APPENDIX A
Mitigation Monitoring and Reporting Program

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Impacts	Mitigation Measure	Responsible / Monitoring Party	Monitoring Action or Implementation Stage
Biological Resources			
The analysis contained within Section 3.5 (Biological Resources) indicated that one special-status plant species (paniculate tarplant [Deinandra paniculata]) was present in Phase 3A. In addition, there are special-status wildlife species and include LBV and CAGN. The Project site is also part of the WRCMSHCP and is designated as Critical Habitat by the USFWS for the LBV and CAGN. There are also sensitive habitats (i.e., coastal sage scrub) that would be removed to construct the trail. Mitigation Measures BIO-1 through BIO 7 would reduce these impacts to less than significant.	**BIO-1 Sound Barriers** Trail construction noise levels will be restricted to below 60 decibels hourly at 100 feet from areas occupied by LBV. Portable sound barriers will be required for work occurring in occupied listed bird habitat between February 15 and August 15 (nesting bird season) to reduce noise levels to 60 decibels or below.	Riverside County Regional Park and Open-Space District	During construction.
	BIO-2 Least Bell's Vireo Surveys & Nesting Bird Surveys One week prior to ground-disturbing activities, a minimum of three surveys will be conducted on separate days to determine Least Bell's Vireo nesting status within 300 feet of the work area; one survey conducted one day prior to activities. If LBV nesting is observed, nest monitoring will be initiated and no work will occur within 300 feet of the nest until the nest succeeds or fails, as determined by a qualified biologist. Post-construction protocol surveys for Least Bell's Vireo should be conducted a minimum of once every three years to monitor the use and nest success within conserved habitat (see Section 7.1.2 of the addendum DBESP [Appendix E of the Initial Study]). Whenever possible, construction and maintenance activities should not occur during the nesting bird season (February 15-September 1). If the nesting bird season is unavoidable, a qualified biologist will conduct surveys prior to work activities to determine the presence/absence of nesting birds no earlier than seven (7) days prior to work activities. Should an active nest be observed, no ground-disturbing work shall occur within a 250-foot buffer for non-special status nesting passerine birds, or 500-foot buffer area for nesting raptors (see sections 6.1 and 7.1.2 of the addendum DBESP [Appendix E of the Initial Study].	Riverside County Regional Park and Open-Space District	Prior to earthmoving and construction activities and during operation (within conserved habitat).
	BIO-3 Wildlife Education Program A qualified biologist shall conduct a training session for proposed Project personnel prior to grading to ensure workers are familiar with the species, noise restrictions, and measures that will be implemented on the Project. The training shall include a description of the species of concern and its habitats, the general provisions of the Endangered Species Act (Act) and the WRCMSHCP, the need to adhere to the provisions of the Act and the WRCMSHCP, the penalties associated with violating the provisions of the Act, the general measures are being implemented to conserve the species of concern as they relate to the proposed Project, and the access routes to and from the proposed Project area boundaries within which the proposed Project activities must be accomplished (see Standard Best Management Practices, Section 6.1.1 of the addendum DBESP [Appendix E of the Initial Study]).	Riverside County Regional Park and Open-Space District	Prior to earthmoving and construction activities and during construction for any new crews or personnel.

Impacts	Mitigation Measure	Responsible / Monitoring Party	Monitoring Action or Implementation Stage
	BIO-4 Biological Monitoring During Construction A qualified biologist shall monitor construction activities for the duration of the proposed Project to ensure that practical measures are being employed to avoid incidental disturbance of habitat and species of concern outside the proposed Project footprint (see Standard Best Management Practices, Section 6.1.1 of the addendum DBESP [Appendix E of the Initial Study]).	Riverside County Regional Park and Open-Space District	During construction.
	BIO-5 Native Vegetation Removal The removal of native vegetation shall be avoided and minimized to the maximum extent practical. Temporary impacts shall be returned to preexisting contours and revegetated with appropriate native species (see Standard Best Management Practices, Section 6.1.1 of the addendum DBESP [Appendix E of the Initial Study]).	Riverside County Regional Park and Open-Space District	During construction and upon project completion.
	BIO-6 Trash Removal To avoid attracting predators of the species of concern, the proposed Project area shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s) (see Standard Best Management Practices, Section 6.1.1 of the addendum DBESP [Appendix E of the Initial Study]).	Riverside County Regional Park and Open-Space District	During construction and operation.
	BIO-7 Revegetation Mitigation for impacts to riparian/riverine areas at a ratio of 1:1 for temporary impacts and 4.81:1 for permanent impacts (ratio approved through agency consultation in the addendum DBESP [Appendix E of the Initial Study]). Temporary impacts will be restored and revegetated on-site. Permanent impacts will be mitigated through restoring, and enhancing 5.82 acres at Mill Creek. Mitigation for coastal sage scrub areas at a ratio of 1:1 for temporary impacts and 3:1 off-site mitigation for permanent impacts. Areas of temporary impacts will be revegetated with native species to restore the impacted area, minimize the potential for soil erosion, and to enable runoff absorption and filtration. The use of native plant species is emphasized throughout every aspect of the proposed Project's design. Native species will also be used to revegetate areas of temporary impact that currently have disturbed, non-native grass, and other non-native vegetation communities to promote native species restoration in the Prado Basin (see Standard Best Management Practices, Section 6.1.1 of the addendum DBESP [Appendix E of the Initial Study]).	Riverside County Regional Park and Open-Space District	Post construction and operation.

Impacts	Mitigation Measure	Responsible / Monitoring Party	Monitoring Action or Implementation Stage
Cultural Resources			
The analysis contained in Section 3.6 (Cultural Resources) indicated that there are three historic-period cultural resources that intersect with the project site. However, these resources would not be directly affected by the proposed Project as the proposed trail alignment avoids them entirely or they have since been demolished. The Project site was also investigated for archaeological resources, although none were identified. Although the potential for identifying archaeological historical resources during project ground disturbance is low, the presence of such resources cannot be entirely discounted. As such, Mitigation Measure CUL-1 was identified and would reduce impacts to less than significant.	**CUL-1 Cultural Materials Discovered during Construction** Should an archaeological deposit be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a Riverside County Regional Park and Open-Space District environmental specialist and USACE Cultural Resources Specialist shall be contacted to evaluate the situation and provide recommendations for the treatment of impacts to the resource. If the deposit is found to be significant (i.e., eligible for listing in the CRHR), the Riverside County Regional Park and Open-Space District shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recordation of the archaeological deposit, data recovery and analysis, and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigations, a report documenting methods, findings, and recommendations shall be prepared and submitted to the Riverside County Regional Park and Open-Space District and USACE for review, and the final report shall be submitted to the Eastern Information Center at the University of California, Riverside. Precontact cultural resources may include, but are not limited to, chert or obsidian flakes, projectile points, mortars, pestles, and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic cultural resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.	Riverside County Regional Park and Open-Space District	During construction.
Geology & Soils			
Section 3.8 (Geology and Soils) indicated that there are three geological unit contained in the Project area. One has a low to high paleontological potential, increasing with depth, while the other two have high potential. Because the proposed Project will require some soil disturbance, impacts to potential paleontological resources is considered potentially significant. However, with the implementation of Mitigation Measures GEO-1, GEO-2, GEO-3, and GEO-4 these impacts would be reduced to less than significant levels.	**Geo-1 Paleontological Monitoring & Mitigation Plan** The qualified paleontologist should develop and oversee the implementation of a Paleontological Monitoring and Mitigation Plan tailored to the Project plans that provides for paleontological monitoring of earthwork and ground-disturbing activities into undisturbed geologic units with high paleontological potential, whether at the surface or in the subsurface, to be conducted by a paleontological monitor meeting industry standards (Murphey et al. 2019).	Riverside County Regional Park and Open-Space District	Paleontological monitoring is required during construction, grading, and soil removal.
	Geo-2 Workers' Environmental Awareness Program The qualified paleontologist should develop a Worker's Environmental Awareness Program training that communicates requirements and procedures for the inadvertent discovery of paleontological resources during construction, to be delivered by the paleontological monitor to the construction crew prior to the onset of ground disturbance.	Riverside County Regional Park and Open-Space District	Prior to construction and grading and soil removal.
	Geo-3 Inadvertent Discoveries In the event that paleontological resources are encountered during construction activities, all work must stop in the immediate vicinity of the finds while the paleontological monitor documents the find. The designated qualified paleontologist shall assess the find. Should the qualified paleontologist assess the find as significant, the find shall be collected and curated in an accredited repository along with all necessary associated data and curation fees.	Riverside County Regional Park and Open-Space District	During construction.

Impacts	Mitigation Measure	Responsible / Monitoring Party	Monitoring Action or Implementation Stage
	Geo-4 Stand-Alone Paleontological Resources Awareness Training A qualified paleontologist should develop a stand-alone paleontological resources awareness training for the District. This training will include information on the types of paleontological resources that may be encountered in the area, an overview of the area's geologic and paleontological history, and instructions on steps to follow should park personnel or members of the public using the SART report the discovery of a paleontological resource. District should ensure this training is delivered to personnel responsible for operations and maintenance activities on the SART.	Riverside County Regional Park and Open-Space District	Prior to construction and grading and soil removal.
Recreation			
Section 3.17 (Recreation), the proposed Project was determined to result in adverse physical impacts on the environment but would be mitigated to less than significant levels with the mitigation measures associated with Sections 3.5 (Biological Resources, 3.6 (Cultural Resources), and 3.8 (Geology and Soils). Therefore, impacts related to recreation would be less than significant with the implementation of these mitigation measures.	Not Applicable. Mitigation measures noted above would address all impacts associated with Recreation.	Not Applicable	Not Applicable

APPENDIX B

Air Quality and Greenhouse Gas Emissions Study

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SART Segment 2, 2A and 3A Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SART Segment 2, 2A and 3A
Construction Start Date	9/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	18.8
Location	33.88665555767355, -117.62289797274802
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5463
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	3.00	Mile	5.00	0.00	0.00	—	—	recreational trail

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.16	0.98	7.50	13.1	0.01	0.30	0.79	1.00	0.28	0.12	0.38	—	2,068	2,068	0.08	0.03	1.52	2,081
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.27	3.55	37.6	38.5	0.12	1.37	6.10	7.47	1.28	1.13	2.40	—	15,752	15,752	0.45	1.44	0.54	16,193
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.65	0.53	5.36	6.32	0.02	0.20	0.85	1.05	0.19	0.14	0.33	—	1,986	1,986	0.06	0.15	0.97	2,032
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.10	0.98	1.15	< 0.005	0.04	0.16	0.19	0.03	0.03	0.06	—	329	329	0.01	0.02	0.16	336

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	0.57	0.48	3.48	5.03	< 0.005	0.21	0.79	1.00	0.19	0.12	0.31	—	775	775	0.03	0.01	1.04	781
2026	1.16	0.98	7.50	13.1	0.01	0.30	0.42	0.73	0.28	0.10	0.38	—	2,068	2,068	0.08	0.03	1.52	2,081
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.27	3.43	37.6	34.4	0.12	1.37	6.10	7.47	1.28	1.13	2.40	—	15,752	15,752	0.45	1.44	0.54	16,193
2026	4.26	3.55	30.9	38.5	0.08	1.16	4.08	5.25	1.07	0.64	1.72	—	10,007	10,007	0.34	0.38	0.18	10,129
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.65	0.53	5.36	5.31	0.02	0.20	0.85	1.05	0.19	0.14	0.33	—	1,986	1,986	0.06	0.15	0.97	2,032
2026	0.58	0.49	3.80	6.32	0.01	0.15	0.22	0.37	0.14	0.05	0.19	—	1,036	1,036	0.04	0.02	0.33	1,042
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.12	0.10	0.98	0.97	< 0.005	0.04	0.16	0.19	0.03	0.03	0.06	—	329	329	0.01	0.02	0.16	336
2026	0.11	0.09	0.69	1.15	< 0.005	0.03	0.04	0.07	0.03	0.01	0.03	—	172	172	0.01	< 0.005	0.06	173

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.39	3.39	3.49	< 0.005	0.21	—	0.21	0.19	—	0.19	—	490	490	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.39	3.39	3.49	< 0.005	0.21	—	0.21	0.19	—	0.19	—	490	490	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.29	< 0.005	0.02	—	0.02	0.02	—	0.02	—	40.3	40.3	< 0.005	< 0.005	—	40.4
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.67	6.67	< 0.005	< 0.005	—	6.70
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.09	1.54	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	282	282	0.01	0.01	1.04	286
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.10	1.17	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	259	259	0.01	0.01	0.03	262
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.6	21.6	< 0.005	< 0.005	0.04	21.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Linear, Grading & Excavation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.71	3.11	27.3	29.4	0.06	1.21	—	1.21	1.11	—	1.11	—	6,496	6,496	0.26	0.05	—	6,518
Dust From Material Movement	—	—	—	—	—	—	3.24	3.24	—	0.35	0.35	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.26	2.24	2.42	< 0.005	0.10	—	0.10	0.09	—	0.09	—	534	534	0.02	< 0.005	—	536
Dust From Material Movement	—	—	—	—	—	—	0.27	0.27	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.44	< 0.005	0.02	—	0.02	0.02	—	0.02	—	88.4	88.4	< 0.005	< 0.005	—	88.7
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.22	2.63	0.00	0.00	0.59	0.59	0.00	0.14	0.14	—	583	583	0.03	0.02	0.06	590
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	< 0.005	32.0
Hauling	0.35	0.13	10.0	2.38	0.06	0.17	2.27	2.43	0.17	0.64	0.80	—	8,639	8,639	0.16	1.36	0.48	9,049
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.5	48.5	< 0.005	< 0.005	0.08	49.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.52	2.52	< 0.005	< 0.005	< 0.005	2.63
Hauling	0.03	0.01	0.83	0.19	< 0.005	0.01	0.18	0.20	0.01	0.05	0.07	—	710	710	0.01	0.11	0.65	744
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.03	8.03	< 0.005	< 0.005	0.01	8.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.42	0.42	< 0.005	< 0.005	< 0.005	0.44
Hauling	0.01	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	118	118	< 0.005	0.02	0.11	123

