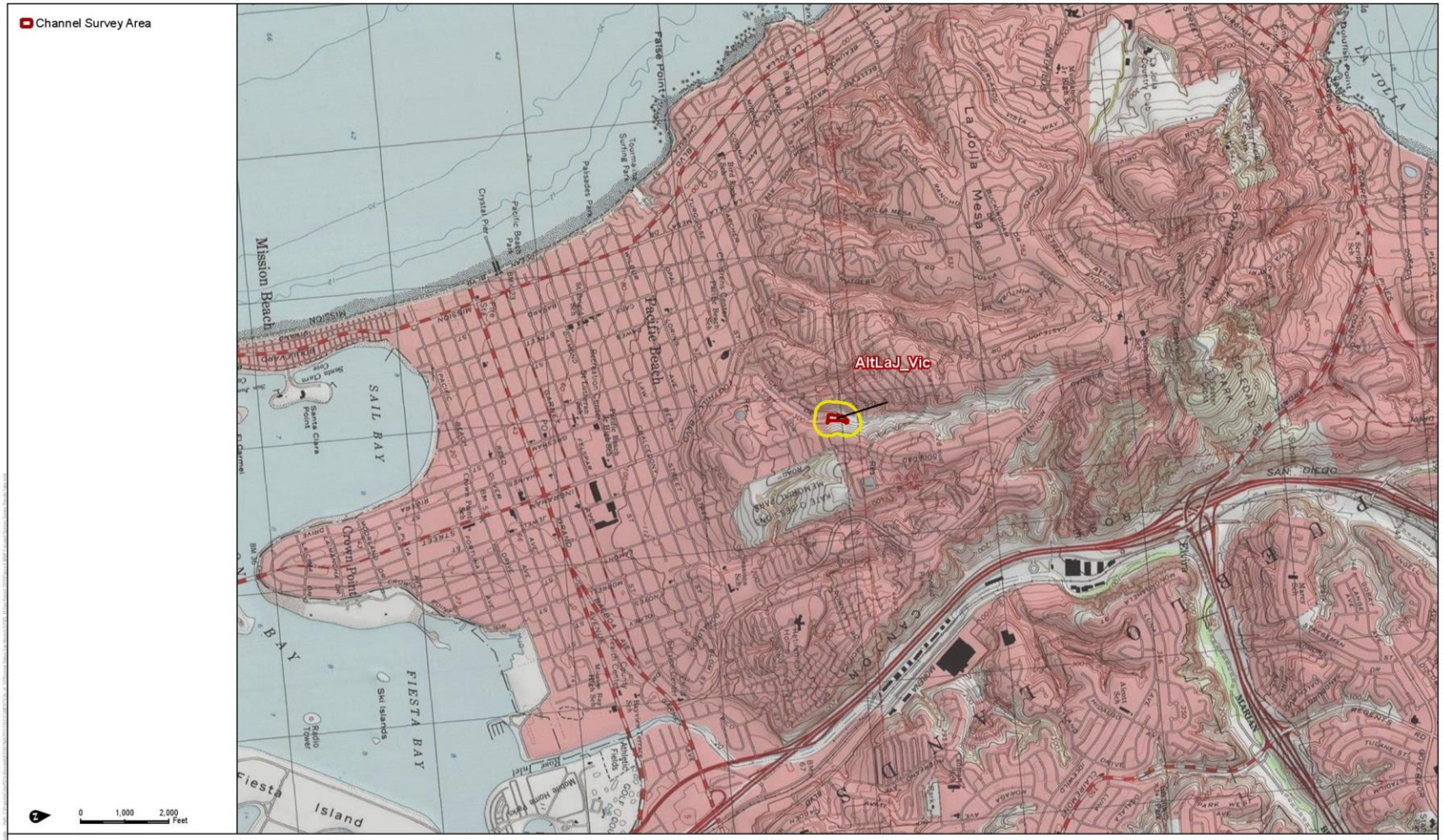


Figure 4-1

WMP LBVI/SWFL Focused Survey USGS Quad/Topog raphic al Map - Los Penasquitos Canyon Creek - 5-805 Basin

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Los Penasquitos Canyon Creek - 5-805 Basin



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 4-2

WMP LBVI/SWFL Focused Survey USGS Quad/Topog raphic al Map - Alta La Jolla - Vickie

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): Alta La Jolla - Vickie

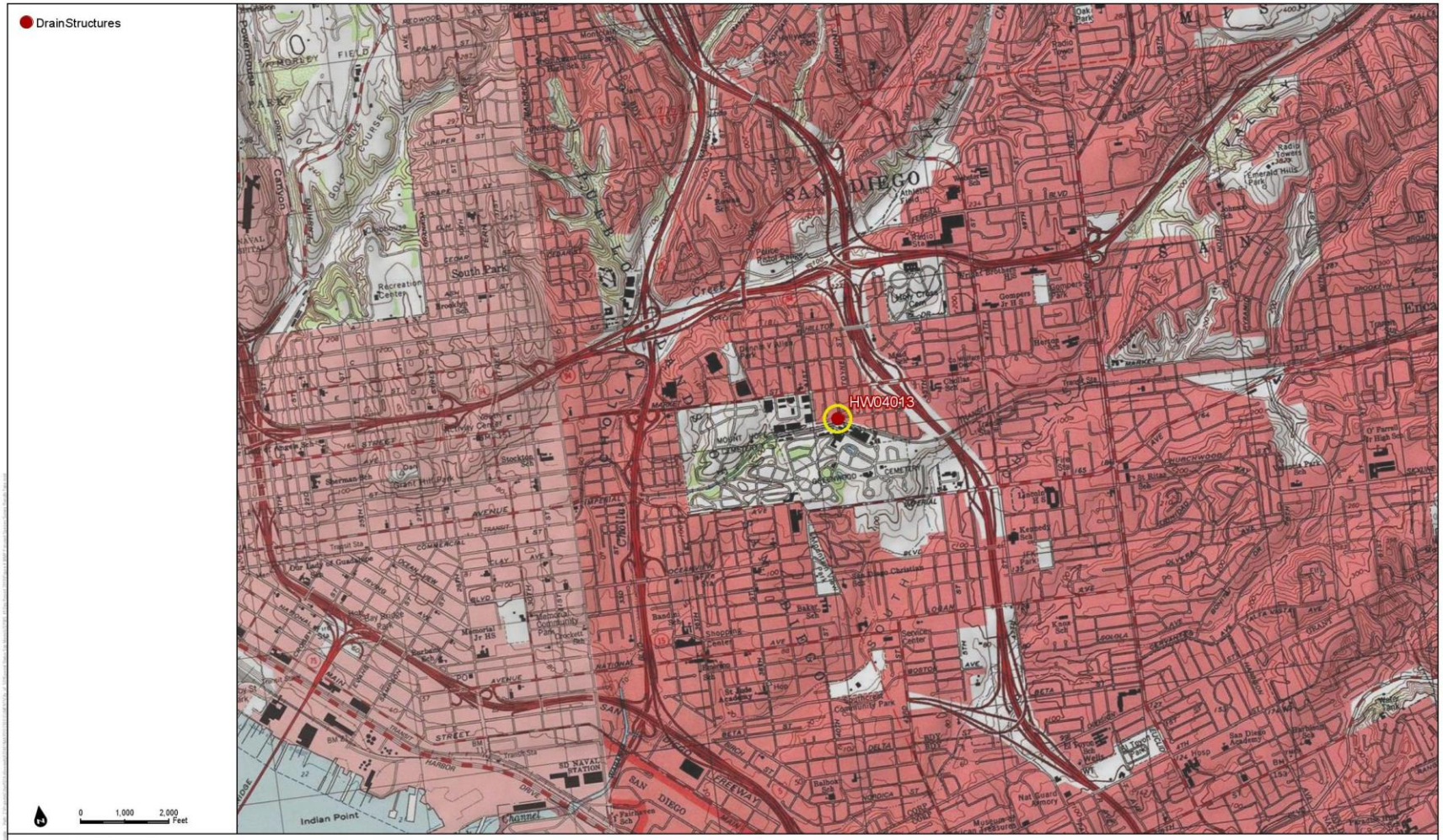
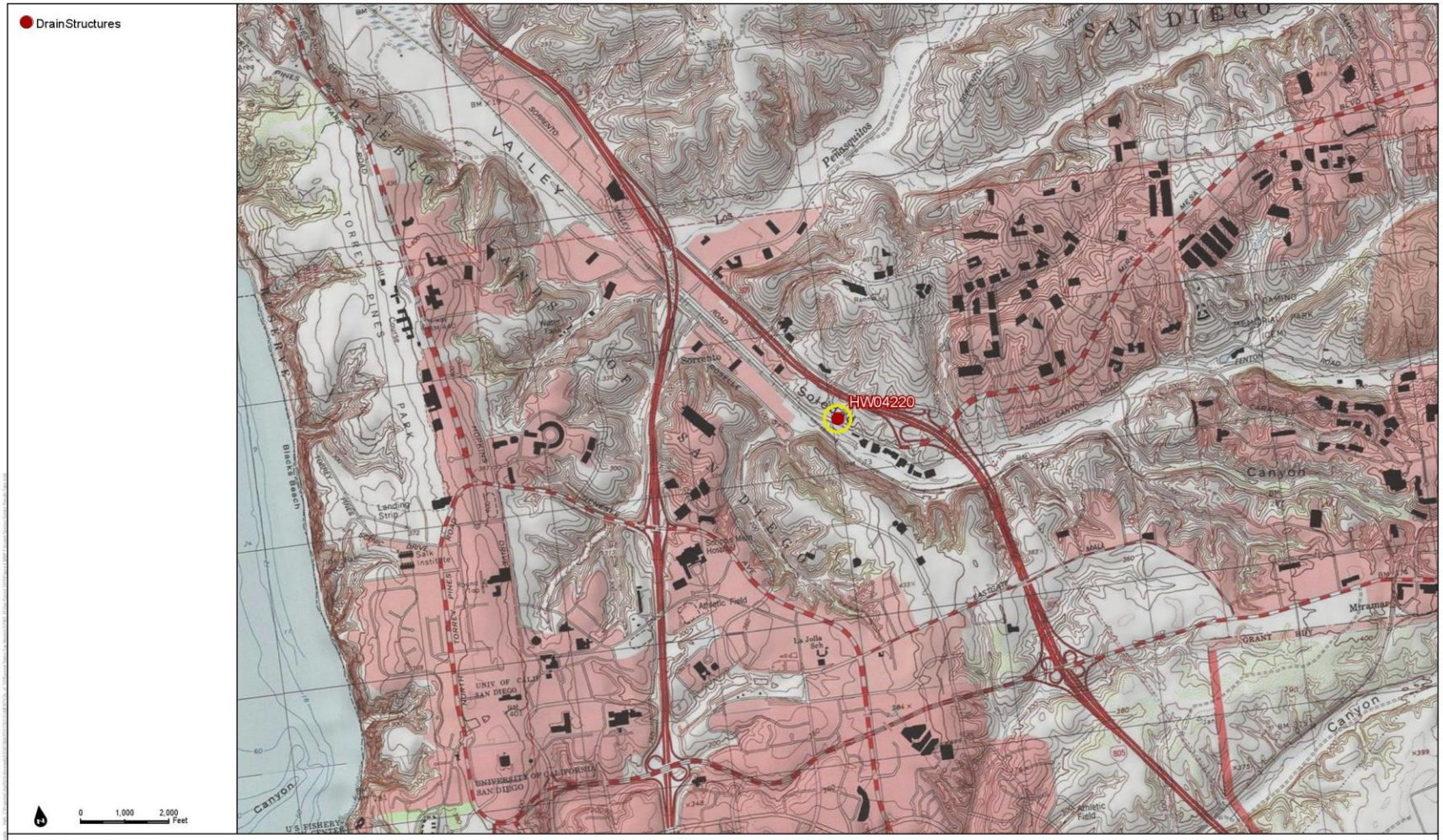


Figure 4-3
WMP LBVI/SWFL Focused Survey USGS Quad/Topog raphic al Map - 4202 J Street

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 4202 J Street



SOURCE: Bing Maps, 2017; SANDAG, 2014

Figure 4-4
WMP LBVI/SWFL Focused Survey USGS Quad/Topog raphic al Map - 10405 Sorrento Valley Road

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 10405 Sorrento Valley Road

Figure 4-5
WMP LBVI/SWFL Focused Survey USGS Quad/Topog raphic al Map - 1660 Hotel Circle North

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 1660 Hotel Circle North

Figure 4-6
WMP LBVI/SWFL Focused Survey USGS Quad/Topog raphic al Map - 5505 Friars Road

Survey Results of the 2019 City of San Diego Waterways Maintenance Plan Project Southwestern Willow Flycatcher and Least Bell's Vireo 45-Day Summary Report - Facility Group(s): 5505 Friars Road

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APPENDIX A

Survey Results During City of San Diego's Waterways Maintenance Plan Project SWFL/LBVI Surveys 2019

Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey – Date, Time, Weather Conditions, Surveyors, and Observations

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F; cloud cover; wind speed)	Results/Observations
10405 Sorrento Valley Road	1	4/19/2019	LBVI	SML	700	745	56 F; 90% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	5/3/2019	LBVI	SML	630	700	57 F; 100% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	3	5/15/2019	LBVI	BLM	930	1000	64 F; 100%; 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	4	5/29/2019	LBVI	BLM	855	925	64 F; 15% CC; 5-10 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	5	6/10/2019	LBVI	BLM	1000	1030	71 F; 0% CC; 5-7 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	6	6/20/2019	LBVI	BLM	830	920	66 F; 100% CC; 0-3 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	7	7/2/2019	LBVI	SML	720	750	65 F; 80% CC; 3-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	8	7/15/2019	LBVI	SML	815	845	72 F; 100% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
Los Penasquitos Canyon Creek	1	4/19/2019	LBVI 1	BSL	630	730	61F; 100-90%, 0-2 mph	LBVI, YWAR, and BHCO present. No SWFL detected.
	2	4/29/2019	LBVI 2	BSL	640	730	61-61F; 100% 0-2 mph	LBVI, YWAR, and BHCO present. No SWFL detected.
	3	5/10/2019	LBVI 3	BSL	715	800	61 F; 100%; 0-3 mph	LBVI, YWAR, and BHCO present. No SWFL detected.
	1	5/24/2019	SWFL 1	BSL	630	715	50-55F; 0%; 0-2 mph	LBVI, RIRA, YWAR, and BHCO present. No SWFL detected.
	4	5/24/2019	LBVI 4	BSL	715	800	55-56F; 0%; 1-3 mph	2 LBVI territories present (western is confirmed pair). No SWFL detected.
	2	6/4/2019	SWFL2	BSL	615	700	63-64F; 100%; 0-2 mph; light drizzle	LBVI, YWAR, and BHCO present. No SWFL detected.
	5	6/4/2019	LBVI 5	BSL	700	730	64F; 100% 0-2 mph	One LBVI territory detected (western not detected). No SWFL detected.
	3	6/14/2019	SWFL 3	BSL	600	630	63F; 100%; 0-2 mph	2 RIRA counter calling, LBVI, COHA, BHCO, and YWAR present. No SWFL detected.
	6	6/14/2019	LBVI 6	BSL	630	710	63F; 100%; 0-2 mph	One LBVI territory detected (western not detected). No SWFL detected.
	4	7/3/2019	SWFL4	BSL	615	635	64F; 100%; 0-2 mph	YWAR and BHCO present. No LBVI or SWFL detected

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F; cloud cover; wind speed)	Results/Observations
	7	7/3/2019	LBVI 7	BSL	635	710	64F; 100%; 0-2 mph	No LBVI or SWFL detected.
	5	7/16/2019	SWFL 5	BSL	615	650	64F; 100%; 0-1 mph	YWAR and BHCO present. No LBVI or SWFL detected.
	8	7/16/2019	LBVI 8	BSL	650	730	64F; 100%; 0-1 mph	YWAR and BHCO present. No LBVI or SWFL detected.
4202 J Street	1	4/19/2019	LBVI	SML	800	845	63 F; 10% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	5/3/2019	LBVI	SML	930	950	58 F; 100% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	3	5/15/2019	LBVI	BLM	730	800	64 F; 100% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	4	5/30/2019	LBVI	BLM	855	925	64 F; 100% CC; 2-4 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	5	6/10/2019	LBVI	BLM	900	930	72F; 10% CC; 1-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	6	6/21/2019	LBVI	BLM	845	915	64 F; 100% CC; 2-4 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	7	7/2/2019	LBVI	SML	1000	1030	69 F; 0% CC; 0-1 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	8	7/15/2019	LBVI	SML	1030	1100	76 F; 0% CC; 1-3 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
1660 Hotel Circle North	1	4/19/2019	LBVI	SML	900	945	67 F; 10% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	5/3/2019	LBVI	SML	900	924	57 F; 100% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	3	5/15/2019	LBVI	BLM	825	900	64 F; 100% CC; 0 mph	YWAR present; female BHCO documented during survey; No LBVI or SWFL observed
	4	5/30/2019	LBVI	BLM	945	1015	64 F; 100% CC; 2-4 mph	YWAR present; No LBVI, SWFL, or BHCO observed.
	5	6/10/2019	LBVI	SML	1025	1100	90 F; 0% CC; 3-5 mph	YWAR present; No LBVI, SWFL, or BHCO observed.
	6	6/20/2019	LBVI	BLM	930	1000	64 F; 100% CC; 2-4 mph	YWAR present; No LBVI, SWFL, or BHCO observed.
	7	7/2/2019	LBVI	SML	920	945	68 F; 10% CC; 3-5 mph	YWAR present; No LBVI, SWFL, or BHCO observed.
	8	7/15/2019	LBVI	SML	945	1015	75 F, 80% CC, 0-1 mph	YWAR present; No LBVI, SWFL, or BHCO observed.

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F; cloud cover; wind speed)	Results/Observations
5505 Friars Road	1	4/19/2019	LBVI 1	BSL	945	1030	66F; 20-40%, 1-5 mph	No LBVI, SWFL, or BHCO observed; YWAR, COHA present
	2	4/29/2019	LBVI 2	BSL	940	1030	59-63; 100%; 2-6 mph	No LBVI, SWFL, or BHCO observed; YWAR present
	3	5/10/2019	LBVI 3	BSL	825	930	61F; 100%; 1-3 mph	No LBVI, SWFL observed; YWAR, YBCH, BHCO present
	1	5/24/2019	SWFL 1	BSL	810	840	59-62F; 0%; 0-2 mph	WIFL* suspected migrant, gave several "whit" calls in response to playback
	4	5/24/2019	LBVI 4	BSL	840	910	62F; 0% 0-2 mph	No LBVI, SWFL, or BHCO observed; YBCH present
	2	6/4/2019	SWFL2	BSL	740	800	62F; 100%; 1-2 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed. No WIFL detected, confirming migrant on May 24.
	5	6/4/2019	LBVI 5	BSL	800	820	62F; 100%; 1-2 mph	No LBVI, SWFL observed; YWAR, YBCH, BHCO present
	3	6/14/2019	SWFL 3	BSL	720	750	63-64F; 100% 0-1 mph	No LBVI, SWFL observed; YWAR, YBCH, 3 BHCO present
	6	6/14/2019	LBVI 6	BSL	750	815	64F; 100%; 0-1 mph	No LBVI, SWFL observed; YWAR, YBCH, 3 BHCO present
	4	7/3/2019	SWFL4	BSL	825	840	65F; 100%; 0-2 mph	No LBVI, SWFL, or BHCO observed; YWAR and YBCH present
	7	7/3/2019	LBVI 7	BSL	840	900	65F; 100%; 0-2 mph	No LBVI, SWFL, or BHCO observed; YWAR and YBCH present
	5	7/16/2019	SWFL 5	BSL	740	800	64F; 100%; 0-1 mph	No LBVI, SWFL observed; YWAR, YBCH, 3 BHCO present
	8	7/16/2019	LBVI 8	BSL	800	830	64-65 F; 100% CC; 0-1 mph	No LBVI, SWFL observed; YWAR, YBCH, 3 BHCO present
Alta La Jolla-Vickie	1	4/20/2019	LBVI	BLM	730	900	60 F; 50% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	2	5/3/2019	LBVI	SML	717	812	57 F; 100% CC; 0 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	3	5/14/2019	LBVI	SML	1015	1115	70 F; 40% CC; 0-3 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	4	5/29/2019	LBVI	BLM	950	1020	65 F; 15% CC, 5-10 mph	No LBVI, SWFL, or BHCO observed. YBCH present
	5	6/10/2019	LBVI	SML	815	845	80 F; 0% CC, 2-5 mph	No LBVI, SWFL, or BHCO observed. YBCH present
	6	6/20/2019	LBVI	SML	945	1100	68 F; 100% CC, 3-5 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.

Facility Group	Survey	Date	Survey Type	Surveyor	Start Time	End Time	Weather (°F; cloud cover; wind speed)	Results/Observations
	7	7/2/2019	LBVI	SML	815	900	75-79F, 80-0% CC, 0-3 mph	No LBVI, SWFL, BHCO, or any other sensitive species observed.
	8	7/15/2019	LBVI	SML	900	930	78F, 70% CC, 0-3 mph	No LBVI, SWFL, or BHCO observed. YBCH present

Surveyor: BSL = Brian Lohstroh, SML = Shelley Lawrence, BLM = Brynne Mulrooney

APPENDIX B

Wildlife Species Detected During City of San Diego's Waterways Maintenance Plan Project SWFL/LBVI Surveys 2019

Common Name	Scientific Name	Order	Family	Status
Reptiles and Amphibians				
Bullfrog (invasive alien)	*Lithobates catesbeianus*	Anura	Ranidae	None
Great Basin Fence Lizard	*Sceloporus occidentalis longipes*	Squamata	Phrynosomatidae	None
California Side-blotched Lizard	*Uta stansburiana elegans*	Squamata	Phrynosomatidae	None
Avian				
Mallard	*Anas platyrhynchos*	Anseriformes	Anatidae	None
Eurasian Collared-Dove*	*Streptopelia decaocto*	Columbiformes	Columbidae	None
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae	None
White-throated Swift	*Aeronautes saxatalis*	Caprimulgiformes	Apodidae	None
Anna's Hummingbird	*Calypte anna*	Apodiformes	Trochilidae	None
Selasphorus Hummingbird	*Selasphorus* sp.	Apodiformes	Trochilidae	None
Light-footed Ridgway's Rail	*Rallus obsoletus levipes*	Gruiformes	Rallidae	FE, SE, FP
Killdeer	*Charadrius vociferus*	Charadriiformes	Charadriidae	None
Western Gull	*Larus occidentalis*	Charadriiformes	Laridae	None
Great Egret	*Ardea alba*	Pelecaniformes	Ardeidae	None
Snowy Egret	*Egretta thula*	Pelecaniformes	Ardeidae	None
Green Heron	*Butorides virescens*	Pelecaniformes	Ardeidae	None
Cooper's Hawk	*Accipiter cooperii*	Accipitriformes	Accipitridae	WL
Red-shouldered Hawk	*Buteo lineatus*	Accipitriformes	Accipitridae	None
Red-tailed Hawk	*Buteo jamaicensis*	Accipitriformes	Accipitridae	None
Nuttall's Woodpecker	*Picoides nuttallii*	Piciformes	Picidae	None
Downy Woodpecker	*Picoides pubescens*	Piciformes	Picidae	None
American Kestrel	*Falco sparverius*	Falconiformes	Falconidae	None
Red-crowned Parrot*	*Amazona viridigenalis*	Psittaciformes	Psittacidae	None
Willow Flycatcher (migrant)	*Empidonax traillii*	Passeriformes	Tyrannidae	SE-Nesting
Pacific-slope Flycatcher	*Empidonax difficilis*	Passeriformes	Tyrannidae	None

Black Phoebe	*Sayornis nigricans*	Passeriformes	Tyrannidae	None
Say's Phoebe	*Sayornis saya*	Passeriformes	Tyrannidae	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	Passeriformes	Tyrannidae	None
Cassin's Kingbird	*Tyrannus vociferans*	Passeriformes	Tyrannidae	None
Western Kingbird	*Tyrannus verticalis*	Passeriformes	Tyrannidae	None
Least Bell's Vireo	*Vireo bellii pusillus*	Passeriformes	Vireonidae	FE, SE, SSC
Hutton's Vireo	*Vireo huttoni*	Passeriformes	Vireonidae	None
Warbling Vireo	*Vireo gilvus*	Passeriformes	Vireonidae	None
California Scrub-Jay	*Aphelocoma californica*	Passeriformes	Corvidae	None
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae	None
Common Raven	*Corvus corax*	Passeriformes	Corvidae	None
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Passeriformes	Hirundinidae	None
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae	None
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae	None
House Wren	*Troglodytes aedon*	Passeriformes	Troglodytidae	None
Bewick's Wren	*Thryomanes bewickii*	Passeriformes	Troglodytidae	None
Coastal California Gnatcatcher	*Polioptila californica californica*	Passeriformes	Polioptilidae	FT, SSC
Wrentit	*Chamaea fasciata*	Passeriformes	Sylviidae	None
American Robin	*Turdus migratorius*	Passeriformes	Turdidae	None
California Thrasher	*Toxostoma redivivum*	Passeriformes	Mimidae	None
Northern Mockingbird	*Mimus polyglottos*	Passeriformes	Mimidae	None
European Starling *	*Sturnus vulgaris*	Passeriformes	Sturnidae	None
Phainopepla	*Phainopepla nitens*	Passeriformes	Ptiliogonatidae	None
Scaly-breasted Munia*	*Lonchura punctulata*	Passeriformes	Estrildidae	None
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae	None
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae	None
Orange-crowned Warbler	*Oreothlypis celata*	Passeriformes	Parulidae	None
Common Yellowthroat	*Geothlypis trichas*	Passeriformes	Parulidae	None
Yellow Warbler	*Setophaga petechia*	Passeriformes	Parulidae	SSC
Wilson's Warbler	*Cardellina pusilla*	Passeriformes	Parulidae	None

Yellow-breasted Chat	*Icteria virens*	Passeriformes	Parulidae	SSC
Spotted Towhee	*Pipilo maculatus*	Passeriformes	Emberizidae	None
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae	None
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae	None
White-crowned sparrow	*Zonotrichia leucophrys*	Passeriformes	Emberizidae	None
Black-headed Grosbeak	*Pheucticus melanocephalus*	Passeriformes	Cardinalidae	None
Blue Grosbeak	*Passerina caerulea*	Passeriformes	Cardinalidae	None
Red-winged Blackbird	*Agelaius phoeniceus*	Passeriformes	Icteridae	None
Brown-headed Cowbird	*Molothrus ater*	Passeriformes	Icteridae	None
Hooded Oriole	*Icterus cucullatus*	Passeriformes	Icteridae	None
Mammals				
Desert (Audubon) Cottontail	*Sylvilagus audubonii*	Lagomorpha	Leporidae	None
California Ground Squirrel	*Spermophilus beecheyi nudipes*	Rodentia	Sciuridae	None
Southern Pocket Gopher	*Thomomys bottae sanctidiegi*	Rodentia	Geomyidae	None

FE –Federally Endangered, FT-Federally Threatened, SE- State Endangered, FP – CDFW Fully Protected species, WL – California Department of Fish and Wildlife (CDFW) Watch List species, SSC – CDFW Species of Special Concern
*Naturalized or Vagrant Species
RV – Rare vagrant

APPENDIX C

Willow Flycatcher Survey and Detection Forms
City of San Diego's Waterways Maintenance Plan Project
SWFL Surveys 2019

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Waterways Maintenance Plan: 5505 Friars Road State CA County San Diego
USGS Quad Name La Jolla Elevation 5 (meters)
Creek, River, Wetland, or Lake Name San Diego River
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** X ***No*** ____

Survey Coordinates: Start: E 482166 N 3624968 UTM Datum WGS84 (See instructions)
Stop: E 481936 N 3625013 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/24/19 Start 0810 Stop 0840 Total hrs 0.5	1	0	0	N	One WIFL giving several 'whit' calls in response to recorded vocalization.	1		482148	3624983
Survey # 2 Observer(s) B. Lohstroh	Date 6/4/19 Start 0740 Stop 0800 Total hrs 0.33	0	0	0	N		# Birds	Sex	UTM E	UTM N
Survey # 3 Observer(s) B. Lohstroh	Date 6/14/19 Start 0720 Stop 0750 Total hrs 0.5	0	0	0	N	3 BHCO Present	# Birds	Sex	UTM E	UTM N
Survey # 4 Observer(s) B. Lohstroh	Date 7/3/19 Start 0825 Stop 0840 Total hrs .25	0	0	0	N		# Birds	Sex	UTM E	UTM N
Survey # 5 Observer(s) B. Lohstroh	Date 7/16/19 Start 0740 Stop 0800 Total hrs .33	0	0	0	N	3 BHCO Present	# Birds	Sex	UTM E	UTM N
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 1.91		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
		0	0	0	0					

Reporting Individual Brian Lohstroh Date Report Completed ____
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # SC-4230
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Balk Biological, Inc.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological E-mail blohstroh@balkbiological.com
Site Name Waterways Maintenance Plan: 5505 Friars Road Date Report Completed _____
Was this site surveyed in a previous year? Yes___ No ___ Unknown _X__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _____ Not Applicable _X_
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _X_ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _X_ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City Of San Diego

Length of area surveyed: 0.2 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

X Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Salix gooddingii, Platanus racemosa

Average height of canopy (Do not include a range): 12 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.
A light commuter rail line (San Diego Trolley) runs through the survey area. Site is a small vegetation maintenance area.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Waterways Maintenance Plan: Los Penasquitos State CA County San Diego
USGS Quad Name Del Mar Elevation 10 (meters)
Creek, River, Wetland, or Lake Name Los Penasquitos Creek
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ***Yes*** X ***No*** ____

Survey Coordinates: Start: E 479153 N 3640732 UTM Datum WGS84 (See instructions)
Stop: E 479638 N 3640865 UTM Zone 11 S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
***** Fill in additional site information on back of this page *****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) B. Lohstroh	Date 5/24/19 Start 0630 Stop 0715 Total hrs 0.75	0	0	0	N	1 BHCO Present				
Survey # 2 Observer(s) B. Lohstroh	Date 6/4/19 Start 0615 Stop 0700 Total hrs 0.75	0	0	0	N	1 BHCO Present				
Survey # 3 Observer(s) B. Lohstroh	Date 6/14/19 Start 0600 Stop 0630 Total hrs 0.5	0	0	0	N	1 BHCO Present				
Survey # 4 Observer(s) B. Lohstroh	Date 7/3/19 Start 0615 Stop 0635 Total hrs .33	0	0	0	N	1 BHCO Present				
Survey # 5 Observer(s) B. Lohstroh	Date 7/16/19 Start 0615 Stop 0650 Total hrs 0.58	0	0	0	N	2 BHCO Present				

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs 2.91	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes___ No ___ If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Brian Lohstroh Date Report Completed _____
US Fish and Wildlife Service Permit # TE-063608-6 State Wildlife Agency Permit # SC-4230
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Brian Lohstroh Phone # (858) 750-9300
Affiliation Balk Biological E-mail blohstroh@balkbiological.com
Site Name Waterways Maintenance Plan: Los Penasquitos Date Report Completed _____
Was this site surveyed in a previous year? Yes___ No ___ Unknown _X__
Did you verify that this site name is consistent with that used in previous years? Yes ____ No _____ Not Applicable _X__
If site name is different, what name(s) was used in the past?_____
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ____ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes _X__ No ____ If no, summarize below.

Management Authority for Survey Area: Federal____ Municipal/County _X__ State ____ Tribal ____ Private ____
Name of Management Entity or Owner (e.g., Tonto National Forest) City Of San Diego

Length of area surveyed: 0.5 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

X Native broadleaf plants (entirely or almost entirely, > 90% native)

_____ Mixed native and exotic plants (mostly native, 50 - 90% native)

_____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix lasiolepis, Baccharis salicifolia, Salix laevigata

Average height of canopy (Do not include a range): 8 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.
Flood control berms present, stream somewhat channelized. Site is a small vegetation maintenance area.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

APPENDIX E

Survey Site Photos
City of San Diego's Waterways Maintenance Plan Project
SWFL Surveys 2019

Photo 1: Riparian habitat at the Friars and Colusa site. Willows, mule fat and Canary Island date palms are visible.

Photo 2: View from within riparian habitat at the Friars and Colusa site. Willows are visible at right, with a Canary Island date palms at left.

Photo 3: Riparian habitat at the Friars and Colusa site. Willows are visible in the background with southwestern spiny rush, goldenbush and annual grasses visible in the foreground.

Photo 4: Riparian habitat at the Los Peñasquitos Canyon Creek site. Willows are visible in the background with mule fat and cattails visible in the foreground.

Photo 5: Riparian habitat at the Los Peñasquitos Canyon Creek site. Willows are visible in the background, pickleweed and tamarisk at center and coastal sage scrub is visible in the foreground.

Photo 6: Riparian habitat at the Los Peñasquitos Canyon Creek site. Willows are visible in the background with pickleweed and tamarisk in the foreground.

APPENDIX D

Special-Status Plant Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2/None	Coastal dunes/perennial herb/Feb–Nov/0–328	X	X	X	X	X	X	X	X	Not expected to occur. No suitable dune habitat present within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana watersheds. The San Dieguito Watershed is outside of the species' known elevation range.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/CE/1B.1/Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/33–3150	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur in San Dieguito and Otay Watersheds that lack suitable vegetation.
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1/Covered	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June (July)/0–33	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within San Dieguito and Otay Watersheds that lack suitable habitat. San Dieguito and Sweetwater Watersheds are outside of the species' known elevation range.
Adolphia californica	California adolphia	None/None/2B.1/None	Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/Dec–May/33–2428	X	L[3-12]	L[13-19]	L[20-33], D[27]	L[34-57]	L[58]	X	L[61-66]	Observed within 1 facility group in San Diego River Watershed. Low potential to occur within facility groups in Peñasquitos, Mission Bay, Pueblo San Diego, Sweetwater, and Tijuana Watersheds and other facility groups within the San Diego River Watershed based on negative focused surveys. Not expected to occur in San Dieguito and Otay Watersheds that lack suitable vegetation.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1/Narrow Endemic	Coastal bluff scrub, coastal scrub/perennial leaf succulent/Sep–May/10–394	X	X	X	X	X	X	X	X	Not expected to occur. This species is limited to the coast and not expected to occur within Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds. No suitable habitat within the San Dieguito, Mission Bay, and Otay Watersheds. San Dieguito Watershed is outside of the species' known elevation range.
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1/None	Coastal scrub/perennial shrub/Apr–June/180–509	X	X	X	X	X	L[58]	X	L[61-66]	Low potential to occur within facility groups in Sweetwater and Tijuana Watersheds based on negative focused surveys. Not expected to occur within San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Otay Watersheds are outside of the species' known geographic range.
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2/None	Chaparral, Sonoran desert scrub; sandy/perennial shrub/Aug–Nov/33–1640	X	L[3-12]	X	L[20-22, 25-33], D[23, 24]	L[34-42, 44, 46, 49-57], D[43, 45, 47, 48]	L[58]	X	L[62-66], D[61]	Observed within 2 facility groups in San Diego River, 4 facility groups Pueblo San Diego, and 1 facility group in Tijuana Watersheds. Low potential to occur within other facility groups in the Peñasquitos, and Sweetwater Watersheds, and other facility groups in the San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, and Otay Watersheds that lack suitable vegetation.
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1/Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/66–1362	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Aphanisma blitoides	aphanisma	None/None/ 1B.2/Narrow Endemic	Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Mar–June/3–1001	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/ 1B.1/Covered	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1198	X	L[3-12]	X	X	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos Watershed based on negative focused surveys. Not expected to occur within San Dieguito, Mission Bay, Sweetwater, Otay, and Tijuana Watersheds that lack suitable vegetation. San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known geographic range.
Arctostaphylos otayensis	Otay manzanita	None/None/ 1B.2/Covered	Chaparral, cismontane woodland; metavolcanic/perennial evergreen shrub/Jan–Apr/902–5577	X	X	X	X	X	X	X	X	Not expected to occur. There is no suitable vegetation within the San Dieguito, Sweetwater, and Otay watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Otay Watersheds are outside of the species' known elevation and geographic range. Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known elevation range.
Arctostaphylos rainbowensis	Rainbow manzanita	None/None/ 1B.1/None	Chaparral/perennial evergreen shrub/Dec–Mar/673–2198	X	X	X	X	X	X	X	X	Not expected to occur. There is no suitable vegetation within the San Dieguito, Mission Bay, Pueblo San Diego, Sweetwater, and Otay Watersheds. Peñasquitos, Mission Bay, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation and geographic ranges. San Dieguito and Pueblo San Diego Watersheds are outside of the species' known elevation range. San Diego River Watershed is outside of the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Artemisia palmeri	San Diego sagewort	None/None/4.2/None	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb) May–Sep/49–3002	L[1, 2]	L[3-5, 11], D[6-10, 12]	L[13, 15-19], D[14]	L[20-26,28-33], D[27]	L[34-43, 45, 46, 48-57], D[44, 47]	L[58]	L[59, 60]	L[61-66]	Observed within 5 facility groups and 1 structure in Peñasquitos, 1 facility group in Mission Bay, 1 facility group in San Diego River, and 2 facility groups in Pueblo San Diego Watersheds. Low potential to occur within other facility groups in San Dieguito, Sweetwater, and Otay Watersheds, and other facility groups in Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds based on negative focused surveys.
Asplenium vespertinum	western spleenwort	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/591–3281	X	L[3-12]	X	L[20-33]	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos, and San Diego River Watersheds based on negative focused surveys. Not expected to occur within San Dieguito, and Otay Watersheds that lack suitable vegetation. Mission Bay, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation range.
Astragalus deanei	Dean's milk-vetch	None/None/1B.1/None	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/Feb–May/246–2280	X	X	X	X	X	X	X	X	Not expected to occur. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known geographic range. Sweetwater and Otay Watersheds are outside of the species' known elevation range.
Astragalus oocarpus	San Diego milk-vetch	None/None/1B.2/None	Chaparral (openings), cismontane woodland/perennial herb/May–Aug/1001–5000	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. Mission Bay, San Diego River, Sweetwater, and Otay Watersheds are outside of the species' known elevation and geographic range. San Dieguito, Peñasquitos, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known elevation range.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/CE/1B.1/Narrow Endemic	Coastal bluff scrub (sandy), coastal dunes,	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
			coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/3–164									Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito Watershed is outside of the species' known elevation range.
Atriplex coulteri	Coulter's saltbush	None/None/1B.2/None	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/10–1509	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Atriplex pacifica	South Coast saltscale	None/None/1B.2/None	Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/Mar–Oct/0–459	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Atriplex parishii	Parish's brittlescale	None/None/1B.1/None	Chenopod scrub, playas, vernal pools; alkaline/annual herb/June–Oct/82–6234	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. Mission Bay, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range.
Baccharis vanessae	Encinitas baccharis	FT/CE/1B.1/Covered	Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous	X	L[3-12]	L[13-19]	X	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos and Mission Bay Watersheds in suitable vegetation based on negative focused surveys. Not expected to occur within the San Dieguito, Otay, and Tijuana Watersheds that lack suitable vegetation. San Diego River, Pueblo San Diego, and Sweetwater are outside of the species' known geographic range. Otay Watershed is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
			shrub/Aug–Nov/197–2362									
Bahiopsis laciniata	San Diego County viguiera	None/None/4.2/None	Chaparral, coastal scrub/perennial shrub/Feb–June (Aug)/197–2461	X	L[3, 4, 6-12], D[5]	L[15-19], D[13, 14]	L[22, 25, 26, 28-33], D[20, 21, 23, 24, 27]	L[35, 36-42, 44, 46, 48, 50-57], D[34, 43, 45, 47, 49]	L[58]	X	L[62-64, 66], D[61, 65]	Observed within 1 facility group in Peñasquitos, 2 facility groups in Mission Bay, 5 facility groups in San Diego River, 5 facility groups in Pueblo San Diego, and 2 facility groups in Tijuana Watersheds. Low potential to occur within other facility groups in Sweetwater Watershed, and other facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Berberis nevinii	Nevin's barberry	FE/CE/1B.1/Covered	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/perennial evergreen shrub/Mar–June/230–2707	X	X	X	X	X	X	X	X	Not expected to occur. Sweetwater and Otay Watersheds are outside of the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known geographic range.
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2/None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/perennial stem succulent/May–June/10–1296	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1/Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools;	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack

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			clay/perennial bulbiferous herb/Apr–May/164–1526									suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Brodiaea filifolia	thread-leaved brodiaea	FT/CE/1B.1/Covered	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/82–3675	X	L[3-12]	X	X	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range. Otay Watershed is outside of the species' known elevation range.
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1/Covered	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentinite/perennial bulbiferous herb/May–July/98–5551	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2/None	Chaparral, coastal scrub; sandy or loamy, disturbed sites	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not

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			and burns/annual herb/Mar–June/33–4003									expected to occur within San Dieguito and Otay Watersheds that lack suitable vegetation.
California macrophylla	round-leaved filaree	None/None/1B.2/None	Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/49–3937	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	X	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Sweetwater, Otay, and Tijuana Watersheds that lack suitable vegetation.
Calochortus dunnii	Dunn's mariposa lily	None/CR/1B.2/Covered	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/(Feb) Apr–June/607–6004	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. Mission Bay Watershed is outside of the species' known elevation and geographic range. San Dieguito, Pueblo San Diego, Sweetwater, Otay, and Tijuana are outside of the species' known elevation range. Peñasquitos and San Diego River Watersheds are outside of the species' known geographic range.
Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3/None	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May (June)/0–984	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.

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Carex obispoensis	San Luis Obispo sedge	None/None/1B.2/None	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland; often serpentinite seeps, sometimes gabbro; often on clay soils/perennial rhizomatous herb/Apr–June/33–2690	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range.
Castilleja plagiotoma	Mojave paintbrush	None/None/4.3/None	Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland/perennial herb (hemiparasitic)/Apr–June/984–8202	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito, Mission Bay, San Diego River, Otay, and Tijuana Watersheds are outside of the species' known elevation and geographic ranges. Peñasquitos, Pueblo San Diego, and Sweetwater Watersheds are outside of the species' known elevation range.
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2/Covered	Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/771–2477	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation range.
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2/None	Chaparral (metavolcanic or gabbroic)/perennial evergreen	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San

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			shrub/Jan–Apr/1969–3609									Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation range.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2/Covered	Chaparral/perennial evergreen shrub/Dec–May/3–1247	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	X	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Sweetwater, and Otay Watersheds that lack suitable vegetation. Tijuana Watershed is outside of the species' known geographic range.
Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1/None	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/0–1575	L[1, 2]	L[3-12]	L[13-19]	X	X	X	X	X	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, and Mission Bay Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation. San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known geographic range.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1/None	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2100	L[1, 2]	L[3-12]	X	L[20-33]	L[34-57]	X	X	X	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, San Diego River, and Pueblo San Diego Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation. Mission Bay, Otay, and Tijuana Watersheds are outside of the species' known geographic range.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1/None	Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–328	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito Watershed is outside of the species' known elevation range.

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Chamaebatia australis	southern mountain misery	None/None/4.2/None	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/984–3346	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation range.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/CE/1B.2/Covered	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct/0–98	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito and Sweetwater Watersheds are outside of the species' known elevation range.
Chorizanthe leptotheca	Peninsular spineflower	None/None/4.2/None	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/984–6234	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. Mission Bay, San Diego River, and Sweetwater Watersheds are outside of the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Pueblo San Diego, Otay, and Tijuana Watersheds are outside of the species' known elevation range.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/CE/1B.1/None	Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy openings/annual herb/Mar–May/10–410	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito Watershed is outside of the species' known elevation range.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2/None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland,	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Otay Watershed is outside of the species' known elevation range.

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			vernal pools; often clay/annual herb/Apr–July/98–5020									
Cistanthe maritima	seaside cistanthe	None/None/4.2/None	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb) Mar–June (Aug)/16–984	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-64, 66], D[65]	Observed within 1 facility group in Tijuana Watershed. Low potential to occur within other facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater, Watersheds, and other facility groups in Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Clarkia delicata	delicate clarkia	None/None/1B.2/None	Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/771–3281	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation range.
Clinopodium chandleri	San Miguel savory	None/None/1B.2/Covered	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic, or metavolcanic/perennial shrub/Mar–July/394–3527	X	X	X	X	X	X	X	X	Not expected to occur. Otay Watershed is outside of the species' known elevation and geographic ranges. Mission Bay and Sweetwater Watersheds are outside of the species' known elevation range. San Dieguito, Peñasquitos, San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known geographic range.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2/None	Chaparral, cismontane woodland/perennial evergreen	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack

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			shrub/Apr–June/98–2592									suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2/None	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/98–2428	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1/None	Coastal bluff scrub, chaparral, coastal scrub/perennial herb/June–Sep/10–377	X	L[3-12]	L[13-19]	L[20-23, 25-33], D[24]	L[34-57]	L[58]	X	L[61-66]	Observed within 1 facility group in San Diego River. Low potential to occur within other facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito and Otay Watersheds are outside of the species' known elevation range.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1/Covered	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May–Sep/49–492	X	L[3-12]	L[13-19]	X	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos and Mission Bay Watersheds based on negative focused surveys. Not expected to occur within San Dieguito and Otay Watersheds that lack suitable vegetation. San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range.
Cryptantha wigginsii	Wiggins' cryptantha	None/None/1B.2/None	Coastal scrub; often clay/annual herb/Feb–June/66–902	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Otay Watershed. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range.