3.5. Linear, Drainage, Utilities, & Sub-Grade (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.99	2.51	22.9	23.6	0.05	0.91	—	0.91	0.84	—	0.84	—	5,694	5,694	0.23	0.05	—	5,713

Dust From Material Movement	—	—	—	—	—	—	2.66	2.66	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.79	1.85	< 0.005	0.07	—	0.07	0.07	—	0.07	—	446	446	0.02	< 0.005	—	447
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.8	73.8	< 0.005	< 0.005	—	74.0
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.19	2.33	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	518	518	0.02	0.02	0.05	525
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.09	0.50	0.01	0.03	0.47	0.51	0.03	0.13	0.17	—	1,806	1,806	0.03	0.28	0.10	1,892

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.1	41.1	< 0.005	< 0.005	0.07	41.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	141	141	< 0.005	0.02	0.13	148
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.80	6.80	< 0.005	< 0.005	0.01	6.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.5

3.7. Linear, Drainage, Utilities, & Sub-Grade (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.85	2.39	21.2	23.3	0.05	0.83	—	0.83	0.76	—	0.76	—	5,693	5,693	0.23	0.05	—	5,712
Dust From Material Movement	—	—	—	—	—	—	2.66	2.66	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.69	3.69	< 0.005	< 0.005	—	3.70
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.18	2.18	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	507	507	0.01	0.02	0.05	513
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.03	0.49	0.01	0.03	0.47	0.51	0.03	0.13	0.17	—	1,775	1,775	0.03	0.28	0.09	1,861
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.95	6.95	< 0.005	< 0.005	0.01	7.29
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.15	1.15	< 0.005	< 0.005	< 0.005	1.21

3.9. Linear, Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.37	10.8	0.01	0.30	—	0.30	0.28	—	0.28	—	1,619	1,619	0.07	0.01	—	1,625
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.37	10.8	0.01	0.30	—	0.30	0.28	—	0.28	—	1,619	1,619	0.07	0.01	—	1,625
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.63	5.31	0.01	0.15	—	0.15	0.14	—	0.14	—	799	799	0.03	0.01	—	801
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.66	0.97	< 0.005	0.03	—	0.03	0.03	—	0.03	—	132	132	0.01	< 0.005	—	133
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.13	2.33	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	448	448	0.02	0.02	1.52	455
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.13	0.14	1.77	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	412	412	0.01	0.02	0.04	417
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.08	0.91	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	206	206	< 0.005	0.01	0.32	209
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	34.1	34.1	< 0.005	< 0.005	0.05	34.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	9/1/2025	10/10/2025	5.00	30.0	—
Linear, Grading & Excavation	Linear, Grading & Excavation	10/11/2025	11/21/2025	5.00	30.0	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	11/22/2025	1/2/2026	5.00	30.0	—
Linear, Paving	Linear, Paving	1/2/2026	9/10/2026	5.00	180	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	6.00	8.00	6.00	0.82
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43

Linear, Grading & Excavation	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Grading & Excavation	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Grading & Excavation	Signal Boards	Electric	Average	6.00	8.00	6.00	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	6.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42

Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Paving	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Paving	Signal Boards	Electric	Average	6.00	8.00	6.00	0.82
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	20.0	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	45.0	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	125	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	40.0	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	26.2	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	32.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10.2	HHDT,MHDT

Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	—	—	5.00	0.00	—
Linear, Grading & Excavation	—	30,070	5.00	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	6,285	—	5.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Construction	5.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	528	532	0.03	< 0.005
2026	352	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	16.3	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	17.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	75.4
AQ-PM	91.6
AQ-DPM	93.5

Drinking Water	73.7
Lead Risk Housing	94.9
Pesticides	0.00
Toxic Releases	66.5
Traffic	98.2
Effect Indicators	—
CleanUp Sites	78.6
Groundwater	16.8
Haz Waste Facilities/Generators	89.2
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	28.8
Cardio-vascular	70.7
Low Birth Weights	61.9
Socioeconomic Factor Indicators	—
Education	63.9
Housing	73.0
Linguistic	55.6
Poverty	82.7
Unemployment	69.1

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	5.286795842

Employed	33.54292314
Median HI	19.40202746
Education	—
Bachelor's or higher	27.07558065
High school enrollment	100
Preschool enrollment	6.493006544
Transportation	—
Auto Access	64.27563198
Active commuting	21.48081612
Social	—
2-parent households	38.65007058
Voting	3.734120364
Neighborhood	—
Alcohol availability	14.70550494
Park access	51.52059541
Retail density	54.11266521
Supermarket access	36.86641858
Tree canopy	15.10329783
Housing	—
Homeownership	29.61632234
Housing habitability	32.13139997
Low-inc homeowner severe housing cost burden	53.83036058
Low-inc renter severe housing cost burden	30.14243552
Uncrowded housing	17.64403952
Health Outcomes	—
Insured adults	4.452713974
Arthritis	54.3

Asthma ER Admissions	81.7
High Blood Pressure	36.7
Cancer (excluding skin)	85.3
Asthma	25.7
Coronary Heart Disease	37.1
Chronic Obstructive Pulmonary Disease	37.6
Diagnosed Diabetes	21.5
Life Expectancy at Birth	2.6
Cognitively Disabled	38.1
Physically Disabled	74.5
Heart Attack ER Admissions	44.3
Mental Health Not Good	17.1
Chronic Kidney Disease	14.8
Obesity	7.3
Pedestrian Injuries	75.8
Physical Health Not Good	16.1
Stroke	34.3
Health Risk Behaviors	—
Binge Drinking	60.3
Current Smoker	20.8
No Leisure Time for Physical Activity	11.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	3.0
Elderly	53.8
English Speaking	24.8

Foreign-born	81.9
Outdoor Workers	33.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	47.1
Traffic Density	94.1
Traffic Access	53.7
Other Indices	—
Hardship	81.3
Other Decision Support	—
2016 Voting	15.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	86.0
Healthy Places Index Score for Project Location (b)	9.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	acreage updated
Construction: Construction Phases	Construction of all phases would occur between Sept 2025 and Sept 2026

APPENDIX C
Biological Resources Technical Report

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Biological Resources Technical Report

Santa Ana River Trail Phases 2, 2A, and 3A

July 4, 2022

Prepared for:

Riverside County Regional Park & Open-Space District
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Prepared by:

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Table of Contents

LIST OF TABLES

LIST OF APPENDICES

Abbreviations

ADA	Americans with Disabilities Act
BGEPA	Bald and Golden Eagle Protection Act
BRTR	Biological Resources Technical Report
BSA	Biological Study Area
Caltrans	California Department of Transportation
CCH	Consortium of California Herbaria
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Riverside County
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DCH	Designated Critical Habitat
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
FR	Federal Register
General Plan	Riverside County General Plan
GPS	Global Positioning System
iPaC	Information for Planning and Consultation
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCVII	Manual of California Vegetation, 2nd Edition
MSHCP	Multi Species Habitat Conservation Plan
NEPA	National Environmental Policy Act
NCCP	Natural Community Conservation Plan
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
OHWM	ordinary high-water mark
Project	Santa Ana River Trail
RHA	River and Harbors Act
RWQCB	Regional Water Quality Control Board
SR-	State Route
SSC	Species of Special Concern
Stantec	Stantec Consulting Services Inc.
SWRCB	State Water Resources Control Board
U.S.	United States

USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States
WRC	Western Riverside County
WRCMSHCP	Western Riverside County Multi-Species Habitat Conservation Plan

1.0 INTRODUCTION

This Biological Resources Technical Report (BRTR) is intended to document the biological resources that are associated with the proposed Santa Ana River Trail Phases 2, 2A, and 3A Project (Project) located in unincorporated Riverside County, California (refer to Appendix A Figures 1 and 2). The surveys conducted and discussions presented within this BRTR are intended to support planning and regulatory agency permitting and associated documentation.

Surveys were conducted in 2021 by Stantec Consulting Services Inc. (Stantec) and Leatherman BioConsulting (Leatherman Bio) biologists within accessible portions of the proposed Project site in addition to a surrounding 300-foot buffer zone. This approximately 362-acre area is defined as the Biological Study Area (BSA) (refer to Appendix A Figure 3). The BRTR describes the existing environmental conditions that occur within the BSA and surrounding areas and evaluates the potential for biological resources to occur based on those conditions with an emphasis on special-status plant and wildlife species, wildlife corridors, and special-status/sensitive natural communities.

1.1 PROJECT LOCATION

The proposed Project is located within the Prado Dam Flood Control Basin area of the Santa Ana River in unincorporated Riverside County, California, within the United States (U.S.) Geological Survey (USGS) Riverside West 7.5-minute topographic quadrangle. The Prado Dam Flood Control Basin area is located within Riverside County, approximately 26 miles east of the Pacific Ocean and 35 miles southeast of downtown Los Angeles. The proposed Project site is located within the northwestern portion of Riverside County (County) at the juncture of the administrative boundaries of Riverside, San Bernardino, and Orange counties and south and southeast of the City of Corona's jurisdictional boundaries (Appendix A Figure 1 Regional Location).

The east and west improvement limits of the proposed Project extend from approximately Rincon Street to the east to Auto Center Drive to the west and are shown in Appendix A Figure 2, Site Plan. As shown in Figure 2, the proposed Project intersects with the following roadways, including Rincon Street, Butterfield Drive, and Auto Center Drive. The proposed Project limits are the Prado Dam Flood Control Basin area to the north, State Route (SR-) 91 to the south, West Rincon Street to the east, and State Route (SR)-71 to the west. Access to the proposed Project site is via regional freeways (SR-91 and SR-71) and local roads (West Rincon Street, Butterfield Drive, Auto Center Drive, and Corydon Street).

The proposed Project occurs within an approximately 46-acre area. In general, the proposed Project site is characterized as open space. Land uses to the north are comprised of natural lands, open space, and residential, while uses to the south include residential, light industrial, and the freeway (SR-91). To the east, land uses include light industrial and natural lands, while to the west, uses include natural lands and SR-91. The Santa Ana River Trail is also located within the Temescal Canyon Area Plan, Santa Ana River Policy Area, Western Riverside County (WRC) Multi-Species Habitat Conservation Plan (MSHCP) Areas, and Public/Quasi Public Lands.

1.2 PROJECT DESCRIPTION

The proposed Project consists of trail construction that would complete a portion of the larger 110-mile regional Santa Ana River Trail system. Specifically, the proposed Project includes a 2.79-mile dual-track Class I multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. The Project includes the construction of three new trail segments, Phase 2 will be 0.65-mile long, Phase 2A will be 1.37-mile long, and Phase 3A will be 0.77-mile long. The three trail segments are shown in Appendix A Figures 2-1 to 2-4.

Once constructed, the trail would be Americans with Disabilities Act (ADA) compliant and follow the California Department of Transportation (Caltrans) Highway Design Manual guidance for bicycle paths.

The following construction is proposed:

- Class I bicycle path with adjacent pedestrian and equestrian path separated by a split rail fence with a general design, as follows:
    - Eight-to-ten-foot-wide bicycle path travel way with two-foot shoulders
    - Ten-foot wide decomposed granite trail (pedestrian and equestrian path)
    - Five percent max longitudinal slope
    - Two percent max crossfall path and shoulder slopes
    - Minimum 2 to 1 foot slope ratio for cut / fill slopes
- Signage and striping along the trail
- Implementation of drainage improvements
- Application of native hydroseed mix along slope areas of the new trail phases

At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 11 feet wide on the bridges and at the Temescal Wash crossing would be 20 feet wide. A combined paved trail will also be required for a portion of the trail along West Rincon Street and Corydon Street within Phase 2 due to right-of-way constraints and existing Southern California Edison overhead powerlines.

1.2.1 Drainage Crossings

To protect the trail as it crosses drainages, riprap would be installed along the alignment (Appendix A Figure 2). Table 1: Preliminary Riprap Quantities shows the estimated square feet of riprap in each trail phase.

Table 1. Preliminary Riprap Quantities

Phase	Riprap Location	Riprap Quantity (square feet)
3A	1	28,134
	2	1,418
2A (west)	3	5,577
2A (east)	4	805
	5	801
	6	803
	7	842
2	8	21,378
	Total	**59,758**

Source: Stantec 2022

In Phase 2, a box culvert extending across Temescal Wash is proposed. Clear-span bridges ranging in length from approximately 100-feet to 180-feet would be used to cross two un-named drainages located in Phase 2A.