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Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1 /Narrow Endemic	Chaparral, coastal scrub/perennial stem succulent/Apr–May/98–492	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Deinandra conjugens	Otay tarplant	FT/CE/1B.1 /Narrow Endemic	Coastal scrub, valley and foothill grassland; clay/annual herb/May–June/82–984	X	X	X	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito Watershed is outside of the species' known geographic range. Otay Watershed is outside of the species' known elevation range.
Deinandra floribunda	Tecate tarplant	None/None/1B.2 /None	Chaparral, coastal scrub/annual herb/Aug–Oct/230–4003	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. Sweetwater Watershed is outside of the species' known elevation and geographic range. Otay Watershed is outside of the species' known elevation range. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known geographic range.
Deinandra paniculata	paniculate tarplant	None/None/4.2/ None	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/Apr–Nov/82–3084	X	X	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside of the species' elevation range. Peñasquitos Watershed is outside of the species' known geographic range.
Dendromecon harfordii var. *harfordii*	north island bush-poppy	None/None/3.2/ None	Closed-cone coniferous forest, chaparral; rocky/perennial evergreen	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, and Otay Watersheds that lack suitable vegetation. Mission Bay Watershed is outside of the species' known elevation range. San Dieguito, Peñasquitos,

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			shrub/Mar–Nov/49–1378									San Diego River, Pueblo San Diego, and Sweetwater Watersheds are outside of the species' known geographic range.
Dichondra occidentalis	western dichondra	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan) Mar–July/164–1640	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/2B.1/Covered	Coastal scrub/annual herb (hemiparasitic)/(Mar) Apr–July (Sep)/33–1148	X	X	X	X	X	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Sweetwater and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds are outside of the species' known geographic range.
Dudleya attenuata ssp. *attenuata*	Orcutt's dudleya	None/None/2B.1/None	Coastal bluff scrub, chaparral, coastal scrub; rocky or gravelly/perennial herb/May–July/10–164	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito Watershed is outside of the species' known elevation and geographic ranges. Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater Watersheds are outside of the species' known geographic range.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1/None	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; rocky, often clay or serpentinite/perennial herb/Apr–June/16–1476	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Dudleya brevifolia	short-leaved dudleya	None/CE /1B.1 /Narrow Endemic	Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/98–820	X	L[3-12]	L[13-19]	L[20-33]	X	X	X	X	Low potential to occur within facility groups the Peñasquitos, Mission Bay, and San Diego River Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside the species' known elevation range. Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range.
Dudleya variegata	variegated dudleya	None/None/1B.2 /Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/ perennial herb/Apr–June/10–1903	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Dudleya viscida	sticky dudleya	None/None/1B.2 /Covered	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/ perennial herb/May–June/33–1804	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1 /Covered	Chaparral, coastal scrub; mesic/ perennial evergreen shrub/(July) Sep–Nov/98–1969	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside of the species' known elevation range.

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Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/CE/1B.1/Covered	Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual / perennial herb/Apr–June/66–2034	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2/Covered	Chaparral (maritime), coastal dunes, coastal scrub; sandy, openings/perennial herb/Feb–June/0–197	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. San Dieguito Watershed is outside of the species' known elevation and geographic ranges. Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known geographic range.
Euphorbia misera	cliff spurge	None/None/2B.2/None	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug (Oct)/33–1640	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[62-64, 66], D[61, 65]	Observed within 2 facility groups in Tijuana Watershed. Low potential to occur within other facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater Watersheds, and other facility groups in Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1/Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/10–1476	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Frankenia palmeri	Palmer's frankenia	None/None/2B.1/None	Coastal dunes, marshes and swamps (coastal salt),	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito and

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			playas/perennial herb/May–July/0–33									Sweetwater Watersheds are outside of the species' known elevation range.
Fraxinus parryi	chaparral ash	None/None /2B.2/None	Chaparral/perennial shrub/Mar–May/699–2034	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Otay Watersheds are outside of the species' known elevation and geographic ranges. Pueblo San Diego and Tijuana Watersheds are outside of the species' known elevation range.
Fremontodendron mexicanum	Mexican flannelbush	FE/CR/1B.1 /None	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentinite/perennial evergreen shrub/Mar–June/33–2349	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito, Sweetwater, and Otay Watersheds that lack suitable vegetation. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds are outside of the species' known geographic range.
Galium proliferum	desert bedstraw	None/None /2B.2/None	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; rocky, carbonate/annual herb/Mar–June/3904–5348	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Otay Watersheds are outside the species' known elevation and geographic ranges. Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known elevation range.
Geothallus tuberosus	Campbell's liverwort	None/None /1B.1/None	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/N.A./33–1969	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito Watershed is outside of the species' known elevation range.

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Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None /3.1/None	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1476–2297	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Mission Bay, Sweetwater and Otay Watersheds. Tijuana Watershed is outside of the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds are outside of the species' known elevation range.
Grindelia hallii	San Diego gumplant	None/None /1B.2/None	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial herb/May–Oct/607–5725	X	X	X	L[20-33]	X	X	X	X	Low potential to occur within facility groups in the San Diego River Watershed based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation. San Dieguito, Mission Bay, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside of the species' known elevation range. Peñasquitos Watershed is outside of the species' known geographic range.
Harpagonella palmeri	Palmer's grapplinghook	None/None /4.2/None	Chaparral, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–May/66–3133	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Hazardia orcuttii	Orcutt's hazardia	None/CT/1B.1/ None	Chaparral (maritime), coastal scrub; often clay/perennial evergreen shrub/Aug–Oct/262–279	X	L[3-12]	X	X	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Sweetwater Watershed is outside of the species' known elevation and geographic ranges. San Dieguito and Otay Watersheds are outside of the species' known elevation range. Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside of the species' known geographic range.
Hesperocyparis forbesii	Tecate cypress	None/None/1B.1 /Covered	Closed-cone coniferous forest, chaparral; clay, gabbroic or	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds that lack suitable vegetation. Sweetwater and Otay

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			metavolcanic/perennial evergreen tree/N.A./262–4921									Watersheds are outside the species' known elevation range. San Dieguito, Peñasquitos, Mission Bay, and Pueblo San Diego Watersheds are outside of the species' known geographic range.
Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	None/None /1B.1/None	Chaparral (coastal), coastal dunes, coastal scrub/perennial herb/Mar–Dec/0–4019	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None /4.2/None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/197–3609	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside of the species' known elevation range.
Hordeum intercedens	vernal barley	None/None /3.2/None	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/annual herb/Mar–June/16–3281	X	X	X	X	X	X	X	X	Not expected to occur within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds that lack suitable vegetation.
Horkelia truncata	Ramona horkelia	None/None /1B.3/None	Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1312–4265	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. Mission Bay Watershed is outside of the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation range.

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Hosackia crassifolia var. *otayensis*	Otay Mountain lotus	None/None /1B.1/None	Chaparral (metavolcanic, often in disturbed areas)/perennial herb/May–Aug/1247–3297	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Otay Watersheds are outside of the species' known elevation and geographic ranges. Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside of the species' known elevation range.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None /1B.2/None	Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/33–443	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito Watershed is outside the species' known elevation range.
Iva hayesiana	San Diego marsh-elder	None/None /2B.2/None	Marshes and swamps, playas/perennial herb/Apr–Oct/33–1640	L[1,2]	L[3, 4, 7-12], D[5, 6]	L[13, 15-19], D[14]	L[20, 22-29, 31-33], D[21, 30]	L[34-43, 45, 46, 49-51, 53-57], D[44, 47, 48, 52]	X	L[59, 60]	L[61-65], D[66]	Observed within 2 facility groups in the Peñasquitos, 1 facility group in Mission Bay, 2 facility group in San Diego River, 4 facility groups in Pueblo San Diego, and 1 facility group in Tijuana Watersheds. Low potential to occur within other facility groups in the San Dieguito, and Sweetwater Watersheds, and other facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None /4.2/None	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar) May–June/10–2953	L[1, 2]	L[9-123, 4, 8-12], D[5-7]	L[13, 15-19], D[114]	L[20-22, 25-29, 31-33], D[23, 24, 30]	L[34-43, 45, 46, 48, 50-57], D[44, 47, 49]	X	L[59, 60]	L[61-66]	Observed within 2 facility groups in Peñasquitos, 3 facility groups in the San Diego River, and 3 facility groups in Pueblo San Diego Watersheds. Low potential to occur within other facility groups in San Dieguito, Mission Bay, Otay, and Tijuana Watersheds, and other facility groups in Peñasquitos, San Diego River, and Pueblo San Diego Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation.

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Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1/None	Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/3–4003	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater and Otay Watersheds that lack suitable vegetation.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2/Covered	Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1706–4495	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. Tijuana Watershed is outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds are outside the species' known elevation range.
Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3/Covered	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/1001–3297	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. Mission Bay, San Diego River, and Otay Watersheds are outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside the species' known elevation range.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3/None	Chaparral, coastal scrub/annual herb/Jan–July/3–2904	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Leptosiphon grandiflorus	large-flowered leptosiphon	None/None/4.2/None	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; usually sandy/annual herb/Apr–Aug/16–4003	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. Mission Bay Watershed is outside the species' known elevation and geographic ranges. Peñasquitos, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds are outside the species' known geographic range.
Leptosyne maritima	sea dahlia	None/None/2B.2/None	Coastal bluff scrub, coastal scrub/perennial herb/Mar–May/16–492	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; openings/perennial bulbiferous herb/Mar–July (Aug)/98–5906	X	X	X	X	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Mission Bay Watershed is outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, San Diego River, and Otay Watersheds are outside the species' known geographic range.
Lycium californicum	California box-thorn	None/None/4.2/None	Coastal bluff scrub, coastal scrub/perennial shrub/(Dec) Mar–Aug/16–492	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2/None	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/49–3510	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Mimulus aurantiacus var. *aridus*	low bush monkeyflower	None/None/4.3/None	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/Apr–July/2461–3937	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation and geographic ranges. San Diego River and Pueblo San Diego Watersheds are outside the species' known elevation range.
Mimulus clevelandii	Cleveland's bush monkeyflower	None/None/4.2/None	Chaparral, cismontane woodland, lower montane coniferous forest; gabbroic, often in disturbed areas, openings, rocky/perennial rhizomatous herb/Apr–July/1476–6562	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. San Dieguito, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation and geographic ranges. Peñasquitos and Pueblo San Diego Watersheds are outside the species' known elevation range.
Mimulus diffusus	Palomar monkeyflower	None/None/4.3/None	Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4003–6004	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation and geographic ranges. Pueblo San Diego Watershed is outside the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Mobergia calculiformis	light gray lichen	None/None/3/None	Coastal scrub; on rocks/crustose lichen (saxicolous)/N.A./33–33	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito and Sweetwater Watersheds are outside the species' known elevation range.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2/Covered	Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/984–5167	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Sweetwater, and Otay Watersheds. Mission Bay Watershed is outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation range.
Monardella stoneana	Jennifer's monardella	None/None/1B.2/None	Closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub; usually rocky intermittent streambeds/perennial herb/June–Sep/33–2592	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within the Tijuana Watershed based on negative focused surveys. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds are outside the species' known geographic range.
Monardella viminea	willowy monardella	FE/CE/1B.1/Covered	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/164–738	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watershed based on negative focused surveys. Otay Watershed is outside the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Mucronea californica	California spineflower	None/None/4.2/None	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/Mar–July (Aug)/0–4593	X	X	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito and Peñasquitos Watersheds are outside the species' known geographic range.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1/None	Valley and foothill grassland, vernal pools (alkaline)/annual herb/Mar–June/66–2100	X	L[3-12]	X	X	L[34-57]	X	X	X	Low potential to occur within facility groups in the Peñasquitos and Pueblo San Diego Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds that lack suitable vegetation.
Nama stenocarpa	mud nama	None/None/2B.2/None	Marshes and swamps (lake margins, riverbanks)/annual / perennial herb/Jan–July/16–1640	X	X	X	X	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to occur within facility groups in the Pueblo San Diego, Otay, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation. San Dieguito, Peñasquitos, Mission Bay, and San Diego River Watersheds are outside the species' known geographic range.
Navarretia fossalis	spreading navarretia	FT/None/1B.1/Narrow Endemic	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/98–2149	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater Watershed that lacks suitable vegetation. Otay Watershed is outside the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.1 /None	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/annual herb/Apr–July/10–3970	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds based on negative focused surveys.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2 /None	Coastal dunes/annual herb/Apr–Sep/0–328	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito Watershed is outside the species' known elevation range. Peñasquitos Watershed is outside the species' known geographic range.
Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2 /None	Coastal dunes, desert dunes, Sonoran desert scrub/annual herb/(Mar) Apr–May/-164–1312	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito Watershed is outside the species' known geographic range.
Nolina cismontana	chaparral nolina	None/None/1B.2 /None	Chaparral, coastal scrub; sandstone or gabbro/perennial evergreen shrub/(Mar) May–July/459–4183	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. Mission Bay, Sweetwater, and Otay Watersheds are outside the species' known elevation and geographic ranges. Pueblo San Diego Watershed is outside the species' known elevation range. Peñasquitos, San Diego River, and Tijuana Watersheds are outside the species' known geographic range.
Nolina interrata	Dehesa nolina	None/CE /1B.1 /Covered	Chaparral (gabbroic, metavolcanic, or serpentinite)/perennial herb/June–July/607–2805	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds are outside the species' known elevation and geographic ranges. Pueblo San Diego and Tijuana Watersheds are outside the species' known elevation range. Peñasquitos and San Diego River Watersheds are outside the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Ophioglossum californicum	California adder's-tongue	None/None/4.2/None	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec) Jan–June/197–1722	X	L[3-12]	X	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside the species' known elevation range.
Orcuttia californica	California Orcutt grass	FE/CE/1B.1/Narrow Endemic	Vernal pools/annual herb/Apr–Aug/49–2165	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. Pueblo San Diego Watershed is outside the species' known geographic range.
Ornithostaphylos oppositifolia	Baja California birdbush	None/CE/2B.1/None	Chaparral/perennial evergreen shrub/Jan–Apr/180–2625	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, Pueblo San Diego, Sweetwater, and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, and San Diego River Watersheds are outside the species' known geographic range.
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2/None	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/10–1001	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Packera ganderi	Gander's ragwort	None/CR/1B.2/Covered	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1312–3937	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. Mission Bay, San Diego River, Sweetwater, and Otay Watersheds are outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Pueblo San Diego, and Tijuana Watersheds are outside the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/annual herb/Mar–July/262–6070	L[1, 2]	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Sweetwater and Otay Watersheds are outside the species' known elevation range.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2/None	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/Mar–Aug/16–984	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	L[59, 60]	X	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Otay Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito Watershed that lacks suitable vegetation. Sweetwater and Tijuana Watersheds are outside the species' known geographic range.
Phacelia stellaris	Brand's star phacelia	None/None/1B.1/None	Coastal dunes, coastal scrub/annual herb/Mar–June/3–1312	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Pickeringia montana var. *tomentosa*	woolly chaparral-pea	None/None/4.3/None	Chaparral; gabbroic, granitic, clay/evergreen shrub/May–Aug/0–5577	X	X	X	X	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in the Pueblo San Diego and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds that lack suitable vegetation. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Otay Watersheds are outside the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2/Covered	Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/N.A./98–525	X	L[3-7, 9-12], D[8]	L[13-15, 19], D[16, 18]	L[20-23, 25, 27-33], D[24, 26]	L[34-36, 38-57], D[37]	X	X	X	Observed within 1 facility group in Peñasquitos, 2 facility groups in Mission Bay, 2 facility groups in San Diego River, and 1 facility group in Pueblo San Diego Watersheds. Low potential to occur within other facility groups in the Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito, Sweetwater, Otay, and Tijuana Watersheds that lack suitable vegetation. San Diego River, Pueblo San Diego, and Tijuana Watersheds are outside the species' known geographic range.
Piperia cooperi	chaparral rein orchid	None/None/4.2/None	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/Mar–June/49–5200	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within San Dieguito, Sweetwater, and Otay Watersheds that lack suitable vegetation.
Pogogyne abramsii	San Diego mesa mint	FE/CE/1B.1/Narrow Endemic	Vernal pools/annual herb/Mar–July/295–656	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. Sweetwater and Otay Watersheds are outside the species' known elevation range.
Pogogyne nudiuscula	Otay Mesa mint	FE/CE/1B.1/Narrow Endemic	Vernal pools/annual herb/May–July/295–820	X	X	X	X	X	X	X	X	Not expected to occur. Not suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. Sweetwater and Otay Watersheds are outside the species' known elevation range. Pueblo San Diego Watershed is outside the species' known geographic range.
Polygala cornuta var. *fishiae*	Fish's milkwort	None/None/4.3/None	Chaparral, cismontane woodland, riparian woodland/perennial deciduous	L[1, 2]	L[3-12]	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, and Tijuana Watersheds based on negative focused surveys. Sweetwater Watershed is outside the species' known elevation and geographic ranges. Otay Watershed is outside the species' known elevation range. Mission Bay, San Diego River, and Pueblo San Diego Watersheds are outside the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
			shrub/May–Aug/328–3281									
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2/None	Chaparral, cismontane woodland, coastal scrub, riparian woodland; sandy, gravelly/perennial herb/(July) Aug–Nov (Dec)/0–6890	X	L[3-12]	X	X	X	L[58]	X	X	Low potential to occur within facility groups in the Peñasquitos and Sweetwater Watershed based on negative focused surveys. San Dieguito, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds are outside the species' known geographic range.
Psilocarphus brevissimus var. *multiflorus*	Delta woolly-marbles	None/None/4.2/None	Vernal pools/annual herb/May–June/33–1640	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, Pueblo San Diego, Otay, and Tijuana Watersheds. Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known geographic range.
Quercus cedrosensis	Cedros Island oak	None/None/2B.2/None	Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/837–3150	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Sweetwater Watersheds. Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds are outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, and Tijuana Watersheds are outside the species' known elevation range.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1/None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr (Aug)/49–1312	X	L[3-6, 8-12], D[7]	L[13-18], D[19]	L[20-26, 28-33], D[27]	L[33-42, 44-57], D[43]	L[58]	X	L[61-66]	Observed within 1 facility group in Peñasquitos, 1 facility groups in Mission Bay, 1 facility group in San Diego River, and 1 facility group in Pueblo San Diego Watersheds. Low potential to occur within other facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Quercus engelmannii	Engelmann oak	None/None/4.2/None	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/164–4265	L[1, 2]	L[3-12]	X	L[20-33]	X	X	X	L[61-66]	Low potential to occur within facility groups in the San Dieguito, Peñasquitos, San Diego River, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the Sweetwater and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside the species' known elevation and geographic ranges. Mission Bay and Pueblo San Diego Watershed are outside the species' known geographic range.
Ribes canthariforme	Moreno currant	None/None/1B.3/None	Chaparral, riparian scrub/perennial deciduous shrub/Feb–Apr/1115–3937	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Sweetwater Watershed. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds are outside the species' known elevation and geographic ranges. Tijuana Watershed is outside the species' known elevation range.
Ribes viburnifolium	Santa Catalina Island currant	None/None/1B.2/None	Chaparral, cismontane woodland/perennial evergreen shrub/Feb–Apr/98–1148	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito, Sweetwater, and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds are outside the species' known geographic range.
Romneya coulteri	Coulter's matilija poppy	None/None/4.2/None	Chaparral, coastal scrub; often in burns/perennial rhizomatous herb/Mar–July/66–3937	X	X	X	X	X	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Sweetwater and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. San Dieguito, Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds are outside the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Rosa minutifolia	small-leaved rose	None/CE/2B.1 /Covered	Chaparral, coastal scrub/perennial deciduous shrub/Jan–June/492–525	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Mission Bay and Pueblo San Diego Watersheds are outside the species' known elevation and geographic ranges. Sweetwater and Otay Watersheds are outside the species' known elevation range. San Dieguito, Peñasquitos, and San Diego River Watersheds are outside the species' known geographic range.
Salvia munzii	Munz's sage	None/None/2B.2 /None	Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/377–3494	X	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in the Tijuana Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Sweetwater and Otay Watersheds are outside the species' known elevation range. Peñasquitos, Mission Bay, San Diego River, and Pueblo San Diego Watersheds are outside the species' known geographic range.
Selaginella cinerascens	ashy spike-moss	None/None/4.1/ None	Chaparral, coastal scrub/perennial rhizomatous herb/N.A./66–2100	X	L[3-12]	L[13-19]	L[20-33]	L[34, 35, 37-42, 44-57], D[36, 43]	L[58]	X	L[61-66]	Observed within 2 facility groups in Pueblo San Diego Watershed. Low potential to occur within other facility groups in the Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Tijuana Watersheds, and other facility groups in Pueblo San Diego Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Pueblo San Diego Watershed is outside the species' known geographic range.
Senecio aphanactis	chaparral ragwort	None/None/2B.2 /None	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr/49–2625	X	L[3-12]	L[13-19]	L[20-33]	X	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Pueblo San Diego Watershed is outside the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Sphaerocarpos drewei	bottle liverwort	None/None/1B.1/None	Chaparral, coastal scrub; openings, soil/ephemeral liverwort/N.A./295–1969	X	L[3-12]	L[13-19]	L[20-33]	X	X	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Sweetwater and Otay Watersheds are outside the species' known elevation range. Pueblo San Diego is outside the species' known geographic range.
Stemodia durantifolia	purple stemodia	None/None/2B.1/None	Sonoran desert scrub (often mesic, sandy)/perennial herb/Jan–Dec/591–984	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds. Pueblo San Diego Watershed is outside the species' known elevation and geographic ranges. Mission Bay, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation range.
Stipa diegoensis	San Diego County needle grass	None/None/4.2/None	Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/33–2625	X	L[3-12]	L[13-19]	L[20-33]	X	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Pueblo San Diego Watershed is outside the species' known geographic range.
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3/None	Chaparral, lower montane coniferous forest/perennial herb/May–Aug/2198–8202	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds are outside the species' known elevation and geographic ranges. Tijuana Watershed is outside the species' known elevation range.
Stylocline citroleum	oil neststraw	None/None/1B.1/None	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–Apr/164–1312	X	X	L[13-19]	L[20-33]	X	L[58]	X	L[61-66]	. Low potential to occur within facility groups in the Mission Bay, San Diego River, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Otay Watershed is outside the species' known elevation range. San Dieguito, Peñasquitos, and Pueblo San Diego Watersheds are outside the species' known geographic range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Suaeda esteroa	estuary seablite	None/None/1B.2/None	Marshes and swamps (coastal salt)/perennial herb/May–Oct (Jan)/0–16	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Peñasquitos, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito and Sweetwater Watersheds are outside the species' known elevation range. Pueblo San Diego Watershed is outside the species' known geographic range.
Suaeda taxifolia	woolly seablite	None/None/4.2/None	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/perennial evergreen shrub/Jan–Dec/0–164	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Otay Watersheds. San Dieguito Watershed is outside the species' known elevation range. Pueblo San Diego and Tijuana Watersheds are outside the species' known geographic range.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2/Covered	Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/541–3281	X	L[3-12]	X	X	X	X	X	X	Low potential to occur within facility groups in the Peñasquitos Watershed based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation. Mission Bay, Pueblo San Diego, and Otay Watersheds are outside the species' known elevation and geographic ranges. Sweetwater and Tijuana Watersheds are outside the species' known elevation range. San Diego River Watershed is outside the species' known geographic range.
Texosporium sancti-jacobi	woven-spored lichen	None/None/3/None	Chaparral (openings); on soil, small mammal pellets, dead twigs, and on Selaginella spp./crustose lichen (terricolous)/N.A./951–2165	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, Sweetwater, and Otay Watersheds. Pueblo San Diego and Tijuana Watersheds are outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Otay Watersheds are outside the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/CRPR/City of San Diego MSCP)	Primary Habitat Associations/Life Form/Blooming Period/Elevation Range (feet)	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Tortula californica	California screw-moss	None/None/1B.2/None	Chenopod scrub, valley and foothill grassland; sandy, soil/moss/N.A./33–4790	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Otay Watersheds are outside the species' known geographic range.
Triquetrella californica	coastal triquetrella	None/None/1B.2/None	Coastal bluff scrub, coastal scrub; soil/moss/N.A./33–328	X	L[3-12]	L[13-19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds based on negative focused surveys. Not expected to occur within the San Dieguito and Otay Watersheds that lack suitable vegetation.
Xanthisma junceum	rush-like bristleweed	None/None/4.3/None	Chaparral, coastal scrub/perennial herb/June–Jan/787–3281	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation within the San Dieguito and Otay Watersheds. Pueblo San Diego Watershed is outside the species' known elevation and geographic ranges. San Dieguito, Peñasquitos, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds are outside the species' known elevation range.

Notes:
X = Not expected to occur
L = Low potential to occur
D = Detected
Status Legend:
FE: Federally listed as endangered
FT: Federally listed as threatened
CE: State listed as endangered
CT: State listed as threatened
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR 3: Plants About Which More Information is Needed - A Review List
CRPR 4: Plants of Limited Distribution - A Watch List
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Facility Group/Segments:
San Dieguito Watershed
1 Green Valley Creek – Pomerado/Pomerado (Segment 1 and 2)
2 Green Valley Creek – Paseo del Verano/Paseo del Verano (Segment 1)
Peñasquitos Watershed
3 Peñasquitos Lagoon – Industrial/Industrial (Segment 1 and 2)
4 Peñasquitos Lagoon – Tripp/Tripp (Segment 1)
5 Los Peñasquitos Canyon Creek – Black Mountain/Black Mountain (Segment 1 and 2)
6 Los Peñasquitos Canyon Creek – 5-805 Basin
7 Soledad Canyon Creek – Sorrento/Roselle (Segment 1 and 2)
8 Carroll Canyon Creek – Carroll/Carroll Canyon (Segment 1)
9 Soledad Canyon Creek – Flintkote/Flintkote (Segment 1)
10 Soledad Canyon Creek – Dunhill/Dunhill (Segment 1)
11 Chicarita Creek – Via San Marco/Via San Marco (Segment 1)
12 10450 Sorrento Valley Road (HW04220) Structure
Mission Bay Watershed
13 Torrey Pines – Torrey/Torrey Pines (Segment 1)
14 Alta La Jolla – Vickie (Segment 1)
15 Mission Bay – MBHS/PB-Olney (Segment 1) and MBHS (Segment 1)
16 Mission Bay – Mission Bay Drive/Mission Bay Drive (Segment 1)
17 Miramar – Engineer/Engineer (Segment 1)
18 Tecolote Creek – Chateau/Chateau (Segment 1 and 2)a
19 Tecolote Creek – Genesee/Genesee (Segment 1)
San Diego River Watershed
20 San Diego River – Nimitz/Nimitz (Segment 1, 2, and 3)
21 San Diego River – Valeta/Valeta (Segment 1)

22 San Diego River – Camino del Rio/Camino del Arroyo (Segment 1) and Camino del Rio (Segment 1)
23 Murphy Canyon Creek – Stadium/Murphy Canyon (Segment 1) and Stadium (Segment 1 and 2)
24 Alvarado Canyon Creek – Mission Gorge/Mission Gorge (Segment 1, 2, 3, and 4)
25 Alvarado Canyon Creek – Alvarado/Alvarado (Segment 1, 2, and 3)
26 Murray Reservoir – Cowles Mountain/Cowles Mountain (Segment 1 and 2)
27 Norfolk Canyon Creek – Fairmount/Baja (Segment 1) and Fairmount (Segment 1, 2, 3, and 4)
28 1331 Washington (OT03537) Structure
29 1277 Camino Del Rio South (IN10399) Structure
30 5505 Friars Road (OT05573) Structure
31 1660 Hotel Circle North (OT03321) Structure
32 901 Hotel Circle South (HW02440) Structure
33 2087 Hotel Circle South (HW02437) Structure

Pueblo San Diego Watershed

34 Maple Canyon Creek – Maple/Maple (Segment 1)
35 Washington Canyon Creek – Washington/Washington (Segment 1 and 2)
36 Mission Hills Canyon Creek – Titus/Titus (Segment 1)
37 Powerhouse Canyon Creek – Pershing/Pershing (Segment 1)
38 San Diego Bay – 28th St/28th St (Segment 1)
39 Chollas Creek – National/National (Segment 1 and 2)
40 Chollas Creek – Rolando/Cartagena (Segment 1) and Rolando (Segment 1 and 2)
41 Chollas Creek – Martin/Martin (Segment 1)
42 Chollas Creek – J St/J St (Segment 1)
43 Auburn Creek – Home/Home (Segment 1, 2, 3, and 5)
44 Auburn Creek – Wightman/Wightman (Segment 1 and 2)
45 Chollas Creek – Megan/Megan (Segment 1 and 2)
46 Chollas Creek – 54th St/54th St (Segment 1)
47 South Chollas Creek – Southcrest/Alpha (Segment 1) and Ocean View (Segment 1)
48 South Chollas Creek – Euclid/Euclid (Segment 2)
49 South Chollas Creek – Federal/Federal (Segment 1 and 2)
50 South Chollas Creek Encanto Branch – Castana/Castana (Segment 1)
51 South Chollas Creek Encanto Branch – Imperial/Imperial (Segment 2)
52 South Chollas Creek Encanto Branch – Jamacha/Jamacha (Segment 1)
53 Paleta Creek – Cottonwood/Cottonwood (Segment 1 and 2)
54 Paleta Creek – Solola/Solola (Segment 1 and 2)
55 3644 Roselawn (OT03694) Structure
56 4202 J Street (HW04013) Structure
57 1206 Goodyear (OT04671) Structure

Sweetwater Watershed

58 Sweetwater River – Parkside/Parkside (Segment 1)

Otay Watershed

59 Nestor Creek – Nestor/30th St (Segment 1), Cedar (Segment 1 and 2), Cerissa (Segment 1), Dahlia (Segment 1), and Grove (Segment 1)
60 Nestor Creek – Outer/Outer (Segment 1 and 2)

Tijuana Watershed

61 Tijuana River – Pilot & Smugglers/Pilot Channel (Segment 1) and Smuggler's Gulch (Segment 1)
62 Tijuana River – Tocayo (Segment 2)
63 Tijuana River – Siempre Viva/Siempre Viva (Segment 1)
64 Spring Canyon Creek – Cactus/Cactus (Segment 1 and 2)
65 Tijuana River – Smythe/Smythe (Segment 1), Via de la Bandola (Segment 1), and Via Encantadoras (Segment 1, 2, and 3)
66 Tijuana River – La Media/La Media (Segment 1)

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APPENDIX E

Special-Status Wildlife Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Amphibians												
Anaxyrus californicus	arroyo toad	FE/SSC/Covered	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Rana draytonii	California red-legged frog	FT/SSC/Covered	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present.
Spea hammondii	western spadefoot	None/SSC/None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	M[1, 2]	L[4, 11], M[3, 5-10, 12]	X[17], L[13-16, 18, 19]	L[22, 28, 31], M[20, 21, 23-27, 29, 30, 32, 33]	L[34-57]	M[58]	X	L[62-64], M[61, 65, 66]	Moderate potential to occur within 7 facility groups and 1 structure in Peñasquitos, 2 facility groups in the San Dieguito, 7 facility groups and 4 structures in the San Diego River, 1 facility group in Sweetwater, and 3 facility groups in the Tijuana Watersheds in suitable vegetation. Low potential to occur within Mission Bay, Pueblo San Diego, and Watersheds. Not expected to occur within the Otay Watershed; no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Peñasquitos, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Reptiles												
Actinemys marmorata	western pond turtle	None/SSC/ Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur within suitable intermittent streams. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the San Dieguito Watershed (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Anniella pulchra	California legless lizard	None/SSC/None	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur within dry washes associated with scrub and riparian woodlands. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the Otay and Tijuana Watersheds (CDFW 2017).
Arizona elegans occidentalis	California glossy snake	None/SSC/None	Commonly occurs in desert regions throughout southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas.	L[1, 2]	X	X	X	X	X	X	X	Low potential to occur within facility groups in the San Dieguito Watershed in suitable open sandy areas. Not expected to occur within Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds; no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, and Tijuana Watersheds (CDFW 2017).
Aspidoscelis hyperythra	orangethroat whiptail	None/WL/ Covered	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	M[1, 2]	L[4, 7, 9-11], M[3, 5, 6, 8, 12]	X[17], L[15, 16], M[13, 14, 18, 19]	L[20, 22-26, 28, 31], M[21, 27, 29, 30, 32, 33]	L[38, 39, 41, 42, 44, 46, 50, 51, 53-57], M[34-37, 40, 43, 45, 47-49, 52]	M[58]	X	L[61-64], M[65, 66]	Moderate potential to occur within 2 facility groups in the San Dieguito, 4 facility groups and 1 structure in the Peñasquitos, 4 facility groups in the Mission Bay, 2 facility groups and 4 structures in the San Diego River, 11 facility groups in the Pueblo San Diego, 1 facility group in Sweetwater, and 2 facility groups in the Tijuana Watersheds in suitable coastal scrub vegetation. Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Tijuana Watersheds in suitable vegetation. Not expected to occur within Otay Watershed; no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC/None	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	M[1, 2]	L[4, 11], M[3, 5-10, 12]	X[17], L[13-16, 18, 19]	L[20, 22-26, 28, 31], M[21, 27, 29, 30, 32, 33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Moderate potential to occur within 2 facility groups in the San Dieguito, 7 facility groups and 1 structure in the Peñasquitos, and 2 facility groups and 4 structures in the San Diego River Watersheds in suitable open chaparral vegetation. Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the Mission Bay, Peñasquitos, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Chelonia mydas	green turtle	FT/None/None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present.
Crotalus ruber	red diamond rattlesnake	None/SSC/None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	L[1, 2]	L[4, 7, 9-11], M[3, 5, 6, 8, 12]	X[17], L[13-16, 18, 19]	L[20, 22-26, 28, 31], M[21, 27, 29, 30, 32, 33]	L[34-57]	L[58]	X	L[61-66]	Moderate potential to occur within 4 facility groups and 1 structure in the Peñasquitos, and 2 facility groups and 4 structures within the San Diego River Watersheds in suitable coastal scrub and chaparral vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable coastal scrub and riparian vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, San Diego River, San Dieguito, and Sweetwater Watersheds (CDFW 2017).
Lichanura trivirgata	rosy boa	None/None /None	Desert and chaparral habitats with rocky soils in coastal canyons and hillsides, desert canyons, washes, and mountains	L[1, 2]	X	X	X	X	X	X	L[61-66]	Low potential to occur within facility groups in San Dieguito and Tijuana Watersheds in suitable rocky soils and chaparral vegetation. Not expected to occur within Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Otay Watersheds; no suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC /Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	L[1, 2]	L[4, 7, 9-11], M[3, 5, 6, 8, 12]	X[17], L[13-16, 18, 19]	L[20, 22-26, 28, 31], M[21, 27, 29, 30, 32, 33]	L[34-57]	L[58]	X	L[61-66]	Moderate potential to occur within 4 facility groups and 1 structure in the Peñasquitos, and 2 facility groups and 4 structures in the San Diego River Watersheds in suitable coastal sage scrub vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable open sandy soil associated with coastal scrub and riparian vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL/None	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable rocky areas associated with chaparral and riparian vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Peñasquitos, San Diego River, San Dieguito, and Tijuana Watersheds (CDFW 2017).
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC/None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable shrubby vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the San Diego River and Tijuana Watersheds (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Thamnophis hammondii	two-striped gartersnake	None/SSC/None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	L[1,2]	M[3-12]	X[17], L[13-16, 18, 19]	L[22], M[20, 21, 23-33]	L[34-57]	M[58]	L[59, 60]	M[61-66]	Moderate potential to occur within 9 facility groups and 1 structure in the Peñasquitos, 7 facility groups and 6 structures in the San Diego River, 1 facility group in the Sweetwater, and 6 facility groups in the Tijuana Watersheds in suitable streams. Low potential to occur within facility groups in San Dieguito, Mission Bay, Pueblo San Diego, and Otay Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the Mission Bay, Otay, Pueblo San Diego, and Tijuana Watersheds (CDFW 2017)
Birds												
Accipiter cooperii (nesting)	Cooper's hawk	None/WL /Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	M[1, 2]	X[4], M[3, 5, 6, 8-12], H[7]	X[17], L[15, 16], M[13, 14, 18, 19]	L[20, 22, 28, 32], M[21, 23-27, 29, 31, 33], H[30]	L[38, 50, 53-57], M[34-37, 39, 40-52]	L[58]	H[59, 60]	L[62-66], H[61]	High potential to occur within Peñasquitos, San Diego River, and Tijuana Watersheds where the species has been detected and there is suitable riparian habitat. High potential to occur within Otay Watershed in suitable riparian vegetation. Moderate potential to occur with Mission Bay, San Diego River, and Pueblo San Diego Watersheds where the species has been detected and there is suitable riparian habitat; however, this species has moderate potential to nest at these sites within suitable dense stands of oak or riparian woodlands. Moderate potential to nest within 2 facility groups in the San Dieguito Watershed in suitable riparian vegetation. Low potential to nest within facility groups in the Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater Watersheds. This species has been recorded within 5 miles of the Sweetwater and Tijuana Watersheds (CDFW 2017).
Agelaius tricolor (nesting colony)	tricolored blackbird	None/SSC /Covered	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry;	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Otay, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
			forages in grasslands, woodland, and agriculture									
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL /Covered	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	X	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable low cover scrub vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC/None	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	X	X[4], L[3, 5-12]	X	L[20-33]	L[34-57]	X	X	L[61-66]	Low potential to nest within facility groups in Peñasquitos, San Diego River, Pueblo San Diego, and Tijuana Watersheds in suitable shrub vegetation. Not expected to nest where there is no suitable vegetation present.
Aquila chrysaetos (nesting and wintering)	golden eagle	None/FP, WL/Covered	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	X	X	X	X	X	X	X	X	Not expected to nest or winter. No suitable vegetation present.
Artemisiospiza belli belli	Bell's sage sparrow	None/WL/None	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Peñasquitos, San Dieguito, and Sweetwater Watershed (CDFW 2017).
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	None/SSC /Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	L[1, 2]	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur within facility groups in suitable open scrub vegetation. No suitable vegetation present. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego,

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
												San Diego River, and Tijuana Watersheds (CDFW 2017).
Branta canadensis	Canada goose	None/None /Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	L[1, 2]	L[3-12]	X	L[20-33]	X	L[58]	X	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, San Diego River, Sweetwater, and Tijuana Watersheds in suitable open water habitat. Not expected to occur where there is no suitable vegetation present.
Buteo regalis (wintering)	ferruginous hawk	None/WL /Covered	Winters and forages in open, dry country, grasslands, open fields, agriculture	X	X	X	X	X	X	X	X	Not expected to winter; no suitable vegetation present.
Buteo swainsoni (nesting)	Swainson's hawk	None/ST /Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Pueblo San Diego, San Diego River, San Dieguito, and Sweetwater Watersheds (CDFW 2017).
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only)	coastal cactus wren	None/SSC /Covered	Southern cactus scrub patches	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Charadrius alexandrinus nivosus (nesting)	western snowy plover	FT, BCC/SSC /Covered	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Pueblo San Diego, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Charadrius montanus (wintering)	mountain plover	None/SSC /Covered	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	X	X	X	X	X	X	X	X	Not expected to winter; no suitable vegetation present.

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Circus cyaneus (nesting)	northern harrier	None/SSC /Covered	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	H[59, 60]	L[62-66], H[61]	High potential to occur within Tijuana Watershed where the species has been detected and suitable habitat is present; however, low potential to nest within grassland vegetation. High potential to occur within Otay Watershed in suitable riparian vegetation. Low potential to nest within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Tijuana Watershed (CDFW 2017).
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT, BCC/SE/None	Nests in dense, wide riparian woodlands and forest with well-developed understories	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Pueblo San Diego, and Sweetwater Watersheds (CDFW 2017).
Egretta rufescens	reddish egret	None/None /Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable open water associated with aquatic vegetation. Not expected to occur where there is no suitable vegetation present.
Elanus leucurus (nesting)	white-tailed kite	None/FP/None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	M[1, 2]	X[4], M[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	H[59, 60]	M[61-66]	High potential to occur within Otay Watershed in suitable riparian vegetation. Moderate potential to occur within Peñasquitos and Tijuana Watersheds where the species has been detected and there is suitable woodland habitat; however, moderate potential to nest in suitable riparian vegetation. Moderate potential to nest within 2 facility groups in the San Dieguito Watershed in suitable vegetation. Low potential to nest within facility groups in Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater Watersheds. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the Peñasquitos Watershed (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FT/SE/Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	H[20-33]	L[34-46, 48-57], H[47]	L[58]	H[59, 60]	H[61-66]	High potential to occur within San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable riparian vegetation. Low potential to nest in suitable riparian vegetation. Not observed during focused surveys. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the San Dieguito and Sweetwater Watersheds (CDFW 2017).
Eremophila alpestris actia	California horned lark	None/WL/None	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	L[1, 2]	L[3-12]	X	L[20-33]	L[34-57]	L[58]	X	L[64], M[62, 63], H[61, 65, 66]	High potential to occur within Tijuana Watershed where the species has been detected and there is suitable agricultural vegetation; however, moderate and high potential to nest in suitable agriculture vegetation adjacent to facilities in this Watershed. Low potential to nest within facility groups in the San Dieguito, Peñasquitos, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable vegetation. Not expected to where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Falco mexicanus (nesting)	prairie falcon	None/WL/None	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the San Diego River Watershed (CDFW 2017).
Falco peregrinus anatum (nesting)	American peregrine falcon	FDL, BCC/SDL, FP/Covered	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Otay Watershed (CDFW 2017).
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FDL, BCC/SE, FP/Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	X	X	X	X	X	X	X	X	Not expected to nest or winter; no suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Icteria virens (nesting)	yellow-breasted chat	None/SSC/None	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	L[1, 2]	L[4, 11], H[3, 5-10, 12]	X[17], L[13, 15,16, 18, 19], H[14]	L[20, 22, 29, 32], H[21, 23-28, 30, 31, 33]	L[34-46, 48-57], H[47]	L[58]	H[59, 60]	M[62-66], H[61]	High potential to occur within Peñasquitos, Mission Bay, and Tijuana Watersheds where the species has been detected and there is suitable riparian vegetation present; however, moderate and high potential to nest in suitable riparian vegetation. High potential to nest within 6 facility groups and 4 structures in the San Diego River, Pueblo San Diego, and Otay Watersheds in suitable vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Sweetwater Watersheds. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the Otay, San Dieguito, and Sweetwater Watersheds (CDFW 2017).
Ixobrychus exilis (nesting)	least bittern	None/SSC/None	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the San Diego River Watershed (CDFW 2017).
Larus californicus	California gull	None/WL/None	Sparsely vegetated islands and levees in inland lakes and rivers; forage in open habitat with scrubland, pastures, orchards, meadows, and agriculture; winters in marine areas including mudflats, estuaries, deltas, and beaches	L[1, 2]	X	X[17], M[13-16, 18, 19]	L[20, 22, 28-33], H[21, 23-27]	X	X	L[60], H[59]	L[61-66]	High potential to occur within San Diego River and Otay Watersheds where the species has been detected and there is suitable open scrubland vegetation present. Moderate potential to occur within 5 facility groups in the Mission Bay Watershed in suitable open scrubland vegetation. Low potential to occur within facility groups in San Dieguito, San Diego River, Otay, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation present.
Laterallus jamaicensis coturniculus	California black rail	None/ST, FP/None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Peñasquitos, Pueblo San Diego, San Diego River, Sweetwater, and Tijuana Watersheds (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Numenius americanus (nesting)	long-billed curlew	None/WL /Covered	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	X	L[3-12]	X	X	L[34-57]	X	X	X	Low potential to nest within facility groups in Peñasquitos and Pueblo San Diego Watersheds in suitable mixed grass vegetation. Not expected to nest within San Dieguito, Mission Bay, San Diego River, Sweetwater, Otay, and Tijuana Watersheds; no suitable vegetation present.
Pandion haliaetus (nesting)	osprey	None/WL/None	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	X	L[4], M[3, 5-12]	X	L[20, 22, 28-33], M[21, 23-27]	X	X	L[60], M[59]	L[62-64], M[61, 65, 66]	Moderate potential to nest within 7 facility groups and 1 structure in Peñasquitos, 6 facility groups in San Diego River, 1 facility group in Otay, and 3 facility groups in Tijuana Watersheds within forested vegetation. Not expected to nest within where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay Watershed (CDFW 2017).
Passerculus sandwichensis beldingi	Belding's savannah sparrow	None/SE /Covered	Nests and forages in coastal saltmarsh dominated by pickleweed (Salicornia spp.)	L[1, 2]	L[4], M[3, 5-12]	X[17], M[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Moderate potential to occur within 8 facility groups and 1 structure in Peñasquitos and 6 facility groups in Mission Bay Watersheds in suitable coastal vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Passerculus sandwichensis rostratus (wintering)	large-billed savannah sparrow	None/SSC /Covered	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	X	X	X	X	X	X	X	X	Not expected to winter; no suitable vegetation present.
Pelecanus occidentalis californicus (nesting colonies and communal roosts)	California brown pelican	FDL/SDL, FP/Covered	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Otay Watershed (CDFW 2017).