1.2.2 Trail Access

Trail access to each of the Phases would be achieved as follows:

- Phase 2: Stagecoach Road/Corydon Street (Stagecoach Park area) and West Rincon Street/Smith Avenue (Corona Airport area)
- Phase 2A: Auto Center Drive (western portion of trail) and Butterfield Drive (eastern portion of trail)
- Phase 3A: Auto Center Drive/Railroad Street (United States Army Corps of Engineers [USACE] office)

2.0 METHODS

This biological resources assessment of the BSA included but was not limited to a literature review, reconnaissance-level surveys, a habitat assessment, vegetation mapping, rare plant surveys, focused surveys for burrowing owl (*Athene cunicularia*); and protocol surveys for southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*) (vireo), and western yellow-billed cuckoo (*Coccyzus americanus*). Prior to the survey, a preliminary literature review of readily available resources was performed. The surveys were conducted on foot throughout the BSA.

2.1 LITERATURE REVIEW

A focused literature search of the BSA was conducted prior to the field survey. The BSA is located within the USGS Corona North, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted for the BSA and a surrounding ten-mile buffer area to determine special-status plants, wildlife, and vegetation communities that have been documented within this area (CDFW 2021a). The database included portions of the following quadrangles surrounding the BSA:

- Guasti
- Fontana
- Black Star Canyon
- Ontario
- Prado Dam
- Lake Mathews
- Corona South
- Riverside West

Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2021b)
- Special Animals List (CDFW 2021c)
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2021d)
- California's Wildlife – Life History and Range (CDFW 2021e)
- California Sensitive Natural Communities (CDFW 2021f)
- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (iPaC) (USFWS 2021)
- Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS] 2021)
- Consortium of California Herbaria (CCH) (CCH 2021)
- WRCMSHCP (2015)

2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENT

The methods for the general and focused wildlife surveys, rare plant surveys, and vegetation mapping are described in the following sections.

2.2.1 Site Reconnaissance and Wildlife Surveys

Stantec initially conducted a habitat assessment and reconnaissance-level survey to document the environmental conditions present within the BSA, this assessment did not include focused, protocol-level surveys for rare plants or wildlife or other special-status resources. The primary goal of the initial survey was to identify and assess habitat that may be capable of supporting special-status plant or wildlife species and determine the potential need for additional focused surveys for special-status resources. Biologists recorded all incidental plant and wildlife observations.

The survey was conducted during a season and time of day when resident and migratory birds would be expected to be present and exhibiting normal activity, small mammals would be active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. The survey was conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 65-95 degrees Fahrenheit). The site reconnaissance survey was conducted on May 6, 2021. Additional focused surveys were conducted and described in the following sections.

The BSA was investigated on foot (where accessible) by experienced field biologists walking throughout publicly accessible areas at an average pace of approximately 1.5 kilometers per hour while visually scanning for wildlife and their sign and listening to wildlife songs and calls. Biologists paused as necessary to listen for wildlife or to identify, record, or enumerate any observed species. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.). Species identifications conform to the most up-to-date online databases and technical literature.

In addition to the general reconnaissance wildlife survey, protocol bird surveys and rare plant surveys were conducted and are described in the following sections.

2.2.1.1 Burrowing Owl Surveys

A habitat assessment and focused burrowing owl surveys were conducted by Stantec Senior Biologist Melissa Tu and Principal Biologist Jared Varonin following the WRCMSHCP Burrowing Owl Survey Instructions (RCA 2006). On May 6, 2021, biologists from Stantec conducted the burrowing owl habitat assessment and the first focused burrow survey. The other three burrow surveys were conducted on June 30, August 12, and September 3, 2021.

Qualified biologists walked through suitable habitat within the Survey Area to identify burrows or other potential signs of burrowing owl, per the WRCMSCHP Burrowing Owl Survey Instructions. During the burrowing owl habitat assessment, the entire Survey Area was surveyed on foot. Unsuitable habitat was documented and was not surveyed during the focused burrow surveys.

For the focused burrowing owl surveys, only suitable burrowing owl habitat including open grassland and other open habitat was surveyed. Suitable habitat included large California ground squirrels (*Otospermophilus beecheyi*) burrows .

2.2.1.2 Riparian Bird Surveys

Protocol surveys were conducted for southwestern willow flycatcher (flycatcher), least Bell's vireo (vireo), and western yellow-billed cuckoo by Brian Leatherman (USFWS permit No. TE827493-9) of Leatherman Bio. Survey methods followed the guidelines endorsed by the USFWS for each species as described below. In general, surveys were conducted in riparian habitat by walking slowly and methodically within and along the margins of all suitable riparian habitat for each species. The focus of the surveys was on the detection and identification of the target species. Nest surveys were not conducted.

The presence/absence surveys for the vireo followed the 2001 survey guidelines developed by the USFWS, which requires that eight surveys be conducted 10 days apart between April 10 and July 31 (USFWS 2001).

The surveys for the flycatcher followed the 2010 protocol. Five surveys at least five days apart were conducted between May 15 and July 17 from dawn to 1030 under suitable weather conditions (Sogge et al 2010). Recorded vocalizations were played as described in the survey protocol in an attempt to elicit a response from individuals potentially present. The recording was played for roughly 15 seconds, stopped for one or two minutes to listen for a response, and then played again. The surveys for the cuckoo followed the protocol developed by Halterman et al. (2015). The protocol requires that four surveys be conducted within three certain periods between June 15 and August 15. Halterman et al. (2015) recommend that surveys be conducted from 12 to 15 days apart between dawn and 1100 under suitable weather conditions. Recorded vocalizations were played as described in the survey protocol in an attempt to elicit a response from individuals potentially present. The prescribed 6-minute broadcast with five vocalizations spaced one minute apart was played every 100 meters (328 feet).

2.2.2 Floristic Surveys

Floristic surveys for rare plant species were performed according to the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018) and *California Native Plant Society Botanical Survey Guidelines* (CNPS 2001). Two surveys were conducted on May 6 and June 30, 2021, by Stantec biologists. Jared Varonin, Melissa Tu, and Ashleigh Townsend conducted the survey on May 6, and Jared Varonin conducted the survey on June 30. The surveys were conducted during the documented blooming periods of most of the vascular rare plant known to occur within 10 miles of BSA. The species that bloom later in the year are shrubs that can be identified any time of year.

2.2.3 Vegetation Mapping

Vegetation descriptions and nomenclature are based on the second edition of *A Manual of California Vegetation* (MCVII) (Sawyer et al. 2009), where applicable, and have been defined to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the ESRI Collector for ArcGIS app on an Apple iPad coupled with a Bad Elf GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ESRI ArcGIS (version 10.7) with aerial photograph base maps with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however, boundaries between some vegetation types are less precise due to difficulties in interpreting aerial imagery and accessing stands of vegetation.

To support the vegetation mapping presented in this BRTR, Stantec conducted a reconnaissance-level field survey. Stantec used this data in conjunction with vegetation mapping data collected/provided by the MSHCP from 2012 (WRCMSHCP 2015) to produce a vegetation community and land cover map for the BSA (refer to Appendix A Figure 3).

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. All vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.

3.0 REGULATORY ENVIRONMENT

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (FESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful "take" and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of Designated Critical Habitat (DCH). Under FESA, take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The USFWS regulations define harm to mean "an act which actually kills or injures wildlife." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 Code of Federal Regulations [CFR] Section 17.3).

DCH is defined in FESA Section 3(5)(A) as "(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features: (I) essential to the conservation of the species; (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior that such areas are essential for the conservation of the species." The effects analyses for DCH must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, Gifford Pinchot Task Force v. USFWS.

Activities that may result in "take" of individuals are regulated by USFWS. USFWS produced an updated list of candidate species December 6, 2007 (72 Federal Register [FR] 69034). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code [USC] 703-711) makes it unlawful to possess, buy, sell, purchase, barter or take any migratory bird listed in Title 50 of CFR Part 10. "Take" is defined as possession or destruction of migratory birds, their nests, and eggs. Disturbances that cause nest abandonment or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA encompasses whole birds, parts of birds, bird nests, and eggs.

3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

USFWS is the primary federal authority charged with the management of golden eagles in the U.S. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this Project. USFWS guidance on the applicability of current BGEPA statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the take of golden and bald eagles. The new rules were released under the existing BGEPA, which has been the primary regulatory protection for unlisted eagle populations since 1940.

All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in the western U.S., it is expected that permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

3.1.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act, as amended in 1964, requires that all federal agencies consult with National Marine Fisheries Service (NMFS), USFWS, and state wildlife agencies (i.e., CDFW) when proposed actions might result in modification of a natural stream or body of water. Federal agencies must consider effects that these projects would have on fish and wildlife development and provide for improvement of these resources. The Fish and Wildlife Coordination Act allows NMFS, USFWS, and CDFW to provide comments to USACE during review of projects under Section 404 of the Clean Water Act (concerning the discharge of dredged materials into navigable waters of the U.S. [WOTUS]) and Section 10 of the Rivers and Harbors Act (RHA) regarding obstructions in navigable waterways. NMFS comments provided under the Fish and Wildlife Coordination Act are intended to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats. Since the proposed Project involves impacts to WOTUS, the USACE will be the lead federal agency and will initiate consultation with the USFWS and CDFW per the requirements of this act.

3.1.5 Federally Regulated Habitats

Areas that meet the regulatory definition of "WOTUS" are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the River and Harbors Act (RHA) (1899). WOTUS may include all waters used or potentially used for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (e.g., intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as WOTUS, tributaries of waters otherwise defined as WOTUS, territorial seas, and wetlands (i.e., "Special Aquatic Sites") adjacent to WOTUS (33 CFR Part 328, Section 328.3). The proposed Project area is within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within WOTUS are regulated by USACE. The placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of State Water Quality Certification pursuant to Section 401 of the CWA. As a part of the permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources. The jurisdictional extent of USACE regulation changed with the 2001 Solid Waste Agency of Northern Cook County ruling. The U.S. Supreme Court held that the USACE could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-state waters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to USACE jurisdiction.

The U.S. Environmental Protection Agency and USACE announced on October 21, 2021, that they will cease implementation of the Navigable Water Protection Rule and are instead interpreting WOTUS consistent with pre-2015 regulatory regime (i.e., the 2015 Clean Water Rule). This proposed rule was published on December 7, 2021 (86 FR 232).

3.1.6 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 requires all federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA into other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision-making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans and documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 USC 4321- 4327; 40 CFR 1500-1508). These guidelines establish an overall federal process for the environmental evaluation of projects.

3.1.7 Rivers and Harbors Act of 1899

3.1.7.1 Section 14

Section 14 of the RHA (1899 and codified in 33 USC 408) is required if a project would modify, alter, and/or occupy an existing USACE-constructed public works project (e.g., a levee). For the USACE Lead District to approve any proposed alterations requests, the alterations must meet USACE standards, and must not be injurious to the public interest or affect the USACE project's ability to meet its authorized purpose.

3.1.7.2 Section 10

Section 10 of the RHA (33 USC Section 403) requires authorization from the USACE for work or structures in or affecting navigable WOTUS.

The term "navigable WOTUS" generally includes those waters that are subject to the ebb and flow of the tide or are presently used, have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events that impede or destroy navigable capacity (33 CFR Section 329.4).

The term "structure" includes, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other obstacle or obstruction (33 CFR Section 322.2).

The term "work" includes, without limitation, any dredging or disposal of dredged material, excavation, filling, or other modification of a navigable WOTUS (33 CFR Section 322.2).

The geographic and jurisdictional limits of the USACE's Section 10 jurisdiction in rivers and lakes:

> *(a) Jurisdiction over entire bed. Federal regulatory jurisdiction, and powers of improvement for navigation, extend laterally to the entire water surface and bed of a navigable waterbody, which includes all the land and waters below the ordinary high-water mark (OHWM). Jurisdiction thus extends to the edge (as determined above) of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation or other barriers. Marshlands and similar areas are thus considered navigable in law, but only so far as the area is subject to inundation by the ordinary high waters.*
>
> *(1) The OHWM of non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.*

(2) Ownership of a river or lakebed or of the lands between high and low water marks will vary according to state law; however, private ownership of the underlying lands has no bearing on the existence or extent of the dominant Federal jurisdiction over a navigable waterbody.

(b) Upper limit of navigability. The character of a river will, at some point along its length, change from navigable to non-navigable. Very often that point will be at a major fall or rapids, or other place where there is a marked decrease in the navigable capacity of the river. The upper limit will therefore often be the same point traditionally recognized as the head of navigation, but may, under some of the tests described above, be at some point yet farther upstream.

The geographic and jurisdictional limits of Corps jurisdiction in oceanic and tidal WOTUS:

(a) Ocean and coastal waters. The navigable WOTUS over which Corps regulatory jurisdiction extends include all ocean and coastal waters within a zone three geographic (nautical) miles seaward from the baseline (The Territorial Seas). Wider zones are recognized for special regulatory powers exercised over the outer continental shelf. 33 C.F.R. § 322.3(b).

(1) Baseline defined. Generally, where the shore directly contacts the open sea, the line on the shore reached by the ordinary low tides comprises the baseline from which the distance of three geographic miles is measured. The baseline has significance for both domestic and international law and is subject to precise definitions. Special problems arise when offshore rocks, islands, or other bodies exist, and the baseline may have to be drawn seaward of such bodies.

(2) Shoreward limit of jurisdiction. Corps regulatory jurisdiction in coastal areas extends to the line on the shore reached by the plane of the mean (average) high water. Where precise determination of the actual location of the line becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline" which is determined by reference to physical markings, lines of vegetation, or changes in type of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.

(b) Bays and estuaries. Corps regulatory jurisdiction extends to the entire surface and bed of all waterbodies subject to tidal action. Jurisdiction thus extends to the edge (as determined by paragraph (a)(2) above) of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation, or other barriers. Marshlands and similar areas are thus considered "navigable in law," but only so far as the area is subject to inundation by the mean high waters. The relevant test is therefore the presence of the mean high tidal waters, and not the general test described above, which generally applies to inland rivers and lakes.

Structures or work outside the limits defined above for navigable WOTUS require a Department of the Army permit pursuant to Section 10 of the RHA if the structure or work affects the course, location, or condition of the water body in such a manner as to impact on its navigable capacity (33 CFR Section 322.3).Section 14 of the RHA of 1899 (33 USC Section 408), commonly referred to as “Section 408,” authorizes the USACE to grant permission to alter, occupy, or use a USACE civil works project if the Secretary of Commerce determines that the activity would not be injurious to the public interest and would not impair the usefulness of the project.

3.2 STATE REGULATIONS

3.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes state policy to prevent significant and avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by state lead agencies. Regulations for implementation are found in the CEQA Guidelines published by the California Natural Resources Agency. These guidelines establish an overall state of California process for the environmental evaluation of projects.

3.2.2 California Endangered Species Act

Provisions of the California Endangered Species Act protect state-listed threatened and endangered species. The CDFW regulates activities that may result in take of individuals (i.e., take is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of take under the California Fish and Game Code (FGC). Additionally, the FGC contains lists of vertebrate species designated as “fully protected” (FGC Sections 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern (SSC) to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. SSC may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the FGC. FGC Section 3503.5 states that it is “unlawful to ‘take’, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to ‘take’, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW. Under Sections 3503 and 3503.5 of the FGC, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or

the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to FGC Section 3800 are prohibited.

3.2.3 Section 1602 of the California Fish and Game Code

Section 1602 of the FGC requires any person, state or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. Notification is generally required for any project that would take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW would determine whether the proposed project may impact fish or wildlife resources.

If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would be required. A completed CEQA document must be submitted to CDFW before an LSAA would be issued. The Project area falls within the South Coast Region of the CDFW.

3.2.4 Porter-Cologne Water Quality Control Act

California Regional Water Quality Control Boards (RWQCBs) regulate the “discharge of waste” to “waters of the State”. All projects proposing to discharge waste that could affect waters of the State must file a Waste Discharge Report with the appropriate RWQCB. The board responds to the report by issuing Waste Discharge Requirements or by waiving them for that project discharge. Both terms “discharge of waste” and waters of the State are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered waters of the State, as defined by Section 404 of the CWA, are addressed under the Porter Cologne Water Quality Control Act. The proposed Project area is under the jurisdiction of the Region 8 – Santa Ana RWQCB.

3.2.5 State-Regulated Habitats

The State Water Resources Control Board (SWRCB) is the state agency (together with the RWQCBs) charged with implementing water quality certification in California.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered

streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFW 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; that substantially change its bed, channel, or bank; or that use any materials (including vegetation) from the streambed may require that the project applicant enter into an LSAA with the CDFW.

3.2.6 Native Plant Protection Act

Under FGC Sections 1900 to 1913, the Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. a Project applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of the NPPA and sections of CEQA that apply to rare or endangered plants.

3.3 LOCAL REGULATIONS

3.3.1 Riverside County General Plan – Multipurpose Open Space Element

The Multipurpose Open Space Element of the Riverside County General Plan (General Plan) contains policies and programs that are designed to protect and conserve environmental resources in the County while encouraging economic development and growth and setting the direction for the framework of its transportation system. Resources covered under the Multipurpose Open Space Element consist of the protection and preservation of natural resources including following key resources: water, biological, forest, vegetation, agriculture and soils, open space- parks and recreation and regional aesthetics, cultural and paleontological, and renewable and non-renewable resources.

The Multipurpose Open Space Element discusses the enactment of policies to protect natural resources within the County for future generations as detailed in the following sections.

3.3.1.1 Water Resources

The General Plan establishes policies that prioritize water conservation by addressing the County's water supply issue through balancing consideration of water supply requirements between urban, agricultural, and environmental needs, promotion of the use of recycled water for landscape irrigation, minimization of pollutant discharge, retention of stormwater for groundwater percolation, development of a repository for the collection of county water resource information, discouragement of development within watercourses, and the provision of active leadership in the regional coordination of water resource management and sustainability efforts. The policies propose efforts to limit the modification of floodways and watercourses, and to preserve and enhance riparian, upland, and wetland habitats.

3.3.1.2 Multi Species Habitat Conservation Plans (MSHCP)

To address the issues of wildlife health and sustainability, the County has directed the development of two Multi-Species Habitat Conservation Plans (MSHCPs), the WRCMSHCP and the Coachella Valley Association of Governments' MSHCP. These MSHCPs are stakeholder driven, comprehensive, and multi-jurisdictional, and focus on the conservation of both species and associated habitats, in order to address biological and ecological diversity conservation needs and provide mitigation for the impacts of development in Riverside County. They seek to preserve natural resources that are sensitive, rare, threatened, endangered, and irreplaceable. They allow the County and other local jurisdictions the ability to manage local land use decisions and maintain economic development flexibility, while providing a coordinated reserve system and implementation program that will facilitate the preservation of biological diversity as well as maintain the region's quality of life. The General Plan aims to enforce the provisions of applicable MSHCPs and implement related County policies when conducting review of possible legislative actions such as general plan amendments, zoning ordinance amendments, etc. The WRCMSHCP is discussed in further detail below.

3.3.1.3 Vegetation

The General Plan prioritizes the management of native vegetation in order to maintain the ecological diversity of the County and prevent drastic changes in wildlife habitats, microclimates, water absorption and purification, soil erosion, fires, and aesthetic quality. It aims to do this through the update and expansion of vegetation mapping, and the preservation of oak tree resources, native trees, natural vegetation, and established tree stands for ecosystem, aesthetic, and water conservation purposes. The conservation of important traditional Native American plant gathering resource areas, and the encouragement of research and education of pollution on human health and natural vegetation are also key elements to this directive.

3.3.1.4 Open Space, Parks, and Recreation

Open space preservation can serve many purposes, including the preservation and enhancement of environmental resources for both ecological and recreational purposes, as well as the proper management of environmental hazards. The County includes Joshua Tree National Park and major state parks such as Anza-Borrego, the Salton Sea State Recreation Area, and Chino Hills State Park. The open space policies set to protect and preserve open space areas from urbanization, develop a comprehensive system consisting of passive open space areas, and maintain or develop parks and recreation areas that have recreational, ecological, and scenic value. A key element is also to identify and conserve the skylines, scenic corridors, and outstanding scenic vistas within the County to protect their aesthetic value and the quality of life of County residents.

3.3.2 Western Riverside County MSHCP/Natural Community Conservation Plan

The WRCMSHCP is a comprehensive, multi-jurisdictional plan that involves the assembly and management of a Conservation Area intended to preserve biological diversity, as well as maintain the

quality of life within WRC by conserving over 100 listed and unlisted plant and wildlife species and their associated habitats, and coordinating, streamlining, and planning Development. The WRCMSHCP establishes a framework for complying with State and federal endangered species regulations in addition to accommodating future growth within the Cities and unincorporated portions of WRC including both unincorporated and incorporated areas. The WRCMSCHP was approved in 2003 and the permits issued on June 22, 2004, by the USFWS and California Department of Fish and Game (CDFG) (since renamed California Department of Fish and Wildlife). The WRCMSHCP Planning Area encompasses approximately 1.26 million acres in WRC and the Plan calls for the conservation and management of approximately 500,000 acres within the Plan Area.

The goals and objectives relative to natural resources that apply to the proposed Project are as follows:

A. The WRCMSHCP Conservation Area contains approximately 500,000 acres comprised of the following:

    1. Conservation of existing publicly owned lands,
    2. Voluntary acquisition of privately held lands by the Cities, the County, or other Permittees,
    3. Voluntary acquisition of privately held lands by state and/or federal agencies, and
    4. Contributions from public and private development.

B. The overarching goal of the WRCMSHCP is to allow for maintenance of biological diversity and ecosystem processes while allowing future economic growth:

    1. In the Plan Area, conserve Covered Species and their habitats.
    2. Improve the future economic development in the County by providing an efficient, streamlined regulatory process through which development can proceed in an efficient way. The MSHCP and the General Plan provide the County with a clearly articulated blueprint describing where future development should and should not occur.
    3. Provide for permanent open space, community edges, and recreational opportunities, which contribute to maintaining the community character of WRC.

The Natural Community Conservation Plan (NCCP) General Process Guidelines and NCCP Act, incorporates general principles of conservation biology that are captured in the Conservation Area design tenets described therein. These Conservation Area design tenets, which are summarized below, provided a framework for the conservation planning process:

- Conserve focus species and their habitats throughout the Plan Area
- Conserve large habitat blocks
- Conserve habitat diversity
- Keep conservation areas contiguous and connected
- Protect conservation areas from encroachment and invasion by non-native species

The WRCMSHCP is prepared pursuant to the provisions of the FESA, as well as a NCCP under the California NCCP Act of 1991. The WRCMSHCP allows participating jurisdictions (Riverside County and

each of the 14 Cities in the western portion of the County) to "take" (permit the loss of) the plant and animal species identified in the WRCMSHCP through the agencies' local land use planning and development review processes.

The WRCMSHCP created a conservation system to protect and manage 153,000 acres of habitat (Additional Conservation Area Lands) for Covered Species, consisting of 97,000 acres conserved as the local mitigation component and 6,000 acres conserved as mitigation for State Permittee projects (Caltrans and State Parks).

The WRCMSHCP conservation areas consist of the following: continued conservation of lands already within public ownership; public acquisition of private lands from willing sellers; private actions to conserve habitat within proposed development projects; implementation of off-site mitigation for the impacts or proposed development projects; and public actions to conserve habitats or otherwise mitigate the direct habitat impacts of public work projects.

The WRCMSHCP allows the issuance of Take Authorizations t. Issuance of Take Authorization to the local jurisdictions allows WRCMSHCP participants to implement land use decisions consistent with the MSHCP without project-by-project review and permitting by the Wildlife Agencies. This local, streamlined approach to planning for endangered and sensitive species results in greater economic development certainty and provides for and maintains biological diversity by creating an interconnected WRCMSHCP Conservation Area. In addition to the preservation of species and associated habitats, the WRCMSHCP Conservation Area provides open space and recreational opportunities that enhance the quality of life in WRC.

3.3.3 California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) is entered into the online CNPS Rare Plant Inventory and given a California Rare Plant Rank (CRPR). The Rare Plant Program currently recognizes more than 1,600 plant taxa (species, subspecies, and varieties) as rare or endangered in California (CNPS 2021).

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under state endangered species legislation, are defined by the following CRPRs:

- CRPR 1A: Plants considered by the CNPS to be extinct in California
- CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3: Plants about which we need more information – a review list

- CRPR 4: Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 0.1 to 0.3 ranking, with 0.1 being the most endangered and 0.3 being the least endangered and are described as follows:

- 0.1: Seriously threatened in California (high degree/immediacy of threat)
- 0.2: Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3: Not very threatened in California (low degree or immediacy of threats or no current threats known)

4.0 EXISTING CONDITIONS

4.1 SETTING

The BSA is located adjacent to the Santa Ana River, the Prado Basin, and the Corona Municipal Airport within the Jurupa Valley area of Riverside County. Elevations within the BSA range from approximately 500 to 600 feet above mean sea level from west to east. Photographs of the BSA are included in Appendix B Photographic Log.

4.2 VEGETATION COMMUNITIES AND LANDS COVER TYPES

As defined in MCVII (Sawyer et al. 2009), a vegetation alliance is “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors.” Generally, Stantec’s mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, generally disturbed habitat occurs within the BSA that is not defined in MCVII. Therefore, land cover types assigned to these types of habitats are descriptive in nature and are not specifically referenced in the MCVII. A list of vegetation communities and acreages in the BSA are included in Table 2. The proposed Project area temporary and permanent impact acreages are included in Appendix C. The botanical nomenclature within this report follows the Jepson Herbarium online database, eFlora (Jepson Flora Project 2022). Plant species documented during the reconnaissance survey are provided in Section 4.2.3.

Table 2 Vegetation Communities and Land Cover Types in the BSA

Vegetation Communities and Land Cover Types	BSA[1] *(Acres)*
Vegetation Communities	
Arroyo willow thickets	30.36
California buckwheat scrub	12.47
California sagebrush scrub	37.73
Cheeseweed flats	0.48
Common and giant reed marshes	0.88
Coyote brush scrub	2.43
Elderberry stands	0.68
Eucalyptus groves	5.44
Menzie's goldenbush scrub	1.28
Mulefat thickets	31.85
Perennial pepperweed patches	0.63
Poison hemlock or fennel patches	0.10
Shining willow groves	8.76
Smartweed-cocklebur patches	0.02
Tamarisk thickets	0.21
Upland mustards or star-thistle fields	8.62
Western ragweed meadow	2.24
Wild oats and annual bromes grassland	56.08
Subtotal	*200.26*
Land Cover Types	
Disturbed/Developed	141.44
Non-vegetated channel	0.27
Open water	2.24
Partially vegetated channel	2.13
Restoration	10.54
Ruderal	5.58
Subtotal	*162.20*
Total[1]	**362.46**

Note: [1] = the BSA total acreage does not add up due to rounding.