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Phalacrocorax auritus (nesting colony)	double-crested cormorant	None/WL/None	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present. This species has been recorded within 5 miles of the Sweetwater Watershed (CDFW 2017).
Plegadis chihi (nesting colony)	white-faced ibis	None/WL /Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to nest within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable shallow marshes associated with aquatic vegetation. Not expected to occur where there is no suitable vegetation present.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC/Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	L[1, 2]	X[4], L[3, 7, 10, 11], H[5, 6, 8, 9, 12]	X[17], L[15, 16], M[13, 14, 18, 19]	L[20, 22, 25, 26, 28, 31], H[21, 23, 24, 27, 29, 30, 32, 33]	L[38, 39, 41, 42, 44, 46, 50, 51, 53-57], H[34-37, 40, 43, 45, 47-49, 52]	L[58]	X	L[61-64, 66], H[65]	High potential to occur within Peñasquitos, San Diego River, Pueblo San Diego, and Tijuana Watersheds where the species has been detected and there is suitable coastal sage vegetation. Moderate potential to occur within 4 facility groups in Mission Bay Watershed in suitable vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Rallus obsoletus levipes	Ridgway's rail	FE/SE, FP/Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	L[1, 2]	L[4, 11], H[3, 5-10, 12]	X[17], H[13-16, 18, 19]	H[20-33]	L[34-38, 40-57], H[39]	X	H[59, 60]	H[61-66]	High potential to occur within Peñasquitos Watershed where the species has been detected and there is suitable coastal vegetation. High potential to occur within 6 facility groups in Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, and Pueblo San Diego Watersheds. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Setophaga petechia (nesting)	yellow warbler	None/SSC/None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	L[1, 2]	L[4, 11], H[3, 5-10, 12]	X[17], L[13-16, 18, 19]	L[20, 22, 28, 29, 32], H[21, 23-27, 30, 31, 33]	L[34, 36, 38, 39, 41, 42, 46, 50, 53-57], H[35, 37, 40, 43-45, 47-52]	X	L[60], H[59]	M[62-66], H[61]	High potential to occur within Peñasquitos, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds where the species has been detected and there is suitable riparian vegetation present; however, moderate and high potential to nest within riparian vegetation. Low potential to nest within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, and Otay Watersheds in suitable vegetation. Not expected to nest where there is no suitable vegetation present. This species has been recorded within 5 miles of the San Diego River and Sweetwater Watersheds (CDFW 2017).
Sialia mexicana	western bluebird	None/None /Covered	Nests in old-growth red fir, mixed-conifer, and lodgepole pine habitats near wet meadows used for foraging	L[1, 2]	L[3-12]	X[17], H[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	High potential to occur within Mission Bay Watershed in suitable riparian vegetation. Low potential to occur in suitable riparian vegetation near water sources. Not expected to occur where there is no suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
Sternula antillarum browni (nesting colony)	California least tern	FE/SE, FP /Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	X	X	X	L[20, 22-33], H[21]	X	X	X	X	High potential to occur within San Diego River Watershed where the species has been detected and there is suitable vegetation present; however, high potential to nest. Low potential to occur within facility groups in the San Diego River Watershed. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Thalasseus elegans (nesting colony)	elegant tern	None/WL /Covered	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	X	X	X	X	X	X	X	X	Not expected to nest; no suitable vegetation present.
Vireo bellii pusillus (nesting)	least Bell's vireo	FT/SE/Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	L[1, 2]	L[4, 11], H[3, 5-10, 12]	X[17], L[13-16, 18, 19]	L[20, 22, 28, 29, 32], H[21, 23-27, 30, 3133]	L[34-43, 45, 46, 48-57], H[44, 47]	L[58]	L[60], H[59]	M[62-66], H[61]	High potential to occur within Tijuana Watershed where the species has been detected during 2017 or 2019 focused surveys and there is suitable riparian vegetation present; however, high potential to nest in suitable riparian vegetation. Focused survey results for Peñasquitos, San Diego River, Pueblo San Diego, and Otay were negative. High potential to nest within 7 facility groups and 1 structure in Peñasquitos, and 6 facility groups and 3 structures in San Diego River, Pueblo San Diego, and Otay Watersheds in suitable riparian vegetation. Moderate potential to nest within 1 facility group in Otay, and 5 facility groups in Tijuana Watersheds in suitable vegetation. Low potential to nest within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Sweetwater, and Otay Watersheds. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River,

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
												San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Fishes												
Gila orcuttii	arroyo chub	None/SSC/None	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud	X	X	X[17], L[13-16, 18, 19]	L[20-33]	X	X	X	X	Low potential to occur within facility groups in the Mission Bay and San Diego River Watersheds. Not expected to occur where there is no suitable vegetation present.
Mammals												
Antrozous pallidus	pallid bat	None/SSC/None	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable open shrub vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, San Diego River, Sweetwater, and Tijuana Watershed (CDFW 2017).
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC/None	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	X	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	X	L[64], M[61-63, 65, 66]	Moderate potential to occur within 5 facility groups in the Tijuana Watershed in suitable open chaparral vegetation. Low potential to occur within facility groups in the Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation. This species has been recorded within 5 miles of the San Diego River Watershed (CDFW 2017).
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC/None	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	X	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	X	L[64], M[61-63, 65, 66]	Moderate potential to occur within 5 facility groups in the Tijuana Watershed in suitable chaparral vegetation. Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Pueblo San Diego,

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
												San Diego River, San Dieguito, and Tijuana Watersheds (CDFW 2017).
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC/None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Pueblo San Diego, San Diego River, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Corynorhinus townsendii	Townsend's big-eared bat	None/PST, SSC/None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Peñasquitos Watershed (CDFW 2017).
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST/None	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present.
Euderma maculatum	spotted bat	None/SSC/None	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	X	X[4], L[3, 5-12]	X	X	L[34-57]	X	X	X	Low potential to occur within facility groups in Peñasquitos and Pueblo San Diego Watersheds in suitable grassland vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay Watershed (CDFW 2017).
Eumops perotis californicus	western mastiff bat	None/SSC/None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	L[1, 2]	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur in suitable chaparral, scrub, and riparian vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, and Sweetwater Watersheds (CDFW 2017).
Lasiurus blossevillii	western red bat	None/SSC/None	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable riparian vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
												Otay, Peñasquitos, Pueblo San Diego, and San Diego River Watersheds (CDFW 2017).
Lasiurus xanthinus	western yellow bat	None/SSC/None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable riparian vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Peñasquitos, Pueblo San Diego, San Diego River, and Sweetwater Watersheds (CDFW 2017).
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC/None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	L[1, 2]	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur in suitable open grassland and coastal scrub vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Macrotus californicus	Californian leaf-nosed bat	None/SSC/None	Riparian woodlands, desert wash, desert scrub; roosts in mines and caves, occasionally buildings	L[1, 2]	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	X	L[59, 60]	L[61-66]	Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Otay, and Tijuana Watersheds in suitable riparian vegetation. Not expected to occur where there is no suitable vegetation present.
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC/None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	X	X[4], L[3, 5-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	X	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, and Tijuana Watersheds in suitable coastal scrub and chaparral vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, Peñasquitos, Pueblo San Diego, San Diego River, and San Dieguito Watersheds (CDFW 2017).
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC/None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of Mission Bay, Otay, Peñasquitos, Pueblo

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
			desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with dropoffs, caverns, and buildings									San Diego, San Diego River, San Dieguito, and Sweetwater Watersheds (CDFW 2017).
Nyctinomops macrotis	big free-tailed bat	None/SSC/None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, and Sweetwater Watersheds (CDFW 2017).
Odocoileus hemionus	mule deer	None/None /Covered	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	L[1, 2]	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[62, 64], M[61, 63, 65, 66]	Moderate potential to occur within 4 facility groups in Tijuana Watershed in suitable coastal sage, chaparral, and riparian vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC/None	Fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the San Dieguito and Tijuana Watershed (CDFW 2017).
Puma concolor	cougar	None/None /Covered	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	L[1, 2]	L[4, 11], M[3, 5-10, 12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Moderate potential to occur within 7 facility segments and 1 structure in the Peñasquitos Watershed in suitable riparian vegetation. Low potential to occur within facility groups in San Dieguito, Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation present.
Taxidea taxus	American badger	None/SSC /Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	X	L[3-12]	X[17], L[13-16, 18, 19]	L[20-33]	L[34-57]	L[58]	L[59, 60]	L[61-66]	Low potential to occur within facility groups in Peñasquitos, Mission Bay, San Diego River, Pueblo San Diego, Sweetwater, Otay, and Tijuana Watersheds in suitable open, treeless areas. Not expected to occur where there is no suitable vegetation present. This species has been recorded

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
												within 5 miles of the Mission Bay, Otay, San Diego River, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Invertebrates												
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None /Covered	Vernal pools, non-vegetated ephemeral pools	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vernal pools present. This species has been recorded within 5 miles of the Mission Bay, Otay, Peñasquitos, Pueblo San Diego, San Diego River, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Callophrys thornei	Thorne's hairstreak	None/None /Covered	Interior cypress woodland dominated by host plant *Hesperocyparis forbesii* (Tecate cypress)	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation and host plant present. This species has been recorded within 5 miles of the Tijuana Watershed (CDFW 2017).
Danaus plexippus	monarch	None/None /None	Wind-protected tree groves with nectar sources and nearby water sources	M[1, 2]	L[4], M[3, 5-12]	X[17], M[13-16, 18, 19]	L[22], M[20, 21, 23-33]	L[50], M[34-49, 51-57]	M[58]	M[59, 60]	M[62-64, 66], H[61, 65]	High potential to occur within Tijuana Watershed where the species has been detected and there is suitable tree grove associated with nectar and water sources present. Moderate potential to occur within 2 facility groups in San Dieguito, 8 facility groups and 1 structure in Peñasquitos, 6 facility groups in Mission Bay, 7 facility groups and 6 structures in San Diego River, 20 facility groups and 3 structures in Pueblo San Diego, 1 facility group in Sweetwater, 2 facility groups in Otay, and 4 facility groups in Tijuana Watersheds in suitable vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Peñasquitos, Pueblo San Diego, San Diego River, San Dieguito, Sweetwater, and Tijuana Watersheds (CDFW 2017).
Euphydryas editha quino	quino checkerspot butterfly	FE/None/None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include *Plantago erecta*, *Antirrhinum coulterianum*, and *Plantago*	X	X[3, 4, 11], L[5-10]	X	L[20-33]	X	X	L[59, 60]	X	Low potential to occur within facility groups in Peñasquitos, San Diego River, and Otay Watersheds in suitable open coastal scrub and chaparral vegetation; however, no host plants observed. Not expected to occur where there is no suitable vegetation present. This species has been

Scientific Name	Common Name	Status (Federal/State/ San Diego MSCP Subarea Plan)	Habitat	San Dieguito Watershed[1-2]	Peñasquitos Watershed[3-12]	Mission Bay Watershed[13-19]	San Diego River Watershed[20-33]	Pueblo San Diego Watershed[34-57]	Sweetwater Watershed[58]	Otay Watershed[59-60]	Tijuana Watershed[61-66]	Potential to Occur
			patagonica (Silverado Occurrence Complex)									recorded within 5 miles of the Otay, San Diego River, Sweetwater, and Tijuana Watershed (CDFW 2017).
Lycaena hermes	Hermes copper	FC/None/None	Mixed woodlands, chaparral, and coastal scrub	X	X[3, 4, 11], L[5-10]	X	L[20-33]	X	X	X	X	Low potential to occur within facility groups in Peñasquitos and San Diego River Watershed in suitable coastal scrub and chaparral vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the San Diego River and Sweetwater Watersheds (CDFW 2017).
Panoquina errans	wandering skipper	None/None /Covered	Saltmarsh	X	X	X	X	X	X	X	X[62-64], L[61, 65, 66]	Low potential to occur within facility groups in Tijuana Watershed in suitable saltmarsh vegetation. Not expected to occur where there is no suitable vegetation present. This species has been recorded within 5 miles of the Otay, San Diego River, and Tijuana Watersheds (CDFW 2017).
Streptocephalus woottoni	Riverside fairy shrimp	FE/None /Covered	Vernal pools, non-vegetated ephemeral pools	X	X	X	X	X	X	X	X	Not expected to occur; no suitable vegetation present. This species has been recorded within 5 miles of the Mission Bay, Otay, and Tijuana Watersheds (CDFW 2017).

Notes:
X = Not expected to occur
L = Low potential to occur
M = Moderate potential to occur
H = High potential to occur
Status Notes:
FE: Federally Endangered
FT: Federally Threatened
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State Endangered
Facility Group: Facility Segment
(reference Section 5 of Biological Technical Report for details on species occurrence potential within specific facility segments)
San Dieguito Watershed
1 Green Valley Creek – Pomerado/Pomerado (Segment 1 and 2)
2 Green Valley Creek – Paseo del Verano/Paseo del Verano (Segment 1)
Peñasquitos Watershed
3 Peñasquitos Lagoon – Industrial/Industrial (Segment 1 and 2)
4 Peñasquitos Lagoon – Tripp/Tripp (Segment 1)
5 Los Peñasquitos Canyon Creek – Black Mountain/Black Mountain (Segment 1 and 2)
6 Los Peñasquitos Canyon Creek – 5-805 Basin
7 Soledad Canyon Creek – Sorrento/Roselle (Segment 1 and 2)
8 Carroll Canyon Creek – Carroll/Carroll Canyon (Segment 1)
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10 Soledad Canyon Creek – Dunhill/Dunhill (Segment 1)
11 Chicarita Creek – Via San Marco/Via San Marco (Segment 1)
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14 Alta La Jolla – Vickie/Vickie (Segment 1)
15 Mission Bay – MBHS/PB-Olney (Segment 1) and MBHS (Segment 1)

16 Mission Bay – Mission Bay Drive/Mission Bay Drive (Segment 1)
17 Miramar – Engineer/Engineer (Segment 1)
18 Tecolote Creek – Chateau/Chateau (Segment 1 and 2)
19 Tecolote Creek – Genesee/Genesee (Segment 1)

San Diego River Watershed

20 San Diego River – Nimitz/Nimitz (Segment 1, 2, and 3)
21 San Diego River – Valeta/Valeta (Segment 1)
22 San Diego River – Camino del Rio/Camino del Arroyo (Segment 1) and Camino del Rio (Segment 1)
23 Murphy Canyon Creek – Stadium/Murphy Canyon (Segment 1) and Stadium (Segment 1 and 2)
24 Alvarado Canyon Creek – Mission Gorge/Mission Gorge (Segment 1, 2, 3, and 4)
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28 1331 Washington (OT03537) Structure
29 1277 Camino Del Rio South (IN10399) Structure
30 5505 Friars Road (OT05573) Structure
31 1660 Hotel Circle North (OT03321) Structure
32 901 Hotel Circle South (HW02440) Structure
33 2087 Hotel Circle South (HW02437) Structure

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38 San Diego Bay – 28th St/28th St (Segment 1)
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40 Chollas Creek – Rolando/Cartagena (Segment 1) and Rolando (Segment 1 and 2)
41 Chollas Creek – Martin/Martin (Segment 1)
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43 Auburn Creek – Home/Home (Segment 1, 2, 3, and 5)
44 Auburn Creek – Wightman/Wightman (Segment 1 and 2)
45 Chollas Creek – Megan/Megan (Segment 1 and 2)
46 Chollas Creek – 54th St/54th St (Segment 1)
47 South Chollas Creek – Southcrest/Alpha (Segment 1) and Ocean View (Segment 1)
48 South Chollas Creek – Euclid/Euclid (Segment 2)
49 South Chollas Creek – Federal/Federal (Segment 1 and 2)
50 South Chollas Creek Encanto Branch – Castana/Castana (Segment 1)
51 South Chollas Creek Encanto Branch – Imperial/Imperial (Segment 2)
52 South Chollas Creek Encanto Branch – Jamacha/Jamacha (Segment 1)
53 Paleta Creek – Cottonwood/Cottonwood (Segment 1 and 2)
54 Paleta Creek – Solola/Solola (Segment 1 and 2)
55 3644 Roselawn (OT03694) Structure
56 4202 J Street (HW04013) Structure
57 1206 Goodyear (OT04671) Structure

Sweetwater Watershed

58 Sweetwater River – Parkside/Parkside (Segment 1)

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APPENDIX F

Summary of Compensatory Mitigation Sites

BTR APPENDIX F

Summary of Compensatory Mitigation
Municipal Waterways Maintenance Plan
City of San Diego, California
PTS #616992

Transportation & Storm Water Department

Storm Water Division – Operations & Maintenance Section

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Summary of Compensatory Mitigation

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BTR Appendix F
Summary of Compensatory Mitigation

1 INTRODUCTION

As described within the *Biological Resources Technical Report* (BTR) for the City of San Diego's (City) *Municipal Waterways Maintenance Plan* (MWMP), impacts to sensitive resources, including wetlands, are expected to occur as a result of the initiation of the MWMP. According to the City of San Diego Biology Guidelines (SDBG), proposed impacts to these resources (i.e., Upland Tiers I–III and Wetlands) also require associated compensatory mitigation be identified prior to the initiation of the impact activity and the total mitigation acreage must also be consistent with the ratios defined in the SDBG (City of San Diego 2018). In addition to compensatory mitigation required by the SDBG, applicable state and federal agency permits that must be obtained to authorize facility maintenance activities may also require mitigation for impacts to sensitive resources under their jurisdiction. Whenever feasible, the mitigation that the City's Transportation & Storm Water Department (TSW) provides for state and federal agency requirements will be included within, and not in addition to, the compensatory mitigation required according to the SDBG. TSW uses all forms of available compensatory wetlands mitigation, including permittee-responsible mitigation (PRM), advance permittee–responsible mitigation (APRM), third-party mitigation banks, and, if available, in-lieu fee programs, which consist of establishment/re-establishment, restoration/rehabilitation, enhancement, and preservation opportunities.

This Appendix F provides the following:

- Section 1 – an account of existing compensatory mitigation site assignments for previously permitted facilities within the MWMP as well as a framework for how TSW will assign compensatory mitigation acreages at potential mitigation sites for additional impacts from the MWMP not already assigned.
- Section 2 – a description of implementation of compensatory mitigation activities (e.g., invasive species removal, grading, planting), compliance with the City's *Multiple Species Conservation Program Subarea Plan* (MSCP Subarea Plan), and methodology to determine any environmental impacts associated with implementation of mitigation activities.
- Section 3 provides a programmatic analysis of potential impacts and mitigation measures under the California Environmental Quality Act (CEQA).

1.1 MITIGATION GROUPS

To organize both the facilities proposed for maintenance under the MWMP and the associated approved or potential mitigation projects, a classification system made up of five "Groups" was developed. This system is based upon the approval status of the mitigation project/site for each

MWMP facility and the location of impacts that have been or are planned to be mitigated at that particular site. These Groups are described in detail below:

- **Group 1 –** Mitigation sites that have been completed or are under construction (e.g., El Cuervo Mitigation Project, El Cuervo del Sur Phase I, Los Peñasquitos Phase I/Primary Enhancement Area, Famosa Slough Salt Marsh Mitigation, San Diego River [Stadium] Wetland Mitigation Project, Tijuana River Emergency Wetlands Creation Mitigation Project, Tijuana River Valley Enhancement Project)
- **Group 2 –** Mitigation sites currently proposed with draft Habitat Mitigation and Monitoring Plans (e.g., El Cuervo del Sur Phase II, Los Peñasquitos Phase II/Secondary Enhancement Area, Otay Reed, Hollister Quarry, 2015-16 Emergency Channel Maintenance Mitigation Project, Smythe Channel and Via de la Bandola Channel Permittee Responsible Mitigation Project, Jamacha Canyon Rehabilitation Project)
- **Group 3** – Mitigation sites identified for potential future implementation, including sites that may be integrated, multi-benefit Capital Improvement Program projects (e.g., various sites identified in the Chollas Creek Watershed Master Plan and Chollas Creek Enhancement Program, Hollister Pond, Marron Valley Wetlands, Otay Valley Regional Park, Sefton Field/Pueblo Lot 1102, Los Peñasquitos Lagoon Restoration, San Dieguito Lagoon East, Mission Bay Park Improvements, Shepard Canyon)
- **Group 4** – Credits for upland mitigation requirements (e.g., deduction of credits from the City's Marron Valley Cornerstone Mitigation Bank, payment into the City's Habitat Acquisition Fund)
- **Group 5** – Approved or potential third-party mitigation banks (e.g., Wildlands Inc. San Luis Rey and/or Rancho Jamul Mitigation Banks, Port of San Diego Pond 20 wetlands mitigation bank)

When a Group 2 or 3 mitigation site is approved, they would be re-classified as Group 1 sites based on an approved final *Habitat Mitigation Monitoring Plan* (HMMP) or other approved mitigation credits, including City APRM sites. These approved mitigation areas or credits would be assigned to proposed facility maintenance, in accordance with the mitigation ratios required by the SDBG and any applicable federal or state resource agency permits.

1.2 SUMMARY OF MITIGATION SITES AND ASSIGNED/ POTENTIAL ACREAGES

Table 1-1 provides a list of MWMP project-level Facility Maintenance Plan (FMP) locations that are "newly proposed" (i.e., prior authorization for maintenance has not been recently obtained), with the mitigation acreage requirements for proposed impacts at each facility by SDBG wetland communities. Table 1-2 provides a list of MWMP project-level FMP locations that were "previously

permitted"; if mitigation was required for prior impacts, the associated HMMP(s) where mitigation acreage or credits have been planned to be assigned to the facility is also listed in the table. Some facilities also include impact areas that were previously permitted and additional areas that are newly proposed; these are noted with Footnote 1; facilities within the Coastal Overlay Zone are noted with an asterisk. Tables 1-3 and 1-4 provide similar information for significant impacts to sensitive uplands.

Table 1-5 provides a list of mitigation sites organized by Group that includes location relative to the Coastal Overlay Zone, acreage credits already assigned to MWMP facilities, acreage credits planned for near-term MWMP facilities, mitigation credits assigned to projects not included in the MWMP (unavailable credits), and mitigation acreage credits (by mitigation type) potentially available for additional MWMP proposed impacts.

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
San Dieguito	104030	Green Valley Creek - Pomerado	Pomerado_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland	0.18
					Riparian Forest or Woodland	0.12
San Dieguito	104033	Green Valley Creek - Pomerado	Pomerado_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland	0.12
					Freshwater Marsh	0.12
San Dieguito	104200	Green Valley Creek - Paseo del Verano	Paseo del Verano_1	3	Riparian Forest or Woodland	0.54
					San Dieguito Total	***1.08***
Los Peñasquitos	201120	Los Peñasquitos Lagoon - Industrial	Industrial_1*	3[1]	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Freshwater Marsh	0.01
					Riparian Forest or Woodland	0.06

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Los Peñasquitos	201200	Los Peñasquitos Canyon Creek - Black Mountain	Black Mountain_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland (Invasive)	0.00
					Freshwater Marsh	0.36
					Natural Flood Channel	0.20
					Riparian Forest or Woodland	0.06
					Riparian Scrub	0.06
Los Peñasquitos	201210	Los Peñasquitos Canyon Creek - Black Mountain	Black Mountain_2	3	Freshwater Marsh	~~0.50~~0.52
					Natural Flood Channel	~~0.24~~0.26
					Riparian Forest or Woodland	~~2.52~~3.27
					Riparian Scrub	~~0.06~~0.08
Los Peñasquitos	203012	Carroll Canyon Creek	Carroll Canyon_1	3	Riparian Forest or Woodland	0.06
					Natural Flood Channel	0.12~~0.10~~
Los Peñasquitos	203150	Soledad Canyon Creek	Dunhill_1*	2	Disturbed Wetland	0.16
					Freshwater Marsh	0.12

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Los Peñasquitos	205140	Chicarita Creek - Via San Marco	Via San Marco_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Los Peñasquitos	HW04220	10405 Sorrento Valley Road	—	3	None	0.00
					Los Peñasquitos Total:	***~~4.45~~5.34***
Mission Bay	300120	Torrey Pines	Torrey Pines_1	3	Natural Flood Channel	0.04
Mission Bay	302130	Mission Bay - Mission Bay Drive	Mission Bay Drive_1*	2	Freshwater Marsh	2.00
					Disturbed Wetland (Invasive)	0.00
					Natural Flood Channel	0.01
Mission Bay	304055	Tecolote Creek	Chateau_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Mission Bay	304250	Tecolote Creek	Chateau_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Mission Bay	304160	Tecolote Creek - Genesee	Genesee_1	3	Freshwater Marsh	0.12
					Disturbed Wetland (Invasive)	0.00
					Natural Flood Channel	0.20

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
					Riparian Forest or Woodland	1.07
					Mission Bay Total:	***3.44***
San Diego River	401103	San Diego River - Nimitz	Nimitz_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	0.04
San Diego River	401105	San Diego River - Nimitz	Nimitz_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	401107	San Diego River - Nimitz	Nimitz_3	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	0.14
San Diego River	401120	San Diego River - Valeta	Valeta_1*	3	Freshwater Marsh	0.04
					Riparian Scrub	0.15
San Diego River	404006	Murphy Canyon Creek	Murphy Canyon_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	407009	Alvarado Canyon Creek - Mission Gorge	Mission Gorge_3	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
					Riparian Forest or Woodland	1.02
					Disturbed Wetland (Invasive)	0.00
San Diego River	407011	Alvarado Canyon Creek - Mission Gorge	Mission Gorge_4	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	407023	Alvarado Canyon Creek - Alvarado	Alvarado_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	407250	Alvarado Canyon Creek - Alvarado	Alvarado_3	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	407901	Murray Reservoir - Cowles Mountain	Cowles Mountain_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Freshwater Marsh	0.02
					Disturbed Riparian Scrub (Concrete-lined)	0.02
					Disturbed Wetland (Concrete-lined)	0.02

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
San Diego River	407911	Murray Reservoir - Cowles Mountain	Cowles Mountain_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	408008	Norfolk Canyon Creek	Fairmount_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	408011	Norfolk Canyon Creek	Fairmount_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	408014	Norfolk Canyon Creek	Fairmount_3	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland (Invasive)	0.00
San Diego River	408017	Norfolk Canyon Creek	Fairmount_4	3	Disturbed Wetland	0.94
San Diego River	403101	San Diego River - Camino del Rio	Camino del Arroyo_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Scrub	0.14

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
San Diego River	403103	San Diego River - Camino del Rio	Camino del Rio_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Forest or Woodland	0.10
					Riparian Scrub	0.66
San Diego River	OT03537	1331 Washington	—	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	IN10399	1277 Camino Del Rio South	—	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	OT03321	1660 Hotel Circle North	—	3	Disturbed Wetland	0.01
					Natural Flood Channel	0.04
San Diego River	HW02440	901 Hotel Circle South	—	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
San Diego River	HW02437	2087 Hotel Circle South	—	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	0.06
					San Diego River Total:	***3.41***

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Pueblo San Diego	502140	Maple Canyon Creek - Maple	Maple_1	3	Disturbed Wetland (Invasive)	0.00
					Natural Flood Channel	0.16
Pueblo San Diego	503011	Powerhouse Canyon Creek	Pershing_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Scrub	0.12
Pueblo San Diego	503100	Powerhouse Canyon Creek	Pershing_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Scrub	0.10
Pueblo San Diego	503901	San Diego Bay - 28th St	28th St_1	3	Disturbed Wetland	0.00[2]
					Natural Flood Channel	0.00[2]
Pueblo San Diego	504044	Chollas Creek - Rolando	Cartagena_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Pueblo San Diego	504046	Chollas Creek - Rolando	Rolando_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Pueblo San Diego	504048	Chollas Creek - Rolando	Rolando_2	3[1]	Disturbed Wetland (Unvegetated Concrete-lined)	0.00

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Pueblo San Diego	504101	Chollas Creek - Martin	Martin_1	3	Natural Flood Channel	0.02
					Riparian Scrub	0.02
Pueblo San Diego	504163	Chollas Creek - J St	J St_1	3	Disturbed Wetland (Invasive)	0.00
Pueblo San Diego	504220	Auburn Creek - Home	Home_1	3[1]	Natural Flood Channel	0.00
				3	Riparian Forest or Woodland	0.01
Pueblo San Diego	504227	Auburn Creek - Home	Home_3		Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland (Invasive)	0.00
Pueblo San Diego	504239	Auburn Creek - Wightman	Wightman_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	0.16~~0.14~~
					Disturbed Wetland (Invasive)	0.00
Pueblo San Diego	504241	Auburn Creek - Wightman	Wightman_2	3	Natural Flood Channel	0.26~~0.16~~
					Riparian Forest or Woodland	0.42

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
					Disturbed Wetland (Invasive)	0.00
Pueblo San Diego	504260	Chollas Creek - Megan	Megan_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	0.01
					Riparian Scrub	0.02
Pueblo San Diego	504262	Chollas Creek Unnamed Tributary - Megan	Megan_2	3	Natural Flood Channel	0.18
Pueblo San Diego	504280	Chollas Creek - 54th St.	54th_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Scrub	0.02
Pueblo San Diego	505006	South Chollas Creek - Southcrest	Alpha_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	1.32
					Disturbed Wetland	0.56
					Disturbed Wetland (Invasive)	0.00

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
					Riparian Forest or Woodland	0.17
Pueblo San Diego	505008	South Chollas Creek - Southcrest	Oceanview_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Natural Flood Channel	0.02
					Disturbed Wetland (Invasive)	0.00
					Riparian Forest or Woodland	0.27
Pueblo San Diego	505021	South Chollas Creek - Euclid	Euclid_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland (Invasive)	0.00
Pueblo San Diego	505037	South Chollas Creek - Federal	Federal_1	3[1]	Riparian Forest or Woodland	0.06
			Federal_2	3[1]	Disturbed Wetland (Unvegetated Concrete-lined)	0.00

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Pueblo San Diego	505306	South Chollas Creek Encanto Branch - Imperial	Castana_1	3	Natural Flood Channel	0.06
Pueblo San Diego	505306	South Chollas Creek Encanto Branch - Imperial	Imperial_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland (Invasive)	0.00
Pueblo San Diego	505603	South Chollas Creek Encanto Branch - Jamacha	Jamacha_1	3[1]	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland (Invasive)	0.00
					Natural Flood Channel	0.02
Pueblo San Diego	506020	Paleta Creek - Solola	Solola_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Pueblo San Diego	506023	Paleta Creek - Solola	Solola_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Pueblo San Diego	OT03694	3644 Roselawn	—	3	Ornamental Plantings	0.00

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Pueblo San Diego	HW04013	4202 J Street	—	3	Disturbed Wetland (Invasive)	0.00
					Riparian Scrub	0.02
Pueblo San Diego	OT054671	1206 Goodyear	—	3	Ornamental Plantings	0.00
					Pueblo Total:	***4.00~~3.88~~***
					Sweetwater Total:	***0.00***
~~Otay~~	~~522010~~	~~Nestor Creek~~	~~Cedar_2~~	~~3~~	~~Freshwater Marsh~~	~~0.04~~
Otay	522013	Nestor Creek	Dahlia_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
Otay	522016	Nestor Creek	Cerissa_1	3	Disturbed Wetland	0.44
					Freshwater Marsh	0.96
					Riparian Forest or Woodland	2.73
Otay	522023	Nestor Creek	Grove_1	3	Disturbed Wetland	0.86
					Riparian Forest or Woodland	0.63~~0.62~~
Otay	522028	Nestor Creek	30th St	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
					Riparian Forest or Woodland	0.55
Otay	522110	Nestor Creek - Outer	Outer_1	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland	0.26~~0.24~~
Otay	522112	Nestor Creek - Outer	Outer_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Otay Total:	***6.43~~6.44~~***
Tijuana River	602118	Tijuana River - Tocayo	Tocayo_2*	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Forest or Woodland	0.15
Tijuana River	603138	Tijuana River - Smythe	Via Encantadoras_1	3	Freshwater Marsh	0.16
					Riparian Forest or Woodland	0.06
Tijuana River	603138	Tijuana River - Smythe	Via Encantadoras_2	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-1
Mitigation Required for Wetland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Tijuana River	603143	Tijuana River - Smythe	Via Encantadoras_3	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Forest or Woodland	0.37
Tijuana River	604251	Spring Canyon Creek	Cactus_1[3]	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Riparian Forest or Woodland	0.42
Tijuana River	604253	Spring Canyon Creek	Cactus_2[3]	3	Disturbed Wetland (Unvegetated Concrete-lined)	0.00
					Disturbed Wetland	0.11
					Riparian Forest or Woodland	0.63
					Riparian Scrub	0.08
Tijuana River	505603	Tijuana River - La Media	La Media_1	3	Freshwater Marsh	0.03
					Riparian Forest or Woodland	<0.01
					Tijuana River Total:	***2.01***
					TOTAL:	**~~24.71~~25.70**

BTR Appendix F
Summary of Compensatory Mitigation

Notes:
MWMP = *Municipal Waterways Maintenance Plan;* FMP = Facility Maintenance Plan; SDBG = San Diego Biology Guidelines

* The facility is located either wholly or partially within the Coastal Zone, and mitigation acreage requirements have been calculated according to the coastal mitigation ratio for the vegetation communities listed in the SDBG, as applicable. Mitigation is also generally required to occur within the Coastal Zone.

1 A portion of the impacts in this facility are categorized as previously permitted, and the mitigation assignment for those impacts is described in Table 1-2.

2 Impacts proposed in this facility group are below the threshold of significance described in the SDBG for this wetland vegetation community, so no mitigation is required.

3 Facility is currently delineated as an artificial wetlands. Upon confirmation from ACOE, CDFW, RWQCB, and City of San Diego, no mitigation would be required.

Table 1-2
Mitigation Assigned for Wetland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_ Number	Group	Mitigation Plan Assigned
Los Peñasquitos	201120	Los Peñasquitos Lagoon – Industrial	Industrial_2~~1~~	1[1]	• Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I
Los Peñasquitos	201120	Los Peñasquitos Lagoon – Industrial	Tripp_1	1	• Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I
Los Peñasquitos	201900	Los Peñasquitos Canyon Creek - 5-805 Basin	5-805_1	N/A	• Self-mitigating project – no additional mitigation required
Los Peñasquitos	203000	Soledad Canyon Creek	Roselle_1	1	• El Cuervo Mitigation Project • Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I • Famosa Slough Salt Marsh Mitigation Area

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-2
Mitigation Assigned for Wetland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_ Number	Group	Mitigation Plan Assigned
Los Peñasquitos	203002	Soledad Canyon Creek	Roselle_2	1	• Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I
Los Peñasquitos	203012	Carroll Canyon Creek	Carroll Canyon_1	1/2	• El Cuervo del Sur Phase II • Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I
Los Peñasquitos	203100	Soledad Canyon Creek	Flintkote_1	1	• Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I
Mission Bay	300150	Alta La Jolla - Vickie	Vickie_1	1	• Self-mitigating project – no additional mitigation required
Mission Bay	302101	Mission Bay - MBHS	PB-Olney_1	1	• Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I
Mission Bay	302103	Mission Bay - MBHS	MBHS_1	1	• Los Peñasquitos Canyon Preserve Wetland Enhancement Project Phase I • El Cuervo del Sur Phase I
Mission Bay	303901	Miramar - Engineer	Engineer_1	N/A	• No mitigation required (artificial wetland impacts only)
San Diego River	404000	Murphy Canyon Creek	Stadium_1	1	• San Diego River (Stadium) Wetland Mitigation Project
San Diego River	404002	Murphy Canyon Creek	Stadium_2	1	• San Diego River (Stadium) Wetland Mitigation Project

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-2
Mitigation Assigned for Wetland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_ Number	Group	Mitigation Plan Assigned
San Diego River	407002	Alvarado Canyon Creek - Mission Gorge	Mission Gorge_1	1	• San Diego River (Stadium) Wetland Mitigation Project
San Diego River	407004	Alvarado Canyon Creek - Mission Gorge	Mission Gorge_2	1	• San Diego River (Stadium) Wetland Mitigation Project
San Diego River	407021	Alvarado Canyon Creek - Alvarado	Alvarado_1	1	• San Diego River (Stadium) Wetland Mitigation Project
San Diego River	408105	Norfolk Canyon Creek	Baja_1	1	• San Diego River (Stadium) Wetland Mitigation Project
San Diego River	OT05573	5505 Friars Rd	-	3	• Sefton Field/Pueblo Lot 1102
Pueblo San Diego	502151	Washington Canyon Creek	Washington_1	2	• 2015/2016 Emergency Channel Maintenance Mitigation Project • San Diego River (Stadium) Wetland Mitigation Project
Pueblo San Diego	502153	Washington Canyon Creek	Washington_2	2	• 2015/2016 Emergency Channel Maintenance Mitigation Project • San Diego River (Stadium) Wetland Mitigation Project • Otay Reed Mitigation Site
Pueblo San Diego	502162	Mission Hills Canyon Creek	Titus_1	N/A	• No mitigation required (invasive species impacts only)

Table 1-2
Mitigation Assigned for Wetland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_ Number	Group	Mitigation Plan Assigned
Pueblo San Diego	504004	Chollas Creek - National	National_1	1/2	• 2015/2016 Emergency Channel Maintenance Mitigation Project • San Diego River (Stadium) Wetland Mitigation Project • [On-Site NFC Restoration]
Pueblo San Diego	504006	Chollas Creek - National	National_2	1/2	• San Diego River (Stadium) Wetland Mitigation Project
Pueblo San Diego	504048	Chollas Creek - Rolando	Rolando_2	1/2	• San Diego River (Stadium) Wetland Mitigation Project • 2015/2016 Emergency Channel Maintenance Mitigation Project • [On-Site NFC Restoration]
Pueblo San Diego	504220	Auburn Creek - Home	Home_1	2[1]	• 2015/2016 Emergency Channel Maintenance Mitigation Project • [On-Site NFC Restoration] • Otay Reed Mitigation Site
Pueblo San Diego	504224	Auburn Creek - Home	Home_2	1	• San Diego River (Stadium) Wetland Mitigation Project
Pueblo San Diego	504231	Auburn Creek - Home	Home_5	2	• 2015/2016 Emergency Channel Maintenance Mitigation Project • Otay Reed Mitigation Site
Pueblo San Diego	505035	South Chollas Creek - Federal	Federal_1	2	• San Diego River (Stadium) Wetland Mitigation Project

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-2
Mitigation Assigned for Wetland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_ Number	Group	Mitigation Plan Assigned
Pueblo San Diego	505037	South Chollas Creek - Federal	Federal_2	2[1]	• San Diego River (Stadium) Wetland Mitigation Project
Pueblo San Diego	505603	South Chollas Creek Encanto Branch - Jamacha	Jamacha_1	2[1]	• 2015/2016 Emergency Channel Maintenance Mitigation Project • San Diego River (Stadium) Wetland Mitigation Project • [On-Site NFC Restoration]
Pueblo San Diego	506005	Paleta Creek - Cottonwood	Cottonwood_1	1/2	• San Diego River (Stadium) Wetland Mitigation Project • 2015/2016 Emergency Channel Maintenance Mitigation Project
Pueblo San Diego	506008	Paleta Creek - Cottonwood	Cottonwood_2	1/2	• San Diego River (Stadium) Wetland Mitigation Project • 2015/2016 Emergency Channel Maintenance Mitigation Project
Pueblo San Diego	511003	Sweetwater River - Parkside	Parkside_1	2	• 2015/2016 Emergency Channel Maintenance Mitigation Project • Otay Reed Mitigation Site
Otay	522008	Nestor Creek	Cedar_1	2	• Hollister Quarry
Otay	522010	Nestor Creek	Cedar_2	2	• Hollister Quarry

BTR Appendix F
Summary of Compensatory Mitigation

Table 1-2
Mitigation Assigned for Wetland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_ Number	Group	Mitigation Plan Assigned
Tijuana River	601020	Tijuana River	Pilot_1	1	• Tijuana River Emergency Wetland Creation Mitigation Project • Tijuana River Valley Enhancement Project (In-Channel and Out-of-Channel)
Tijuana River	601100	Tijuana River	Smuggler's Gulch_1	1	• Tijuana River Emergency Wetland Creation Mitigation Project • Tijuana River Valley Enhancement Project (In-Channel and Out-of-Channel)
Tijuana River	603147	Tijuana River - Smythe	Smythe_1	2	• Smythe Channel and Via de la Bandola Channel Permittee Responsible Mitigation Project
Tijuana River	603150	Tijuana River - Smythe	Via de la Bandola_1	2	• Smythe Channel and Via de la Bandola Channel Permittee Responsible Mitigation Project
Tijuana River	505603	Tijuana River – Siempre Viva	Siempre Viva_1	N/A	• No mitigation required (non-jurisdictional impacts only)

Notes:
MWMP = *Municipal Waterways Maintenance Plan;* FMP = Facility Maintenance Plan; MBHS = Mission Bay High School; PB = Pacific Beach; N/A = not applicable; NFC = Natural Flood Channel

[1] A portion of the impacts in this facility is categorized as newly proposed, and the mitigation requirement for those impacts is described in Table 1-1.

Table 1-3
Mitigation Required for Upland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
					San Dieguito Total	***0***
Los Peñasquitos	201200	Los Peñasquitos Canyon Creek - Black Mountain	Black Mountain_1	3	Coastal Sage Scrub	0.00[2]
Los Peñasquitos	201210	Los Peñasquitos Canyon Creek - Black Mountain	Black Mountain_2	3	Coastal Sage Scrub	0.00[2]
Los Peñasquitos	HW04220	10405 Sorrento Valley Road	—	3	Coastal Sage Scrub	0.00[2]
					Los Peñasquitos Total:	***0.00***
					Mission Bay Total:	***0.00***
San Diego River	401120	San Diego River - Valeta	Valeta_1	3	Coastal Sage Scrub	0.00[2]
San Diego River	404006	Murphy Canyon Creek	Murphy Canyon_1	3	Coastal Sage Scrub	0.00[2]
San Diego River	408011	Norfolk Canyon Creek	Fairmount_2	3	Chamise Chaparral	0.00[2]
San Diego River	408014	Norfolk Canyon Creek	Fairmount_3	3	Chamise Chaparral	0.00[2]
					San Diego River Total:	***0.00***

Table 1-3
Mitigation Required for Upland Impacts in Newly Proposed MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Unassigned Mitigation Requirement (acres)
Pueblo San Diego	504048	Chollas Creek - Rolando	Rolando_2	3	Coastal Sage Scrub	0.00[2]
Pueblo San Diego	504262	Chollas Creek - Megan	Megan_2	3	Coastal Sage Scrub	0.00[2]
Pueblo San Diego	505603	South Chollas Creek Encanto Branch - Jamacha	Jamacha_1	3[1]	Non-Native Grassland	0.00[2]
					Pueblo San Diego Total:	***0.00***
					Sweetwater Total:	***0.00***
					Otay Total:	***0.00***
					Tijuana River Total:	***0.00***

Notes:
MWMP = *Municipal Waterways Maintenance Plan;* FMP = Facility Maintenance Plan; SDBG = San Diego Biology Guidelines

[1] A portion of the impacts in this facility has been previously permitted, and the mitigation assignment for those impacts is described in Table 1-4.

[2] Impacts proposed in this facility are below the threshold of significance described in the SDBG for this vegetation community, so no mitigation is required.

Table 1-4
Mitigation Assigned for Upland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Mitigation Plan Assigned
Los Peñasquitos	201900	Los Peñasquitos Canyon Creek - 5-805 Basin	5-805_1[2]	N/A	Coastal Sage Scrub	Self-mitigating project – no additional mitigation required
Los Peñasquitos	203012	Carroll Canyon Creek	Carroll Canyon_1[2]	1	Non-Native Grassland	N/A
Mission Bay	300150	Alta La Jolla - Vickie	Vickie_1	N/A	Coastal Sage Scrub	Self-mitigating project – no additional mitigation required
Mission Bay	302101	Mission Bay - MBHS	PB-Olney_1[3]	4	Non-Native Grassland	Marron Valley Cornerstone Lands Bank
Mission Bay	302103	Mission Bay - MBHS	MBHS_1[3]	4	Non-Native Grassland	Marron Valley Cornerstone Lands Bank
San Diego River	408105	Norfolk Canyon Creek	Baja_1[3]	4	Non-Native Grassland	Marron Valley Cornerstone Lands Bank
Pueblo San Diego	504220	Auburn Creek - Home	Home_2[3]	4	Chaparral	Marron Valley Cornerstone Lands Bank
Pueblo San Diego	505037	South Chollas Creek - Federal	Federal_1	3	Coastal Sage Scrub	TBD

Table 1-4
Mitigation Assigned for Upland Impacts in Previously Permitted MWMP FMP Facilities

Watershed	Facility Number	Facility Group	Facility Segment_Number	Group	SDBG Wetland Vegetation Community	Mitigation Plan Assigned
Pueblo San Diego	505037	South Chollas Creek - Federal	Federal_2	3	Coastal Sage Scrub	TBD
Pueblo San Diego	505603	South Chollas Creek Encanto Branch - Jamacha	Jamacha_1[2]	3	Non-Native Grassland	N/A
Tijuana River	603147	Tijuana River - Smythe	Smythe_1[3]	2	Non-Native Grassland	Marron Valley Cornerstone Lands Bank

Notes:
MWMP = *Municipal Waterways Maintenance Plan;* FMP = Facility Maintenance Plan; SDBG = San Diego Biology Guidelines; MBHS = Mission Bay High School; PB = Pacific Beach; N/A = not applicable; TBD = to be determined

[2] Impacts in this facility were previously permitted, but were below the threshold of significance described in the SDBG for this vegetation community, so no mitigation plan was assigned.

[3] Impacts in this facility were previously permitted based on a prior biological assessment and mitigated, as appropriate.