4.2.1 Vegetation Communities

4.2.1.1 Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)

This vegetation classification generally consists of arroyo willow (*Salix lasiolepis*) as the dominant in the tall shrub or low tree canopy with bigleaf maple (*Acer macrophyllum*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood

(*Cornus sericea*), California wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), other willows (*Salix* sp.), and black elderberry (*Sambucus nigra*) as co-dominants. Emergent trees may be present at a low cover. The plants are usually less than 10 meters in height, canopy is open to continuous, and the herbaceous layer is variable.

Within the BSA, this vegetation community is dominated by arroyo willow with smaller amounts of mulefat shrubs and scattered black willows. Most of the arroyo willow thickets occur in the BSA surrounding Phase 2. Approximately 30 acres of this community occurs in the BSA.

4.2.1.2 California Buckwheat Scrub (*Eriogonum fasciculatum* Shrubland Alliance)

This vegetation classification generally consists of California buckwheat (*Eriogonum fasciculatum*) as a dominant in the shrub canopy in cismontane stands with California sagebrush (*Artemisia californica*), coyote brush, sticky monkeyflower (*Diplacus aurantiacus*), bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), Menzies' goldenbush (*Isocoma menziesii*), common deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), white sage (*Salvia apiana*), or black sage (*Salvia mellifera*) as co-dominant species. Emergent trees may be present at low cover. Shrubs are usually less than two meters in height, canopy is continuous or intermittent, and the herbaceous layer is variable and may be grassy.

Within the BSA, this vegetation is dominated by California buckwheat with smaller amounts of California sagebrush, deerweed, and California brittlebush. California buckwheat scrub occurs in small patches in the BSA surrounding Phases 2A and 3A. Approximately 12.5 acres of this community occur in the BSA.

4.2.1.3 Coastal Sagebrush Scrub (*Artemisia californica* Shrubland Alliance)

This vegetation classification generally consists of California sagebrush as the dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod (*Cleome isomeris*), sticky monkeyflower, bush sunflower, brittlebush, desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal buckwheat (*Eriogonum cinereum*), California buckwheat, yellow yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), Menzie's goldenbush, heart leaved keckella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina*), chaparral prickly pear (*Opuntia littoralis*), evergreen buckthorn (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including southern California black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), or black elderberry. Shrubs are less than two meters in height or in two tiers with a second less than five meters tall. The canopy is intermittent to continuous, and the herbaceous layer is variable.

Within the BSA, this vegetation is dominated by California sagebrush with smaller amounts of California buckwheat and coyote brush. California sagebrush scrub occurs in large patches in the BSA in Phases 2A, 3, and 3A. Approximately 38 acres of this community occur in the BSA.

4.2.1.4 Cheeseweed Flats (*Malva parviflora*)

This non MCVII vegetation classification generally consists of a monoculture of cheeseweed (*Malva parviflora*).

Within the BSA, this vegetation is dominated by monoculture of dense cheeseweed with other non-native annual species such as short-pod mustard (*Hirschfeldia incana)* occasionally observed. Cheeseweed flats occur in one patch in the BSA southeast of Phase 2A and the area appears to have been previously disturbed and may have been used as an access road in the past. Approximately 0.5 acre of this community occurs in the BSA.

4.2.1.5 Common and Giant Reed Marshes (*Phragmites australis Arundo donax* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by common reed (*Phragmites australis*) or giant reed (*Arundo donax*).

Within the BSA, this vegetation is dominated by giant reed. One reed marsh occurs in the BSA north of Phase 2A in an area surrounded by native riparian vegetation. Approximately an acre of this community occurs in the BSA.

4.2.1.6 Coyote Brush Scrub (*Baccharis* pilularis Shrubland Alliance)

This vegetation classification generally consists of coyote brush, California coffeeberry (*Frangula californica*) and/or coast silk tassel (*Garrya elliptica*) is dominant to co-dominant in the shrub canopy with coastal sagebrush, sticky monkeyflower, California buckwheat, deerweed, California blackberry (*Rubus ursinus*), white sage*,* purple sage (*Salvia leucophylla*) and poison oak. Emergent trees may be present at low cover.

Within the BSA, this vegetation is dominated by coyote brush with smaller amounts of deerweed, bush sunflower, mulefat, and Menzie's goldenbush. Coyote brush scrub occurs in small patches in the Phase 2A BSA and in the BSA west of Phase 3A. Approximately two acres of this community occur in the BSA.

4.2.1.7 Elderberry Stands (*Sambucus nigra)*

This non MCVII vegetation classification generally consists of elderberry tress with occasional shrubs and an understory of native and non-native grasses and annual herb

Within the BSA, this vegetation is dominated by elderberry trees. One elderberry stand occurs in the BSA west of Phase 3A. Approximately 0.7 acre of this community occurs in the BSA.

4.2.1.8 Eucalyptus Groves (*Eucalyptus* spp. Woodland Semi-Natural Alliance)

This non MCVII vegetation classification generally consists of eucalyptus species/gum trees (*Eucalyptus* sp.) as the dominant in the tree canopy. The trees are less than 60 meters in height, canopy is open to continuous, shrub layer is generally sparse, and the herbaceous layer is sparse to intermittent.

Within the BSA, this vegetation is dominated by large eucalyptus trees with bare ground along low drainage areas. Eucalyptus groves occur in the BSA in Phases 2A and 3A. Approximately five acres of this community occur in the BSA.

4.2.1.9 Menzie's Goldenbush Scrub (*Isocoma menziesii* Shrubland Alliance)

This vegetation classification generally consists of Menzie's goldenbush as dominant or co-dominant in the shrub canopy with coastal sagebrush, coyote brush, broom baccharis (*Baccharis sarothroides*), giant coreopsis (*Coreopsis gigantea*), matchweed (*Gutierrezia californica*), island broom (*Acmispon dendroideus)*, silver bush lupine (*Lupinus albifrons),* and Virginia glasswort (*Salicornia depressa*). Herbs commonly present include San Miguel Island milkvetch (*Astragalus miguelensis*), California orach (*Etriplex californica*), ripgut brome (*Bromus diandrus*), coast morning glory (*Calystegia macrostegia*), saltgrass (*Distichlis spicata*), and purple needlegrass (*Stipa pulchra*).

Within the BSA, this vegetation is dominated by Menzie's goldenbush with smaller amounts of coyote brush. California buckwheat, and quailbush (*Atriplex lentiformis*). This community occurs in one patch in the BSA north of Phase 2A. Approximately an acre of this community occurs in the BSA.

4.2.1.10 Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance)

This vegetation classification generally consists of mulefat (*Baccharis salicifolia*) as the dominant in the shrub canopy with coastal sagebrush, willow baccharis (*Baccharis emoryi*), coyote brush, laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry species (*Rubus* spp.), narrow leaved willow (*Salix exigua*), arroyo willow, black elderberry, and tamarisk species (*Tamarix* spp.) as co-dominants. Emergent trees may be present at low cover, including grey pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oak species (*Quercus* spp.), or willow species (*Salix* spp.). Shrubs are less than five meters in height, the canopy is continuous with tie tiers at less than two meters and at less than five meters, and the herbaceous layer is sparse.

Within the BSA, this vegetation is dominated by mulefat with smaller amounts of arroyo willow and coyote brush. This community occurs in the BSA of all three phases and most of this vegetation in the Phase 2 BSA. Approximately 32 acres of this community occur in the BSA.

4.2.1.11 Perennial Pepperweed Patches (*Lepidium latifolium* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by perennial pepperweed (*Lepidium latifolium*). Emergent trees and shrubs may be present at low cover.

Within the BSA, this vegetation is dominated by perennial pepperweed. This community occurs in one patch in the BSA at the edge of Phases 2A and 3A. Approximately 0.6 acre of this community occurs in the BSA.

4.2.1.12 Poison hemlock or fennel patches (*Conium maculatum- Foeniculum vulgare* Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of thoroughwort (*Ageratina adenophora*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), Indian teasel (*Dipsacus sativus*) and/or sweet fennel (*Foeniculum vulgare*). Emergent trees and shrubs may be present at low cover, including oak trees and coyote brush.

Within the BSA, this vegetation is dominated by poison hemlock. This community occurs in one patch in the BSA at the edge of Phases 2A and 3A. Approximately 0.1 acre of this community occurs in the BSA.

4.2.1.13 Shining Willow Groves (*Salix lucida* ssp. *lasiandra* Forest and Woodland Alliance)

This vegetation classification generally consists of shining willow (*Salix lucida*) as dominant or co-dominant in the tree canopy with bigleaf maple, white alder (*Alnus rhombifolia*), American dogwood, California sycamore, Freemont cottonwood, black cottonwood, coast live oak, willows, and blue elderberry.

Within the BSA, this vegetation is dominated by shining willow with smaller amounts of mulefat, other willow species, and castor bean. This community occurs in one large patch in the BSA in Phase 2A west of Butterfield Park. Approximately 9 acres of this community occurs in the BSA.

4.2.1.14 Smartweed and Cocklebur Patches (*Polygonum lapathifolium - Xanthium strumarium* Herbaceous Alliance)

This vegetation classification generally consists of sunflower (*Helianthus annuus*), curlytop knotweed (*Polygonum lapathifolium*), and/or cocklebur (*Xanthium strumarium*) or other knotweed or smartweed species as dominant or co-dominant in the herbaceous layer with five-angled dodder (*Cuscuta pentagona*), tall flatsedge (*Cyperus eragrostis*), barnyard grass (*Echinochloa* sp.), pale spikerush (*Eleocharis macrostachya*), western goldentop (*Euthamia occidentalis*), rushes (*Juncus* spp.) and docks (*Rumex* spp.).

Within the BSA, this vegetation consists of cocklebur, sunflower, and perennial pepperweed. One 0.02-acre patch occurs in the BSA in Temescal Wash in Phase 2.

4.2.1.15 Tamarisk Thicket (*Tamarix* spp. Shrubland Semi-Natural Alliance)

This vegetation classification generally consists of salt cedar (*Tamarix ramosissima*) or another *Tamarix* species dominant in the shrub canopy. Emergent trees may be present at low cover, including Freemont's cottonwoods or willow trees.

Within the BSA, this vegetation is dominated by salt cedar. This community occurs in one linear patch along West Rincon Street in the BSA east of Phase 2. Approximately 0.2 acre of this community occurs in the BSA.

4.2.1.16 Upland mustards or star-thistle fields (*Brassica nigra* – Centaurea [*solstitialis, melitensis*] Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of black mustard (*Brassica nigra*), common mustard (*Brassica rapa*), Italian thistle (*Carduus pycnocephalus*), Maltese star thistle (*Centaurea melitensis*), yellow starthistle (*Centaurea solstitialis*), cardoon artichoke thistle (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), short-pod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*), or similar ruderal forb is dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover.

Within the BSA, this vegetation is dominated by short-pod mustard and Maltese star-thistle with smaller amounts of other non-native annual grasses, mostly bromes, and non-native annual herbs. This community occurs along West Rincon Street in Phase 2 and in the eastern portion of Phase 3A. Approximately 8.6 acres of this community occurs in the BSA.

4.2.1.17 Western Ragweed Meadow (*Ambrosia psilostachya* Provisional Herbaceous Alliance)

This vegetation classification generally consists of western ragweed as dominant or co-dominant in the herbaceous layer with ripgut brome, soft chess (*Bromus hordeaceus*), Bermuda grass (*Cynodon dactylon*), filarees (*Erodium* spp.), gumplants (*Grindelia* spp.), barely (*Hordeum murinum*), checkerbloom (*Sidalcea malviflora*), and blue-eyed grass (*Sisyrinchium bellum*).

Within the BSA, this vegetation is dominated by western ragweed. Other non-native annuals occur in the flat area at the base of the Prado Basin spillway; approximately two acres of this community occur in one patch west of Phase 3A at the base of the Prado Basin spillway within the BSA.

4.2.1.18 Wild Oats and Annual Brome Grasslands (*Avena* spp.-*Bromus* spp. Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of slim oat (*Avena barbata*), wild oats (*Avena fatua*), purple false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima*), ripgut brome, soft chess, and foxtail barley (*Hordeum murinum*) as dominant or co-dominant in the herbaceous layer with other non-natives such as Australian saltbush (*Atriplex semibaccata*) and barley species (*Hordeum* sp.).

Emergent trees and shrubs may be present at low cover. Herbs are less than four feet in height and cover is open to continuous.

Within the BSA, this vegetation is dominated by bromes and other non-native annual grasses. Wild oats and annual brome grasslands occur in large patches in the BSA surrounding Phases 2A and 3A. Approximately 56 acres of this community occur in the BSA.

4.2.2 Land Cover Types

4.2.2.1 Disturbed/Developed

This land cover type includes areas that have been graded or paved and are developed with urban infrastructure. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil such as along disturbed areas or roadsides. The Phase 2 BSA includes Corydon Street, West Rincon Street, and disturbed areas between West Rincon Street and the Corona Airport. The Phase 2A BSA includes dirt access roads, a large borrow pit, portions of the Corona Airport and Butterfield Park, and buildings south and west of Phase 2A. The Phase 3A BSA includes portions of SR-91. Approximately 141 acres of this land cover type occurs in the BSA.

4.2.2.2 Non-vegetated Channel

Non-vegetated channel is not a MCVII classification. In this land cover type, the area is unvegetated on a relatively permanent basis. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Holland 1986).

A drainage ditch occurs along the south side of Butterfield Drive in the Phase 2A BSA. Approximately 0.3 acre of this land cover type occurs within the BSA.