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
1	Fig 1a/1-1	Los Peñasquitos	Within	El Cuervo Mitigation Project	City of San Diego - PWD	14.89	0.15	—	—	—	Roselle_1	—	—
1	Fig 1a/1-2	Los Peñasquitos	Within	El Cuervo del Sur Phase I	City of San Diego - TSW	—	2.30	—	—	—	Roselle_1, Roselle_2, Flintkote_1, Industrial_2~~1~~, Tripp_1, MBHS_1, PB-Olney_1	—	—
1	Fig 1a/1-3	Los Peñasquitos	Within	Los Peñasquitos Phase I/Primary Enhancement Area	City of San Diego - TSW	—	6.64	—	—	—	Roselle_1, Roselle_2, Industrial_2~~1~~, Tripp_1, MBHS_1, PB-Olney_1, Carroll Canyon_1, Flintkote_1	—	—
1	Fig 1b/1-4	San Diego River	Outside	San Diego River (Stadium) Wetland Mitigation Project	City of San Diego - PUD	0.225	8.91	—	—	23.697	Stadium_1, Stadium_2, Mission Gorge_1, Mission Gorge_2, Alvarado _1, Rolando_2, Home_2, Baja_1, Washington_1,	—	31.20

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
											Washington_2, National_1, National_2, Federal_1, Federal_2, Jamacha_1, Cottonwood_1, Cottonwood_2		
1	Fig 1c/1-5	Tijuana River	Within	Tijuana River Emergency Wetland Creation Mitigation Project	City of San Diego - TSW	0.78	9.43	—	0.81	—	Pilot_1, Smuggler's Gulch_1	—	0.81
1	Fig 1c/1-6	Tijuana River	Within	Tijuana River Valley Enhancement Project (In-Channel and Out-of-Channel)	City of San Diego - TSW	—	8.62	—	—	—	Pilot_1, Smuggler's Gulch_1	—	—
1	Fig 1b/1-7	San Diego River	Within	Famosa Slough Salt Marsh Mitigation Area	City of San Diego - TSW	0.35	—	—	0.35	—	~~Sorrento Valley_1~~Roselle_1	—	—

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
2	Fig 1a/2-1	Los Peñasquitos	Within	El Cuervo del Sur Phase II	City of San Diego - TSW	—	0.03	—	1.45	—	Carroll Canyon_1	Mission Bay Drive_1	1.45
2	Fig 1a/2-2	Los Peñasquitos	Within	Los Peñasquitos Phase II/Secondary Enhancement Area	City of San Diego - TSW	—	—	—	—	2.47	—	Mission Bay Drive_1	1.83
2	Fig 1b/2-3	Pueblo San Diego	Outside	2015/2016 Emergency Channel Maintenance Mitigation Project	City of San Diego - PWD	—	2.92	—	—	—	Cottonwood_1, Cottonwood_2, Home_1, Home_5, Jamacha_1, National_1, Parkside_1, Rolando_2, Washington_1, Washington_2	—	—
2	Fig 1b/2-4	Pueblo San Diego	Outside	Jamacha Canyon Rehabilitation Project	City of San Diego - PWD	—	—	—	5.77	0.93	—	—	6.82
2	Fig 1c/2-5	Otay	Partially Within	Hollister Quarry	City of San Diego - TSW	—	0.91	—	0.05	—	Cedar_1, Cedar_2	—	0.80
2	Fig 1c/2-6	Otay	Outside	Otay Reed Mitigation Site	City of San Diego - TSW	—	0. 16	—	—	—	Home_1, Home_5, Parkside_1, Washington_2	—	0.05

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
2	Fig 1c/2-7	Tijuana River	Within	Smythe Channel and Via de la Bandola Channel Permittee Responsible Mitigation Project	City of San Diego - TSW	—	3.84	—	—	—	Smythe_1, Via de la Bandola_1	—	—
3	Fig 1a	San Dieguito	Outside	San Pasqual Valley	City of San Diego	—	—	—	309.00	153.00	—	—	362.00
3	Fig 1a	San Dieguito	Within	San Dieguito Lagoon East	—	—	—	—	10.48	—	—	—	10.48
3	Fig 1a	Los Peñasquitos	Within	Los Peñasquitos Lagoon Restoration	—	—	—	—	24.00	7.32	—	—	31.32
3	Fig 1a	Los Peñasquitos	Within	Los Peñasquitos Phase I/Secondary Enhancement Area	City of San Diego - TSW	—	—	—	—	3.00	—	—	3.00
3	Fig 1a	Los Peñasquitos	Within	El Cuervo al Oeste	City of San Diego	—	—	—	2.50	—	—	—	2.50
3	Fig 1a	Los Peñasquitos	Within	Montongo Mitigation Site	City of San Diego	—	—	—	2.70	—	—	—	2.70
3	Fig 1b	Mission Bay	Within	Noyes Street Outfall Mitigation Site	Northern Wildlife Preserve	—	—	0.976	1.657	—	—	—	2.689
3	Fig 1b	Mission Bay	Within	Mission Bay Park Improvements	City of San Diego	—	—	—	45.00	—	—	—	45.00

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
3	Fig 1b	San Diego River	Outside	Pueblo Lot 1102/Sefton Field	City of San Diego	—	—	—	0.62	5.18	—	—	5.8
3	Fig 1b	San Diego River	Outside	Shepard Canyon	City of San Diego	—	—	—	—	5.00	—	—	5.00
3	Fig 1b	San Diego River	Outside	Rueda Canyon	City of San Diego	—	—	—	—	3.00	—	—	3.00
3	Fig 1b	Pueblo San Diego	Outside	Florida Canyon	City of San Diego	—	—	—	—	0.12	—	—	0.12
3	Fig 1b	Pueblo San Diego	Outside	Wabash	Primarily Private	—	—	—	0.73	—	—	—	0.73
3	Fig 1b	Pueblo San Diego	Outside	Federal and Home	Private, City of San Diego	—	—	—	6.64	—	—	—	6.64
3	Fig 1b	Pueblo San Diego	Outside	Sunshine Berardini	City of San Diego	—	—	—	5.05	—	—	—	5.05
3	Fig 1b	Pueblo San Diego	Outside	Chollas Parkway	Mostly City of San Diego, private	—	—	—	11.05	—	—	—	11.05
3	Fig 1b	Pueblo San Diego	Outside	Auburn & Wightman	City of San Diego, Private (mostly)	—	—	—	4.36	—	—	—	4.36
3	Fig 1b	Pueblo San Diego	Outside	National Ave	City of San Diego, ROW, and Private	—	—	—	2.46	—	—	—	2.46

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
3	Fig 1b	Pueblo San Diego	Outside	Imperial Creek @ YMCA	City of San Diego (and Private in Groundwork /Dudek plans)	—	—	—	7.30	—	—	—	7.30
3	Fig 1b	Pueblo San Diego	Outside	47th and Castana	City of San Diego, ROW, and Private	—	—	—	1.60	1.30	—	—	2.90
3	Fig 1b	Pueblo San Diego	Outside	Paradise Creek and Woodman	City of San Diego	—	—	—	—	0.71	—	—	0.71
3	Fig 1b	Pueblo San Diego	Outside	Jamacha and Cardiff	City of San Diego (mostly), Private	—	—	—	1.20	0.01	—	—	1.21
3	Fig 1b	Pueblo San Diego	Outside	Chollas & 54th	City of San Diego	—	—	—	14.64	2.28	—	—	16.92
3	Fig 1c	Otay	Outside	OVP Rec 1	City of San Diego	—	—	—	0.54	—	—	—	0.54
3	Fig 1c	Otay	Outside	Hollister Pond	City of San Diego	—	—	—	—	0.34	—	—	0.34
3	Fig 1c	Otay	Outside	Otay HU Potential Mitigation Parcels	City of San Diego (mostly), Private	—	—	—	0.42	8.15	—	—	14.33
3	Fig 1c	Otay	Outside	Dennery Rd	Private	—	—	—	7.67	4.18	—	—	11.85

Table 1-5
Mitigation Credits Assigned and Available by Mitigation Site

Group	Figure / Attachment	Watershed	Coastal Overlay Zone	Mitigation Plan or Site Name	Owner / Manager	Mitigation Acreage Assigned to Non-MWMP Projects (Unavailable)	Mitigation Acreage Assigned to Previously Permitted MWMP Facilities	Upland Creation/ Enhancement/ Buffer Acreage Available	Wetlands Creation/ Restoration/ Re-Establishment/ Rehabilitation Acreage Available	Wetlands Enhancement/ Preservation Acreage Available	List of Previously Permitted MWMP Facilities Mitigated by Plan	List of Newly Proposed MWMP Facilities Mitigated by Plan	Mitigation Acreage Potentially Available for Additional Newly Proposed Facilities (Unassigned Mitigation Requirement) under MWMP
5	Fig 1c	Otay	Outside	Otay River Mitigation Bank	City of San Diego	—	—	—	250	—	—	—	250
3	Fig 1c	Tijuana	Within	Smythe Channel and Via de la Bandola Channel Advanced Permittee Responsible Mitigation Project	City of San Diego	—	—	—	0.20	1.42	—	—	1.62
3	Fig 1d	Tijuana River	Outside	Marron Valley Cornerstones Land Bank (Wetlands)	City of San Diego	—	—	—	1.29	—	—	—	1.65
TOTALS						**16.25 ~~16.245~~**	**43.75**	**0.98 ~~0.976~~**	**719.54 ~~463.097~~**	**222.11 ~~219.107~~**	**—**	**—**	**856.23 ~~683.173~~**

MWMP = Municipal Waterways Maintenance Plan; MBHS = Mission Bay High School; PB = Pacific Beach; PWD = Public Works Department; TSW = Transportation & Storm Water Department; PUD = Public Utilities Department; ROW = right-of-way

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2 ANALYSIS OF IMPACTS FROM IMPLEMENTATION OF COMPENSATORY MITIGATION

As described in Section 1, Group 2 and 3 mitigation sites are considered to have potential to provide mitigation credit for maintenance impacts related to the MWMP, but either the HMMP for the site is still in draft form and not yet approved, or a specific mitigation design has not been prepared. This section provides a description of mitigation activities that would occur with implementation of mitigation on Group 2 and 3 sites.

2.1 LITERATURE REVIEW

In addition to draft HMMPs for Group 2 sites, the following reports and documentation were reviewed to better understand potential impacts associated with development of future mitigation sites, the method for how those impacts have been previously analyzed, and the approval process of past compensatory mitigation projects:

- *Final Mitigated Declaration and Initial Study/Environmental Checklist: San Luis Rey Habitat Management Area Restoration Project* (AECOM 2018)
- Availability of Prospectus Rancho Jamul Mitigation Bank Phase IIB (USACE 2014)
- *Final Mitigated Negative Declaration and Initial Study/Environmental Checklist: El Cuervo Mitigation Plan and Sewer Access Road Realignment* (City of San Diego 1999)
- *MSCP Subarea Plan* (City of San Diego 1997)
- Biology Guidelines (City of San Diego 2018)
- Master Storm Water System Maintenance Program (City of San Diego 2013a)

2.2 COMPENSATORY MITIGATION DESCRIPTION

TSW plans to create, restore, rehabilitate, and/or enhance native riparian and wetland habitats at a variety of potential mitigation sites. The majority of these sites are located on disturbed lands, areas dominated by invasive species or upland habitats. This work will be implemented systematically in accordance with the City's MSCP and applicable regulatory agency permits, with the goal of providing compensatory mitigation credits for impacts from proposed maintenance activities associated with the MWMP in the form of long-term, self-sustaining ecological improvements to these areas. Each proposed mitigation site will be subject to review and approval from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Wildlife, and California Coastal Commission (as applicable).

BTR Appendix F
Summary of Compensatory Mitigation

Compensatory mitigation projects involving creation, restoration, and/or rehabilitation would typically involve vegetation removal (primarily non-native species), grading (typically to remove soil to modify site hydrology), and in some cases, can involve removal of structures (e.g., concrete channel lining). After initial site preparation, planting and temporary irrigation are installed, followed by a maintenance and monitoring program. Mitigation projects consisting of enhancement only, typically require vegetation removal, planting, irrigation, followed by site maintenance and monitoring.

Compensatory mitigation within the City's MSCP is required to meet the following three elements: (1) Mitigation Element, (2) Protection and Notice Element, and (3) Management Element. Requirements of the Mitigation Element are incorporated into MM-BIO-1a, MM-BIO-1b, and MM-BIO-3, and include required ratios, no-net-loss of wetlands, options for satisfying mitigation (including PRM, APRM, mitigation bank credits, acquisition, and monetary compensation), restoration plan requirements, and species-specific mitigation.

An HMMP (i.e., Revegetation/Restoration Plan) would be developed for each mitigation project and would conform with the City's SDBG (Appendix II – Attachment III), U.S. Environmental Protection Agency and U.S. Army Corps of Engineers Compensatory Mitigation Final Rule (EPA and USACE 2008). The HMMP includes a description of the proposed activities, monitoring and maintenance requirements, anticipated mitigation acreage/credit, required performance standards, and long-term protection measures. The HMMP is used to obtain regulatory approvals which set the requirements for mitigation implementation, assignment of mitigation acreages/credits, and performance standards to determine if the mitigation was completed successfully. Mitigation projects would provide mitigation acreage for impacts associated with maintenance at specific facilities identified in the MWMP or would result in mitigation credits for multiple facilities. Mitigation credits would confirm with the U.S. Army Corps of Engineers' *Memorandum for the Record for City of San Diego APRM* (USACE 2015).

The long-term protection measures outlined in the HMMP must meet the Protection and Noise Element and Management Element of the MSCP Subarea Plan. For Protection and Noise, recorded site protections are required for land not already owned by the City. For such properties, land must be dedicated to the City or other conservation entity, or a covenant of easement much be recorded with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service named as third-party beneficiaries. The covenant would be required to incorporate permissible passive activities and other restrictions.

In terms of the Management Element requirements, the HMMP must identify how the objective of the MSCP Preserve Management (Section 1.5 of the MSCP Subarea Plan) will be met, including identification of the responsible entity and funding source. If the City holds the fee title or is granted a conservation easement, it will be responsible for management of the mitigation area. If the City

does not hold fee title or a covenant of easement is not granted, then a responsible entity must be identified, along with a secure funding source to pay for management in perpetuity.

Areas that are not currently in the City MSCP Multi-Habitat Planning Area (MHPA) may require a MHPA Boundary Line Adjustment to provide additional long-term protection and assurance mitigation sites remain are conserved in perpetuity. Section 1.1.1 of the City's MSCP Subarea Plan (City March 1997), "[a]djustments to the MHPA boundaries may be made without the need to amend either this MSCP Subarea Plan or the MSCP Plan in cases where the new MHPA boundary results in an area of equivalent or higher biological value" and that "[t]he determination of the biological value of a proposed boundary change will be made by the City in accordance with the MSCP Plan, with the concurrence of the wildlife agencies." Section 5.4.2 of the Final MSCP Plan (August 1998) sets forth six criteria that City and wildlife agency staff use to determine if a proposed Boundary Line Adjustment meets the "functional equivalency" test. Wildlife agency concurrence on Boundary Line Adjustment findings would occur through a City discretionary action that includes a public notice and appeal process.

Construction of mitigation projects would be required to comply with applicable regulations, including the construction general permit (which typically requires preparation of a Storm Water Pollution Prevention Plan or Water Pollution Control Plan that dictates the placement of best management practices to reduce the potential for pollutant runoff during construction), the U.S. Migratory Bird Treaty Act (that requires avoidance of take of active bird nests), and the MSCP Land Use Adjacency Guidelines (that prohibits use of nighttime lighting and ensures that other indirect impacts are minimized).

BTR Appendix F
Summary of Compensatory Mitigation

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3 POTENTIAL ENVIRONMENTAL IMPACTS AND APPLICABLE MITIGATION MEASURES

Based on the mitigation description above and conclusions of the Environmental Impact Report (EIR) for the MWMP, Table 3-1 was developed as a programmatic analysis of impacts associated with implementation of draft HMMPs (i.e., Group 2 mitigation sites) and potential mitigation sites (i.e., Group 3), in accordance with the City's SDBG (Appendix II – Attachment III).

With implementation of the environmental protocols and mitigation measures identified in Table 3-1, construction of mitigation sites is expected to result in less than significant impacts. More specific determinations of potential impacts and applicable mitigation would be determined through a Substantial Conformance Review (SCR) submittal that would include the following:

- **Site Survey**

  A biologist must conduct a site field reconnaissance survey of the proposed mitigation site, in accordance with the City's Guidelines for Conducting Biological Surveys (Appendix II in City of San Diego 2018). This survey will include mapping of all vegetation communities present on the site as well as recording of all plant and wildlife species encountered or detected.

  If jurisdictional resources are determined to have potential to be present on the site, this survey will also include a formal wetland delineation, which will be conducted according to the survey methods described in Section 2.2.3, Wetland Delineation, of the MWMP BTR.

- **Impacts Analysis**

  Based on the results of the site survey, the impacts to vegetation communities, plant and wildlife species, and jurisdictional resources will be analyzed and the mitigation required for these impacts, if any, will be identified in accordance with the SDBG (City of San Diego 2018).

  In addition, based on the results of the site survey, mitigation measures from Section 5, "Mitigation" of the MWMP BTR will be identified as being applicable to the proposed mitigation site construction activities (e.g., special-status species avoidance).

- **Calculation of Mitigation Credit Available**

  After the impacts of creating the mitigation site have been analyzed, the mitigation credits available will be calculated based on the proposed mitigation type(s) available at the site (e.g., establishment, rehabilitation, enhancement) and based on any mitigation required from installation of the mitigation site itself (e.g., impacts to sensitive vegetation communities).

This acreage calculation will then be compared with the compensatory mitigation acreage required for impacts planned to occur in the MWMP facility(ies) proposed for maintenance to ensure that the mitigation acreage (or credits in accordance with APRM) to be available at the proposed mitigation site would be sufficient to cover the facility(ies) requirements.

- **Conformance with applicable Environmental Protocols and Mitigation Measures**

  For each applicable Environmental Protocol or Mitigation Measure, a description of compliance must be provided, either in the form of a report (e.g., visual analysis), schedule and monitoring exhibit (e.g., biological, cultural, paleontological monitoring), draft findings (e.g., boundary line adjustment), and/or plan (e.g., water pollution control plan).

BTR Appendix F
Summary of Compensatory Mitigation

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Aesthetics/Visual Effects and Neighborhood Character		
Issue 1: Would the project result in a substantial obstruction in any vista or scenic view from a public viewing area as identified in the community plan?	Programmatic mitigation activities may be visible from a community plan identified vista, scenic view, or public vantage point and may entail the introduction of new vegetation. Depending on location, new vegetation could result in substantial view blockage or interruption. Therefore, program-level activities (primarily consisting of construction of new compensatory mitigation sites) conducted under the MWMP that would entail the introduction of new vegetation would be **potentially significant** (**AES-1**).	**MM-AES-1 Visual Analysis for Program Activities.** Where program activities, including construction of compensatory mitigation sites, would entail the introduction of new vegetation and (potential) substantial view blockage or interruption of a community plan identified vista, scenic view or public vantage point, additional analysis shall be conducted. The analysis shall consider the nature of program-level activities; proximity to community plan identified vista, scenic view or public vantage point; and potential for program-level activities to result in substantial, long-term view obstruction. If the analysis determines that substantial view obstruction may occur, then additional mitigation, including the selection of plants and trees with a shorter form, shall be considered in planting palettes to maintain existing view corridors at community plan identified views, scenic vistas or public vantage points.
Issue 2: Would implementation of the project result in a negative aesthetic site or result in substantial alteration to the	The analysis of project-level and programmatic maintenance activities indicates that the visual effects associated with maintenance activities would not be noticeable to nearby residents or	N/A

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
existing or planned character of the area, such as could occur with the construction of a subdivision in a previously undeveloped area? **Issue 3**: Would the project result in bulk, scale, materials, or style which would be incompatible with surrounding development?	public users and would not alter the characteristics displayed by in-facility vegetation. This is based on the fact that changes in vegetation caused by maintenance are consistent with the existing expectations of vegetation fluctuations within storm water facilities. Similarly, programmatic mitigation activities would occur in existing open space areas where vegetation naturally shifts seasonally and over time. Therefore, programmatic mitigation activities would not result in a substantial long-term contrast that would fundamentally and permanently alter the character of a particular area and would not result in a negative aesthetic site, substantial alteration to the existing or planned character of the area, or incompatibility with surrounding development. Impacts would be **less than significant**.	
Issue 4: Would the project result in the loss of any distinctive or landmark tree(s), or stand of mature trees as identified in a community plan?	Programmatic mitigation activities are unlikely to result in the removal of a stand of mature trees, distinct trees, or landmark trees identified in a community plan. Impacts would be **less than significant**.	N/A

BTR Appendix F
Summary of Compensatory Mitigation

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Issue 5: Would the project result in a substantial change to natural topography or other ground surface relief features through landform alteration?	MWMP maintenance and repair activities are considered less than significant and programmatic mitigation activities would be also **less than significant** for similar reasons (e.g., lack of substantial topographic changes).	N/A
Air Quality and Odor		
Issue 1: Would the project conflict with or obstruct implementation of the applicable air quality plan?	MWMP maintenance and repair activities are considered less than significant and programmatic mitigation activities would be also **less than significant** for similar reasons (e.g., mitigation would not provide for residential development growth or local employment growth).	N/A
Issue 2: Would the project expose sensitive receptors to substantial pollutant concentrations?	MWMP maintenance and repair activities are considered less than significant and programmatic mitigation activities would be also **less than significant** for similar reasons (e.g., work would be temporary, would not be a source of daily, long-term mobile-source emissions, would not include sensitive land uses nor would it generate substantial short-term toxic air contaminants, and would not occur in an area with a high incidence rate of Coccidioidomycosis (Valley Fever).	**MM-AQ-1**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	Health Impacts of Criteria Air Pollutants Because estimated emissions resulting from implementation of 10 concurrent maintenance activities would exceed the San Diego Air Pollution Control District (SDAPCD) screening-level threshold for nitrogen oxides (NO_x) during implementation of the MWMP, the addition of concurrent equipment operated to implement programmatic mitigation activities could result in a **potentially significant** contribution to regional concentrations of non-attainment pollutants; therefore, mitigation is required. Health impacts that result from NO_2 and NO_x include respiratory irritation; however, because the majority of programmatic mitigation activities would be short term activities, nearby receptors would not be exposed off-road equipment exhaust for a prolonged period of time. Therefore, potential health impacts associated with NO_2 and NO_x would be **less than significant**.	

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was determined to be a **less-than-significant** impact. Thus, programmatic mitigation activities' CO emissions would not contribute to significant health effects associated with this pollutant. Construction activities associated with the programmatic mitigation activities would not exceed thresholds for PM_{10} or $PM_{2.5,}$ would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SDAB from coming into attainment for these pollutants. The programmatic mitigation activities would also not result in substantial DPM emissions during construction and, therefore, would not result in significant health effects related to DPM exposure. Because the minimal contribution of particulate matter during construction, health impacts would be **less than significant**. *Valley Fever Exposure*	

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	Based on the low incidence rate of Coccidioidomycosis in the MWMP area and in greater San Diego County, and the programmatic mitigation activities' implementation of dust control strategies, it is not anticipated that earth-moving activities during proposed maintenance activities would result in exposure of nearby sensitive receptors to Valley Fever. Therefore, programmatic mitigation activities would have a **less than significant** impact with respect to Valley Fever exposure for sensitive receptors.	
Issue 3: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	MWMP maintenance and repair activities are considered less than significant and programmatic mitigation activities would be also **less than significant** for similar reasons (e.g., odors generated would be temporary)	N/A
Issue 4: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed	The combined emissions of the 10 concurrent maintenance activities, which represent the maximum daily construction scenario, exceed the project-level SDAPCD significance threshold for NO_x prior to the City's implementation of air quality mitigation. Should other projects, such as implementation of compensatory biological mitigation, occur in the vicinity of the MWMP,	**MM-AQ-1**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
quantitative thresholds for O3 precursors)?	significant effects related to NO_x emissions could be further intensified due to roadway emissions from motor vehicles proximate to many MWMP activity areas, including development of mitigation sites; therefore, this impact would be **potentially significant** absent air quality mitigation.	
Biological Resources		
Issue 1: Would the proposal have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in the MSCP or other local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	MWMP programmatic mitigation activities may include activities in both upland and wetland habitats, occupied or potentially utilized by sensitive species. Activities within wetlands are required to result in a net benefit to wetland habitat areas, as verified through preparation and regulatory approval of a *Habitat Mitigation Monitoring Plan* (HMMP). Therefore impacts to sensitive wetlands would be **less than significant.** In some cases, wetlands mitigation projects are developed in existing upland areas and can result in a net loss of sensitive upland (Tier II or III) habitat areas. Such impacts would be **significant** absent mitigation.	**MM-BIO-1a; MM-BIO-1b**; **MM-BIO-2**; **MM-BIO-3; MM-BIO-4**; **MM-BIO-5**; **MM-BIO-6;** and **MM-BIO-7**. **EP-BIO-3a**; **EP-BIO-3b**; **EP-BIO-3c**; **EP-BIO-4**; **EP-BIO-5; EP-BIO-6**; **EP-LU-1; EP-LU-2;** and **EP-WQ-1**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	During construction of mitigation sites, impacts may inadvertently occur outside of the approved limits of work. Such unauthorized impacts to sensitive upland or wetland habitats would be **potentially significant** absent mitigation. Mitigation sites would typically be designed to avoid significant impacts to sensitive plant species requiring species-specific mitigation (Table 5.3-4a). In cases where impacts are unavoidable, impacts to sensitive plant species would be **potentially significant** absent mitigation. Mitigation sites are often adjacent to existing habitat for sensitive wildlife species and therefore direct impacts to sensitive wildlife species and indirect noise impacts to California gnatcatcher would be **potentially significant** absent mitigation. Programmatic mitigation activities may result in numerous indirect impacts to sensitive vegetation	

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	communities, sensitive species and associated habitats during construction including spread of invasive species, shot-hole borer beetle, and potential impacts to adjacent sensitive species. These impacts would be **less than significant** with incorporation of Environmental Protocols (EPs).	
Issue 2: Would the proposal result in a substantial adverse impact on any Tier I Habitats, Tier II Habitats, Tier IIIA Habitats, or Tier IIIB Habitats as identified in the Biology Guidelines of the Land Development Manual or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	Potential MWMP programmatic mitigation activities could potentially result in significant impacts to upland habitats and/or unintended temporary impact areas in sensitive habitat communities would require restoration following the completion of construction. These impacts would be **potentially significant**, absent mitigation.	**MM-BIO-1b** and **MM-BIO-2**
Issue 3: Would the proposal result in a substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means?	Potential MWMP programmatic mitigation activities are expected to result in net benefits to wetlands areas and functions and, therefore, these impacts would be **less than significant.**	N/A

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Issue 4: Interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites?	Potential MWMP programmatic mitigation activities are expected to result in net benefits to the movement of any native resident or migratory fish or wildlife species and, therefore, these impacts would be **less than significant**.	N/A
Issue 5: A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, either within the MSCP plan area or in the surrounding region?	Potential MWMP programmatic mitigation activities are expected to comply with the City of San Diego (City) Multiple Species Conservation Program (MSCP) Multi-Habitat Planning Area (MHPA) requirements, including the Land Use Adjacency Guidelines, and, therefore, these impacts would be **less than significant**. Some compensatory mitigation sites may require a Boundary Line Adjustment to add the mitigation site, a portion of the site, and/or buffers to the MHPA. No reductions in the MHPA are anticipated, except to possibly correct MHPA boundaries to conform with natural versus urbanized areas. It is expected that required findings showing a net benefit to MSCP covered species would be made and	**EP-LU-1** and **EP-LU-2**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	impacts to the MSCP from potential Boundary Line Adjustments would be **less than significant.**	
Issue 6: Would the project introduce land use within an area adjacent to the MHPA that would result in adverse edge effects?	Potential MWMP programmatic mitigation activities would create land uses that do not result in adverse edge effects and, therefore, these impacts would be **less than significant**.	**EP-LU-1 and EP-LU-2**
Issue 7: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	The proposed MWMP, including programmatic mitigation activities, would comply with the City's Public Tree Protection Policy; therefore, this impact would be **less than significant**.	N/A
Greenhouse Gas Emissions (GHG)		
Issue 1: Would the proposal generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? **Issue 2:** Would the project conflict with the City's Climate Action Plan or another applicable plan, policy or regulation adopted for the	Similar to MWMP maintenance activities, programmatic mitigation activities would result in GHG emissions primarily associated with use of off-road equipment, on-road hauling and vendor trucks, and worker vehicles. However, similar to MWMP maintenance activities, programmatic mitigation activities would be consistent with each of the Climate Action Plan strategies and with implementation of EP-SW-1 through EP-SW-8, impacts would be **less than significant**.	**EP-SW-1**; **EP-SW-2**; **EP-SW-3**; **EP-SW-4**; **EP-SW-5**; **EP-SW-6**; **EP-SW-7**; and **EP-SW-8**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
purpose of reducing the emissions of greenhouse gases?		
Geologic Conditions		
Issue 3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Programmatic mitigation activities would follow all applicable seismic standards and geotechnical engineering practices when bypass structures, access roads, or stockpiling of materials is necessary. When needed, an evaluation would be conducted to determine bank, soil, or slope stability. When necessary, stabilization would be implemented in locations that are documented during the site assessments and when the engineering team has deemed the condition as needing additional evaluations. Implementation of EP-GEO-1 would ensure impacts would remain **less than significant**.	**EP-GEO-1**
Health and Safety/-Hazards		
Issue 1a: Would the project expose people or structures either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	Similar to MWMP maintenance activities, programmatic mitigation activities would not result in such risk exposures and, therefore, this impact would be **less than significant**.	N/A

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Issue 1b: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? **Issue 1c:** Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? **Issue 1d:** Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?		

BTR Appendix F
Summary of Compensatory Mitigation

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Issue 2: Would any component of the project be located on a site that is included on a hazardous material sites list compiled pursuant to Government Code Section 6596.25 and, as a result, pose a significant hazard to the public or environment?	Similar to MWMP maintenance activities, potential programmatic mitigation activities may come into contact with unexpected hazardous materials or known contaminated sites listed pursuant to Government Code Section 6596.25. Thus, with implementation of EP-HAZ-1, EP-HAZ-2, and EP-HAZ-3, impacts would be **less than significant**.	**EP-HAZ-1; EP-HAZ-2;** and **EP-HAZ-3**
Issue 3: Would the project result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter-mile of an existing or proposed school?	Similar to MWMP maintenance activities, programmatic mitigation activities have the potential to encounter unknown hazardous materials or contaminated soils, which could possibly create a hazard within one-quarter mile of a school. Thus, with implementation of EP-HAZ-2, impacts would be **less than significant**.	**EP-HAZ-2**
Issue 4: Would the project expose people to toxic substances through reasonably foreseeable conditions, such as pesticides and herbicides, some of which have long-lasting ability, applied to the soil during previous agricultural uses?	MWMP programmatic mitigation activities have the potential to encounter soils that have been contaminated by previous agricultural use or could expose people or the environment to hazardous conditions. Thus with implementation of EP-HAZ-1, EP-HAZ-2, and EP-HAZ-3, impacts would be **less than significant**.	**EP-HAZ-1**; **EP-HAZ-2; EP-HAZ-3**

BTR Appendix F
Summary of Compensatory Mitigation

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Historical, Archaeological, and Tribal Cultural Resources		
Issue 1: Would the project result in an alteration, including the adverse physical or aesthetic effects and/or the destruction of a prehistoric or historic building (including an architecturally significant building), structure, object, or site, or existing religious or sacred use?	Cultural Resources MWMP maintenance activities have potential to impact previously undiscovered cultural resources, including tribal cultural resources (TCRs) and/or grave sites. No known religious or sacred uses have been identified within the MWMP area of potential effects (APE), however, mitigation sites were not included in the APE and there is potential for these to be encountered during future mitigation activities. Impacts to previously undiscovered cultural or archaeological resources due to MWMP programmatic mitigation activities would be **potentially significant**. Historical Resources MWMP programmatic mitigation sites were not evaluated to determine if any historical resources are listed in or eligible for listing in the California Register of Historical Resources or National Register of Historic Places. Therefore, MWMP mitigation activities have	**MM-CR-1**; **MM-CR-2**; **MM-CR-3**; and **MM-CR-4** **MM-HR-1** and **MM-HR-2**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	potential to impact historic resources and such impacts would be **potentially significant**.	
Issue 2: Would the project result in the disturbance of any human remains, including those interred outside of formal cemeteries?	Similar to maintenance activities, MWMP mitigation activities that would include ground disturbance have potential to impact human remains and as such would be **potentially significant**.	**MM-CR-1**
Issue 3: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe?*	Formal tribal consultation has been conducted with representatives from two local California Native American Kumeyaay tribes. Any information regarding tribal cultural resources discussed during consultation has been incorporated into this Program Environmental Impact Report related to the MWMP mitigation activities. MWMP maintenance activities have the potential to impact previously undiscovered TCRs as defined in Public Resources Code (PRC) Section 21074. Although no known religious or sacred uses have been identified within the MWMP APE, mitigation sites were not included in the APE, and there is potential for TCRs to be encountered during future mitigation activities. Impacts to previously undiscovered TCRs due to MWMP	**MM-CR-1**; **MM-CR-2**; **MM-CR-3;** and **MM-CR-4**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	programmatic mitigation activities would be **potentially significant**.	
	Hydrology	
Issue 1: Would the project result in a substantial increase in impervious surfaces and associated increased runoff?	Similar to MWMP maintenance activities, mitigation activities would not include increases in impervious surfaces and would not increase runoff. Therefore, these impacts would be **less than significant**, and no mitigation is required.	N/A
Issue 2: Would the project result in substantial alteration to on- and off-site drainage patterns due to changes in runoff flow rates or volumes?	MWMP mitigation activities are required to result in net benefits to hydrologic/hydraulic conditions such that flood risk to developed properties are not increased and potential for erosion is limited, as verified through regulatory approvals of a HMMP for each mitigation project. Therefore, these impacts would be **less than significant**.	N/A
	Land Use	
Issue 1: Would the project result in a conflict with goals, objectives, and recommendations of the community plan in which it is located?	MWMP programmatic mitigation activities are expected to be consistent with the goals and policies of the General Plan and Community Plans, and it would not preclude the attainment of the primary intent of the	**EP-LU-1**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	General Plan or Community Plans, and impacts would be **less than significant**.	
Issue 2: Would the project require a deviation or variance, and the deviation or variance would in turn result in a physical impact on the environment?	MWMP programmatic mitigation activities are expected to comply with land use regulations and would not result in a net loss of wetlands and therefore impacts would be **less than significant**.	N/A
Issue 3: Would the project result in a conflict with the provisions of the City's Multiple Species Conservation Program Subarea Plan or other approved local, regional, or state habitat conservation plan?	MWMP programmatic mitigation activities are expected to be consistent with City of San Diego MSCP Subarea Plan, including the Land Use Adjacency Guidelines, Boundary Line Adjustment requirements, and the Land Development Code Environmentally Sensitive Lands Regulations, and impacts would be **less than significant**.	**EP-LU-1** and **EP-LU-2**
Noise		
Issue 1: Would the project result or create a significant increase in the existing ambient noise levels?	Construction noise from potential MWMP programmatic mitigation activities was not estimated as part of the modeling completed for the MWMP but has the potential to be similar to large facility maintenance projects. Therefore, noise impacts from construction of mitigation site conducted under the MWMP would be **significant** absent mitigation.	**MM-NOI-1**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
Issue 2: Would the project result in the exposure of people to noise levels which exceed the City's adopted noise ordinance or are incompatible with Table K-4?	Construction noise from potential MWMP programmatic mitigation activities may exceed the City's Municipal Code Noise Ordinance standard for construction (75 dBA L_{eq} (12-hr)) when mitigation activities would take place in proximity to the nearest noise-sensitive receivers. This would be a **potentially significant** noise impact absent mitigation.	**MM-NOI-1**
Issue 3: Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Because construction of mitigation sites would utilize similar equipment as MWMP maintenance and likely be further away from residences than maintenance sites, vibration levels resulting from heavy construction equipment are not expected to result in excessive groundborne vibration levels, and impacts would be **less than significant.**	N/A
Paleontological Resources		
Issue 1: Would the project require over 1,000 cubic yards of excavation in a high resource potential geologic deposit/formation/rock unit, or over 2,000 cubic yards of excavation in a moderate resource	MWMP programmatic mitigation activities may include grading that exceeds the significance thresholds for paleontological resources; however, with implementation of EP-PAL-1, impacts would be **less than significant**.	**EP-PAL-1**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
potential geologic deposit/formation/rock unit?		
Solid Waste		
Issue 1: Would the proposed project have an effect upon, or result in a need for, new or altered solid waste facilities?	MWMP programmatic mitigation activities would contribute to landfill capacity; however, they would not substantially increase the amount of solid waste that is currently handled and transferred to the Miramar Landfill. Impacts would be **less than significant**.	N/A
Issue 2: Would the project comply with federal, state, and local statutes and regulations related to solid waste?	Due to the nature of the solid waste handled during implementation of programmatic mitigation activities, recycling and reusing the materials is not always appropriate or feasible, and the amount that will be diverted from disposal is unknown. Given the proposed MWMP may not substantially change the amount of solid waste currently handled and transferred to the Miramar Landfill, and that TSW has a current diversion rate far below the required amount of 50%, it is anticipated that programmatic mitigation activities would also not comply with the 50% waste diversion goal set by the TSW *Waste Diversion Plan*. Therefore, even with implementation of EP-SW-1 through	**EP-SW-1** through **EP-SW-8**

Table 3-1
Summary of Significant Impacts and Relevant CEQA Threshold of Significance

MWMP CEQA Impact Threshold	Impact Analysis	Environmental Protocols and Mitigation Measures
	EP-SW-8, impacts would be **potentially significant**.	
Water Quality		
Issue 1: Would the project adhere to the City's Stormwater Standards Manual (City of San Diego 2018)?	MWMP programmatic mitigation activities are required to be constructed consistent with the City's Storm Water Standards Manual, which outline the best management practices and pollution prevention measures that would be implemented. Therefore, these impacts would be **less than significant**.	**EP-WQ-1**
Issue 2: Would the project otherwise substantially degrade water quality?	MWMP mitigation activities are required to result in net benefits to wetland functions, including water quality, as verified through regulatory approvals of an HMMP for each mitigation project. Therefore, these impacts would be **less than significant**.	N/A

CEQA = California Environmental Quality Act; N/A = not applicable

BTR Appendix F
Summary of Compensatory Mitigation

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4 REFERENCES

City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. July 2016.

City of San Diego. 2018. Biology Guidelines. Adopted January 22, 2018; amended February 1, 2018, by City Council Resolution R-311507. https://www.sandiego.gov/planning/programs/landdevcode/landdevmanual.

EPA and USACE (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers). 2008. Compensatory Mitigation for Losses of Aquatic Resources, Final Rule.

SWRCB (State Water Resources Control Board). 2012. "Section I, Findings; C, Activities Not Covered Under the General Permit." In National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006-DWQ. Effective July 17, 2012.

USACE (U.S. Army Corps of Engineers). 2015. *Memorandum for the Record: Advance Permittee-Responsible Mitigation Related to City of San Diego Essential Public Projects Within the County of San Diego, California*. October 23.