4.2.2.3 Open Water

This land cover type was used to map the approximate limits of the open water habitat within the Santa Ana River in the western portion of the BSA west of Phase 3A. Approximately two acres of this land cover type occurs within the BSA.

4.2.2.4 Partially Vegetated Channel

This land cover type is a non-vegetated channel but has more than 10 percent vegetative cover. Partially vegetated channel is not a MCVII classification. The lack of vegetation is due to flowing water during the rainy season. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel.

This land cover type includes Temescal Wash east and west of West Rincon Street in Phase 2. Some large willow trees have been established on the edges of the wash. Approximately two acres of this land cover type occur within the BSA.

4.2.2.5 Restoration Areas

Areas mapped as restoration were either observed to be undergoing active habitat restoration activities or were areas that have been previously restored and are being monitored or have been completed.

Two restoration areas occur within Phase 2A, and two restoration areas occur in the western portion of the BSA west of Phase 3A. Approximately 10.5 acres of this land cover type occur within the BSA.

4.2.2.6 Ruderal Areas

Ruderal vegetation is not a MCVII classification. This land cover type is usually sparsely vegetated with pioneer plant species that readily colonize open disturbed soil. In the BSA these include non-native annual grasses, bromes, redstem filaree, and Maltese star-thistle.

Ruderal patches occur in the Phase 2A Survey Area near Auto Center Drive and the western portion of the BSA west of Phase 3A. Approximately 5.5 acres of this land cover type occur within the BSA.

4.2.3 Plant Species Observed

Table 3 includes a list of 119 vascular plant species that were observed in the BSA.

Table 3 Vascular Plant Species Observed in the BSA

Scientific Name	Common Name
Acmispon glaber	deerweed
Acmispon strigosus	strigose lotus
*Ailanthus altissima**	tree of heaven
Ambrosia psilostachya	western ragweed
Amsinckia intermedia	fiddleneck
*Anagallis arvensis**	scarlet pimpernel
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Artemisia dracunculus	tarragon
*Arundo donax**	giant reed
Asclepias fascicularis	narrow leaf milkweed
Atriplex canescens	hoary saltbush
Atriplex lentiformis	quailbush
*Atriplex semibacatta**	Australian saltbush

Scientific Name	Common Name
*Avena fatua**	wild oats
Baccharis pilularis	coyote bush
Baccharis salicifolia	mulefat
Baccharis sarothroides	Broom baccharis
*Bromus diandrus**	ripgut brome
*Bromus madritensis**	foxtail brome
*Bromus rubens**	red brome
Calystegia macrostegia	coast morning glory
Camissoniopsis micrantha	Spencer primrose
*Carduus pycnocephalus**	Italian thistle
*Carya illinoinensis**	pecan
*Centaurea melitensis**	Maltese star-thistle
Chenopodium californicum	California goosefoot
*Chrysanthemum coronarium**	garland daisy
*Cirsium vulgare**	bull thistle
*Conium maculatum**	poison hemlock
Corethrogyne filaginifolia	common sandaster
Croton californicus	California croton
Croton setigerus	turkey mullen
Cryptantha intermedia	common cryptantha
Cucurbita foetidissima	coyote gourd
Cuscuta californica	California dodder
Datura wrightii	jimsonweed
Deinandra fasciculata	clustered tarweed
Deinandra paniculata+	paniculate tarplant
Diplacus aurantiacus	sticky monkeyflower
*Dysphania ambrosioides**	Mexican tea
Eleocharis macrostachya	spike rush
Elymus condensatus	giant wildrye
Encelia californica	bush sunflower
Encelia farinosa	brittlebush
Ericameria palmeri	Palmer goldenweed
Erigeron canadensis	Canada horseweed
Eriogonum fasciculatum	California buckwheat
*Erodium cicutarium**	redstem filaree
Eucalyptus sp.*	gum tree

Scientific Name	Common Name
Euphorbia polycarpa	smallseed sandmat
*Festuca perenniis**	Italian ryegrass
*Foeniculum vulgare**	sweet fennel
Helianthus annuus	hairy-leaved sunflower
*Helminthotheca echioides**	bristly ox-tongue
Heteromeles arbutifolia	toyon
Heterotheca grandiflora	telegraph weed
*Hirschfeldia incana**	shortpod mustard
*Hordeum marinum**	barley
*Koelreuteria bipinnata**	goldenrain tree
*Lactuca serriola **	prickly lettuce
Lasthenia californica	goldenfields
*Lepidium latifolium**	perennial pepperweed
Lupinus bicolor	lupine
Malosma laurina	laurel sumac
*Malva parviflora**	cheeseweed
Marah macrocarpa	Chilicothe
*Marrubium vulgare**	horehound
*Medicago polymorpha**	California burclover
*Melilotus indicus**	annual yellow sweetclover
*Nicotiana glauca**	tree tobacco
Nicotiana quadrivalvis	Indian tobacco
*Oncosiphon pilulifer**	stinknet
Opuntia oricola	chaparral pricklypear
*Parkinsonia aculeata**	Jerusalem thorn
Phacelia ramosissima	branching phacelia
Plantago erecta	dot-seed plantain
Platanus racemosa	California sycamore
Pluchea sericea	arrow weed
*Polypogon monspeliensis**	rabbit's foot grass
Populus fremontii	Fremont cottonwood
Pseudognaphalium californicum	California cudweed
*Pseudognaphalium luteoalbum**	cudweed
Quercus agrifolia	coat live oak
*Raphanus sativus**	wild radish
*Ricinus communis**	castor bean

Scientific Name	Common Name
Rosa californica	California wild rose
Rubus ursinus	pacific blackberry
*Rumex pulcher**	fiddledock
Salix gooddingii	black willow
Salix laevigata	red willow
Salix lasiandra	shining willow
Salix lasiolepis	arroyo willow
*Salsola tragus**	Russian thistle
Salvia apiana	white sage
Salvia mellifera	black sage
Sambucus nigra ssp. *caerulea*	blue elderberry
*Schinus molle**	Peruvian peppertree
*Schinus terebinthifolius**	Brazilian peppertree
*Schismus barbatus**	old han schismus
Schoenoplectus californicus	California bulrush
*Silybum marianum**	milk thistle
*Sisymbrium irio**	London rocket
Solanum douglasii	Douglas' nightshade
*Sonchus arvensis**	perennial sow thistle
*Sonchus asper**	spiny sow thistle
*Sorghum halepense**	Johnsongrass
*Stipa miliacea**	smilo grass
Stipa pulchra	purple needlegrass
Trifolium willdenovii	tomcat clover
Toxicodendron diversilobum	poison oak
*Typha angustifolia**	narrowleaf cattail
Typha domingensis	southern cattail
Urtica dioica	stinging nettle
*Urtica urens**	dwarf nettle
*Veronica anagallis-aquatica**	water speedwell
Vitis girdiana	California wild grape
Washingtonia robusta*	Mexican fan palm
Xanthium strumarium	cocklebur
Notes: * = Non-native species, + = California Rare Plant Rank 4.2	

4.3 COMMON WILDLIFE

4.3.1 Terrestrial Invertebrates

While a focused survey for insects was not conducted within the BSA during the 2021 surveys; randomly selected areas within the appropriate micro habitats (e.g., leaf litter, woody debris piles, etc.) were visually inspected to determine the presence/absence of invertebrates and gastropods, as a variety of common insects are known to occur in the area. Conditions in the BSA provide a suite of microhabitat variations for a variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the BSA play a crucial role in biological processes. They serve as the primary or secondary food source for amphibian, bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. The visually inspected areas of the BSA detected a wide variety of common and non-native invertebrates. Some of the orders identified in the BSA included beetles (*Coleoptera* spp.), flies (*Diptera* spp.), grasshoppers (*Orthoptera* spp.), crickets (*Gryllidae* spp.), isopods (*Isopoda* spp.), snails (*Gastropoda* spp.), spiders (*Araneae* spp.), moths and butterflies (*Lepidoptera* spp.), bees (*Apis* spp.), and ants (*Hymenoptera* spp.).

4.3.2 Fish

Temescal Wash flows under West Rincon Street in Phase 2 in the eastern portion of the BSA. The ephemeral wash is usually dry except during the rainy season, when species of small non-native fish including mosquito fish (*Gambusia affinis*) are likely to occur in the wash and flow downstream.

4.3.3 Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments or by burrowing into the soil. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), likely provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988). These species are highly cryptic and often difficult to detect. Amphibians require aquatic habitat for all or part of their life cycle, which is present within the BSA. Baja California treefrog (*Pseudacris hypochondriaca*) was heard during 2021 surveys. Other common species known to occur in the region include the western toad (*Anaxyrus boreas*) and the non-native American bullfrog (*Lithobates catesbeianus*).

4.3.4 Reptiles

The number and type of reptile species that may occur at a given site is related to biotic and abiotic features present in the BSA. These include the diversity of plant communities, substrate, soil type, and

presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

Many reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG 2010). In some cases, they are only observed when flushed from their refugia. Two common reptile species were observed during 2021 surveys, the common side-blotched lizard (*Uta stansburiana*) and the western fence lizard (*Sceloporus occidentalis*). The BSA also includes suitable habitat for other common reptile species.

4.3.5 Birds

Focused surveys for burrowing owl and listed riparian birds were conducted. A list of common and special-status bird species and other wildlife species observed during 2021 surveys is included in Table 4. The BSA provides high quality nesting and foraging habitat for many bird species.

4.3.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). Multiple desert cottontails (*Sylvilagus audubonii*) and a few California ground squirrels were observed during the 2021 surveys. Signs of other mammal species (tracks, scat, etc.) were detected, but no live individuals were observed during the 2021 surveys. Sign observed included a wood rat midden, Botta's pocket gopher (*Thomomys bottae*) mounds, and mule deer (*Odocoileus hemionus*) tracks. Other common mammals are expected to occur within the BSA given the habitat conditions and species that are known to occur in the region. These may include coyote (*Canis latrans*), kangaroo rats (*Dipodomys* sp.), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*). No special-status mammal species were observed in the BSA.

Although bats were not detected in the BSA, they likely forage and roost in the region, particularly along Temescal Wash and the riparian corridors. Many bats tend to concentrate foraging activities in riparian habitats similar to those occurring within and adjacent to the BSA where insect abundance is high (CDFW 2000).

Table 4 Wildlife Species Observed in the BSA

Scientific Name	Common Name
Birds	

Scientific Name	Common Name
Aeronautes saxatalis	white-throated swift
Anthus rubescens	American pipit
Bombycilla cedrorum	cedar waxwing
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Calypte anna	Anna's hummingbird
Cathartes aura[1]	turkey vulture (fly over)
Charadrius vociferus	killdeer
Colaptes auratus	northern flicker
Corvus brachyrhynchos	American crow
Dendroica coronate	yellow-rumped warbler
Dryobates pubescens	downy woodpecker
Eremophila alpestris actia[1]	California horned lark
Geococcyx californianus	greater roadrunner
Geothlypis trichas	common yellowthroat
Haemorhous mexicanus	house finch
Icteria virens[1]	yellow-breasted chat
Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Mimus polyglottos	northern mockingbird
Passerina caerulea	blue grosbeak
Petrochelidon pyrrhonota	American cliff swallow
Picoides nuttallii	Nuttall's woodpecker
Pipilo maculatus	spotted towhee
Piranga ludoviciana	western tanager
Polioptila californica californica[1]	coastal California gnatcatcher
Polioptila caerulea	blue-gray gnatcatcher
Psaltriparus minimus	Bushtit
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Setophaga petechia[1]	yellow warbler
Spinus lawrencei[1]	Lawrence's goldfinch
Spinus psaltria	lesser goldfinch
Sturnus vulgaris	European starling
Tyrannus verticalis	western kingbird
Vireo bellii pusillus[1]	least Bell's vireo

Scientific Name	Common Name
Zenaida macroura	mourning dove
Invertebrates	
Anthocharis cardamines	orange tip butterfly
Apis mellifera	European honeybee
Coccinellidae sp.	lady bird beetle
Nymphalis antiopa	mourning cloak butterfly
Pogonomyrmex barbatus	red harvester ant
Mammals	
Thomomys bottae[2]	Bottas's pocket gopher (burrows)
Neotoma sp.[2]	woodrat (midden)
Odocoileus hemionus[2]	mule deer (tracks)
Ostospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	desert cottontail
Reptiles	
Sceloporus occidentalis	western fence lizard
Uta stansburiana	side-blotched lizard

Notes: [1] = Special-status Species including WRCMSHCP covered, [2] = Species observed by sign

4.4 AQUATIC RESOURCES

Aquatic resources within 100 feet of the proposed Project area (Aquatic Resources Survey Area) were delineated on May 6, December 8, 2021, and June 9, and June 16, 2022; details of the results are included in Appendix D - Aquatic Resources Survey Report and Preliminary Jurisdictional Assessment. Drainages with an OHWM, three-parameter wetlands, and sensitive riparian vegetation were mapped in the Aquatic Resources Survey Area (Appendix A Figures 5-1 to 5-4). The mapped waters and wetlands are under the jurisdiction of the USACE, SWRCB/Santa Ana RWQCB, and/or CDFW.

Determinations of jurisdictional waters, wetlands, and riparian habitat in this report were based on current conditions, (i.e., normal circumstances) and were made in accordance with relevant USACE, SWRCB and CDFW guidance. Determinations are subject to verification by the USACE, Santa Ana RWQCB and CDFW. Stantec advises all interested parties to treat the information contained herein as preliminary pending verification of jurisdictional boundaries by the regulatory agencies.

4.5 SOILS

Prior to conducting the field reconnaissance, historic soils data from the Natural Resources Conservation Service was used to determine potential soil types that may occur within the BSA (refer to Appendix A Figure 4). Characteristics of soils present on the site are summarized in Table 5; there are no hydric soils present in the proposed Project area.

Table 5 Historic Soil Units Occurring within the BSA

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
AkC	Arbuckle loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; loam, gravelly loam, and stratified sandy loam to vert gravelly sandy clay loam; parent material consists of alluvium derived from metasedimentary rock; minor components include Cortina, Garretson, and Perkins.	32.57
AkD	Arbuckle loam, 8 to 15 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; loam, gravelly loam, and stratified sandy loam to very gravelly sandy clay loam; parent material consists of alluvium derived from metasedimentary rock; minor components include Perkins, Garretson, and Cortina.	17.81
AlC	Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19	A well-drained non-hydric soil associated with fan remnants at elevations between 690 and 1,470 feet, medium runoff; gravely loam, gravelly very fine sandy loam, gravelly loam, gravelly clay loam, and very gravelly sandy loam; parent material is derived from alluvium derived from igneous, metamorphic, and sedimentary rock; minor components include Perkins, Garretson, and Cortina.	5.26
AlE3	Arbuckle gravelly loam, 2 to 25 percent slopes, severely eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; gravelly loam, gravelly clay loam, and stratified very gravelly sandy loam to very gravelly sandy clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Garretson, Cortina, and Unnamed.	22.27
BP	Borrow pit	A hole, pit, or excavated area that was dug for the purposes of removing soils for a construction project.	32.20
DAM	Dams	Impounded waterbody.	2.16
GaC	Garretson very fine sandy loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 430 and 1,740 feet, medium runoff; very fine sandy loam and loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle, Perkins, and Cortina.	11.05
GfF2	Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded	A well-drained non-hydric soil associated with hills at elevations between 100 and 4,000 feet, medium runoff; very fine sandy loam and unweathered; parent material is derived from residuum weathered from sandstone; minor components include Altamont, Vallecitos, and Gaviota.	9.17
GrB	Grangeville sandy loam, sandy substratum, drained, 0 to 5 percent slopes	A moderately well-drained non-hydric soil associated with alluvial fans at elevations between 600 and 1,800 feet, very low runoff; sandy loam; parent material is derived from alluvium derived from granite; minor components include Dello and Traver.	3.59

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
GvB	Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes	A somewhat poorly drained non-hydric soil associated with alluvial fans at elevations between 10 and 1,800 feet, low runoff; fine sandy loam and sandy loam; parent material is derived from alluvium derived from granite; minor components include Dello and Traver.	29.23
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 150 to 900 feet, low runoff; coarse sandy loam, fine sandy loam, and stratified loamy sand to coarse sandy loam; parent material is derived from alluvium derived from granite; minor components include Greenfield, Ramona, Tujunga, and two unnamed soils.	3.48
MdC	Metz loamy sand, 2 to 8 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, low runoff; loamy sand and stratified sand to loamy sand; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and two unnamed soils.	16.17
MgB	Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, very low runoff; loamy sand, stratified sand to silt loam, and stratified gravelly coarse sand to gravelly sand; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and an unnamed soil.	57.04
MhB	Metz loamy fine sand, sandy loam substratum, 0 to 5 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, very low runoff; loamy fine sand and stratified sand to silt loam; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and an unnamed soil.	8.01
PeC	Perkins loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 60 and 1,700 feet, high runoff; loam and stratified very gravely sandy loam to very gravelly clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle and Garretson.	48.97
PgD2	Perkins gravelly loam, 8 to 15 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 60 and 1,700 feet, high runoff; gravelly loam and stratified vert gravelly sandy loam to very gravelly clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle and Garretson.	18.78
RaD2	Ramona sandy loam, 8 to 15 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans and terraces at elevations between 250 and 3,500 feet, medium runoff; sandy loam, fine sandy loam, sandy clay loam, and gravelly sandy loam; parent material is derived from alluvium derived from granite; minor components include Greenfield, Tujunga, and Hanford.	1.93

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
RaD3	Ramona sandy loam, 8 to 15 percent slopes, severely eroded	A well-drianed non-hydric soil associated with alluvial fans and terraces at elevations between 250 and 3,500 feet, high runoff; sandy loam, fine sandy loam, sandy clay loam, and gravelly sandy loam; parent material is derived from alluvium derived from granite; minor components include Tujunga, Hanford, and Greenfield.	1.62
SeC2	San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 600 and 1,800 feet, low runoff; fine sandy loam and stratified sandy loam to silt loam; parent material is derived from residuum weathered from sedimentary rock; minor components include Metz and San timoteo.	2.24
SgA	San Emigdio loam, 0 to 2 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 430 and 2,340 feet, very low runoff; loam, fine sandy loam, and stratified sandy loam to silt loam; parent material is derived from alluvium derived from sedimentary rock; minor components include Metz and san timoteo.	20.93
TeG	Terrace escarpments	A steep slope pf 15 percent or greater made up of various layers of soil; parent material is derived from alluvium derived from mixed sources.	17.97
		Total	**362.45**

5.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

The background information presented above combined with habitat assessments performed during the surveys was used to evaluate special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and adjacent habitats. For the purposes of this BRTR, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California Endangered Species Act or FESA,
- Are candidate species being considered or proposed for listing under these same acts,
- Are recognized as SSC by the CDFW,
- Are ranked by CNPS as CRPR 1, 2, 3, or 4 plant species,
- Are fully protected by the FGC, Sections 3511, 4700, 5050, or 5515,
- Included in the CDFW Special Animals List (CDFW 2021c),
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions, or
- Are covered species under the WRCMSHCP.

5.1 SPECIAL-STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Shining willow grove occurs within the BSA; and is a CDFW natural community with a sensitivity ranking of S3 (vulnerable).

The BSA also occurs within the region covered by the WRMSHCP. Three riparian communities (mulefat thickets, arroyo willow thickets, and shining willow groves) and five native upland scrub habitats (California buckwheat scrub, California sagebrush scrub, coyote brush scrub, elderberry stands, and Menzie's goldenbush scrub) occur within the BSA and are WRC sensitive vegetation communities.

5.2 DESIGNATED CRITICAL HABITAT

The BSA occurs within and adjacent to DCH for the following federally listed species: Santa Ana sucker (*Catostomus santaanae*), coastal California gnatcatcher (*Polioptila californica californica*), southwestern willow flycatcher, and least Bell's vireo. DCH for these species occupies the Santa Ana River floodplain

extending from the San Bernardino Mountains in the northeast to the Chino Hills in the southwest. The coastal California gnatcatcher and the least Bell's vireo occur within the BSA.

5.3 SPECIAL-STATUS PLANTS

One special-status plant species, paniculate tarplant (*Deinandra paniculata*), a CNPS CRPR 4.2 species, was observed in coastal sage scrub in the Phase 3A during the spring 2021 rare plant survey (Appendix A Figure 3-4).

Table 6 presents a list of special-status plants, including federally- and state-listed species and CRPR 1-4 species and species protected by the WRCMSHCP that are known to occur in the region surrounding the BSA (within ten miles) (Appendix A Figure 6s and 6A).

Records searches of the USFWS iPaC CNDDB, the CNPS Online Inventory, and the CCH were performed for special-status plant taxa. Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present**: Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Both a documented recent record (within 10 years) exists of the taxa within the BSA, or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate**: Both a documented recent record (within 10 years) exists of the taxa within the BSA, or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the BSA; the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Low**: A historical record (over 10 years) exists of the taxa within the BSA, or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

Table 6 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Abronia villosa var. *aurita* chaparral sand-verbena	1B.1	Chaparral, coastal scrub, desert dunes; sandy substrates; 75-1600 meters (m).	(Jan) Mar-Sep	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 1.14 miles southeast of the BSA; this occurrence was recorded in 1934.
Allium marvinii Yucaipa onion	1B.2, WRCMSHCP	Clay openings in chaparral, 760-1,065 m.	Apr-May	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 3.24 miles south, southwest of the BSA; this occurrence was recorded in 1992.
Ambrosia pumila San Diego ambrosia	1B.1, FE, WRCMSHCP	Chaparral, coastal scrub, valley and foothill grassland, and vernal pools; sandy loam or clay substrates (sometimes alkaline); often found in disturbed areas; 20-415 m.	Apr-Oct	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 8.06 miles to the east, northeast of the BSA; this occurrence was recorded in 2006.
Astragalus brauntonii Braunton's milk-vetch	1B.1	Chaparral, coastal scrub, and valley and foothill grasslands. Occurs in recent burns or disturbed areas, usually sandstone with carbonate layers; 4-640 m.	Jan-Aug	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.59 miles to the southwest of the BSA; this occurrence was recorded in 2020.
Atriplex coulteri Coulter's saltbush	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland, ocean bluffs, ridgetops, as well as alkaline low places; alkaline, dry, or clay soils; 2-460 m.	Mar-Oct	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 5.38 miles to the north, northwest of the BSA; this occurrence was recorded in 1917.

Special-Status Biological Resources

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Baccharis malibuensis Malibu baccharis	1B.1	Chaparral, cismontane woodland, coastal scrub, and riparian woodland; 150-305 meters.	Aug	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 6.10 miles to the south, southwest of the BSA; this occurrence was recorded in 2008.
Calochortus plummerae Plummer's mariposa-lily	4.2, WRCMSHCP	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands; granitic and rocky substrates; 100-1700m.	May-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 4.69 miles south of the BSA; this occurrence was recorded in 1992.
Calochortus weedii var. *intermedius* intermediate mariposa-lily	1B.2, WRCMSHCP	Chaparral, coastal scrub, and valley and foothill grasslands; rocky, calcareous; 105 to 855 m.	May-Jun	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.20 miles south, southeast of the BSA; this occurrence was recorded in 2017.
Calystegia felix lucky morning-glory	1B.1	Historically associated with wetland and marshy places, but possibly found in drier habitats as well; meadows, seeps, and riparian scrub (alluvial); sometimes found in silty loam and alkaline substrates; 30-215 m.	Mar-Sep	**Moderate** Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.17 miles north the BSA; this occurrence was recorded in 1917.

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Centromadia pungens ssp. *laevis* smooth tarplant	1B.1, WRCMSHCP	Chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland; alkaline substrate; 0-640 m.	Apr-Sep	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.37 miles northeast of the BSA; this occurrence was recorded in 2010.
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	SE, 1B.1	Coastal scrub (sandy) and valley and foothill grasslands; 150-1,220 m.	Apr-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7.05 miles southwest of the BSA; this occurrence was recorded in 1902.
Chorizanthe parryi var. *parryi* Parry's spineflower	1B.1, WRCMSHCP	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands; sandy or rocky substrates; open habitat; 275-1220 m.	Apr-Jun	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 8.45 miles southeast of the BSA; this occurrence was recorded in 2009.
Chorizanthe polygonoides var. *longispina* long-spined spineflower	1B.2, WRCMSHCP	Chaparral, coastal scrub, meadows and seeps, valley and foothill grasslands, and vernal pools; often clay substrates; 30-1530 m.	Apr-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.38 miles west, southwest of the BSA; this occurrence was recorded in 2001.
Clinopodium chandleri San Miguel savory	1B.2, WRCMSHCP	Chaparral, coastal scrub, riparian woodlands, and valley and foothill grasslands; rocky and Gabboric substrates; 120-1075 m.	Mar-Jul	**Low** No recent occurrences within 10 miles.
Deinandra paniculata paniculate tarplant	4.2	Coastal scrub; valley and foothill grasslands; and vernal pools; 25-940 m.	Mar-Nov	**Present** Documented in coastal scrub in Phase 3A

Special-Status Biological Resources

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Dudleya multicaulis many-stemmed dudleya	1B.2, WRCMSHCP	Chaparral, coastal scrub, and valley and foothill grasslands; often clay substrates; 15-790 m.	Apr-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.91 mile south of the BSA; this occurrence was recorded in 1985.
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	1B.1, FE, SE, WRCMSHCP	Chaparral and coastal scrub (alluvial fan); sandy or gravelly substrate; 91-610 m.	Apr-Sep	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.77 miles northeast of the BSA; this occurrence was recorded in 2006.
Hesperocyparis forbesii Tecate cypress	1B.1	Closed-cone coniferous forest and chaparral; clay, gabbroic or metavolcanic; 80 to 1,500 m.	N/A	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 2.53 miles south, southwest of the BSA; this occurrence was recorded in 2011.
Horkelia cuneata var. *puberula* mesa horkelia	1B.1	Chaparral (maritime), cismontane woodland, and coastal scrub; sandy or gravelly substrate; 70-810 m.	Feb-Jul (Sep)	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.05 miles southwest of the BSA; this occurrence was recorded in 2008.
Lepechinia cardiophylla heart-leaved pitcher sage	1B.2, WRCMSHCP	Closed-cone coniferous forest, chaparral, and cismontane woodland; 520 to 1,370 m.	Apr-Jul	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 4.23 miles northwest of the BSA; this occurrence was recorded in 2016.