BTR Appendix F
Summary of Compensatory Mitigation

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Group 1

Group 2

Group 3

1-1, San Dieguito Lagoon East

1-2, San Pasqual Valley

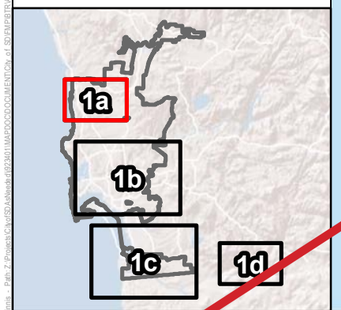
2-1, Los Peñasquitos Lagoon Restoration

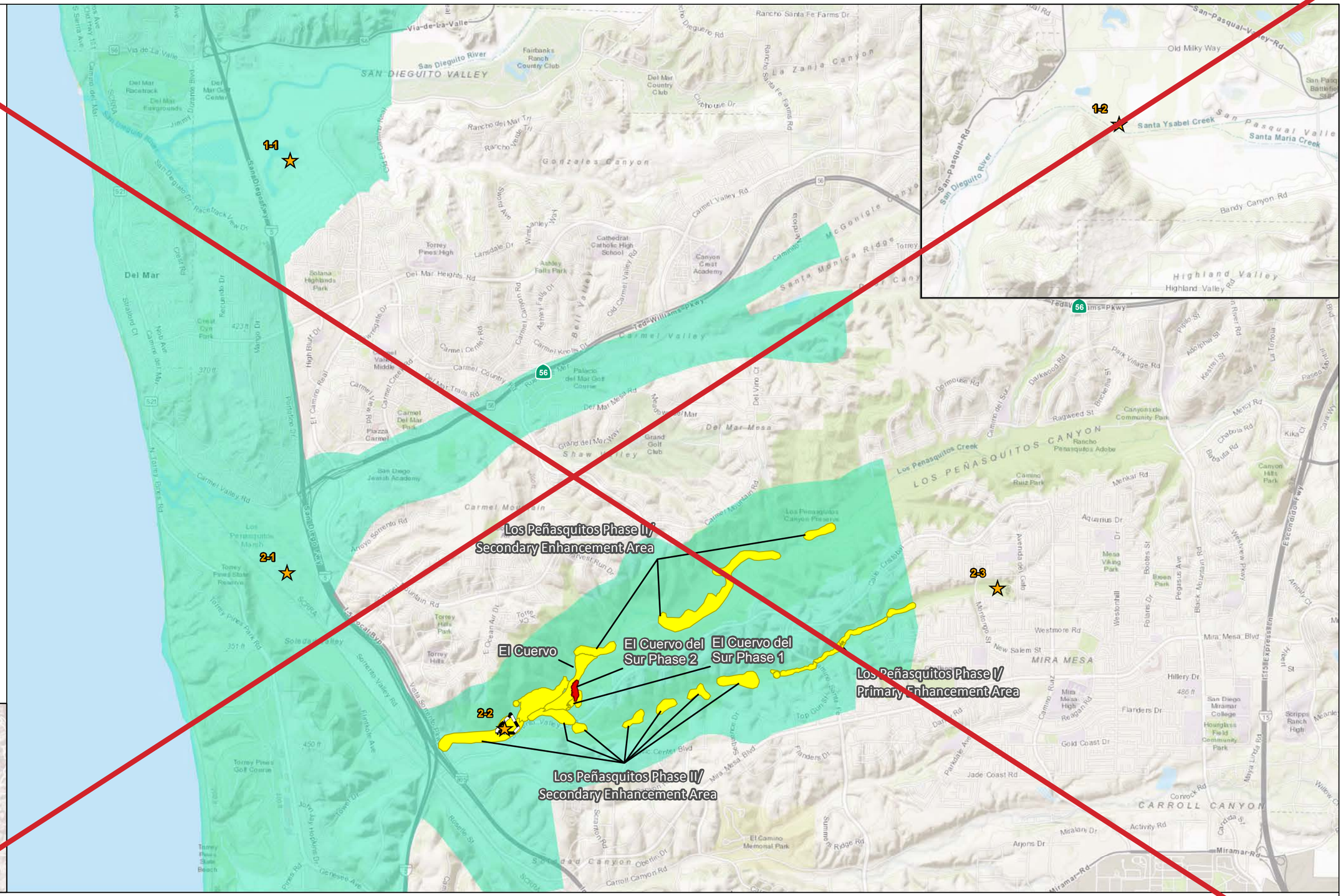
2-2, El Cuervo Oeste

2-3, Montongo Mitigation Site: Areas #1 and #2

Coastal Zone

0 0.325 0.65 Miles





SOURCE: ESRI, 2018; SANDAG, 2018

DUDEK

Municipal Waterways Maintenance Plan

Biological Resources Technical Report - Appendix F

FIGURE 1a

Compensatory Mitigation Sites (Sheet 1)

Group 1
Group 2
Group 3
1-1, San Dieguito Lagoon East
1-2, San Pasqual Valley
2-1, Los Peñasquitos Lagoon Restoration
2-2, El Cuervo Oeste
2-3, Montongo Mitigation Site: Areas #1 and #2
Coastal Zone

0 0.325 0.65 Miles

1a
1b
1c
1d

1-1
1-2
2-1
2-2
2-3

Los Peñasquitos Phase II/ Secondary Enhancement Area
El Cuervo
El Cuervo del Sur Phase 2
El Cuervo del Sur Phase 1
Los Peñasquitos Phase I/ Primary Enhancement Area
Los Peñasquitos Phase II/ Secondary Enhancement Area

SOURCE: ESRI, 2018; SANDAG, 2018

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Municipal Waterways Maintenance Plan

Biological Resources Technical Report - Appendix F

FIGURE 1a

Compensatory Mitigation Sites (Sheet 1)

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Group 1
Group 2
Group 3
3-1, Noyes Street Outfall Mitigation Site
3-2, MIssion Bay Park Improvements
4-1, Pueblo Lot 1102/Sefton Field
4-2, Shepard Canyon
4-3, Rueda Canyon
5-1, Florida Canyon
5-10, 47th and Castana
5-11, Jamacha and Cardiff
5-12, Paradise Creek and Woodman
5-2, Wabash
5-3, Federal and Home
5-4, Sunshine Berardini
5-5, Chollas Parkway
5-6, Auburn & Wightman
5-7, Chollas & 54th
5-8, National Ave
5-9, Imperial Creek @ YMCA
Coastal Zone

0 0.5 1 Miles

1a
1b
1c
1d

3-1
3-2
4-1
4-2
4-3
5-1
5-2
5-3
5-4
5-5
5-6
5-7
5-8
5-9
5-10
5-11
5-12

Stadium Mitigation Site
Famosa Slough Salt Marsh Mitigation
Jamacha Canyon Stream Rehabilitation Project
2015/16 Emergency Channel Maintenance Mitigation Project

KEARNY MESA
MISSION VALLEY
FLETCHER HILLS
CHARLES VALLEY
PENINSULA OF SAN DIEGO
San Diego
La Mesa
La Presa
Lemon Grove
El Cajon
Point Loma
Mission Bay
Vacation Island
Fiesta Island
Crown Point
Dog Beach
Cowles Mountain
Sweetwater Reservoir
Mother Miguel Mountain

SOURCE: ESRI, 2018; SANDAG, 2018

DUDEK

Municipal Waterways Maintenance Plan

Biological Resources Technical Report - Appendix F

FIGURE 1b

Compensatory Mitigation Sites (Sheet 1)

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- Group 1
- Group 2
- Group 3
- Group 5
- 7-1, OVP Rec 1
- 7-2, Hollister Pond
- 7-3, Otay HU Potential Mitigation Parcels
- 7-4, Otay HU Potential Mitigation Parcels
- 7-5, Dennery Rd
- 7-6, Otay River Mitigation Bank
- 8-1, Smythe & Bandola Mitigation Project (APRM)
- Coastal Zone

0 0.5 1 Miles

1a 1b 1c 1d

Hollister Quarry
7-1
7-2
7-3
7-4
Otay Reed Mitigation Site
7-5
7-6
TJ River Emergency Wetland Mitigation Project
Smythe & Bandola Mitigation Project (PRM)
8-1
TJ Valley Enhancement Project

SOURCE: ESRI, 2018; SANDAG, 2018

DUDEK

Municipal Waterways Maintenance Plan

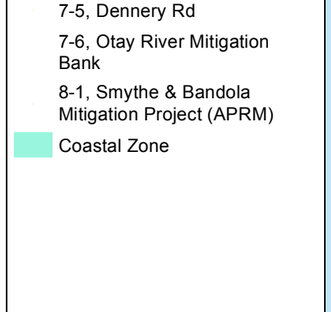
Biological Resources Technical Report - Appendix F

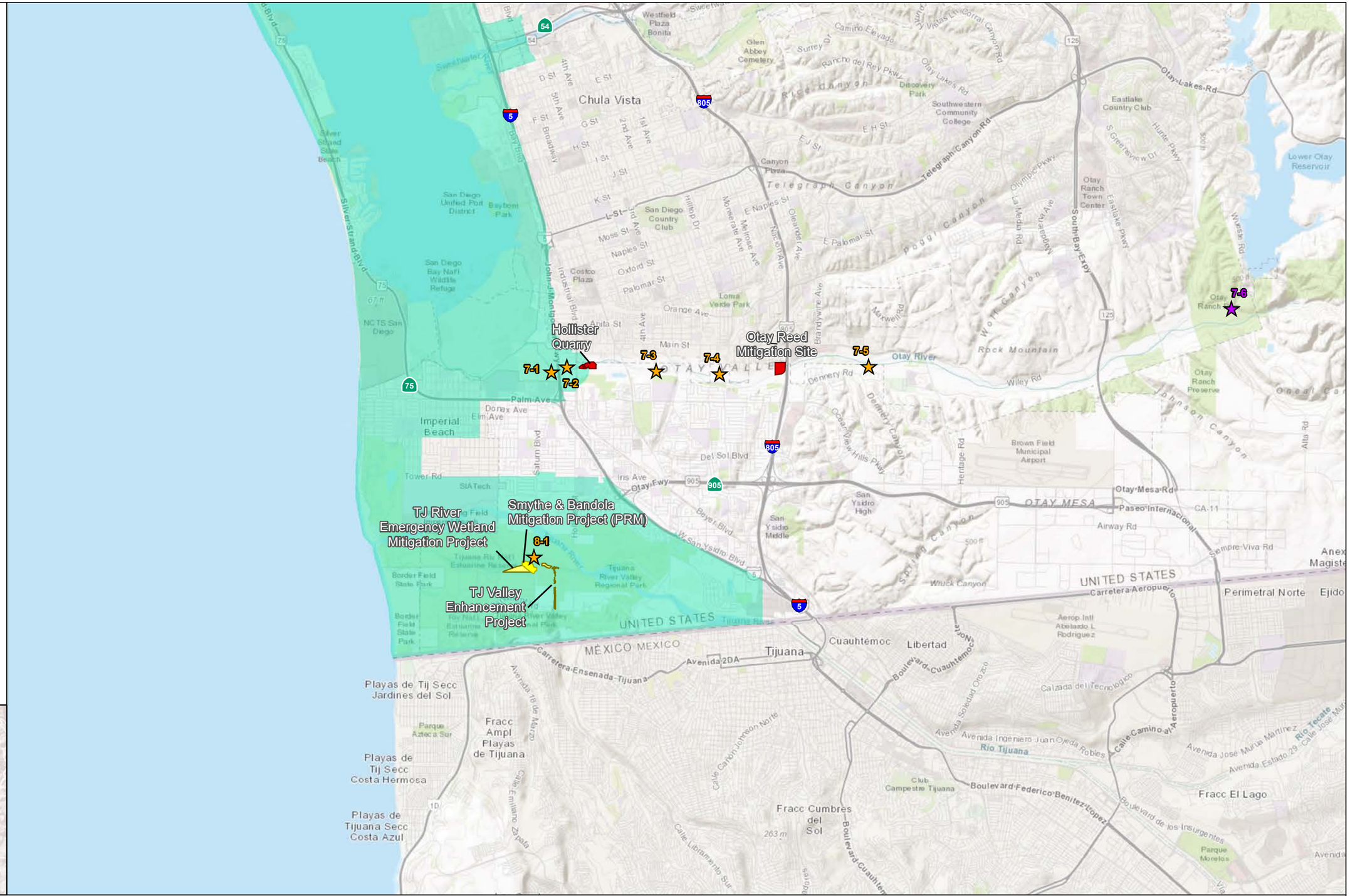
FIGURE 1c

Compensatory Mitigation Sites (Sheet 2)

- Group 1
- Group 2
- Group 3
- Group 5
- 7-1, OVP Rec 1
- 7-2, Hollister Pond
- 7-3, Otay HU Potential Mitigation Parcels
- 7-4, Otay HU Potential Mitigation Parcels
- 7-5, Dennery Rd
- 7-6, Otay River Mitigation Bank
- 8-1, Smythe & Bandola Mitigation Project (APRM)
- Coastal Zone

0 0.5 1 Miles





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SOURCE: ESRI, 2018; SANDAG, 2018

Municipal Waterways Maintenance Plan

Biological Resources Technical Report - Appendix F

FIGURE 1c

Compensatory Mitigation Sites (Sheet 2)

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Group 1
Group 2
Group 3
Coastal

0 0.325 0.65 Miles

1a
1b
1c
1d

8-2

OTAY MOUNTAIN
SAN YSIDRO MOUNTAINS
Otay Mountain Truck Trl
Dorance St
Bee Canyon Rd
Summit Rd
Little Tecate Peak Trl
San Diego County Rte 94
Campo Rd
Barrett Lake Rd
Cottonwood Creek
Cochera Via Dr
Bee Canyon
Mine Canyon
Little Tecate Peak
Cottonwood Creek Rd
Harron Valley
Tecate Creek
Tijuana River
UNITED STATES
MEXICO MEXICO
Canon El Padre
Camino a Tecate
Boulevard Altiplano
TIJUANA
3565 ft
3163 ft
826 m
788 m

SOURCE: ESRI, 2018; SANDAG, 2018

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Municipal Waterways Maintenance Plan

Biological Resources Technical Report - Appendix F

FIGURE 1d

Compensatory Mitigation Sites (Sheet 3)

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ATTACHMENT 1-1

El Cuervo Wetland Mitigation Project

Table 1
El Cuervo Wetland Mitigation Project
Existing Native Vegetation, Impacts, and Mitigation Acreages

Plant Community	Existing Vegetation (Total Site) (Acres)	Existing Vegetation to Remain[1] (Acres)	Impacts (Sewer Road) (Acres)	Temporary Impacts[3] (Reveg.) (Acres)	Total Impacts	Revegetation Creation Area (per Plans) (Areas)	Revegetation Enhancement Area (per Plans & Add. Enhancement)[3]	Total Revegetation & Enhancement (Acres)
Southern Willow Scrub (SWS)	0.54	0.47	0.066	0.006	0.072	3.96	2.65	6.61
Mulefat Scrub (MFS)	0.49	0.36	0.056	0.079	0.135	0.61	0.88	1.49
Freshwater Marsh (FWM)	0.41	0.35	0.052	0.009	0.061	1.47	0.84	2.31
Sycamore (individual trees)	0.0004	-	-	0.0004	0.0004	1.23 (Cot/Syc)	0.04 (Cot/Syc)	1.27
Isolated Riparian Trees (RT)	0.09	0.09	-	-	-	-	-	---[2]
Brackish Marsh (BM)	0.163	-	-	0.163	0.163	-	-	-
Isolated Wetland Species (IW)	0.05	0.044	0.006	-	0.006	-	-	---[2]
Distributed Wetlands (DW)	3.817	0.817	0.038	2.964	3.002	-	0.377	0.377[1]
Subtotal Wetlands	**5.560**	**2.131**	**0.218**	**3.221**	**3.439**	**7.27**	**4.787**	**12.057**

Plant Community	Existing Vegetation (Total Site) (Acres)	Existing Vegetation to Remain[1] (Acres)	Impacts (Sewer Road) (Acres)	Temporary Impacts[3] (Reveg.) (Acres)	Total Impacts	Revegetation Creation Area (per Plans) (Areas)	Revegetation Enhancement Area (per Plans & Add. Enhancement)[3]	Total Revegetation & Enhancement (Acres)
Isocoma Scrub (IS)	4.82	1.606	0.936	2.278	-	0.41	2.569	2.979[1]
Annual Grassland (AGL)	6.13	0.166	0.743	5.221	-	-	-	---[1]
Subtotal Uplands	**10.95**	**1.772**	**1.679**	**7.499**	**9.178**	**0.41**	**2.569**	**2.979**
Total Native Vegetation	**16.51**	**3.90[1]**	**1.90**	**10.72**	**12.62**	**7.68**	**7.36**	**15.04**

[1] Additional mitigation compensation is being provided through enhancement of existing upland and wetland plant communities through exotic/weed species removal from within the limits of the work areas (i.e., from Environmentally Sensitive Areas shown on original plans) and totals approximately 3.36 acres spread amongst the various plant communities.

[2] Impacts to these wetland habitat types are being mitigated for as part of the four primary revegetation plant communities listed above.

[3] Temporary impacts are those resulting from the actual revegetation work. These were necessary to make proper hydrologic connections and/or conversions to higher-quality habitat.

Source: Dudek 2000.

ATTACHMENT 1-2

El Cuervo del Sur Phase I

FINAL EL CUERVO DEL SUR WETLAND HABITAT MITIGATION AND MONITORING PLAN

Prepared for

City of San Diego
Transportation & Storm Water Department
2781 Caminito Chollas
San Diego, CA 92105

URS Project No. 27679051

February 28, 2014
Updated February 25, 2015, with assistance from HELIX Environmental Planning, Inc.

URS

4225 Executive Square, Suite 1600
La Jolla, CA 92037
858.812.9292 Fax: 858.812.9293

Table 5
Wetland Creation Accounting and Project Use

Location	Acreage
El Cuervo del Sur Mitigation Site Phase I (creation acreage available)	2.30
El Cuervo del Sur Mitigation Site Phase II (creation acreage available)	1.42[1]
Total Creation Acreage Available	3.72
Sorrento Valley Area (creation acreage required)	1.91
Mission Bay High School Area (creation acreage required)	0.34
Trip and Industrial Area (creation acreage required)	0.05
Total Creation Mitigation Used	2.30

[1]Phase II will be implemented at a later date under a subsequent HMMP.

El Cuervo del Sur Site Boundary (Phase I)
El Cuervo del Sur Site Boundary (Phase II - not a part of this mitigation plan)
Potential Soil Disposal Area
Phase I Soil Disposal (with upland seed mix)
Proposed Road Fill
Expected USACE jurisdiction following implementation

Planting Zones

Herbaceous Wetland
Riparian Scrub
Riparian Transitional

Proposed road fill continues north please refer to figure 8B for full extent

Phase II (not a part of this mitigation plan)

Eucalyptus

Phase I soil disposal with upland seed mix

Existing Shrubs to Remain

Phase I

Proposed road fill continues south please refer to figure 8B for full extent

Palm Trees

Not Impacted

Planting Zones	Phase I	Phase II
Herbaceous Wetland	1.00	0.41
Riparian Scrub	0.94	0.55
Riparian Transitional	0.36	0.46
Total	2.30 acres	1.42 acres

SOURCES: Site Boundary, Buffer, Vegetation, Soil Disposal Area (URS, 2013). Soil (SSURGO, USDA, 2007). Aerial Imagery (SanGIS, 2012).

CONCEPTUAL MITIGATION DESIGN
EL CUERVO DEL SUR HMMP
CITY OF SAN DIEGO

URS

45 0 45 90 Feet

SCALE: 1" = 90' (1:1,080)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: LR | DATE: 2/25/2015 | FIG. NO: **8A**
PM: BE | PROJ. NO: 27679954.08300

Path: G:\gis\projects\15771\27679051\map_docs\mxd\PQ_Canyon_Mitigation\El_Cuervo_del_Sur\ElCuervoDelSur_ConceptualDesign_phase2_with_fillsites.mxd, Paul_Moreno, 2/25/2015, 12:44:33 PM

El Cuervo del Sur Site Boundary (Phase I)

El Cuervo del Sur Site Boundary (Phase II - not a part of this mitigation plan)

Potential Soil Disposal Area

Phase I Soil Disposal (with upland seed mix)

Proposed Road Fill

Planting Zones

Herbaceous Wetland

Riparian Scrub

Riparian Transitional

Phase II
(not a part of this mitigation plan)

Phase I

Phase I soil disposal with upland seed mix

SEA MIST WY

SORRENTO VALLEY BL

SOURCES: Site Boundary, Buffer, Vegetation, Soil Disposal Area (URS, 2013). Soil (SSURGO, USDA, 2007). Aerial Imagery (SanGIS, 2012).

CONCEPTUAL MITIGATION DESIGN
EL CUERVO DEL SUR HMMP
CITY OF SAN DIEGO

URS

150 0 150 300 Feet

SCALE: 1" = 300' (1:3,600)

SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: LR | DATE: 2/24/2015 | FIG. NO: **8B**

PM: MT | PROJ. NO: 27679954.08300

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ATTACHMENT 1-3

Final Los Peñasquitos Phase I/Primary Enhancement Area

FINAL LOS PEÑASQUITOS CANYON PRESERVE WETLAND ENHANCEMENT PLAN

Prepared for

City of San Diego
Transportation & Storm Water Department
2781 Caminito Chollas
San Diego, CA 92105

URS Project No. 27679954

February 28, 2014
Updated February 25, 2015, with assistance from HELIX Environmental Planning, Inc.

URS

4225 Executive Square, Suite 1600
La Jolla, CA 92037
858.812.9292 Fax: 858.812.9293

permitted in the near future (for past and recurring maintenance) and is also included in the estimate of mitigation requirements (Table 5). The goal of the Los Peñasquitos 8.8-acre primary enhancement area is to provide 0.18 acre of wetland enhancement for the USACE and 6.64 acres of wetland enhancement for both the CCC and City. The mitigation being provided as part of this plan will also meet the habitat enhancement requirements from CDFW and RWQCB for the channel maintenance projects listed above. Wetland enhancement provided by this Plan will be obtained through the removal of invasive non-native plant species from the sparsely vegetated riparian drainage (primary enhancement area) in Lopez Canyon (refer to Figure provided in Appendix A).

Table 5
Wetland Enhancement Opportunities Accounting and Project Use

Location	Acreage
Primary Enhancement Area (garland daisy polygon)	8.8 [1]
Secondary Enhancement Areas [2]	1.69 [1, 2]
Total Enhancement Acreage Available	10.49 [1, 2]
Sorrento Valley Area (enhancement acreage required)	5.53
Mission Bay High School Area (enhancement acreage required)	0.96
Trip and Industrial Area (enhancement acreage required)	0.15
Total Enhancement Mitigation Used	6.64[3]

[1] Estimates which will be verified based on mapping done in the field during enhancement activities.

[2] Secondary enhancement areas are not part of this plan.

[3] The entire 8.8-acre primary enhancement area (7.66 acres with easements subtracted) will be used to satisfy the mitigation requirements for the Sorrento Valley, Mission Bay High School, and Tripp and Industrial Channel Maintenance areas. The City will not retain any excess mitigation associated with the primary enhancement for future channel maintenance projects.

Enhancement Areas

Primary Enhancement Area

Glebionis coronaria (Gc)
Garland daisy

Seconday Enhancement Area

Cynara cardunculus (Cc)
Cardoon, Artichoke thistle
(not a part of this enhancement plan)

Other

- Open Space Los Penasquitos/Lopez Canyon
- El Cuervo Mitigation Site
- City of San Diego Public Utilities Mitigation Site
- Coastal Zone Overlay
- Multi-Habitat Planning Area
- Water Main
- Sewer Main

Trees*

- *Eucalyptus sp.* (Eu) Eucalyptus
- *Callistemon sp.* (Ca) Bottlebrush
- *Cinnamomum camphora* (Cc2) Camphor tree
- *Liquidambar styraciflua* (Ls) Sweetgum
- *Phoenix canariensis* (Pc) Canary Island palm
- *Rhus lancea* (Ri) African sumac
- *Schinus molle* (Sm) Peruvian pepper
- *Schinus terebinthifolius* (St) Brazilian pepper
- *Washingtonia robusta* (Wr) Mexican fan palm

Shrubs*

- *Acacia sp.* (Ac) Acacia
- *Echium sp.* (Ec) Pride of Madeira
- *Nicotiana glauca* (Ng) Tree tobacco
- *Tamarix parviflora* (Tp) Smallflower tamarisk

Herbs*

- *Asphodelus fistulosus* (Af) Asphodel
- *Cortaderia selloana* (Cs) Pampas grass
- *Cynara cardunculus* (Cc) Cardoon, Artichoke thistle
- *Cyperus involucratus* (Ci) Umbrella sedge
- *Dipsacus fullonum* (Df) Wild teasel
- *Paspalum dilatatum* (Pd) Dallis grass

Vine*

- *Hedera helix* (Hh) English ivy

Other

- Multiple species (see abbreviation and count)

**Count indicated when greater than 1.*

Los Penasquitos Oak Tree Mitigation

Los Penasquitos Oak Tree Mitigation

FA5

Eu (1), Df (1)

Wr (4), Eu (2)

Eu (5), Wr (1)

Eu (2), Wr (1)

Wr (3), Eu (2)

Ca (4), Eu (2)

Ca (1), Eu (1)

Los Penasquitos Eucalyptus Removal Mitigation

LOS PENASQUITOS CREEK

Primary Enhancement Area

FA1

Los Penasquitos North Wetland and Upland

El Cuervo Wetland Revegetation Mitigation Project

El Cuervo Norte

FA3

Pc (1), Ir (1)

Wr (3), Cc2 (2), Cp (1), Ee (1)

Cs (2), Pc (1)

Pc (2), Cs (4)

Wr (3), Cc2 (25), Cr (1), Ir (5), Oe (1)

Cs (5), Wr (4)

LOPEZ CANYON CREEK

FA2

Pc (1), Wr (2)

Pc (1), Cs (3)

Pc (1), Wr (3), St (2), Cs (3), Ec

St (11), Ci (2), Wr (1), Cs (3)

Secondary Enhancement Area (not a part of this enhancement plan)

FA4

Tp (1), Ir (1)

Tp (3), Ng (1)

Tp (3), Ng (1)

FA = CONCEPTUAL FUNCTIONAL ASSESSMENT AREAS
(Actual functional assessment areas to be determined based on actual enhancement areas implemented.)

SOURCES: GPS Points (URS, 2013).
Open Space, City of SD Utilities Mitigation, Coastal Zone, MHPA (SanGIS, 2010).
Mitigation Boundaries (URS, 2012).

ENHANCEMENT OPPORTUNITIES
LOS PEÑASQUITOS CANYON PRESERVE
CONCEPTUAL WETLAND ENHANCEMENT PLAN

URS

625 0 625 1250 Feet

SCALE: 1" = 1250' (1:15,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: DS	DATE: 2/25/2015	FIGURE
PM: MT	PROJ. NO: 27679954.02000	3

Path: G:\gis\projects\V57\27679005\mxd_docs\mxd\PQ_Canyon_Mitigation\Wetland_Enhancement_Plan\Penasquitos_Canyon_Enhancement_Opportunities.mxd, daniel_arellano, 2/25/2015, 6:00:10 PM

ATTACHMENT 1-4

San Diego River (Stadium) Wetland Mitigation Project

Stadium Wetland Mitigation Project (San Diego River)

Mitigation Plan

Final

March 13, 2015

Prepared for:
City of San Diego
Public Utilities Department
9192 Topaz Way, MS 901A
San Diego, California 92123

Prepared by:

ATKINS
3570 Carmel Mountain Road, Suite 300
San Diego, California 92130
Atkins Project No.: 100042255

Stadium Wetland Mitigation Site: Credit Ledger

RWQCB: R9- 2013-0124 CDFW: 1600-2014-0192-R5 USACE: NW27 SPL-2014-00416-DB

February 2019

Credit Type	Restoration											Enhancement							Upland Restoration	Total
	Re-establishment				Rehabilitation															
	Freshwater Marsh -Wetland	Riparian Forest -Wetland	Riparian Scrub -Wetland	Riparian Scrub* -ACOE non-wetland WUS -RWQCB Riparian -CDFW Wetland	Freshwater Marsh -Wetland	Riparian Forest -Wetland	Riparian Scrub -Wetland	Riparian Forest* -ACOE non-wetland WUS -RWQCB Riparian -CDFW Wetland	Riparian Scrub* -ACOE non-wetland WUS -RWQCB Riparian -CDFW Wetland	Riparian Forest - ACOE Riparian Buffer -RWQCB Riparian -CDFW wetland	Riparian Scrub - ACOE Riparian Buffer -RWQCB Riparian -CDFW wetland	Freshwater Marsh -Wetland	Riparian Forest -Wetland	Riparian Scrub -Wetland	Riparian Forest* -ACOE non-wetland WUS -RWQCB Riparian -CDFW Wetland	Riparian Scrub* -ACOE non-wetland WUS -RWQCB Riparian -CDFW Wetland	Riparian Forest - ACOE Riparian Buffer -RWQCB Riparian -CDFW wetland	Riparian Scrub - ACOE Riparian Buffer -RWQCB Riparian -CDFW wetland	Diegan Coastal Sage Scrub (Tier II)	
Total Credits (Acres)**	**0.055**	**0.002**	**0.802**	**1.531**	**0.069**	**5.756**	**1.728**	**6.328**	**4.940**	**0.826**	**1.993**	**0.368**	**13.994**	**3.793**	**7.656**	**1.394**	**1.783**	**0.856**	**0.969**	**54.843**
40% Credit Available (15% at Mitigation Plan Approval and 25% at Successful end of 120-day PEP)	0.022	0.0008	0.321	0.612	0.027	2.302	0.691	2.531	1.976	0.330	0.797	0.147	5.597	1.517	3.062	0.557	0.713	0.342	0.387	21.93
Projects																				
Murphy Canyon Channel Maintenance Transportation & Storm Water Dept Stephanie Bracci (619) 527-3445 12/2014	**-**	**-**	**-**	**-**	**-**	**0.89**	**-**	**-**	**-**	**0.33**	**-**	**-**	**-**	**-**	**3.06**	**-**	**-**	**-**	**-**	**4.28**
City: PTS 348397	-	-	-	-	-	0.89	-	-	-	0.33	-	-	-	-	3.06	-	-	-	-	4.28
RWQCB: R9-2013-0124	-	-	-	-	-	0.89	-	-	-	0.21	-	--	-	-	1.43	-	-	-	-	2.53
USACOE: SPL-2013-00494-MBS	-	-	-	-	-	-	-	-	-	-	-	--	-	-		-	-	-	-	-
CDFW: 1600-2010-0269-R5		-		-	-	0.89	-	-	-	0.21		-	-	-	0.67	-	-	-	-	1.77
Alvarado Creek Channel Maintenance Transportation & Storm Water Dept Stephanie Bracci (619) 527-3445 9/2015	**-**	**-**	**-**	**-**	**-**	**0.41**	**-**	**-**	**-**	**-**	**0.65**	**-**	**1.81**	**-**	**-**	**-**	**0.713**	**0.327**	**-**	**3.91**
City: PTS 228729	-	-	-	-	-	0.41	-	-	-	-	0.65	-	1.80		-	-	0.713	0.327	-	3.90
RWQCB: R9-2015-0102	-	-	-	-	-	0.35	-	-	-	-	-	-	1.81		-	-	-	-	-	2.16
USACOE: SPL-2015-00423-MBT	-	-	-	-	-	0.35	-	-	-	-	-	-	0.35	-	-	-	0.11	-	-	0.81
CDFW: 1600-2015-0107-R5	-	-	-	-	-	0.41	-	-	-	-	-	-	0.41		-	-	0.15	-	-	0.97
South Chollas Creek Map 101 Maint Transportation & Storm Water Dept Stephanie Bracci (619) 527-3445 10/2018	-	-	-	-	-	**0.04**	**-**	**-**	**-**	**-**	**-**	**-**	**0.08**	-	-	-	-	-	-	**0.12**
City: PTS 608808	-	-	-	-	-	0.04	-	-	-	-	-	-	0.08	-	-	-	-	-	-	0.12
RWQCB: R9-2018-0089	-	-	-	-	-	0.04	-	-	-	-	-	-	0.04	-	-	-	-	-	-	0.08
USACOE: SPL- TBD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CDFW: 1600-2018-0167-R5	-	-	-	-	-	0.04	-	-	-	-	-	-	0.04	-	-	-	-	-	-	0.08
Montezuma Creek Channel Maintenance Transportation and Storm Water Dept Mayra Medel (619) 527-3449 10/2018	-	-	-	-	-	**0.002**	-	-	-	**-**	**0.019**	-	-	-	-	**0.042**	-	**0.015**		**0.078**
City: PTS 608835						0.002				-	0.019	-	-	-	-	0.042		0.015		0.078
RWQCB: R9-2018-0107	-	-	-	-	-	0.002	-	-	-	-	-	--	-	-	-	-	-	-	-	0.002
USACOE: SPL-2018-00362-SRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CDFW: 1600-2018-0182-R5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
											0.06					**0.06**				**0.12**

Auburn Creek Maps 70 and 76 Transportation & Storm Water Dept Stephanie Bracci (619) 527-3445 2/2019																				
City: PTS 606769											0.06					0.06				0.12
RWQCB: R9-2018-0076																				-
USACOE: SPL- 2018-00276-SRR																				-
CDFW: 1600-2018-0123-R5																				-
Balance																				
Credits Available (Acres)	**0.055**	**0.002**	**0.802**	**1.531**	**0.069**	**4.414**	**1.728**	**6.328**	**4.940**	**0.496**	**1.264**	**0.368**	**12.104**	**3.793**	**4.596**	**1.334**	**1.07**	**0.514**	**0.969**	**46.543**
Credit Balance of 40%	**0.022**	**0.0008**	**0.321**	**0.612**	**0.027**	**0.960**	**0.691**	**2.531**	**1.976**	**0**	**0.068**	**0.147**	**3.707**	**1.517**	**0.002**	**0.497**	**0**	**0**	**0.387**	**13.622**

* These areas are expected to develop into 3 parameter wetlands by the end of the 5 year maintenance period.

** These numbers based on results of time zero report and as-built conditions. Actual acreage for credit will be confirmed at the end of the five year maintenance and monitoring period.

Source: City of San Deigo Public Utilities, 2013; ESRI, 2014

ATKINS

FIGURE 13
Mitigation Credit Areas

100038033

Stadium Wetland Mitigation Project (San Diego River)

P:\Projects - Biological Resources\100038033 San Diego River Stadium Mitigation Project\GIS\mxd\Fig13_MitigationCreditAreas.mxd

ATTACHMENT 1-5

Conceptual Revegetation Plan for the Tijuana River Emergency Channel

CONCEPTUAL RIPARIAN HABITAT REVEGETATION PLAN TIJUANA RIVER EMERGENCY CHANNEL SAN DIEGO, CALIFORNIA

Prepared for:

CITY OF SAN DIEGO
Engineering Design and Development
1010 Second Avenue
San Diego, California 92101-4154

Contact: Frank Belock, Jr.
Deputy Director

Prepared by:

DUDEK AND ASSOCIATES, INC.
605 Third Street
Encinitas, California 92024

Contact: Harold A. Wier
(619) 942-5147

6 July 1993
Revised 15 September 1993

1.0 INTRODUCTION

This conceptual revegetation plan was prepared to support the City of San Diego's application for a Clean Water Act Section 404 permit for the construction of an emergency channel in the Tijuana River, San Diego County, California, between Hollister Street and a point approximately 5,500 feet northwest (Figure 1). The channel would meander and would result in a total distance of approximately 6,200 feet.

The revegetation plan proposes the creation of 9.87 acres of high quality riparian habitat on the Tijuana River and establishes a maintenance and monitoring program.

The primary purposes of this plan are to provide the identity of the proposed mitigation site, and guidelines, criteria, and methodologies by which high quality riparian habitat and transitional habitat is proposed to be established on the site adjacent to the emergency channel on the Tijuana River. It is anticipated that implementation plans will be prepared subsequent to approval of the 404 permit. Also described in this document is the condition of existing habitat that will be impacted by the channel, and the condition of the mitigation site.

METHODS

Field work was conducted to accomplish three tasks: (1) determine the suitability of a candidate revegetation site; (2) determine the location of the least damaging channel through the riparian scrub habitat; (3) determine the location of a channel avoiding known 1993 least Bell's vireo territories; and (4) document the density of trees through the proposed channel area.

A site tour with representatives of the City of San Diego Engineering and Planning Departments, U. S. Fish and Wildlife Service, Wetlands Advisory Board, Southwest Wetlands Interpretative Association and DUDEK was conducted on 16 June 1993. A portion of the proposed channel area was inspected and the now proposed mitigation site also was inspected. There was general consensus that the proposed mitigation site represented a high potential for restoration because it appeared to have proper sandy soils, and was situated adjacent to and within 1-3 feet elevation of existing dense riparian scrub habitat. Site preparation required appeared to be minimal grading to assure proper elevations. This grading would remove weedy vegetation and very few established shrubs (e.g., *Baccharis salicifolia*). The proposed mitigation site area is shown conceptually in Figures 2.

Field work also was completed by DUDEK on 24, 29 June and 5 July 1993. Starting at a distance of approximately 1,400 feet, and ending at a point 4,400 feet west of Hollister Street, the field work consisted of establishing transects measuring 100 feet long by 23 feet wide.

City of San Diego property line

Mix 1

Southern Willow Scrub:
Salix hindsiana
Salix gooddingii
Salix lasiolepis

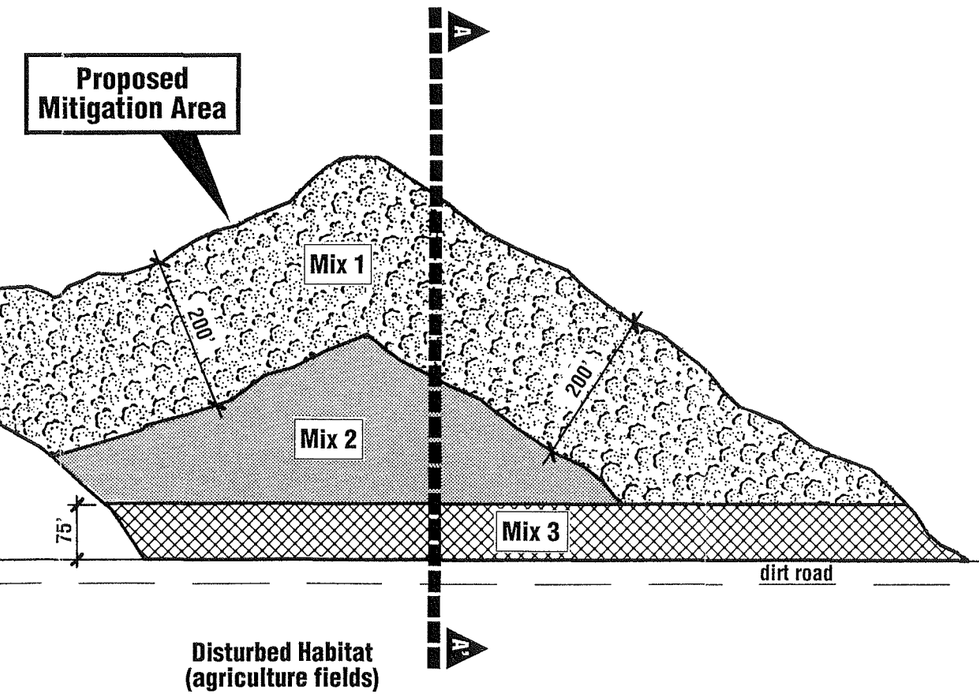
Mix 2

Southern Willow Scrub:
Baccharis salicifolia
Isocoma veneta
Juncus acutus
Oenothera elata
Salix gooddingii
Salix lasiolepis

Mix 3

Riparian Woodland:
Baccharis salicifolia
Isocoma veneta
Populus fremontii
Sambucus mexicana
Salix lasiolepis

Existing Riparian Habitat to Remain



1" = 200'

Tijuana River Valley Emergency Channel Habitat Mitigation & Monitoring Plan

Conceptual Revegetation Plan

FIGURE 3

ATTACHMENT 1-6

Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project

FINAL WETLANDS MITIGATION AND MONITORING PLAN for the TIJUANA RIVER VALLEY CHANNEL MAINTENANCE PROJECT

Prepared for

City of San Diego
Storm Water Division
2781 Caminito Chollas, MS 44
San Diego, California 92105
Contact: Stephanie Bracci
sbracci@sandiego.gov

Prepared by

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Vipul Joshi
vjoshi@dudek.com

FEBRUARY 2013

2.0 MITIGATION SITES

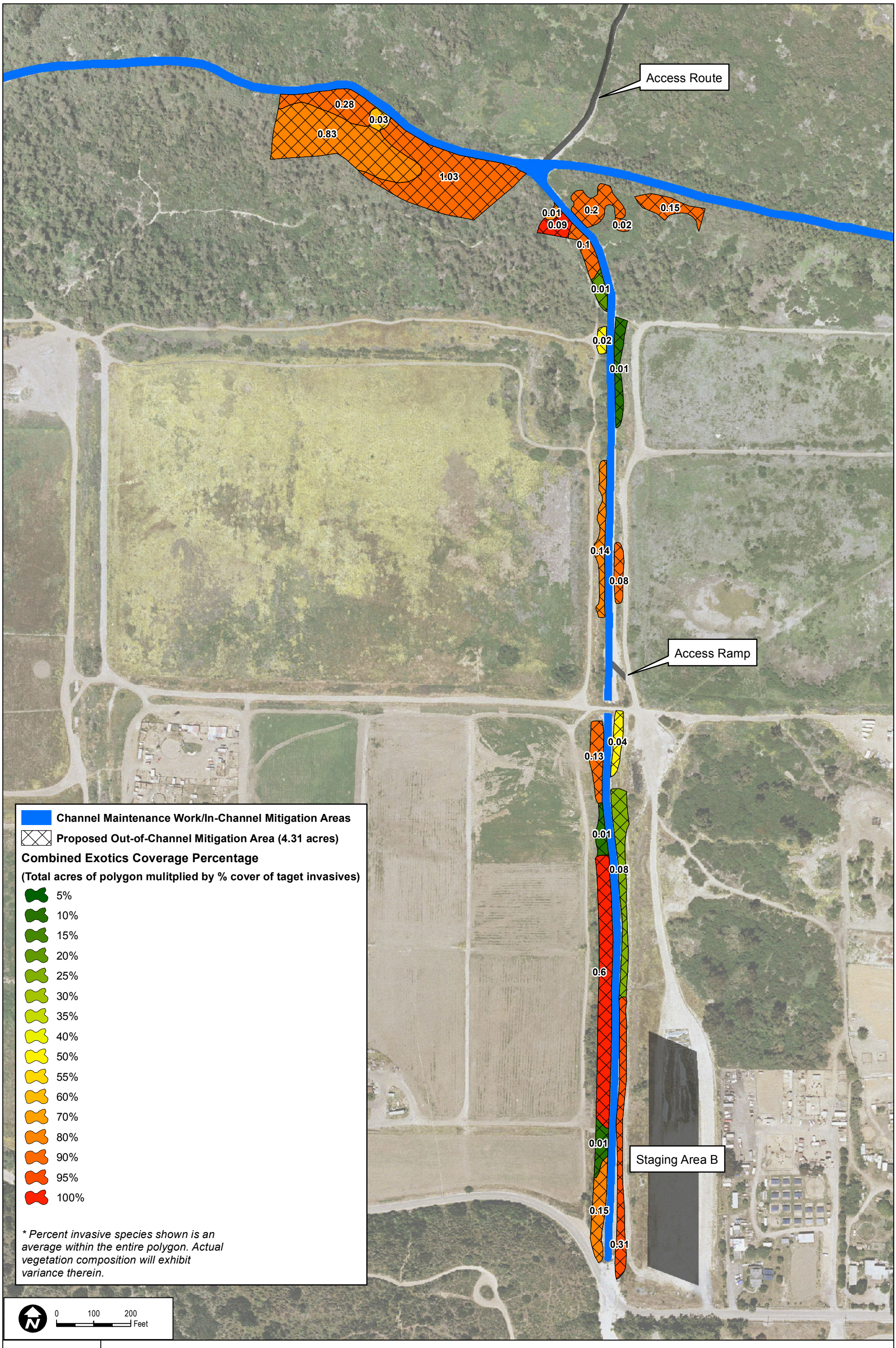
2.1 In-Channel Mitigation Area

Within the In-Channel mitigation area, the three targeted invasive plant species: giant reed, castor bean, and salt cedar will be controlled through a combination of channel maintenance (i.e., sediment removal and as-needed exotic species treatment/control). The 4.31-acre channel maintenance area (In-Channel mitigation) shall receive weed control during the maintenance and monitoring period regardless of whether dredging activities occur. The control of target invasive species within the In-Channel mitigation area will be monitored and maintained, as-needed, in accordance with the Final WMMP. The In-Channel mitigation location is shown on Figure 2 and includes the Pilot Channel, Smuggler's Gulch, and equipment turnaround areas.

2.2 Out-of-Channel Mitigation Area

The Out-of-Channel mitigation involves the control of three target, invasive plant species: giant reed, castor bean, and salt cedar. The Project mitigation areas outside the channel have been mapped based on conditions observed in 2012 investigations conducted by SWIA and Dudek for the Project. Most recently, Dudek performed an invasive mapping effort in November 2012 to identify the approximate percent cover of giant reed, castor bean and salt cedar within areas adjacent to the channel maintenance areas. A total of 4.31 acres of enhancement credit (i.e., estimated area of occupied by invasive exotic species based on percent cover mapping) has been identified in locations offering the best accessibility and the highest levels of exotic invasive species (Figure 3).

There may be some deviations from these initially mapped areas as determined in the field at the time of implementation. The decision to modify the Out-of-Channel mitigation areas will be influenced by which sites are accessible at the time of implementation and conditions observed at the time of implementation (including actual extent of exotic invasive species). The Out-of-Channel mitigation sites will total 4.31 acres of actual exotic invasive species control, the locations of which will be documented on As-Built plans required for the mitigation (see Section 5).



DUDEK

7165

FIGURE 3

Proposed Out-of-Channel Mitigation Area

FINAL WETLANDS MITIGATION AND MONITORING PLAN

TIJUANA RIVER VALLEY CHANNEL MAINTENANCE PROJECT

ATTACHMENT 1-7

Conceptual Salt Marsh Mitigation Plan (Famosa Slough)

CONCEPTUAL SALT MARSH MITIGATION PLAN FOR THE SORRENTO CREEK MAINTENANCE DREDGING PROJECT SAN DIEGO, CALIFORNIA

Prepared for:

City of San Diego

Engineering and Capital Projects Department
1010 Second Ave. Ste. 1200
San Diego, California 92101
Contact: Jeanette DeAngelis
Tel: (619) 533-3409
Email: jdeangelis@sandiego.gov

Prepared by:

605 Third Street
Encinitas, California 92024

Christopher Oesch
Habitat Restoration Specialist
Tel: (760) 479-4268

2.0 PROJECT PLAN

2.1 Existing Conditions

Famosa Slough currently contains approximately 37.2 acres of wetland habitat based on the Famosa Slough Enhancement Plan. The SCMP project area is located between West Point Loma Boulevard and Interstate 8.

The mitigation site is located along an existing tidal channel that connects the San Diego River to Famosa Slough. The mitigation site is bounded by apartment buildings on the east side of the saltmarsh area (*Figure 2*). A fence and vegetative buffer separate the parking lot from the access road. The site immediately abuts middle and lower saltmarsh habitat areas. Biological conditions are described in the Famosa Slough Enhancement Plan (Pacific Southwest Biological Services, 1993).

An existing access utility maintenance road to SDG&E power poles is located along the east side of the mitigation area. Access can be gained to this easement from West Point Loma Boulevard.

2.1.1 Vegetation

The SCMP site is bordered by an apartment building parking lot on the east side. Vegetation associated with this parking lot includes exotic trees such as Brazilian pepper (*Schinus terebinthifolius*) and myoporum (*Myoporum laetum*) (*Figure 3*). Vegetation outside of the parking lot fence line includes non-native annual grassland and disturbed coastal sage scrub. Toward the north end of the project area there are private homes that abut the channel open space area. Vegetation associated with back yard plantings include ice plant (*Carpobrotus edulis*) and other ornamental landscape plantings. As elevations drop, vegetation quickly transitions to tidal saltmarsh. Middle marsh elevations are dominated by pickleweed (*Salicornia virginica*) and alkali heath (*Frankenia salina*); lower marsh areas consist primarily of California cord-grass (*Spartina foliosa*) and saltwort (*Batis maritima*). A complete flora of the project area is contained in the Famosa Slough Enhancement Plan (Pacific Southwest Biological Services, 1993).

2.1.2 Soils

Soils on the SCMP site include "made land" according to the San Diego Soils Survey. These are fill soils that were associated with the adjacent access road, and the San Diego River channel and Mission Bay construction.

2.1.3 Hydrology and Hydrologic Functions

Famosa Slough is a tidal slough that connects to the Pacific Ocean via the San Diego River channel. As such, the slough is subject to the full tidal prism that passes through tide gates on the San Diego River channel. The tidal ebb and flow affects the lower and middle saltmarsh areas. In addition to tidal influence, an existing storm sewer outfall introduces freshwater urban runoff into the slough environment creating a freshwater condition in the area immediately around the outfall pipe. The urban runoff occurs mainly during winter rain events. However, measurable nuisance flows are present year round.

2.1.4 Present and Proposed Uses of the Famosa Slough Site

The Famosa Slough site is owned by the City of San Diego and is maintained by the Department of Park and Recreation as an open space park. The slough is part of over 18,000 acres of City-owned open space used for preservation of natural resources, passive outdoor recreation, and scenic enjoyment.

The SCMP site currently functions as part of the slough wildlife habitat complex and is used by dog walkers via the utility access road. SDG&E uses the access road along the eastern boarder of the site for maintenance access to the adjacent power poles. The site is also occasionally used by transients for temporary encampment.

A portion of the site is planned to function as part of the tidal saltmarsh ecosystem. During and after implementation of this SCMP, Famosa Slough will continue to be managed and maintained by the City as natural open space.

2.2 Goals of the Mitigation Project

The primary goal of the SCMP is to 1) re-establish middle and lower saltmarsh vegetation on a 0.48-acre area and 2) provide increased habitat functions for saltmarsh-adapted wildlife species. These goals are the result of site visits,

discussions with City of San Diego ECPD and detailed evaluations of the sites biological resources. The primary goal listed above is presented with the corresponding objectives and performance standards in *Section 4.1 - Performance Standards*. These goals have been developed with specific consideration of the proposed SCMP.

In addition to these two goals, the following site specific constraints have been incorporated into this mitigation plan in the interest of minimizing adverse impacts to biological resources:

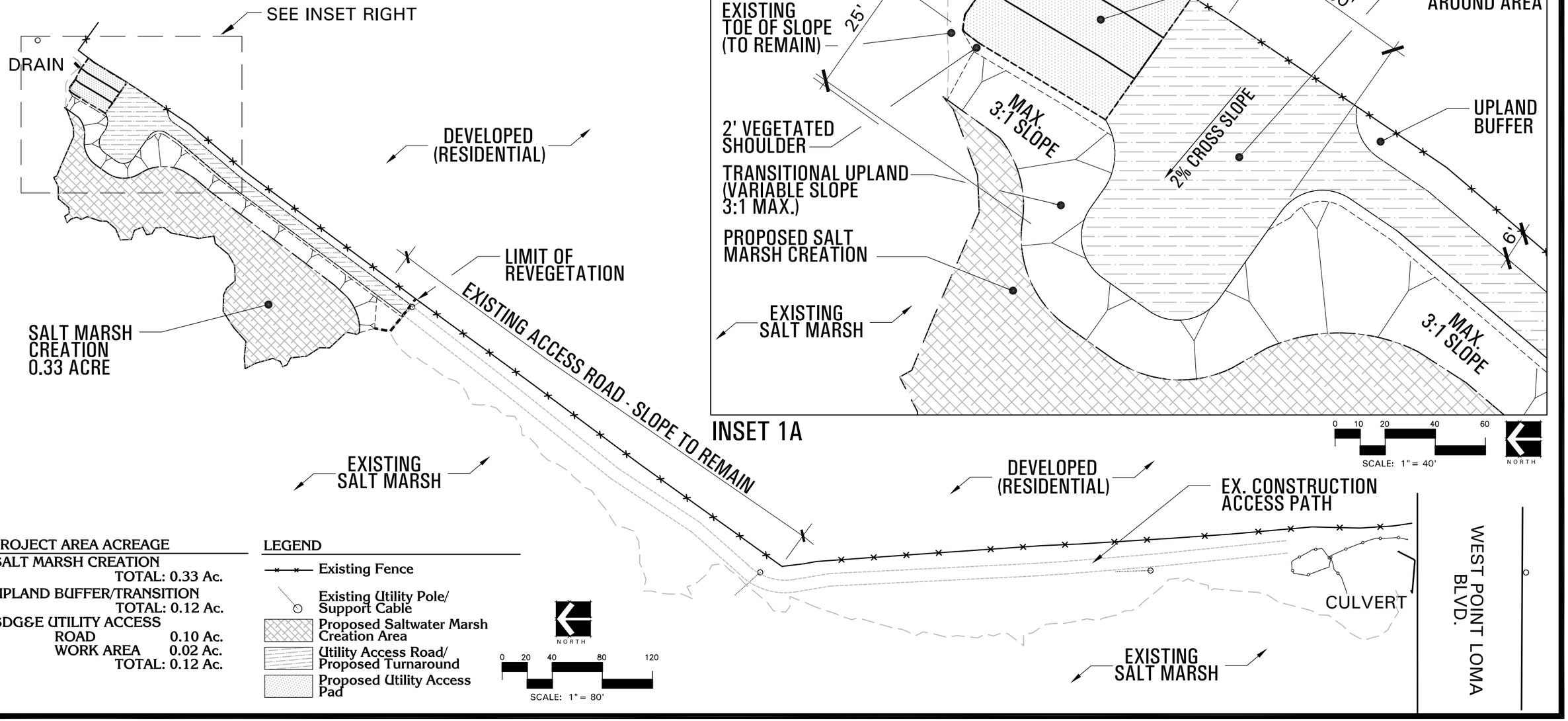
- Avoid disturbance to existing saltmarsh habitats during implementation of the SCMP.
- Salvage and reuse existing native plant species located within the specified area of the Famosa Slough site to the maximum extent practicable.
- Provide an appropriate upland erosion control on all upland areas within the disturbance area of the project including side slopes and access road.
- Prevent any impacts to threatened or endangered native wildlife species through appropriate timing of construction work and/or conduct a pre-construction nesting bird survey.

2.2.1 Type of Habitat to be Established

The target habitat to be established is lower and middle saltmarsh. Lower saltmarsh will be dominated by California cord-grass (*Spartina sp.*) and saltwort (*Batis maritima*). Middle saltmarsh areas will include pickleweed (*Salicornia virginica*), alkali heath (*Frankenia salina*), saltgrass (*Distichlis spicata*) and salty susan (*Jaumea carnosa*) as dominant species. This community type will be similar in vertical structure and spatial composition to the existing vegetation in the immediate vicinity of the SCMP site. All plant species to be utilized on the Famosa Slough site are shown in *Section 2.3.3 - Plant Materials*.

In an effort to establish a weed-free buffer zone around the SCMP area to the maximum extent practicable, non-native plants on the upland portions of the SCMP site will be removed as part of this plan. Appropriate native upland species such as California sagebrush (*Artemisia californica*), California sunflower (*Encelia californica*), flat-top buckwheat (*Eriogonum fasciculatum*) will be established for erosion control on all disturbance areas that are located in upland areas.

2.2.2 Target Hydrologic Functions



PROJECT AREA ACREAGE	
SALT MARSH CREATION	
TOTAL:	0.33 Ac.
UPLAND BUFFER/TRANSITION	
TOTAL:	0.12 Ac.
SDG&E UTILITY ACCESS	
ROAD	0.10 Ac.
WORK AREA	0.02 Ac.
TOTAL:	0.12 Ac.

LEGEND

- Existing Fence
- Existing Utility Pole/ Support Cable
- Proposed Saltwater Marsh Creation Area
- Utility Access Road/ Proposed Turnaround
- Proposed Utility Access Pad

Sorrento Creek Mitigation Salt Marsh Project

Conceptual Mitigation Area Map

FIGURE 4

ATTACHMENT 2-1

Final El Cuervo del Sur Phase II Mitigation Site

El Cuervo Del Sur Phase II Mitigation Site

Conceptual Habitat Mitigation and Monitoring Plan

October 3, 2019 | SDD-24.35

Prepared for:

City of San Diego
Transportation & Storm Water Department
2781 Caminito Chollas, MS 46
San Diego, CA 92105

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

MITIGATION CREDIT TRACKING

This section provides a discussion of mitigation credit tracking for future storm channel maintenance projects.

A total of 1.45 acres of mitigation credit would be used for future storm water channel maintenance projects by way of a Master Site Development Permit. Once this HMMP is approved, Table 3 below may be used for tracking relative to tracking available mitigation credits for future projects.

Table 3
Mitigation Site Credit Summary

Pre-Construction Site Condition	**Post-Construction Site Condition**					
Habitat Types	**Habitat Types**	**Cowardin Classification**	**Hydrology**	**Mitigation Method - Type**	**Acres**	**CRAM**
Non-Aquatic (Upland)	**Wetland Waters of the U.S. and State**					
Disturbed Land (Disturbed Habitat – bare and weed dominated) = 1.17 acres and Non-Native Grassland = 0.3 acre[1]	Freshwater Marsh (Herbaceous Wetland)	Palustrine Emergent	Perennial	Establishment (creation)	0.56	Depressional[2]
	Riparian Scrub	Palustrine Scrub Shrub	Perennial	Establishment (creation)	0.92	Depressional[2]
				Total	**1.48[3]**	

[1] Pre-construction site habitat types are discussed in Section 3.5.1 and also based on the Jurisdictional Delineation (Helix 2016) which determined the site is upland.

[2] As discussed in Section 8.3.6, a pre-construction CRAM could not be conducted at the proposed mitigation site because it is currently upland habitat (score = 0), and proposes that post-construction CRAM surveys be conducted in Year 3 and Year 5 using the CRAM Depressional Wetland Field Module (with a final Year 5 target score of 65) and that scores be compared with those assessed in the impact area(s).

[3] As discussed in Section 3.1 Mitigation Goals "The Phase II mitigation site is intended to establish approximately 1.48 acres of USACE-, RWQCB-, CDFW-, CCC-, and City jurisdictional wetland habitat within the Coastal Zone in Los Peñasquitos Canyon Preserve."

Phase I Establishment Boundary
Phase II Establishment Boundary
Phase I Soil Disposal
Phase II Soil Disposal

Phase II Vegetation

Disturbed Habitat (Bare Ground)
Disturbed Habitat (Weeds)
Non-Native Grassland
Disturbed Habitat (Phase I Soil Transfer Area)

Sensitive Species

Least Bell's Vireo Unpaired Male
Least Bell's Vireo Pair

Los Peñasquitos Creek

L:\PROJECTS\SDD\SDD-24435 ECuervo\Map\HMMP\Fig5 Vegetation.mxd SDD-24435 1/4/2019 - CL

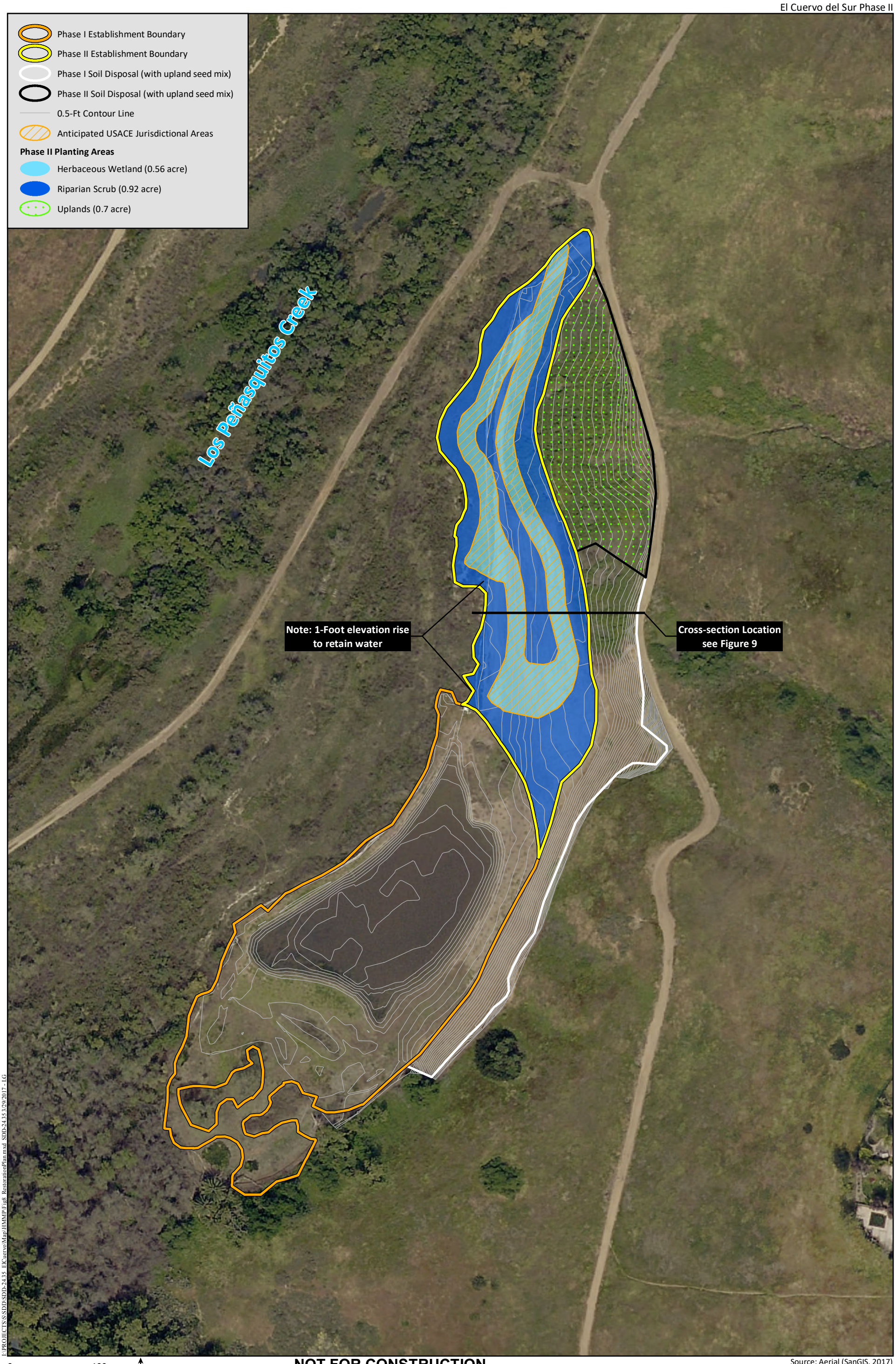
0 100 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Vegetation/Sensitive Species

Figure 5



I:\PROJECTS\S\SDD\SDD-24 35 ElCuervo\Map\HMMP\Fig8 RestorationPlan.mxd SDD-24 35 3/29/2017 - LG

0 100 Feet

N

NOT FOR CONSTRUCTION

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Mitigation Plan

Figure 8

ATTACHMENT 2-2

Final Los Peñasquitos Canyon Phase II/Secondary Enhancement Area

DRAFT

HABITAT MITIGATION AND MONITORING PLAN FOR THE LOS PEÑASQUITOS CANYON PRESERVE PHASE II ENHANCEMENT PROJECT

Prepared for:

City of San Diego
Transportation and Storm Water Department
2781 Caminito Chollas
San Diego, California 92105

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024

JUNE 2018

Table 1
Phase II Wetland Enhancement Area Acreage

Location	Acreage
Phase II Enhancement Project Area (total project area – yellow polygons on Figure 2)	134.82
Phase II Enhancement Removal Areas (total non-native species removals footprint area)	2.54
Phase II Enhancement Credits (overlap with existing mitigation sites excluded)	2.47

Coastal Zone

Treatment Areas

Primary Enhancement Area (Phase I enhancement area completed)

Secondary Enhancement Area (Phase II)

Non-Credit Area

Existing City Mitigation Site

Storm Water Facility Maintenance Basin

Utility Easement Buffer

Invasive Plant Species*

Herb

- Cardoon (*Cynara cardunculus*)
- Dallis Grass (*Paspalum dilatatum*)
- Onionweed (*Asphodelus fistulosus*)
- Pampas Grass (*Cortaderia selloana*)
- Perennial Pepper Weed (*Lepidium latifolium*)
- Roast-Beef Plant (*Iris foetidissima*)
- Umbrella plant (*Cyperus involucratus*)
- Wild teasel (*Dipsacus fullonum*)

Shrub

- Acacia (*Acacia sp.*)
- Echium (*Echium sp.*)
- Saltcedar (*Tamarix ramosissima*
- Tamarisk (*Tamarix parviflora*
- Tree Tobacco (*Nicotiana glauca*)

Tree

- African Sumac (*Rhus lancea*)
- Bottlebrush (*Callistemon sp.*)
- Brazilian Peppertree (*Schinus terebinthifolius*)
- Camphor Tree (*Cinnamomum camphora*)
- Canary Island Date Palm (*Phoenix canariensis*)
- Eucalyptus (*Eucalyptus sp.*)
- Mexican Fan Palm (*Washingtonia robusta*)
- Olive (*Olea europaea*)
- Peruvian Pepper (*Schinus molle*)
- River Redgum (*Eucalyptus camaldulensis*)
- Sweetgum (*Liquidambar styraciflua*)
- Tree Of Heaven (*Ailanthus altissima*)

Vine

- English Ivy (*Hedera helix*)

Other

- Multiple Species Recorded

Non-Credit

- Pampas Grass (*Cortaderia selloana*)
- Perennial Pepper Weed (*Lepidium latifolium*)
- Saltcedar (*Tamarix ramosissima*

**Source (URS 2015). Dudek performed limited update mapping throughout the preserve in May 2018*

SOURCE: SANGIS 2017; URS 2017

DUDEK

0 500 1,000 Feet

Los Penasquitos Canyon Preserve Phase II Wetland Enhancement Project

FIGURE 2

Existing Conditions and Enhancement Areas - Invasive Plant Species

Habitat Mitigation and Monitoring Plan

ATTACHMENT 2-3

2015/2016 Emergency Channel Maintenance Mitigation Plan

FINAL

CONCEPTUAL WETLAND MITIGATION PLAN
for
2015/16 EMERGENCY CHANNEL MAINTENANCE

Prepared for:

City of San Diego
Transportation & Storm Water Department
2781 Caminito Chollas, MS#44
San Diego, California 92105
Contact: Christine Rothman

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Christopher Oesch
760.479.4268

MARCH 2018

Table 2
Mitigation Acreage by Watershed and Site

Channel	MMP Map No(s).	Water shed	Mitigation Credit (acres)				No Mitigation Credit				Mitigation Credit by Emergency Maintenance Channel							
			Enhancement Initiated	*Additional Proposed Enhancement*	*Re-establishment Initiated*	*Additional Proposed Rehab*	*Additional Non-Natives Removed (Non-Credit Area)*	*Additional Non-Natives Planned for Removal (Non-Credit Area)*	*Re-Establishment Initiated (Non-Credit Area)*	*Rehabilitation Proposed (Non-Credit Area)*	*Auburn Creek (MMP 70)*	*Auburn Creek (MMP Map 77)*	*Chollas Creek (MMP Map 71)*	*Chollas Creek (MMP Maps 91 & 93)*	*Cottonwood (MMP Maps 120 & 121)*	*Jamacha (MMP Map 115)*	*Washington (MMP Map 84)*	*Parkside (MMP Map 122)*
Chollas Creek	91 and 93	Pueblo	0.02	0.01	0.02	0	0.03	0	0.02	0	0	0	0	0.05	0	0	0	0
South Chollas Creek	95/97/ 97a/98/ 98a/ 104	Pueblo	0.14	0.69	0	0.57	0.10	0.69	0	0.01	0.10	0.03	0.02	0.83	0.12	0.05	0.02	0.05
Washington	84	Pueblo	0.15	0	0	0	0.02	0	0	0	0	0	0.02	0.11	0	0	0.02	0
Paradise Canyon Open Space	NA	Pueblo	0	0	0	1.32	0	0.43	0	0	0	0.03	0	1.07	0.12	0.05	0	0.05
Subtotals			*0.31*	*0.70*	*0.02*	*1.89*	*0.15*	*1.12*	*0.02*	*0.01*	*0.10*	*0.06*	*0.04*	*2.06*	*0.24*	*0.10*	*0.04*	*0.10*
Subtotal Enhancement			*1.01*		*--*	*--*	*1.27*		*--*	*--*	*0.05*	*--*	*0.02*	*0.70*	*0.12*	*0.05*	*0.02*	*0.05*
Subtotal Re-Establishment			*--*		*0.02*	*--*	*--*		*0.02*	*--*	*--*	*--*	*--*	*0.02*	*--*	*--*	*--*	*--*
Subtotal Rehabilitation			*--*		*--*	*1.89*	*--*		*--*	*0.01*	*0.05*	*0.06*	*0.02*	*1.34*	*0.12*	*0.05*	*0.02*	*0.05*
Totals			**Mitigation: 2.92**				**No Mitigation Credit: 1.30**				**Mitigation Credits Applied: 2.74**							

DUDEK

SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-1

Washington Channel, Map 84 - Wetlands Mitigation Areas

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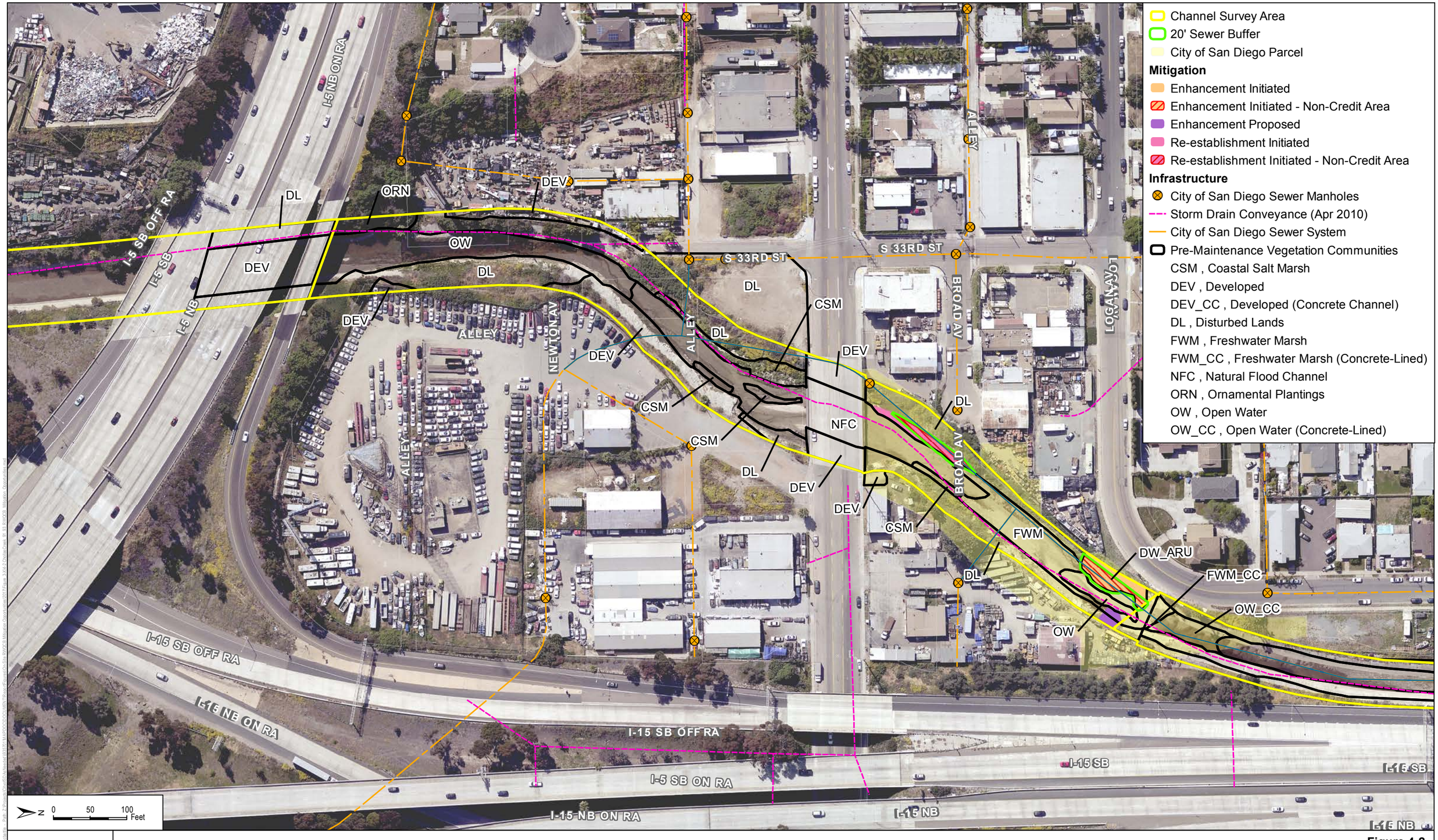

SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-2

Chollas Creek Channel, Maps 91/93 - Wetlands Mitigation Areas

INTENTIONALLY LEFT BLANK

DUDEK

SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-3

South Chollas Creek Channel, Maps 95/97/98 - Wetlands Mitigation Areas

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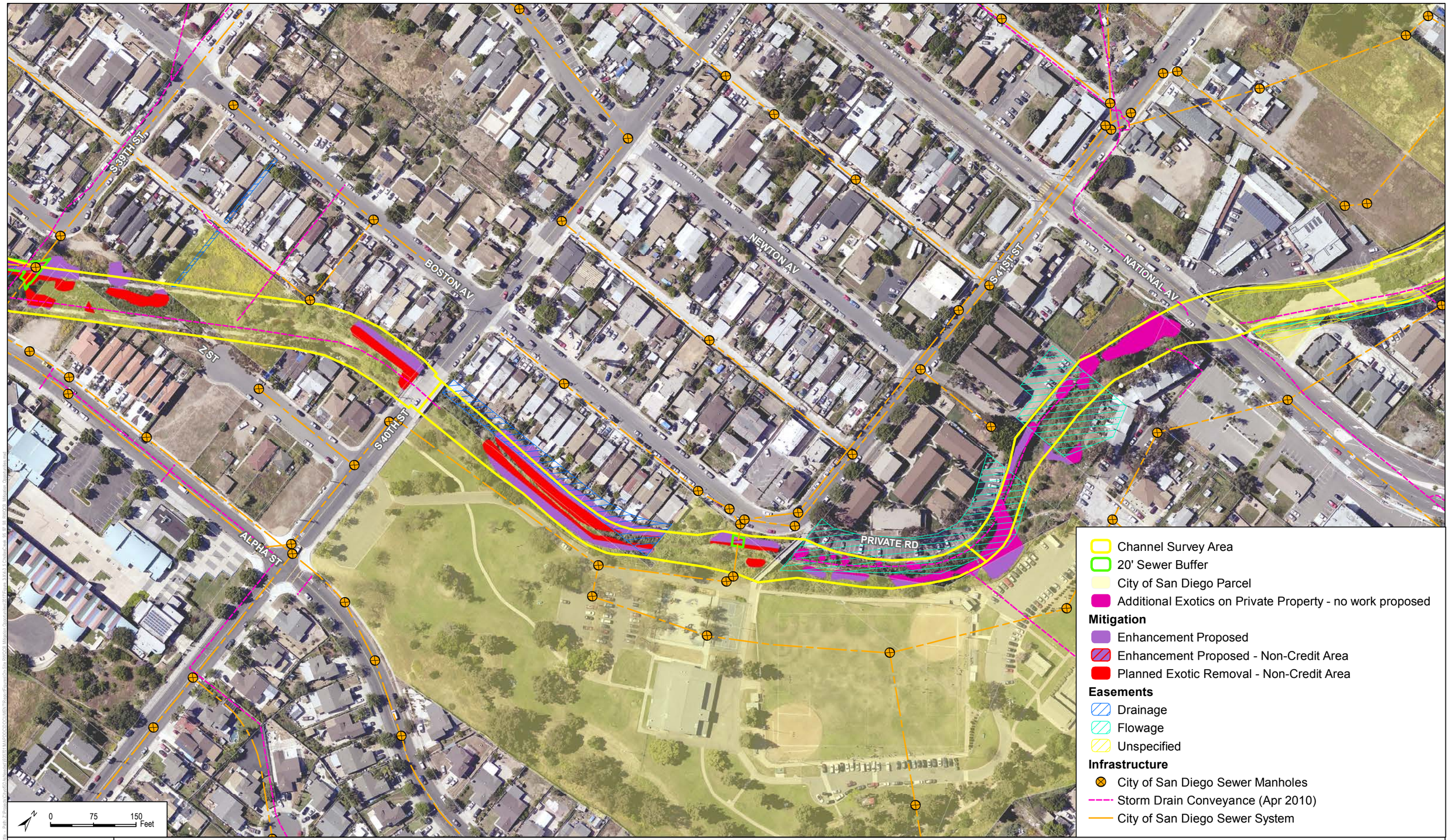

DUDEK

SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-4

South Chollas Creek Channel, Maps 95/97/98 - Wetlands Mitigation Areas

INTENTIONALLY LEFT BLANK

DUDEK

SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-5

South Chollas Creek Channel, Maps 95/97/98 - Wetlands Mitigation Areas

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SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-6

Chollas Creek Channel, Maps 98A - Wetlands Mitigation Areas

DUDEK

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SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

Figure 4-7

Chollas Creek Channel, Maps 104 - Wetlands Mitigation Areas

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Document Path: Z:\Projects\City of SD\Activities\dudek\0967\01\MAPDOC\DOCUMENT\Report Figures\On-Site RWQCB Mitigation Opportunities\2017\Figure 3.XX-8 Pueblo Paradise Canyon_AllData.mxd

SOURCE: City of San Diego 2018; SanGIS 2018; SANDAG Imagery 2017

DUDEK

Figure 4-8

Paradise Canyon Open Space - Wetlands Mitigation Areas

ATTACHMENT 2-4

Jamacha Canyon - Preliminary Design Concept

DRAFT

HABITAT MITIGATION AND MONITORING PLAN
for the
JAMACHA CANYON STREAM REHABILITATION PROJECT
CITY OF SAN DIEGO, CALIFORNIA

Prepared for:

City of San Diego
Public Works Department
525 B Street, Suite 750, MS 908A
San Diego, California 92101-4502
Contact: Carrie Purcell

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Michael Sweesy

MAY 2018

Through analysis of observed conditions during baseline investigations and regulatory definitions for mitigation activities, compensatory mitigation can be achieved through re-establishment, enhancement, preservation, and upland buffer restoration within the mitigation sites (Figures 4–10). Mitigation credits will be achieved through improvements to the existing ACOE jurisdictional channel through the removal of non-native invasive species, planting of native vegetation communities, and stormflow conveyance improvements. The mitigation site overlaps with existing jurisdictional aquatic resources (including City native wetlands) and utility easements (including sewer); where the Mitigation Project overlaps with these resource/easements, no mitigation credit is proposed.

Re-establishment credits will be achieved through the widening of the existing channel to create new jurisdictional area (wetlands and/or waters of the U.S.), removal of non-native invasive species, planting of native vegetation communities, and stormflow conveyance improvements such as the installation of in-stream features.

Existing jurisdictional resources within the proposed mitigation grading areas will be rehabilitated through removal of non-native invasive species, planting of native vegetation communities, and stormflow conveyance improvements. However, because the City Biology Guidelines (2018) require restoration of temporary impacts to City native wetlands (e.g., freshwater marsh and natural flood channel), these area are not proposed as mitigation credit under APRM. Rehabilitation of disturbed wetlands (e.g., disturbed freshwater marsh and disturbed wetlands) are included as mitigation credit.

Enhancement credits are proposed outside of the mitigation grading area, at sites where existing wetlands are dominated by non-native invasive species. Preservation credits are proposed within existing native wetlands located out of the proposed mitigation grading area, but within the area proposed to be added to the MHPA. Finally, upland buffer credits are proposed on transitional slope areas that are part of the proposed mitigation grading design.

Table 4 summarizes the anticipated mitigation credits that will result at each mitigation site after accounting for a deduction to offset temporary impacts to existing jurisdictional areas associated with implementation of the project.

Table 4
Jamacha Canyon Stream Rehabilitation Project
APRM Mitigation Credit Summary

Credit Type	Estimated Acres by Mitigation sites								Total
	A	*B*	*B-C*[1]	*C*	*D*	*D-E*[1]	*E*	*F*	
Re-establishment	0.45	2.71	0	0.74	0.36	0	0.28	1.23	5.77

Table 4
Jamacha Canyon Stream Rehabilitation Project
APRM Mitigation Credit Summary

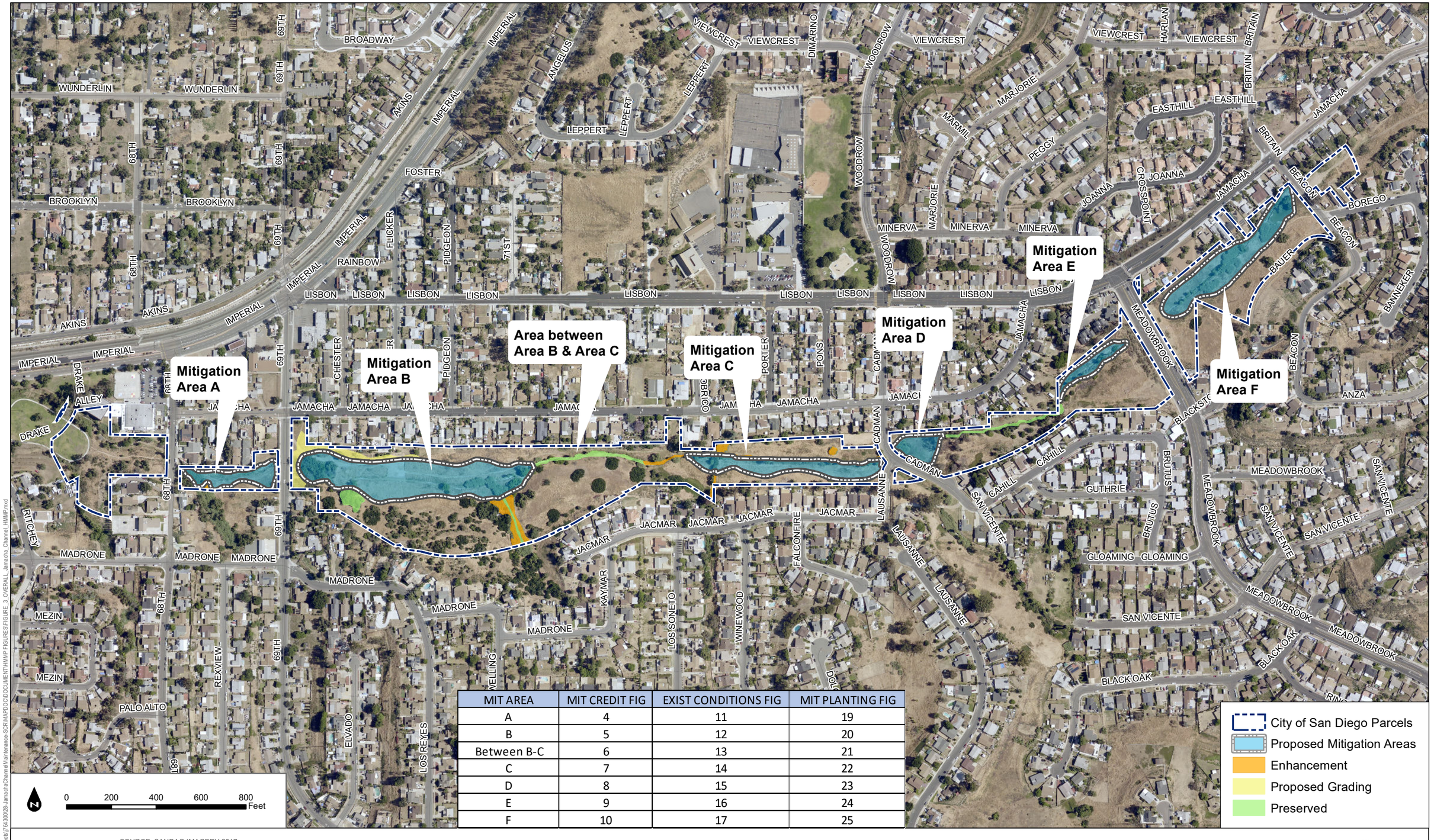
Credit Type	Estimated Acres by Mitigation sites								Total
	A	*B*	*B-C*[1]	*C*	*D*	*D-E*[1]	*E*	*F*	
Rehabilitation	0	0	0	0.05	0	0	0.03	0.05	0.12
Enhancement	0.05	0.25	0.03	0.13	0.01	0		0.00	0.48
Preservation	0	0.21	0.15	0	0	0.08	0.00	0.00	0.45
Upland Buffer Restoration	0.14	1.04	0	0.34	0.04	0	0.05	0.31	1.93
Subtotal Credits	*0.64*	*4.21*	*0.18*	*1.26*	*0.41*	*0.08*	*0.37*	*1.59*	*8.74*
Non-Credit Area (Existing Native City Wetlands & Easements)	0.07	0.33	0.01	0.25	0.07	0.05	0.10	0.37	1.25
Total	**0.71**	**4.54**	**0.20**	**1.51**	**0.48**	**0.14**	**0.47**	**1.96**	**9.99**

[1] Preservation and enhancement of channel between mitigation sites.

4.7 Jamacha Canyon APRM Service Area

In accordance with the APRM MFR agreement, each mitigation project implemented through the APRM program will have a defined service area. The service area is the geographic envelope within which future MWMP projects must be located to use credits from the Mitigation Project as compensatory mitigation for unavoidable impacts to ACOE jurisdiction. Service areas are watershed-based and normally include the watershed in which the Mitigation Project is located and all abutting watersheds.

The proposed Jamacha Canyon APRM service area is based on HUC 10 hydrologic units. The service area (Figure 18) will include the San Diego Bay, Lower San Diego River, and Lower Sweetwater River HUC 10 areas.



MIT AREA	MIT CREDIT FIG	EXIST CONDITIONS FIG	MIT PLANTING FIG
A	4	11	19
B	5	12	20
Between B-C	6	13	21
C	7	14	22
D	8	15	23
E	9	16	24
F	10	17	25

SOURCE: SANDAG IMAGERY 2017

DUDEK

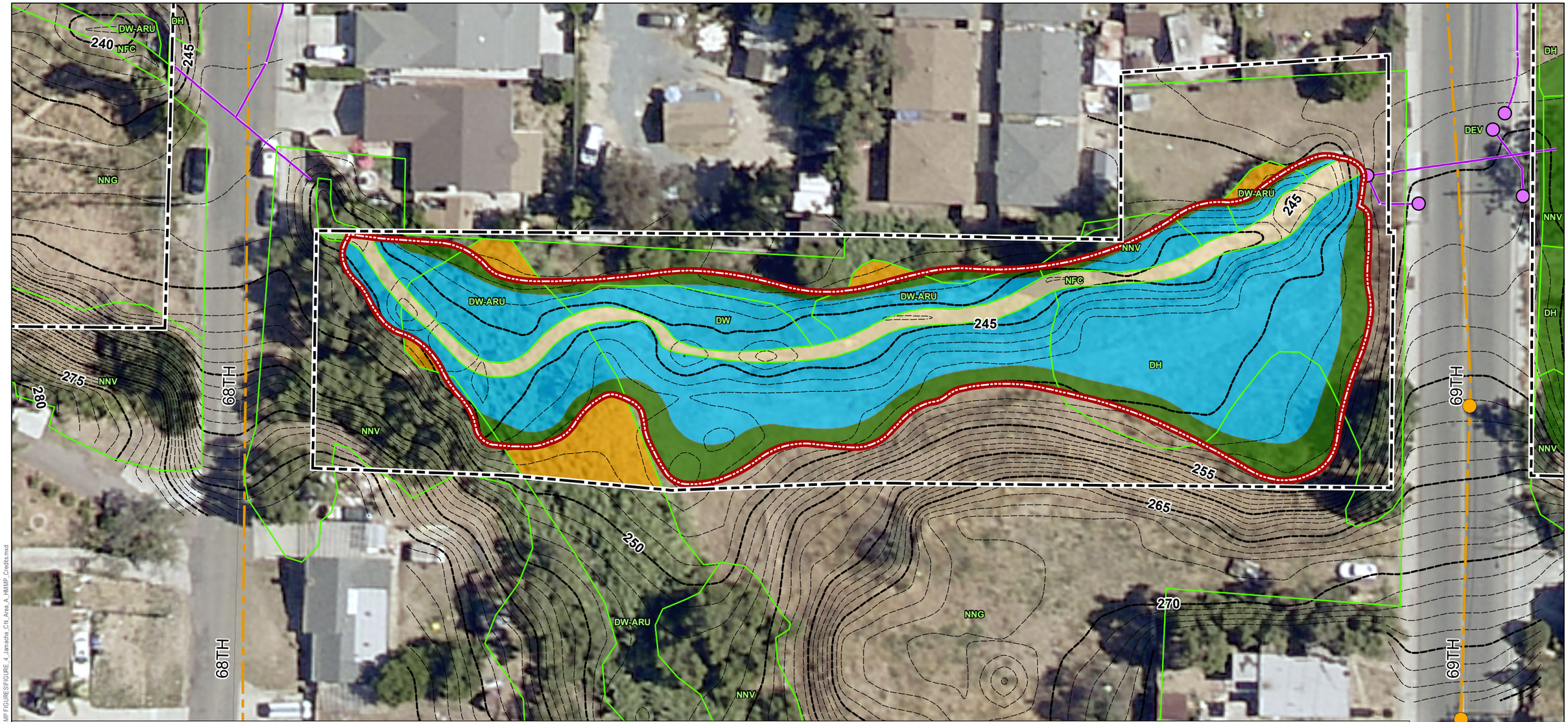
FIGURE 3

Mitigation Plan Overview

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\7843\0028-JamachaChannelMaintenance\SCRIMAP\DOC\DOCUMENT\HMMP FIGURES\FIGURE_3_OVERALL_Jamacha_Channel_HMMP.mxd



City of San Diego Parcels
Proposed Mitigation Area
Existing 1-Ft Topo
Existing Storm Drain Structure
Existing Storm Drain Conveyance
Existing Sewer Manhole
Existing Sewer Main
Vegetation Communities

0 20 40 60 80 Feet

CLOW - Coast Live Oak Woodland
CSS - Diegan Coastal Sage Scrub
dCSS - disturbed Diegan Coastal Sage Scrub
DEV - Urban/Developed
DH - Disturbed Habitat
DW - Disturbed Wetland
DW-ARU - Disturbed Wetland (Arundo-dominated)
DW-PD - Disturbed Wetland (Palm-dominated)
EUC - Eucalyptus Woodland
FWM - Coastal and Valley Freshwater Marsh
dFWM - disturbed Coastal and Valley Freshwater Marsh
NFC - Natural Flood Channel
NNG - Non-Native Grassland
NNV - Non-Native Vegetation

Mitigation Credits
Preserved
Re-Establish
Rehabilitation
Enhancement
Buffer
No Credit

SOURCE: SANDAG IMAGERY 2017

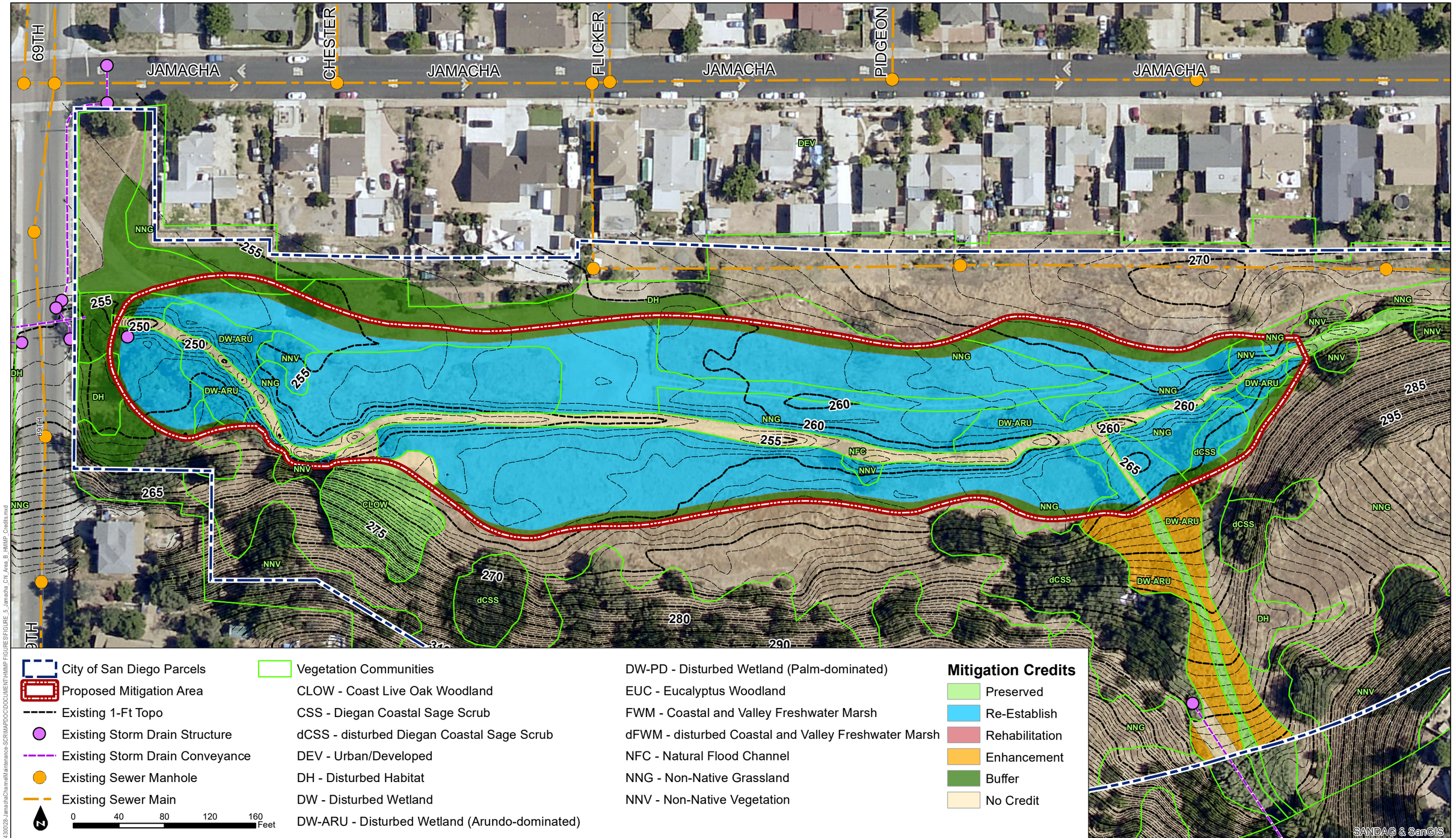
DUDEK

FIGURE 4
Jamacha Channel Mitigation Credits - Area A

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\7643002b-JamachaChannelMaintenance-SCR\MAPDOC\DOCUMENT\HMMP FIGURES\FIGURE 4_Jamacha_CH_Area_A_HMMP_Credits.mxd



City of San Diego Parcels
Proposed Mitigation Area
Existing 1-Ft Topo
Existing Storm Drain Structure
Existing Storm Drain Conveyance
Existing Sewer Manhole
Existing Sewer Main

0 40 80 120 160 Feet

Vegetation Communities
CLOW - Coast Live Oak Woodland
CSS - Diegan Coastal Sage Scrub
dCSS - disturbed Diegan Coastal Sage Scrub
DEV - Urban/Developed
DH - Disturbed Habitat
DW - Disturbed Wetland
DW-ARU - Disturbed Wetland (Arundo-dominated)
DW-PD - Disturbed Wetland (Palm-dominated)
EUC - Eucalyptus Woodland
FWM - Coastal and Valley Freshwater Marsh
dFWM - disturbed Coastal and Valley Freshwater Marsh
NFC - Natural Flood Channel
NNG - Non-Native Grassland
NNV - Non-Native Vegetation

Mitigation Credits
Preserved
Re-Establish
Rehabilitation
Enhancement
Buffer
No Credit

SOURCE: SANDAG IMAGERY 2017

DUDEK

FIGURE 5
Jamacha Channel Mitigation Credits - Area B

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\7643002\8-JamachaChannelMaintenance-SCR\MAPDOC\DOCUMENT\HMMP FIGURES\FIGURE 5_Jamacha_CH_Area_B_HMMP_Credits.mxd

SOURCE: SANDAG IMAGERY 2017

DUDEK

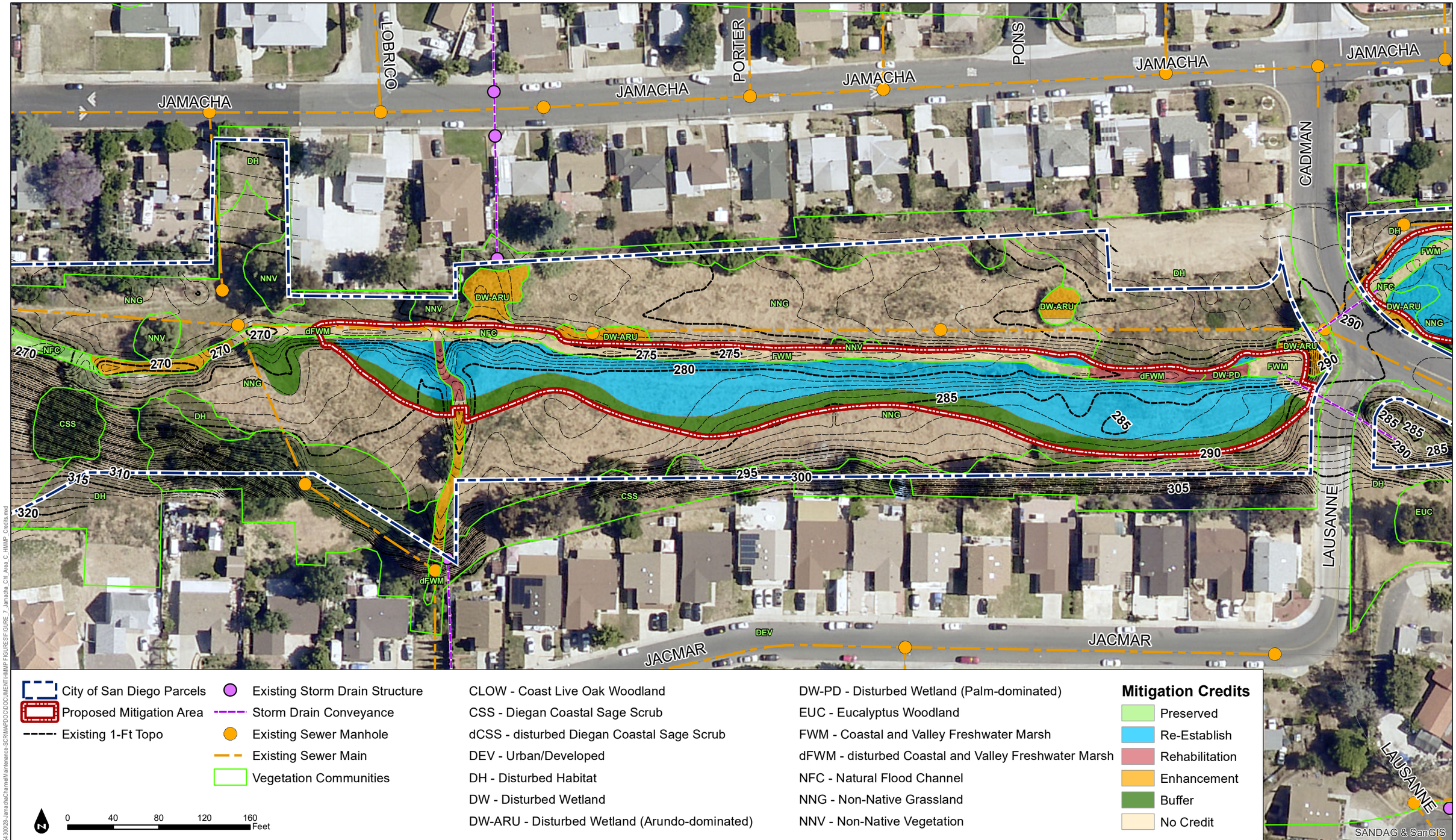
FIGURE 6

Jamacha Channel Mitigation Credits - Between Area B and Area C

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\764300\2b-JamachaChannelMaintenance-SCRIMAP\DOC\DOCUMENT\HMMP FIGURES\FIGURE 6_Jamacha_CH_Area_B-C_HMMP.mxd/s.mxd



SOURCE: SANDAG IMAGERY 2014

DUDEK

FIGURE 7

Jamacha Channel Mitigation Credits - Area C

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\7843300\8-JamachaChannelMaintenance\SCRIMAP\DOC\DOCUMENT\HMMP FIGURES\FIGURE_7_Jamacha_CH_Area_C_HMMP_Credits.mxd

City of San Diego Parcels
Proposed Mitigation Area
Existing 1-Ft Topo
Existing Storm Drain Structure
Existing Storm Drain Conveyance
Existing Sewer Manhole
Existing Sewer Main
Vegetation Communities

0 25 50 75 100 Feet

CLOW - Coast Live Oak Woodland
CSS - Diegan Coastal Sage Scrub
dCSS - disturbed Diegan Coastal Sage Scrub
DEV - Urban/Developed
DH - Disturbed Habitat
DW - Disturbed Wetland
DW-ARU - Disturbed Wetland (Arundo-dominated)
DW-PD - Disturbed Wetland (Palm-dominated)
EUC - Eucalyptus Woodland
FWM - Coastal and Valley Freshwater Marsh
dFWM - disturbed Coastal and Valley Freshwater Marsh
NFC - Natural Flood Channel
NNG - Non-Native Grassland
NNV - Non-Native Vegetation

Mitigation Credits
Preserved
Re-Establish
Rehabilitation
Enhancement
Buffer
No Credit

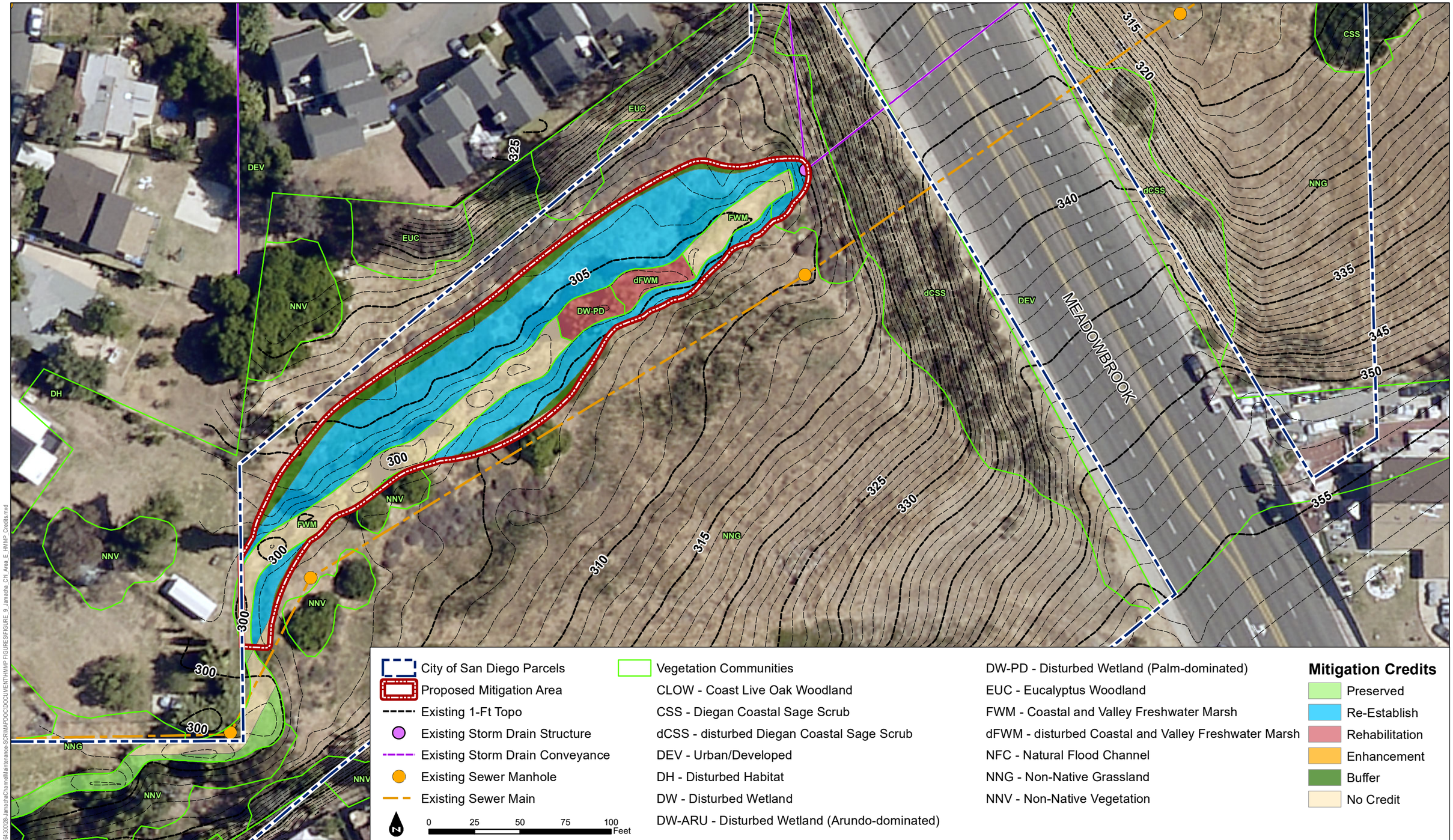
SOURCE: SANDAG IMAGERY 2017

DUDEK

Jamacha Canyon Stream Rehabilitation Project

FIGURE 8
Jamacha Channel Existing Conditions - Areas D
Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\7643001\28-JamachaChannelMaintenance-SCR\MAPDOC\DOCUMENT\HMMP FIGURES\FIGURE_8_Jamacha_CH_Areas_D_HMMP_Credits.mxd



SOURCE: SANDAG IMAGERY 2017

DUDEK

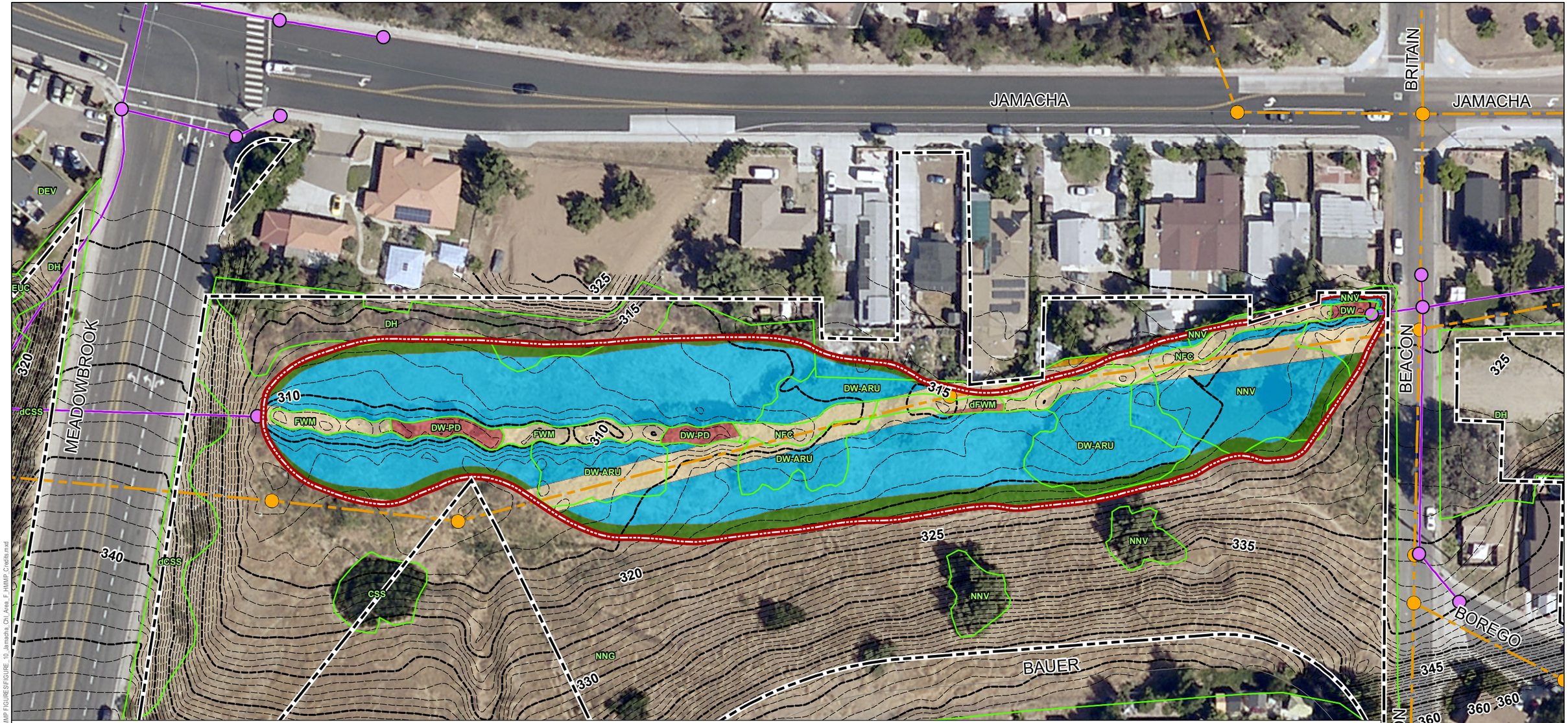
FIGURE 9

Jamacha Channel Mitigation Credits - Areas E

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\7743\0028-JamachaChannelMaintenance-SCR\MAPDOC\DOCUMENT\HMMP FIGURES\FIGURE_9_Jamacha_CN_Areas_E_HMMP_Credits.mxd



City of San Diego Parcels
Proposed Mitigation Area
Existing 1-Ft Topo
Existing Storm Drain Structure
Existing Storm Drain Conveyance
Existing Sewer Manhole
Existing Sewer Main
Vegetation Communities

0 35 70 105 140 Feet

CLOW - Coast Live Oak Woodland
CSS - Diegan Coastal Sage Scrub
dCSS - disturbed Diegan Coastal Sage Scrub
DEV - Urban/Developed
DH - Disturbed Habitat
DW - Disturbed Wetland
DW-ARU - Disturbed Wetland (Arundo-dominated)
DW-PD - Disturbed Wetland (Palm-dominated)
EUC - Eucalyptus Woodland
FWM - Coastal and Valley Freshwater Marsh
dFWM - disturbed Coastal and Valley Freshwater Marsh
NFC - Natural Flood Channel
NNG - Non-Native Grassland
NNV - Non-Native Vegetation

Mitigation Credits
Preserved
Re-Establish
Rehabilitation
Enhancement
Buffer
No Credit

SOURCE: SANDAG IMAGERY 2017

DUDEK

FIGURE 10
Jamacha Channel Mitigation Credits - Area F

Jamacha Canyon Stream Rehabilitation Project

Habitat Mitigation and Monitoring Plan

Document Path: Z:\Projects\j764.300128-JamachaChannelMaintenance-SCRIMAP\DOC\DOCUMENT\HMMP FIGURES\FIGURE_10_Jamacha_Chl_Area_F_HMMP_Credits.mxd

ATTACHMENT 2-5

Hollister Quarry Mitigation Site

Draft

HOLLISTER QUARRY SITE

Aquatic Resources Habitat Mitigation and Monitoring Plan

Prepared for
City of San Diego
2781 Caminito Chollas, MS 46
San Diego, CA 92105

Revised October 2019

ESA

HELIX Environmental Planning

ROCKS BIOLOGICAL CONSULTING

HOLLISTER QUARRY SITE

Aquatic Resources Habitat Mitigation and Monitoring Plan

Prepared for
City of San Diego
2781 Caminito Chollas, MS 46
San Diego, CA 92105

Revised October 2019

Prepared by: ESA

550 West C Street
Suite 750
San Diego, CA 92101
619.719.4200
esassoc.com

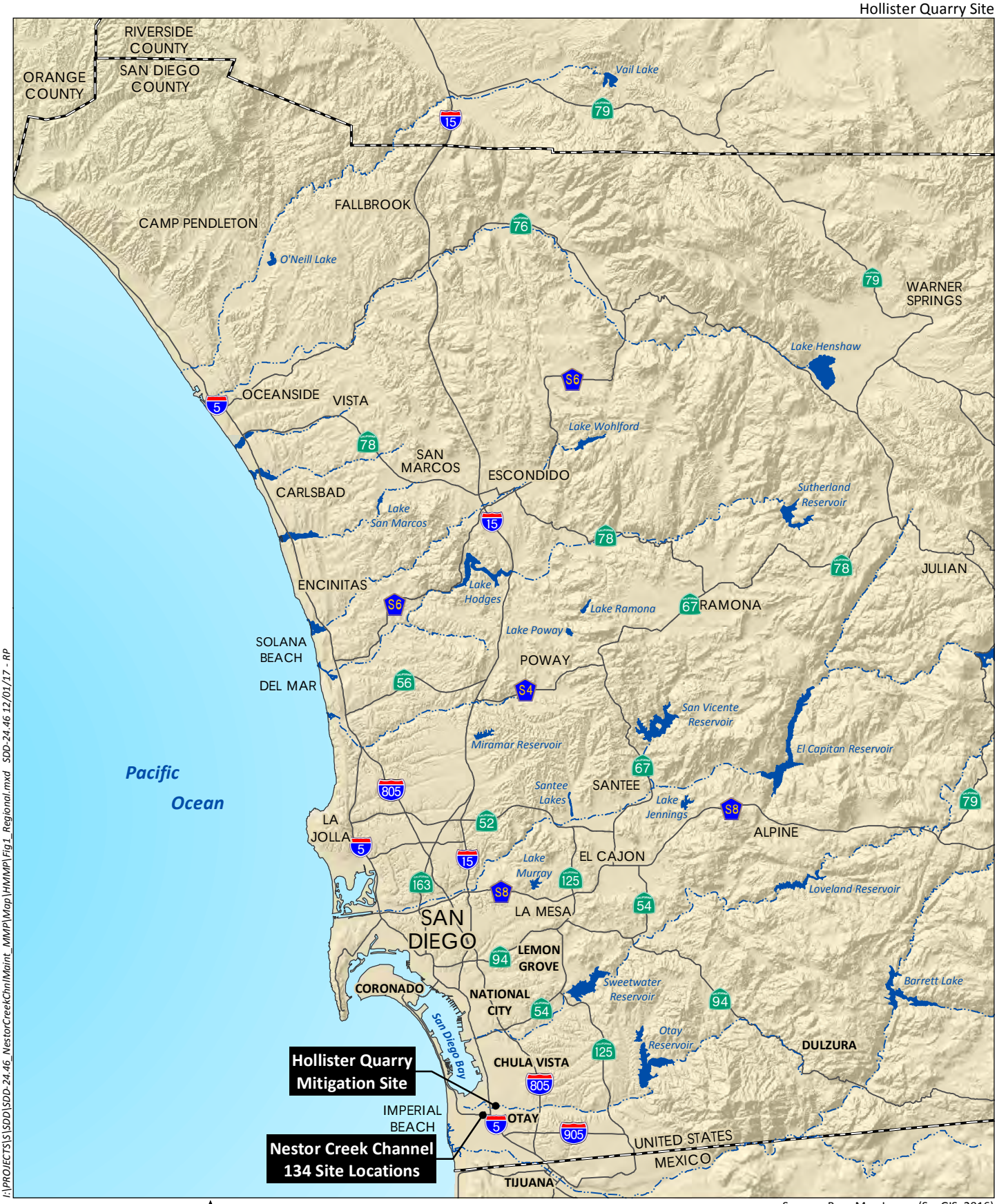
Bend	Oakland	San Diego
Camarillo	Orlando	San Francisco
Delray Beach	Pasadena	Santa Monica
Destin	Petaluma	Sarasota
Irvine	Portland	Seattle
Los Angeles	Sacramento	Tampa

With assistance from:

Helix Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Rocks Biological Consulting
2621 Denver Street, Suite B
San Diego, CA 92110-3300

Hollister Quarry Site



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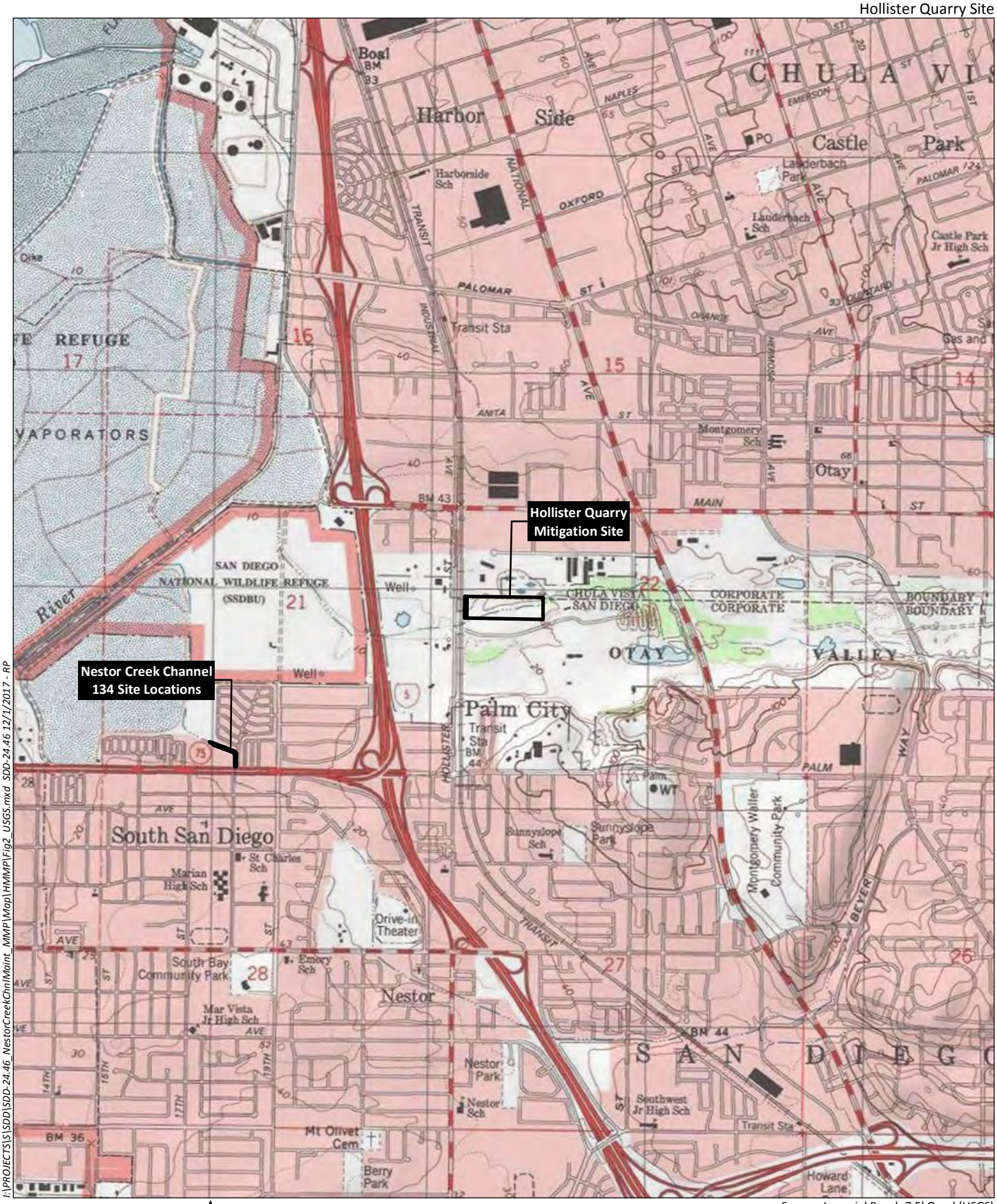
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\S\SDD\SDD-24.46_NestorCreekChnlMaint_MMP\Map\HMMP\Fig2_USGS.mxd SDD-24.46 12/1/2017 - RP

Source: Imperial Beach 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2

Hollister Quarry Site

Parcel Boundary

Vegetation Type

- Upland Scrub (*Ambrosia monogyra* population)
- Disturbed Land
- Disturbed Wetland (Arundo-dominated)
- Southern Willow Scrub
- Upland Scrub - Bacharis Srub

Hollister Street

singlewhorl burrowbrush

least Bell's vireo

Potential Staging Area

least Bell's vireo

least Bell's vireo

least Bell's vireo

Potential Access Area

least Bell's vireo

least Bell's vireo

least Bell's vireo

I:\PROJECTS\S\SDD\SDD-24.46_NestorCreekChnlMaint_MMP\Map\HMMP\Fig5_Hollister_Veg.mxd SDD-24.46 5/21/2018 - RP

0 100 Feet

N

Source: Aerial (NAIP 2016)

HELIX Environmental Planning

Existing Vegetation and Sensitive Biological Resources

Figure 5

Hollister Quarry Site

Parcel Boundary
Total Proposed Mitigation Boundary
Alternate Mitigation Boundary
Wetland waters of the U.S./State
Non-wetland Waters of the U.S./State
RWQCB Waters of the State/Active Flood Plain
Ordinary High Water Mark
Vegetation
Existing Topography
Sample Points

Avenue

Ambrosia monogyra population
Disturbed Land
SP8
Otay River/Low-flow Channel
SP7
Arundo-Dominated Riparian
SP11
SP10
SP9
Southern Willow Scrub
SP6
Upland Scrub - Bacharis Srub
SP2
SP4
SP3
SP5
Disturbed Land
SP1
Arundo-Dominated Riparian
Disturbed Land
Arundo-Dominated Riparian
Arundo-Dominated Riparian
Disturbed Land (Garland Daisy)

Proposed Mitigation Boundary (see Figure 8 series)

Alternate Proposed Mitigation Boundary (see Figure 9 series)

Hollister Street

I:\PROJECTS\S\SDD\SDD-24.46_NestorCreekChnlMaint_MMP\Map\HMMP\Fig6_USACE.mxd SDD-24.46 9/6/2018 -RP

0 100 Feet

N

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

USACE Waters of the U.S./RWQCB Waters of the State

Figure 6

Hollister Quarry Site

Parcel Boundary
Total Proposed Mitigation Boundary
Alternate Mitigation Boundary
Coastal Zone
Jurisdictional Riparian Areas
Existing Topography
Sample Points

Non-applicable

Deferred Certified

SP1
SP2
SP3
SP4
SP5
SP6
SP7
SP8
SP9
SP10
SP11

Hollister Street

I:\PROJECTS\S\SDD\SDD-24.46_NestorCreekChnlMaint_MMP\Map\HMMP\Fig7_CDFW.mxd SDD-24.46 9/4/2018 -RP

0 100 Feet

N

Source: Aerial (SanGIS, 2016)

HELIX Environmental Planning

CDFW/City/Coastal Commission Jurisdictional Riparian Areas

Figure 7

Hollister Quarry Site

- Existing Topography
- Proposed Grading
- Parcel Boundary
- Total Proposed Mitigation Boundary (2.22 acres)
- Staging Area
- Upland Weed-free Buffer (0.15 acre)
- Riparian Weed-free Buffer (0.34 acre)
- Ordinary High Water Mark

Proposed USACE Mitigation

- Riparian Scrub Re-establishment (1.03 acres)
- Riparian Scrub Rehabilitation (0.05 acre)
- Transitional Riparian Scrub Re-establishment (0.02 acre)
- Transitional Riparian Scrub Rehabilitation (0.04 acre)

Otay River/Low-flow Channel

Section A-A'

Section B-B'

Section C-C'

Staging Area

Staging Area

Hollister Street

0 100 Feet

N

Source: Aerial (SanGIS, 2016)

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HELIX Environmental Planning

USACE
Alternate Conceptual Mitigation Plan

Figure 9a

Hollister Quarry Site

- Existing Topography
- Proposed Grading
- Parcel Boundary
- Total Proposed Mitigation Boundary (2.22 acres)
- Staging Area
- Upland Weed-free Buffer (0.15 acre)
- Riparian Weed-free Buffer (0.34 acre)
- Ordinary High Water Mark
- RWQCB Waters of the State/Active Flood Plain

Proposed RWQCB Mitigation

- Riparian Scrub Re-establishment (0.87 acre)
- Riparian Scrub Rehabilitation (0.21 acre)
- Transitional Riparian Scrub Re-establishment (0.77 acre)
- Transitional Riparian Scrub Rehabilitation (0.05 acre)

Otay River/Low-flow Channel

Section A-A'

Section B-B'

Section C-C'

Staging Area

Staging Area

Hollister Street

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0 100 Feet

N

Source: Aerial (SanGIS, 2016)

HELIX Environmental Planning

RWQCB
Alternate Conceptual Mitigation Plan

Figure 9b

Hollister Quarry Site

- Existing Topography
- Proposed Grading
- Parcel Boundary
- Total Proposed Mitigation Boundary (2.22 acres)
- Staging Area
- Upland Weed-free Buffer (0.15 acre)
- Riparian Weed-free Buffer (0.34 acre)
- Ordinary High Water Mark
- Coastal Zone

Proposed CDFW/City/Coastal Commission Mitigation

- Riparian Scrub Re-establishment (0.35 acre)
- Riparian Scrub Rehabilitation (0.72 acre; 0.02 acre in Coastal Zone)
- Transitional Riparian Scrub Re-establishment (0.31 acre)
- Transitional Riparian Scrub Rehabilitation (0.84 acre; 0.19 acre in Coastal Zone)

Non-Applicable

Otay River/Low-flow Channel

Staging Area

Staging Area

Deferred Certified

Hollister Street

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0 100 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

CDFW/City/Coastal Commission Alternate Conceptual Mitigation Plan

Figure 9c

Hollister Quarry Site

- Parcel Boundary
- Total Proposed Mitigation Boundary (2.22 acres)
- Staging Area
- Upland Weed-free Buffer (0.15 acre)
- Riparian Weed-free Buffer (0.34 acre)

Plant Palette

- Riparian Scrub (1.08 acres)
- Transitional Riparian Scrub (1.14 acres)

Staging Area

Staging Area

Hollister Street

0 100 Feet

N

Source: Aerial (SanGIS, 2017)

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HELIX Environmental Planning

Alternate Planting Plan

Figure 11

Attachment B
Revised Tables

Table 1 (revised)
AQUATIC RESOURCE MITIGATION REQUIREMENTS
FOR NESTOR CREEK MAP 134 CHANNEL MAINTENANCE (acres)[1]

Habitat	U.S. Army Corps of Engineers (USACE) / Regional Water Quality Control Board (RWQCB)			California Department of Fish and Wildlife (CDFW)			City of San Diego (City)			California Coastal Commission (CCC)		
	Past/Proposed Impacts[2]	Ratio[3]	Mitigation[3]	Past/Proposed Impacts	Ratio[3]	Mitigation[3]	Past/Proposed Impacts	Ratio[4]	Mitigation[4]	Past/Proposed Impacts	Ratio[3]	Mitigation[3]
2010 Emergency												
Southern willow scrub (concrete)[5]	--	--	--	--	--	--	0.03	3:1	0.09	0.03	3:1	0.09
Freshwater marsh (concrete)[5]	--	--	--	--	--	--	0.02	4:1	0.08	0.02	4:1	0.08
Disturbed wetland (concrete)[5]	--	--	--	--	--	--	0.06	4:1	0.24	0.06	4:1	0.24
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**0.11**	**--**	**0.41**	**0.11**	**--**	**0.41**
2016 Emergency												
Freshwater marsh (earthen)[5]	0.02	2:1	0.04	--	--	--	0.02	4:1	0.08	0.02	4:1	0.08
Disturbed wetland (Arundo-dominated; earthen)[5]	0.01	0:1	--	0.01	0:1	--	0.01	0:1	--	0.01	0:1	--
Subtotal	**0.03**	**--**	**0.04**	**0.01**	**--**	**--**	**0.03**	**--**	**0.08**	**0.03**	**--**	**0.08**

Attachment B (cont.)
Revised Tables

Table 1 (revised; cont.)
AQUATIC RESOURCE MITIGATION REQUIREMENTS
FOR NESTOR CREEK MAP 134 CHANNEL MAINTENANCE (acres)[1]

Habitat	U.S. Army Corps of Engineers (USACE) / Regional Water Quality Control Board (RWQCB)			California Department of Fish and Wildlife (CDFW)			City of San Diego (City)			California Coastal Commission (CCC)		
	Past/Proposed Impacts[2]	Ratio[3]	Mitigation[3]	Past/Proposed Impacts	Ratio[3]	Mitigation[3]	Past/Proposed Impacts	Ratio[4]	Mitigation[4]	Past/Proposed Impacts	Ratio[3]	Mitigation[3]
Proposed Future Maintenance												
Freshwater marsh (concrete)[5]	--/0.03[7]	--[7]/1:1[6]	--[8]/0.03[7]	--	--	--	0.03	4:1	0.12	0.03	TBD	TBD
Disturbed wetland (concrete)[5]	--/0.07[7]	--[7]/0:1[6]	--[8]/--[7]	--	--	--	0.07	4:1	0.28	0.07	TBD	TBD
Natural flood channel/ streambed (earthen)[6]	--/0.01	--[7]/1:1	--[8]/0.01	0.01	1:1	0.01	0.01	2:1	0.02	0.01	TBD	TBD
Disturbed wetland (Arundo-dominated; earthen)[6]	--	--	--	0.01	0:1	--	0.01	0:1	--	0.01	TBD	TBD
Subtotal	**--/0.11[7]**	**--**	**--[8]/0.04[7]**	**0.02**	--	**0.01**	**0.12**	**--**	**0.42**	**0.12**	**--**	**TBD**
TOTAL	**0.03/0.14[7]**	**--**	**0.04/0.08[7]**	**0.03**	--	**0.01**	**0.25**	**--**	**0.91**	**0.25**	**--**	**TBD**

[1] Acreages are rounded to the nearest 0.01 acre; thus, totals reflect rounding. TBD = To Be Determined.

[2] No wetland mitigation was required in 2010 under Nationwide Permit (NWP) 43 or the associated 401 certification. Proposed maintenance of serviceable structures is exempt from USACE regulation. Previous habitat mitigation required by the San Diego RWQCB for maintenance on concrete-lined MMP channels has been on a case-by-case basis. While no RWQCB mitigation for the habitats within the concrete portions is being proposed at this time, at the RWQCB's discretion, habitat mitigation can be accommodated within the Hollister Quarry mitigation site.

[3] Mitigation ratios/acreages for 2010 and 2016 emergencies have been established with the agencies, mitigation ratios/acreages for proposed future maintenance have been accepted by the CDFW, no mitigation was required by the USACE for proposed future maintenance, mitigation ratios/acreages are proposed to the RWQCB for the proposed future maintenance, and mitigation ratios/acreages are to be determined for impacts to CCC wetlands by proposed future maintenance.

[4] City mitigation ratios/acreages for 2010, 2016, and proposed future maintenance reflect current authorization under MMP SDP 2034245 AND SCR 2161346. If proposed future maintenance is conducted pursuant to the MWMP, mitigation will be provided in accordance with the MWMP SDP.

[5] Wetland waters of the U.S./State.

[6] Non-wetland waters of the U.S./State.

[7] Mitigation for concrete-lined channel is proposed for RWQCB by request.

[8] No mitigation was required by USACE.

Attachment B (cont.)
Revised Tables

Table 3 (revised)
PROPOSED AQUATIC RESOURCES MITIGATION – HOLLISTER QUARRY MITIGATION SITE[1]

Jurisdictional Resource/ Habitat	Re-establishment[2] (Restoration[3])	Rehabilitation[4] (Restoration[4])	Total
USACE Wetland Waters of the U.S.			
Riparian scrub	1.03	0.05	**1.08**
Transitional riparian scrub	0.02	0.04	**0.06**
Total USACE Credit	**1.05**	**0.09**	**1.14**
RWQCB Wetland Waters			
Riparian scrub	0.87	0.21	**1.08**
Transitional riparian scrub	0.77	0.05	**0.82**
Total RWQCB Credit	**1.64**	**0.26**	**1.90**
CDFW Riparian Habitat			
Riparian scrub	0.35	0.72	**1.07**
Transitional riparian scrub	0.31	0.84	**1.15**
Total CDFW Credit	**0.66**	**1.56**	**2.22**
City Wetlands			
Riparian scrub	0.35	0.72	**1.07**
Transitional riparian scrub	0.31	0.84	**1.15**
Total City Credit	**0.66**	**1.56**	**2.22**
Coastal Commission Wetlands[5]			
Riparian scrub	0.35	0.72	**1.07**
Transitional riparian scrub	0.31	0.84	**1.15**
Total Coastal Commission Credit[5]	**0.66**	**1.56**	**2.22**

[1] Rounded to the nearest 0.01 acre. All proposed credits should be considered estimations for planning purposes until permits for this HMMP and for channel maintenance at Nestor Map 134 have been obtained from all agencies.

[2] Re-establishment as defined by USACE that meets no-net loss policy because of gains in function and value.

[3] Meets City 1:1 restoration or creation component because of gains in both function and value.

[4] Rehabilitation as defined by USACE which meets City 1:1 restoration or creation component on a case by case basis.

[5] Of the 2.22 acres proposed for Costal Commission wetland mitigation, 0.21 acre occurs within the Coastal Zone consisting of 0.02 acre riparian scrub rehabilitation and 0.19 acre of transitional riparian scrub rehabilitation.

Attachment B (cont.)
Revised Tables

Table 4a (revised)
PROPOSED USACE MITIGATION – NESTOR MAP 134

Habitat	Impacts (earthen bottom[2])	Mitigation Required/Proposed		Mitigation Provided	
		Re-establishment	Rehabilitation	Re-establishment	Rehabilitation
2010 Emergency					
No mitigation required					
2016 Emergency					
Freshwater marsh[1]	0.02	0.02	0.02	--	--
Riparian scrub[1]	--	--	--	0.02[1]	0.02[1]
Subtotal	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**
2018 Proposed Maintenance					
Disturbed wetland (Arundo-dominated)[1]	0.01	--	--	--	--
Streambed/ Natural flood channel[3]	0.01	--	--	--	--
Riparian scrub[1]	--	--	--	--	--
Subtotal	**0.02**	**--**	--	**--**	**--**
TOTAL	**0.04**	**0.02**	**0.02**	**0.02**	**0.02**

[1] Wetland waters of the U.S./State.
[2] USACE is not expected to require mitigation for impacts within concrete-lined channels; thus, only impacts within earthen bottom channel are listed.
[3] Non-wetland waters of the U.S.

Attachment B (cont.)
Revised Tables

Table 5 (revised)
EXCESS AQUATIC RESOURCE MITIGATION CREDITS FOR ADVANCED PERMITTEE RESPONSIBLE MITIGATION (APRM) AT HOLLISTER QUARRY MITIGATION SITE

Summary	Restoration (Re-establishment) (acre)	Restoration (Rehabilitation) (acre)
City/Coastal Commission		
- Mitigation Provided	0.66	1.56
- Map 134 Mitigation Requirements (City)	0.24	0.67
Excess Credits Available (City)	**0.42**	**0.89**
CDFW		
- Mitigation Provided	0.66	1.56
- Map 134 Mitigation Requirements (CDFW)	0.01	0.01
Excess Credits Available (CDFW)	**0.65**	**1.55**
USACE		
- Mitigation Provided	1.05	0.09
- Map 134 Mitigation Requirements (USACE)	0.02	0.02
Excess Credits Available (USACE)	**1.03**	**0.07**
RWQCB[1]		
- Mitigation Provided	1.64	0.26
- Map 134 Proposed Mitigation Requirements (RWQCB)	0.03	0.05
Excess Credits Anticipated (RWQCB)[2]	**1.61**	**0.21**

[1] Proposed Mitigation provided and required is subject to RWQCB approval.
[2] Final mitigation requirements are being determined during the permitting process.

ATTACHMENT 2-6

Otay Reed Mitigation Site

Draft

OTAY REED SITE

Wetland Habitat Mitigation and Monitoring Plan

Prepared for
City of San Diego
2781 Caminito Chollas, MS 46
San Diego, CA 92105

Revised October 2019

ESA

HELIX
Environmental Planning

OTAY REED SITE

Wetland Habitat Mitigation and Monitoring Plan

Prepared for
City of San Diego
2781 Caminito Chollas, MS 46
San Diego, CA 92105

Revised October 2019

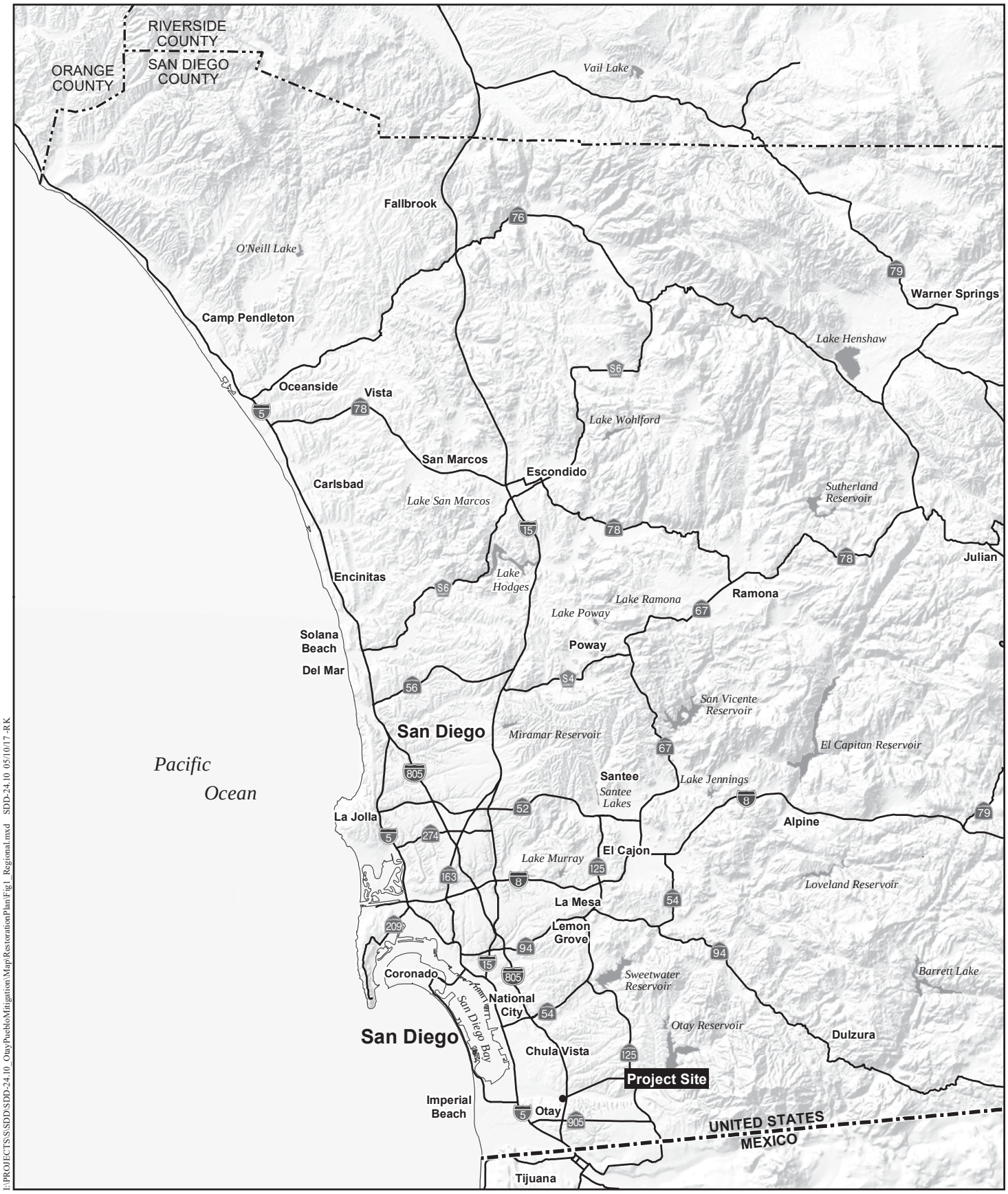
Prepared by: ESA

550 West C Street
Suite 750
San Diego, CA 92101
619.719.4200
esassoc.com

Bend	Oakland	San Diego
Camarillo	Orlando	San Francisco
Delray Beach	Pasadena	Santa Monica
Destin	Petaluma	Sarasota
Irvine	Portland	Seattle
Los Angeles	Sacramento	Tampa

With assistance from:

Helix Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942



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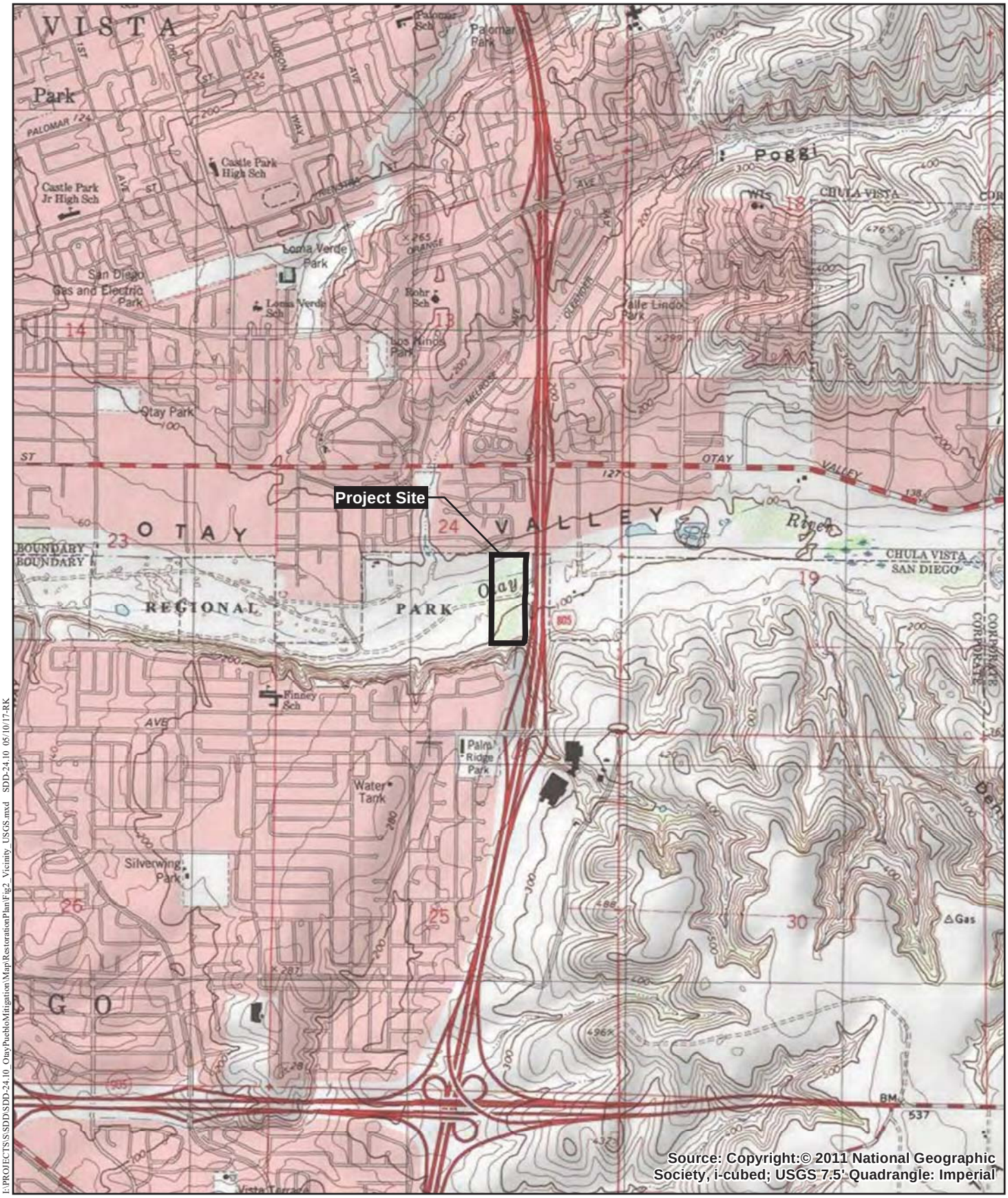
Regional Location Map

OTAY REED

HELIX Environmental Planning

N 0 8 Miles

Figure 1



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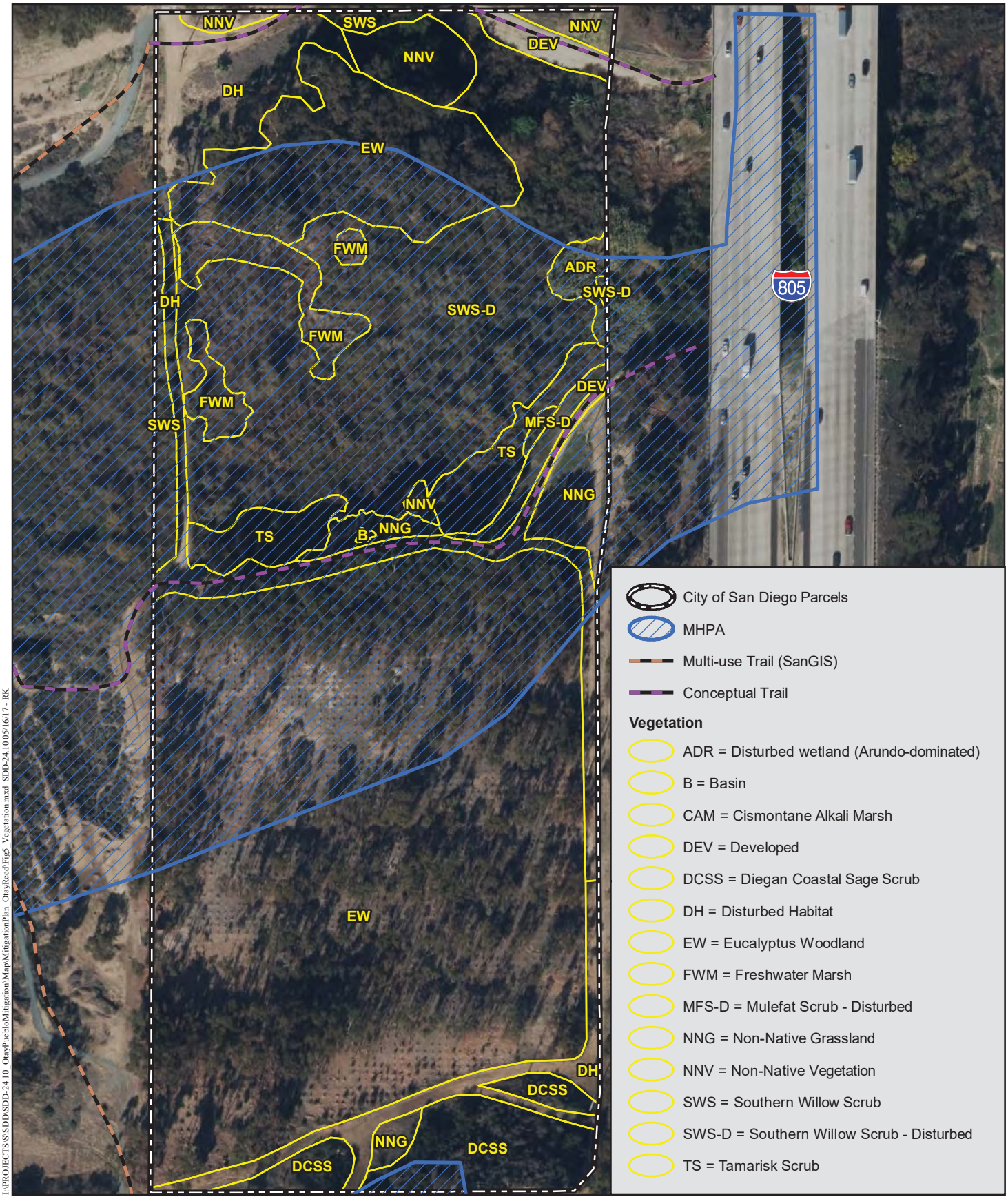
Project Vicinity Map (USGS Topography)

OTAY REED

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2



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Existing Vegetation Communities

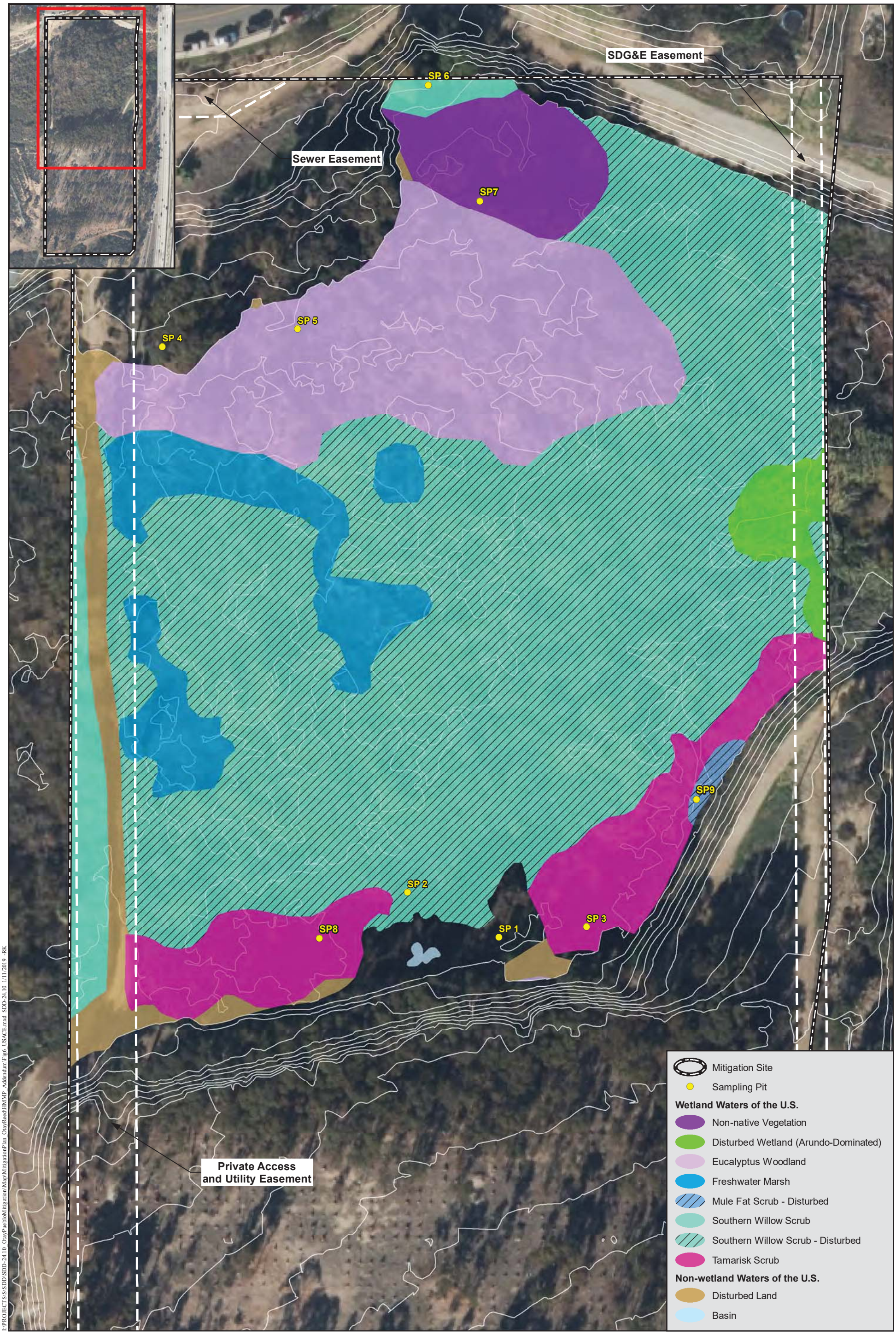
OTAY REED

HELIX Environmental Planning

N

0 150 Feet

Figure 5



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USACE Jurisdictional Habitats

OTAY REED

HELIX Environmental Planning

N 0 60 Feet

Figure 6

Sewer Easement

SDG&E Easement

SP 6

SP7

SP 5

SP 4

SP9

SP 2

SP8

SP 1

SP 3

Private Access
and Utility Easement

Mitigation Site

Sampling Pit

CDFW/City Jurisdiction

- Disturbed Wetland (Arundo-Dominated)
- Disturbed Land
- Eucalyptus Woodland
- Freshwater Marsh
- Mule Fat Scrub - Disturbed
- Non-Native Vegetation
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Tamarisk Scrub
- Streambed
- Basin

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CDFW/City Jurisdictional Habitats

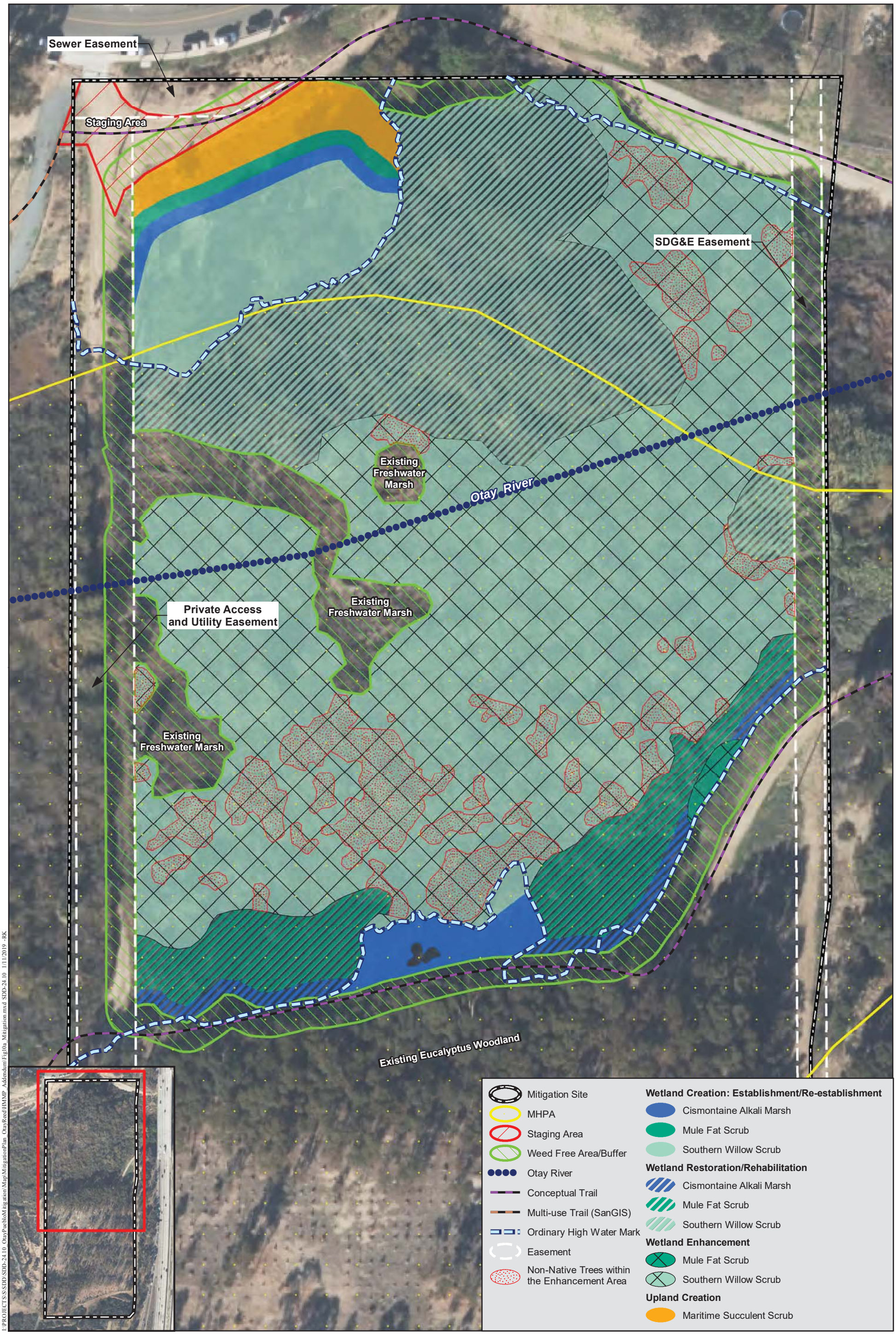
OTAY REED

HELIX Environmental Planning

N

0 60 Feet

Figure 7



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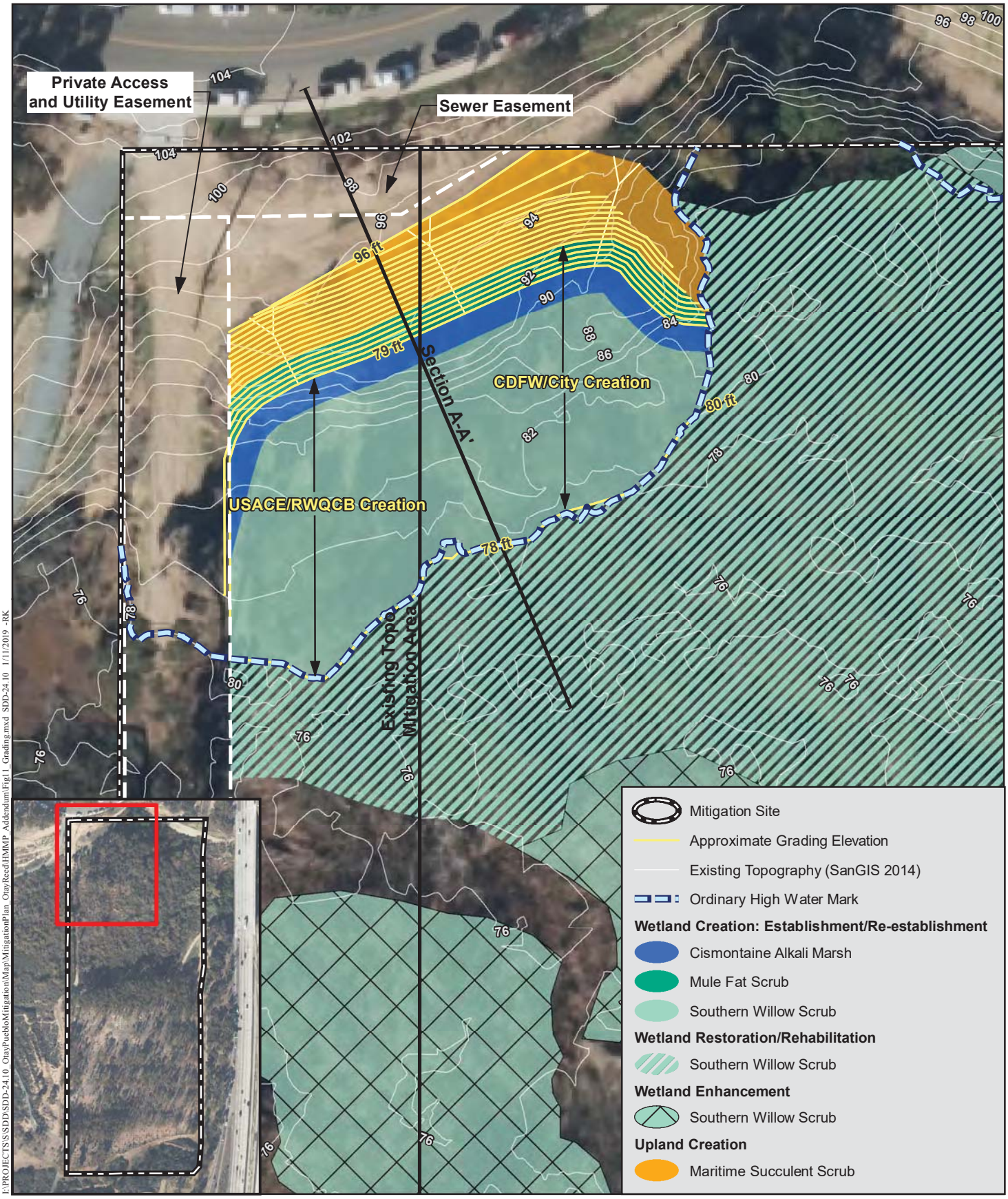
Conceptual Mitigation Plan

OTAY REED

HELIX Environmental Planning

N 0 60 Feet

Figure 10a



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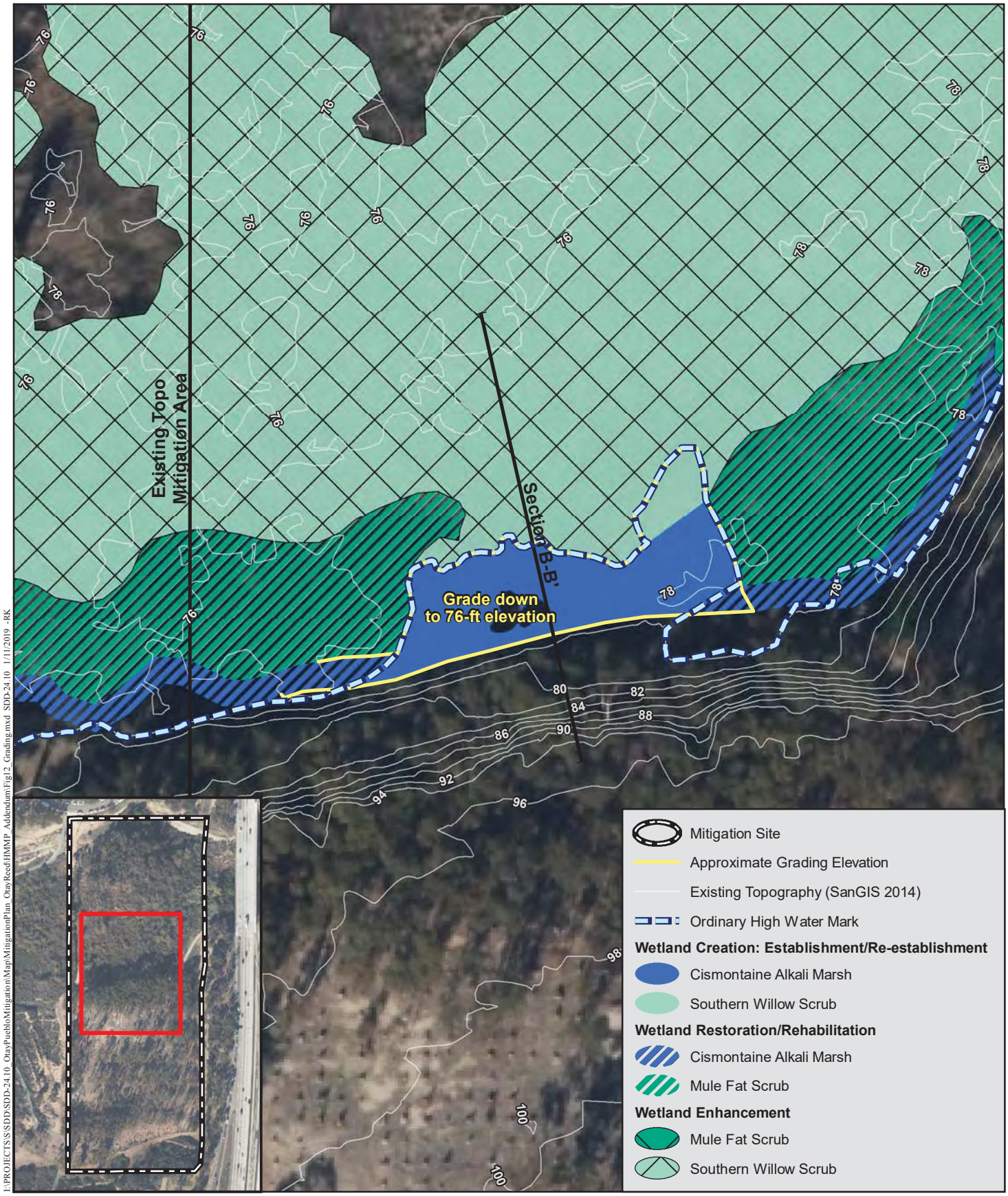
Conceptual Grading Plan

OTAY REED

HELIX Environmental Planning

N 0 50 Feet

Figure 11



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Conceptual Grading Plan

OTAY REED

HELIX Environmental Planning

0 50 Feet

Figure 12

Attachment B
Revised Tables

Table 4 (revised)
OTAY REED PROPOSED MITIGATION[1]

Jurisdictional Resource/Habitat	Establishment (Creation)/ Re-establishment[2] (Restoration)	Rehabilitation (Restoration)	Enhancement	Total
U.S. Army Corps of Engineers (USACE)/Regional Water Quality Control Board (RWQCB)				
Southern willow scrub	0.38	1.17	3.00	**4.55**
Mule fat scrub	--	0.36	0.02	**0.38**
Cismontane alkali marsh	0.14	0.09	--	**0.23**
Total USACE/RWQCB Credit	**0.52**	**1.62**	**3.02**	**5.16**
California Department of Fish and Wildlife (CDFW)				
Southern willow scrub	0.38	1.17	3.00	**4.55**
Mule fat scrub	0.05	0.36	0.02	**0.43**
Cismontane alkali marsh	0.14	0.09	--	**0.23**
Total CDFW Credit	**0.57**	**1.62**	**3.02**	**5.21**
City of San Diego (City)				
Southern willow scrub	0.38	1.17	3.00	**4.55**
Mule fat scrub	0.05	0.36	0.02	**0.43**
Cismontane alkali marsh	0.14	0.09	--	**0.23**
Maritime succulent scrub	--	0.13	--	**0.13**
Total City Credit	**0.57**	**1.75**[3]	**3.02**	**5.34**[2]

[1] Rounded to the nearest 0.01 acre. All proposed credits should be considered estimations for planning purposes until permits for this HMMP and for channel maintenance at Nestor Map 131 have been obtained from all agencies.

[2] Re-establishment (Restoration) meets the no-net loss policy in function and value.

[3] Includes 0.13 acre of upland credit.

Attachment B (cont.)
Revised Tables

Table 4c (revised)
PROPOSED CITY MITIGATION FOR NESTOR CREEK MAP 131 AND 2015-2016 EMERGENCY CHANNEL MAINTENANCE

Habitat Type	Impacts to City Wetlands	Mitigation Required[2]		Mitigation Provided[2]	
		Creation/ Restoration	Creation/ Restoration/ Enhancement/ Acquisition	Creation/ Restoration	Enhancement
Nestor Creek Map 131					
Southern willow scrub	0.10	0.10	0.21	0.11	0.66[1]
Freshwater marsh	0.07	0.07	0.19	--	--
Disturbed wetland	0.07	0.07	0.22	--	--
Natural flood channel/Streambed	0.06	0.06	0.06	--	--
Mule fat scrub	--	--	--	0.05[1]	0.02[1]
Cismontane alkali marsh	--	--	--	0.14[1]	--
Subtotal	**0.30**	**0.30**	**0.68**	**0.30**	**0.68**
2015-2016 Emergency Channel Maintenance (Auburn Map 70)[3]					
Southern willow scrub (including disturbed)		0.05	--	0.05	--
Disturbed mule fat scrub		0.01	0.02	0.03	--
Natural flood channel		0.04	0.04	--	--
Cismontane alkali marsh	--	--	--	0.08[1]	--
Subtotal		**0.10**	**0.06**	**0.16**	**--**
TOTAL	**0.30**	**0.40**	**0.74**	**0.46**	**0.68**

[1] Out-of-kind mitigation to satisfy freshwater marsh, disturbed wetland, and natural flood channel/streambed creation/ restoration/enhancement.

[2] All proposed credits should be considered estimations for planning purposes until permits for this HMMP and for channel maintenance at Nestor Map 131 have been obtained from all agencies

[3] Mitigation is partially fulfilled by the mitigation provided and addressed under a separate plan (Dudek 2017); mitigation acreages listed in this table include remaining mitigation needs as required by the City.

Attachment B (cont.)
Revised Tables

Table 5a (revised)
OTAY REED WETLAND CITY MITIGATION CREDIT SUMMARY[1, 2]

	Establishment (Creation)/ Re-Establishment (Restoration)			Rehabilitation (Restoration)			Enhancement		Total
	Southern Willow Scrub	Mule Fat Scrub	Cismontane Alkali Marsh	Southern Willow Scrub	Mule Fat Scrub	Cismontane Alkali Marsh	Southern Willow Scrub	Mule Fat Scrub	
Total Credits[3]	0.38	0.05	0.14	1.17	0.36	0.09	3.00	0.02	5.21
Estimated Deduction for Nestor Map 131	0.11	0.05	0.14	--	--	--	0.66	0.02	0.98
Estimated Deduction for 2015/16 emergency channel maintenance	--	--	--	0.05	0.03	0.08	--	--	0.16
Subtotal	**0.11**	**0.05**	**0.14**	**0.05**	**0.03**	**0.08**	**0.66**	**0.02**	**1.14**
Remaining Credits	0.27	0	0	1.12	0.33	0.01	2.34	0	4.07

[1] Acreages are rounded to the nearest 0.01 acre. All proposed credits should be considered estimations for planning purposes until permits for this HMMP and for channel maintenance at Nestor Map 131 have been obtained from all agencies.

[2] Habitat acronyms: SWS=southern willow scrub, MFS=mulefat scrub, CAM=cismontane alkali marsh

[3] Reflects available City Credit. Since jurisdictional and impacts for USACE, RWQCB and CDFW are different, the available credits per agency may be different. Refer to Table 5b.

Attachment B (cont.)
Revised Tables

Table 5b (revised)
OTAY REED EXCESS MITIGATION CREDIT BY JURISDICTION [1]

Jurisdictional Resource/ Habitat	Establishment (Creation) / Re-establishment (Restoration)	Rehabilitation (Restoration)	Enhancement	Total
USACE[2]				
Southern willow scrub	0.38	1.17	3.00	**4.55**
Mule fat scrub	--	0.36	0.02	**0.38**
Cismontane alkali marsh	0.14	0.09	--	**0.23**
Total USACE Credit	**0.52**	**1.62**	**3.02**	**5.16**
RWQCB				
Southern willow scrub	0.36	1.17	2.77	**4.30**
Mule fat scrub	--	0.36	0.02	**0.38**
Cismontane alkali marsh	0.13	0.09	--	**0.22**
Total RWQCB Credit	**0.49**	**1.62**	**2.79**	**4.90**
CDFW				
Southern willow scrub	0.37	1.17	2.99	**4.53**
Mule fat scrub	0.04	0.36	0.01	**0.41**
Cismontane alkali marsh	0.13	0.09	--	**0.22**
Total CDFW Credit	**0.54**	**1.62**	**3.00**	**5.16**
City				
Southern willow scrub	0.27	1.12	2.34	**3.73**
Mule fat scrub	--	0.33	--	**0.33**
Cismontane alkali marsh	--	0.01	--	**0.01**
Maritime Succulent Scrub[3]	--	0.13	--	**0.13**
Total City Credit	**0.27**	**1.59**	**2.34**	**4.20**

[1] Rounded to the nearest 0.01 acre. All proposed credits should be considered estimations for planning purposes until permits for this HMMP and for channel maintenance at Nestor Map 131 have been obtained from all agencies.

[2] USACE did not require mitigation for Nestor 131 impacts.

[3] Includes Upland Maritime Succulent Scrub habitat.

ATTACHMENT 2-7

Smythe Channel and Via de la Bandola Channel Permittee Responsible Mitigation Project

HABITAT MITIGATION AND MONITORING PLAN
for the
SMYTHE CHANNEL AND VIA DE LA BANDOLA CHANNEL
PERMITTEE RESPONSIBLE MITIGATION PROJECT
CITY OF SAN DIEGO, CALIFORNIA

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SEPTEMBER 2019

1.3 Mitigation for Impacts to City, State, and Federal Waters

Jurisdictional impacts and mitigation requirements by jurisdiction for the Smythe channel and Via de la Bandola channel are shown in Tables 1 and 2, respectively. Mitigation for both of these channels will occur at the Mitigation Site, located adjacent to the Tijuana River, as shown in Figures 3 and 4, and as described in Sections 5.2 and 5.3. Mitigation ratio determinations are discussed in Section 6.

Table 1
Wetland Impacts and Mitigation for the Smythe Channel Emergency Maintenance Project

Wetland Vegetation Community	Impact Acreage	ACOE/ RWQCB Mitigation Ratio	City Mitigation Ratio	ACOE/ RWQCB Mitigation Required	Additional City Mitigation Required	Total Mitigation Required
Riparian scrub (southern willow scrub)	0.39	3:1	3:1	1.17	—	1.17
Riparian scrub (southern willow scrub) CDFW/City Jurisdiction only	0.38	—	3:1	—	1.14	1.14
Freshwater marsh	0.20	3:1	4:1	0.60	0.20	0.80
Grand Total	**0.97**	**—**	**—**	**1.77[1]**	**1.34**	**3.11**

[1] As reported in RGP 63 Permit SPL-2015-00942 RAG Attachment E Final Report (City of San Diego 2015), the actual impacts to the wetland waters of the U.S. (0.39 ac of riparian scrub and 0.20 ac of freshwater marsh totaling 0.59 ac) were less than the total impacts to the wetland waters of the U.S. (0.73 ac) authorized in the RGP 63. Therefore, this HMMP has met RGP 63 Special Condition 4 in accordance with the 3 to 1 ratio mitigation.

Table 2
Wetland Impacts and Mitigation for the Via de la Bandola Channel Emergency Maintenance Project

Wetland Vegetation Community	Impact Acreage	RWQCB Mitigation Ratio	City Mitigation Ratio	RWQCB Mitigation Required	Additional City Mitigation Required	Total Mitigation Required
Riparian scrub (southern willow scrub; concrete-lined)	0.09	2:1	3:1	0.18	0.09	0.27
disturbed Freshwater marsh (concrete-lined)	0.10	2:1	4:1	0.20	0.20	0.40
Grand Total	**0.19**	**—**	**—**	**0.38**	**0.29**	**0.67**

The Smythe channel and Via de la Bandola channel mitigation outlined herein is intended to satisfy ACOE, RWQCB, and City mitigation requirements by resource type for wetland impacts at the

Smythe channel. The City 0.5:1 mitigation ratio requirement for the 0.03 acre of non-native grassland impacts to the Smythe channel has been satisfied with Marron Valley Cornerstone Lands Conservation Bank purchase of 0.015 acre upland credits (City 2017) (see Appendix D). While CDFW does not currently require mitigation, if CDFW requires mitigation for future maintenance of the Smythe or Via de la Bandola channels, the Mitigation Site is expected to provide adequate mitigation to offset those impacts in accordance with the California Fish and Game Code. Enhancement/rehabilitation activities would be considered "permanent" mitigation and, assuming the initial mitigation continues to thrive, would allow channel maintenance to occur at Smythe and Via de la Bandola channels without additional mitigation for future maintenance events.

Table 3 provides a summary of mitigation occurring at the proposed Mitigation Site. Smythe channel mitigation is proposed, as shown in Table 3, through the off-site rehabilitation of 0.97 acre and enhancement of 2.14 acres of wetlands. Via de la Bandola mitigation is also proposed, as shown in Table 3, through the off-site rehabilitation of 0.19 acre and enhancement of 0.48 acre of wetlands. As noted, the additional acreage shown in Table 3 will be implemented as contingency to provide assurance of attaining the minimum required mitigation acreage, should portions of the site underperform. Mitigation acreage credits within the Mitigation Site is calculated based on the actual spatial footprint of target non-natives to be removed.

Table 3
Proposed Mitigation Site Credit Acreage

	Restoration (Rehabilitation) Credit Acreage	Enhancement Credit Acreage
Required Mitigation for Smythe channel	0.97 acre	2.14 acres
Required Mitigation for Via de la Bandola channel	0.19 acre	0.48 acre
Additional Contingency Mitigation Implemented	0.02 acres	0.04 acres
Total Mitigation Credit Acreage	1.18 acres	2.66 acres

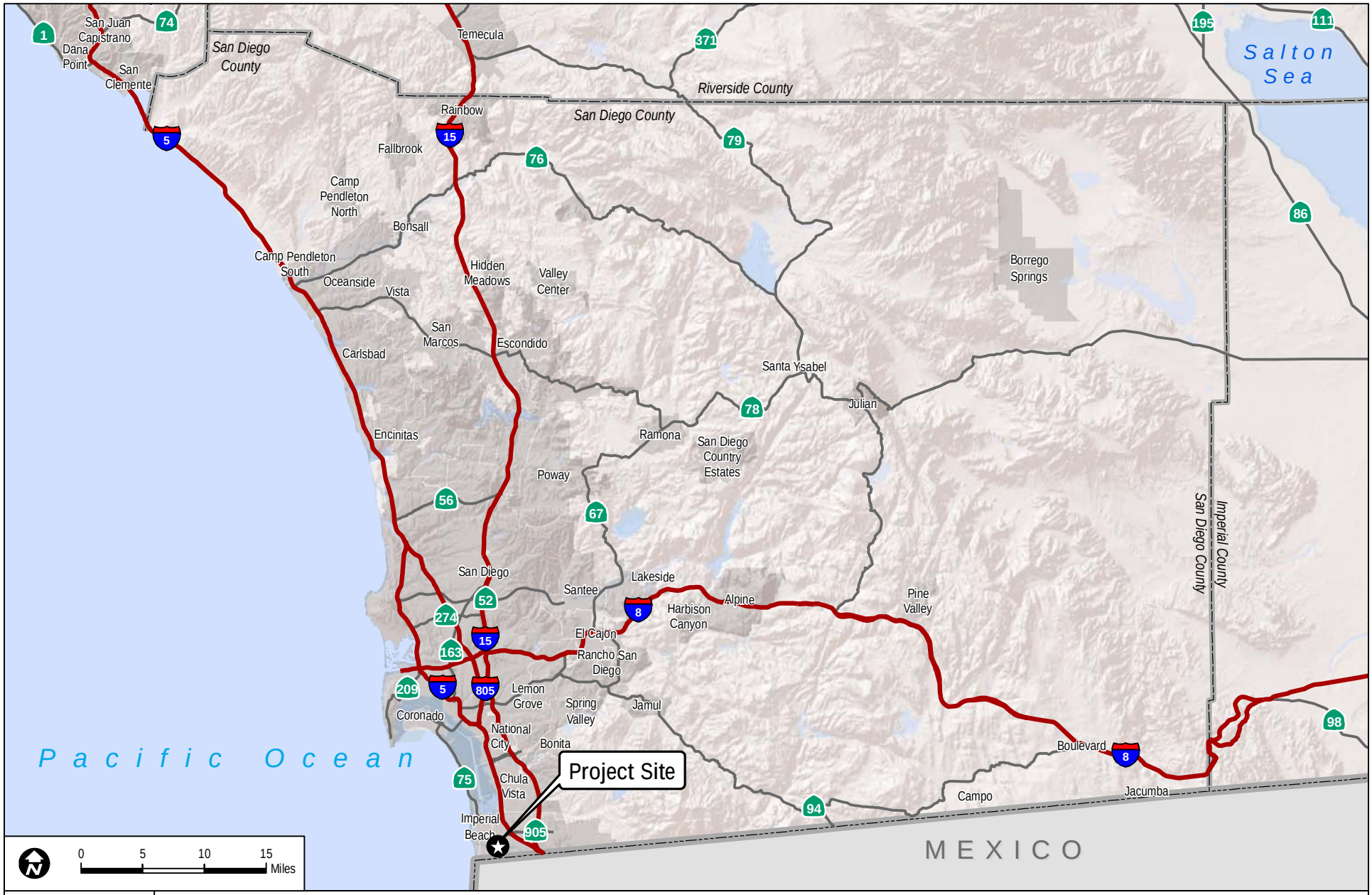

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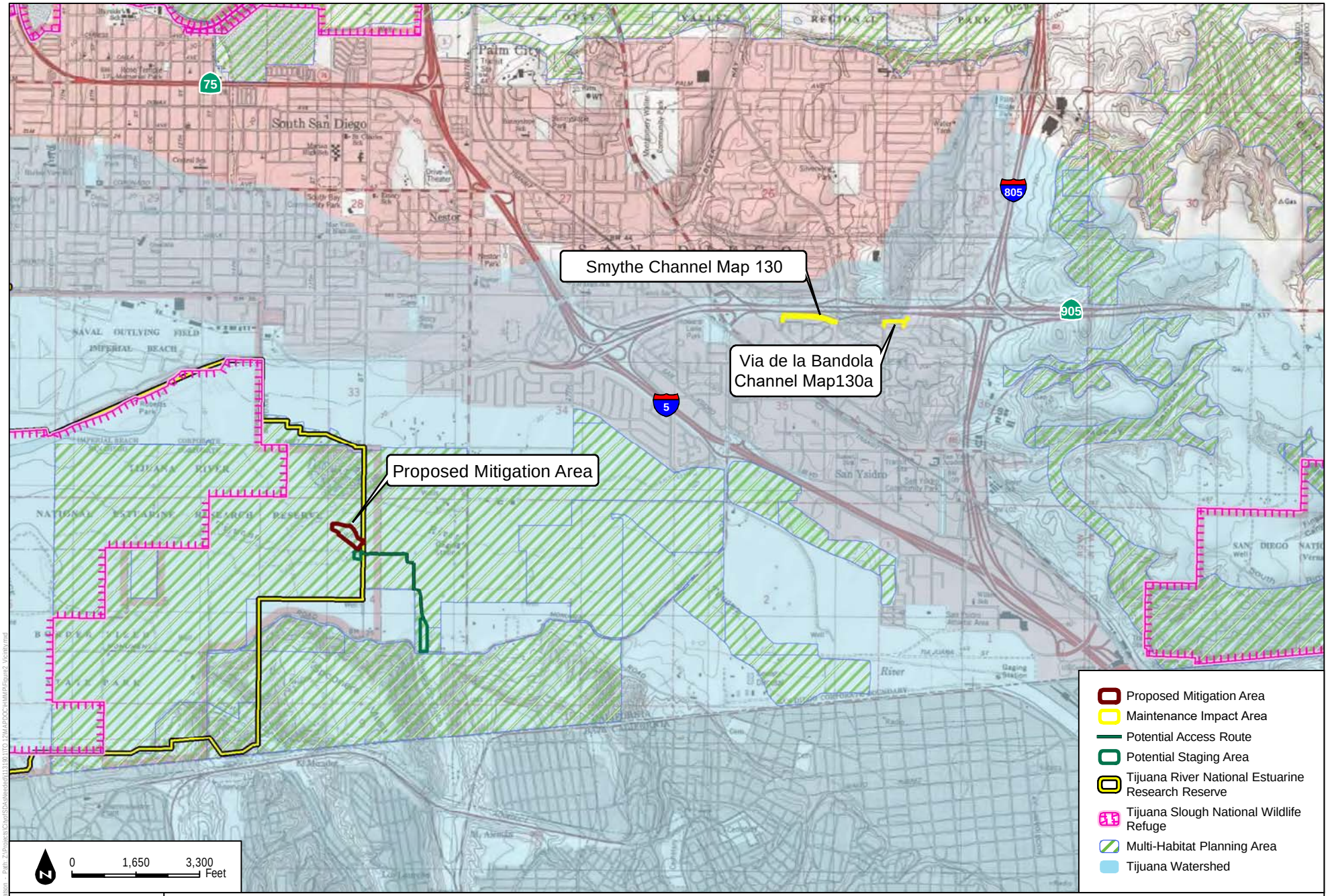
FIGURE 1

Regional Map

HMMP for the Tijuana River Smythe-Via de la Bandola Mitigation Project



SOURCE: USGS 7.5-Minute Series Imperial Beach Quadrangle, SANDAG

FIGURE 2

Vicinity Map

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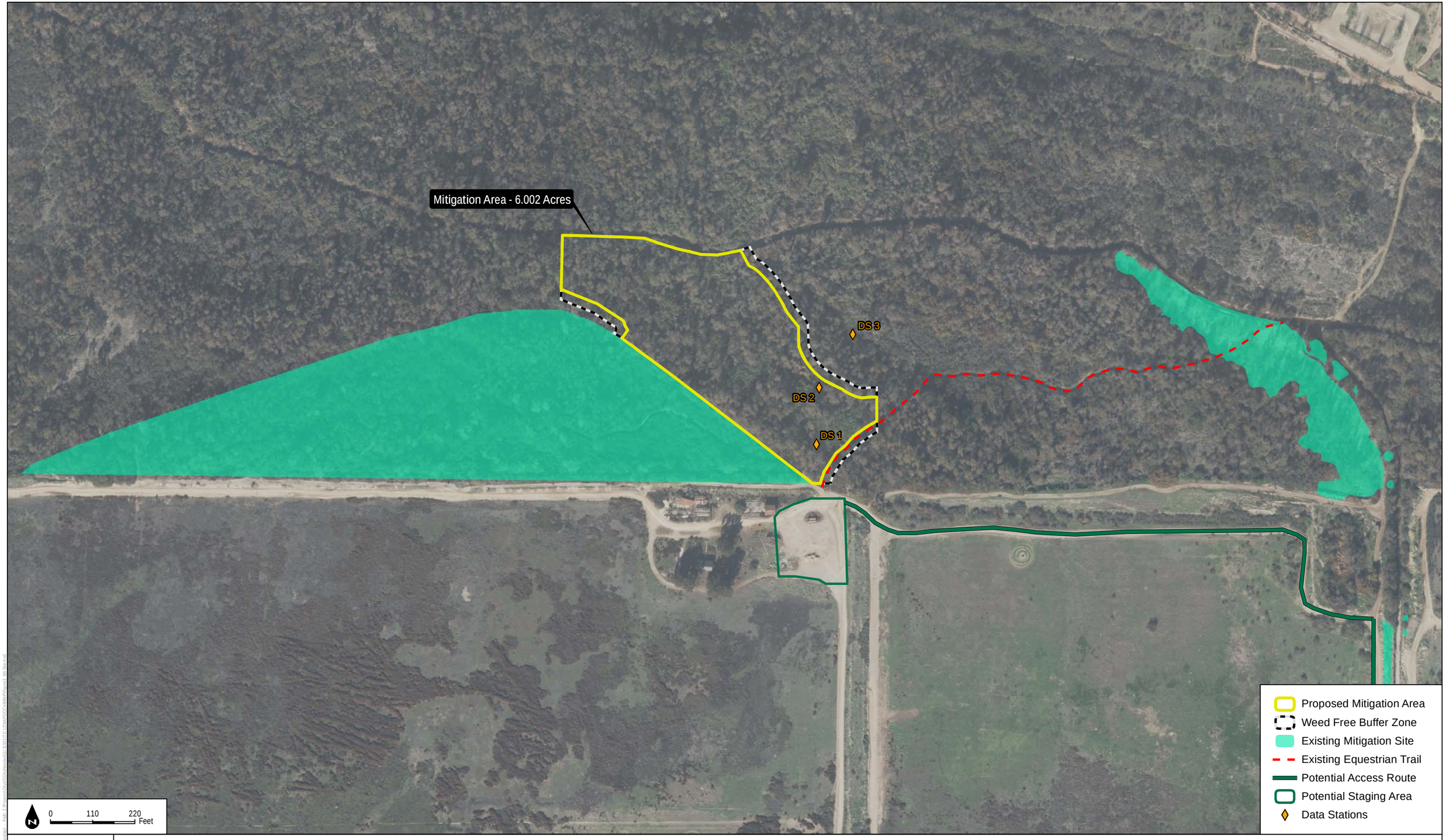
HMMP for the Tijuana River Smythe-Via de la Bandola Mitigation Project



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SOURCE: SANDAG 2014/ 2015

FIGURE 3

Mitigation Site

HMMP for the Tijuana River Smythe-Via de la Bandola Mitigation Project