Special-Status Biological Resources

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Lepidium virginicum var. *robinsonii* Robinson's peppergrass	4.3	Chaparral and coastal scrub; 1-885 m.	Jan-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is within BSA; this occurrence was recorded in 2010.
Monardella australis ssp. *jokerstii* Jokerst's monardella	1B.1	Chaparral and lower montane coniferous forest. Occurs on steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes; 1,350-1,750 m.	Jul-Sep	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 2.15 miles north, northwest of the BSA; this occurrence was recorded in 1952.
Monardella hypoleuca ssp. *intermedia* intermediate monardella	1B.3	Chaparral, cismontane woodland, and lower montane coniferous forest; usually understory; 400 to 1,250 m.	Apr-Sep	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 3.58 miles south of the BSA; this occurrence was recorded in 1986.
Nolina cismontana chaparral nolina	1B.2	Chaparral and coastal scrub. Occurs on sandstone or gabbro; 140-1,275 m.	(Mar) May-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.16 miles south of the BSA; this occurrence was recorded in 1990.
Penstemon californicus California beardtongue	1B.2, WRCMSHCP	Chaparral, lower montane coniferous forest, and pinyon and juniper woodland, often in sandy soils; 1,170-2,300 m.	May-June (Aug)	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 6.83 miles west, southwest of the BSA; this occurrence was recorded in 1981.

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	1B.1	Coastal scrub (openings) and valley and foothill grasslands; 75-520 m.	Mar-Jun	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.84 miles southwest of the BSA; this occurrence was recorded in 2000.
Phacelia keckii Santiago Peak phacelia	1B.3	Closed-cone coniferous forest and chaparral; 545-1,600 m.	May-Jun	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 6.01 miles south of the BSA; this occurrence was recorded in 1981.
Pseudognaphalium leucocephalum white rabbit-tobacco	2B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland; sandy and gravelly substrates; 0-2,100 m.	(Jul) Aug-Nov (Dec)	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.28 miles west of the BSA; this occurrence was recorded in 1928.
Sidalcea neomexicana salt spring checkerbloom	1B.2	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub; alkali springs and marshes; 15 to 1,530 m.	Mar-Jun	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 1.79 miles north of the BSA; this occurrence was recorded in 1917.
Symphyotrichum defoliatum San Bernardino aster	1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grasslands (vernally mesic); often found near ditches, streams, and springs; 2-2040 m.	Jul-Nov (Dec)	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 5.63 miles north, northwest of the BSA; this occurrence was recorded in 1928.

Sources: CCH 2021, CDFW 2021a, 2021d; CNPS 2021, WRCMSHCP 2015

Notes: [1] = Months appearing in parenthesis listed under blooming period indicates an additional, but uncommon, blooming periods for that species.

Special-Status Biological Resources

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Status Codes				
FE Federally listed Endangered Species				
SE State-listed Endangered Species				
WRCMSHCP = Western Riverside County MSHCP covered				
California Rare Plant Rank (CRPR)				
1A Plants considered by the CNPS to be extinct in California.				
1B Plants rare, threatened, or endangered in California and elsewhere.				
2B Plants presumed extinct in California but more common elsewhere.				
4 Plants of limited distribution – a watch list.				
.1 Seriously threatened in California (high degree/immediacy of threat).				
.2 Fairly threatened in California (moderate degree/immediacy of threat).				
.3 Not very threatened in California (low degree/ immediacy of threat or no current threats known).				

5.4 SPECIAL-STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA. Species protected by the WRCMSHCP are also included.

Seven special-status bird species, coastal California gnatcatcher, California horned lark (*Eremophila alpestris actia*), least Bell's vireo, Lawrence's goldfinch (*Spinus lawrencei*), turkey vulture (*Cathartes aura*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*) were observed in the BSA during 2021 surveys. Additional details on the least Bell's vireo observations and flycatcher and cuckoo surveys are provided in Appendix E. Focused surveys for burrowing owl were conducted but no owls were observed or are expected to occur in the BSA (Appendix F).

The CNDDB was queried for occurrences of special-status wildlife taxa within the BSA occurs and surrounding ten-mile area, as discussed above in Section 2.0. Table 7 summarizes the special-status wildlife taxa known to occur regionally (within 10 miles) and their potential for occurrence in the BSA (Appendix A Figure 6). Table 7 also includes WRCMSHCP covered species, USFWS iPaC data and Cornell Lab of Ornithology eBird data (Cornell 2021, USFWS 2021, WRCMSHCP 2015). Appendix A Figures 6B and 6C present CNDDB special-status wildlife that have been documented within two miles of the BSA.

Table 8 provides WRCMSHCP covered species that are not included in Table 7 that have high potential to occur in the BSA.

Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the taxa occurs on site and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs on site; or the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

Table 7 Known and Potential Occurrences of Special-Status Wildlife within the BSA

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
INVERTEBRATES					
Bombus crotchii	Crotch bumble bee	**SA**	Coastal California east to the sierra-cascade crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.14 miles southeast of the BSA from 1933.	**Low**
Branchinecta sandiegonensis	San Diego fairy shrimp	**FE**	Restricted to vernal pools in coastal southern California and northwestern Baja California, Mexico.	Suitable habitat does not occur within the BSA. Suitable habitat may occur west of the BSA. The nearest and most recent recorded occurrence is approximately 7.48 miles southwest of the BSA from 2006.	**Not Likely to Occur**
Danaus plexippus	monarch butterfly	**FC**	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation. Roosts located in wind-protected tree groves (eucalyptus, pine, cypress), with nectar and water sources nearby.	Suitable habitat occurs within the BSA. Narrow leaf milkweed (*Asclepias fascicularis*), a monarch butterfly host plant, occurs in the BSA. The nearest and most recent occurrence is within the BSA from 2021.	**High**
Eugnosta busckana	Busck's gallmoth	**SA**	Beaches, salt marshes, sand dunes & coastal scrub dunes, presumed extirpated.	Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 9.71 miles east, northeast of the BSA from 1906.	**Not Likely to Occur**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Euphydryas editha quino	Quino checkerspot butterfly	**FE, WRCMSHCP**	Native to southern California and northwestern Mexico. Occurs in localized colonies closely associated with the larval food plant, *Plantago erecta*. Adults use several chaparral annual flowers for food. Six known populations in southwestern Riverside and San Diego Counties and at least one population near Tecate, Mexico.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 4.68 miles south of the BSA from 1976.	**Not Likely to Occur**
Neolarra alba	white cuckoo bee	**SA**	Parasitic species that lays eggs in the nest of other bees.	Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 9.71 miles east, northeast of the BSA from 1928.	**Not Likely to Occur**
Rhaphiomidas terminates abdominalis	Delhi Sands flower-loving fly	**FE, WRCMSHCP**	Endemic to sand dune formations of San Bernardino Valley, from Colton to Ontario.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 6.50 miles north of the BSA from 2001.	**Not Likely to Occur**
FISH					
Catostomus santaanae	Santa Ana sucker	**FT, WRCMSHCP**	Native to the Los Angeles and Santa Ana basins in southern California. Live in the shallow portions of rivers and streams. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of algae.	Surface water was present within the BSA during the May 2021 surveys. The nearest recorded occurrence is approximately 0.40 mile west, southwest of the BSA from 2002.	**Low**
Gila orcuttii	arroyo chub	**SSC, WRCMSHCP**	Found in habitats characterized by slow-moving water, mud or sand substrate, and depths greater than 40 cm. Most abundant in low gradient pools that support at least some aquatic vegetation.	Surface water was present within the BSA during the May 2021 surveys. The nearest recorded occurrence is within BSA from 1997.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Oncorhynchus mykiss irideus pop. 10	steelhead – southern California Distinct Population Segment (DPS)	**FE**	Inhabits seasonally accessible rivers and streams with gravel for spawning. Requires sufficient flows in their natal streams to be able to return from oceans and lakes to spawn. Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerance to warmer water and more variable conditions.	Surface water was present within the BSA during the May 2021 surveys. The nearest recorded occurrence is within BSA from 2013.	**Not Likely to Occur**
Rhinichthys osculus	Santa Ana speckled dace	**SSC**	Found mainly in perennial steams fed by cool springs that maintain temperatures below 20°C. In the Los Angeles Basin, they occupy shallow rifles dominated by gravel and cobble. Prefer pools in low-gradient streams with slow-moving waters with overhanging riparian vegetation.	Surface water was present within the BSA during the May 2021 surveys. The nearest and most recent recorded occurrence is approximately 8.19 miles east, northeast of the BSA from 1996.	**Low**
AMPHIBIANS					
Anaxyrus californicus	arroyo toad	**FE, SSC, WRCMSHCP**	Occurs in the central San Joaquin valley and surrounding foothills, primarily in washes, arroyos, sandy riverbanks, and riparian areas.	Suitable habitat is present within the BSA. The nearest and most recent recorded occurrence is approximately 9.26 miles south, southeast of the BSA.	**Low**
Spea hammondii	western spadefoot	**SSC, WRCMSHCP**	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools and other temporary rain pools, cattle tanks, and occasionally pools of intermittent streams are essential for breeding and egg-laying.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.10 mile south of the BSA from 1964.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Taricha torosa	Coast Range newt	**SSC, WRCMSHCP**	Occurs in oak woodlands, chaparral, and grasslands.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.67 mile south of the BSA from 1997.	**Low**
REPTILES					
Anniella stebbinsi	southern California legless lizard	**SSC**	Generally, south of the transverse range, extending to northwestern Baja California, occurs in sandy or loose loamy soils under sparse vegetation; disjunct populations in the Tehachapi and Piute mountains in Kern County; variety of habitats; generally, in moist, loose soil, they prefer soils with a high moisture content.	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.87 miles east of the BSA from 2016.	**Moderate**
Arizona elegans occidentalis	California glossy snake	**SSC**	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7.91 miles north, northeast of the BSA from 1946.	**Low**
Aspidoscelis hyperythra	orange-throated whiptail	**WL, WRCMSHCP**	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of bush and rocks. Perennial plants necessary for its major food: termites.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.01 miles south of the BSA from 1990.	**Low**

Special-Status Biological Resources

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Aspidoscelis tigris stejnegeri	coastal whiptail	**SSC, WRCMSHCP**	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.43 miles south, southeast of the BSA from 2016.	**Moderate**
Coleonyx variegatus abbotti	San Diego banded gecko	**SSC, WRCMSHCP**	Found in southwestern California from Ventura County into Baja California. Inhabits coastal scrub chaparral and desert scrub habitats, preferring granite or rocky outcrops.	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.00 miles east, northeast of the BSA from 2003.	**Moderate**
Crotalus ruber	red-diamond rattlesnake	**SSC, WRCMSHCP**	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slope of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.64 miles east, northeast of the BSA from 2003.	**Moderate**
Emys marmorata	western pond turtle	**SSC, WRCMSHCP**	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches usually with aquatic vegetation, below 6,000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.3 mile from water for egg-laying.	Marginally suitable habitat occurs within the BSA. No perennial water occurs in the BSA. The nearest recorded occurrence is approximately 2.07 miles west of the BSA from 1992.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Phrynosoma blainvillii	coast horned lizard	**SSC, WRCMSHCP**	Primarily in sandy soil in open areas, especially sandy washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Main prey item is harvester ants. Occurs west of the deserts from northern Baja California, Mexico north to Shasta County below 2,400 m (8,000 feet) elevation.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.67 miles south, southeast of the BSA from 2016.	**Moderate**
Salvadora hexalepis virgultea	coast patch-nosed snake	**SSC**	Occurs in semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	Suitable habitat does not occur in the BSA. The nearest and most recent recorded occurrence is approximately 6.32 miles west, southwest of the BSA from 1999.	**Not Likely to Occur**
Thamnophis hammondii	two-striped gartersnake	**SSC**	Coastal California from vicinity of Salinas to northwest Baja California, Mexico. From sea level to about 7000 feet. elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7.98 miles southwest of the BSA from 2000.	**Low**
BIRDS					
Accipiter cooperii	Cooper's hawk	**WL, WRCMSHCP**	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks.	Suitable foraging and nesting habitat occur within the BSA. The nearest recorded occurrence is within the BSA from 2010.	**High (foraging)/ Moderate (nesting)**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Agelaius tricolor	tricolored blackbird	**ST, SSC, BCC, WRCMSHCP**	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate and foraging area with insect prey within a few km of the colony.	Suitable foraging and potential nesting habitat occur within the BSA. The nearest recorded occurrence is approximately 1.73 miles northeast of the BSA from 2009.	**Moderate (foraging)/Low (nesting)**
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	**WL, WRCMSHCP**	Resident in southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	Suitable foraging and nesting habitat occur within the BSA. The nearest recorded occurrence is approximately 0.50 mile southwest of the BSA from 2019.	**High**
Ammodramus savannarum	grasshopper sparrow	**SSC, WRCMSHCP**	Occurs in grasslands, hayfields, and prairies with sparse shrub cover. Known to nest in lowlands and foothills west of the Sierra Nevada Mountain range through most of California.	Suitable foraging habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3 miles west of the BSA from 2020.	**Moderate (foraging)/Low (nesting)**
Aquila chrysaetos	golden eagle	**BGEPA, FP, WL, BCC, WRCMSHCP**	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Suitable foraging habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2007.	**Low (foraging)/ Not Likely (nesting)**
Artemisiospiza belli	Bell's sage sparrow	**WL, BCC, WRCMSHCP**	Prefers semi-open habitats with relatively evenly spaced shrubs; dry chaparral and coastal sage scrub; shrub species include brittlebush, black sage, California buckwheat, California sagebrush, bush mallow, chamise, white sage, valley cholla, and willow.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.7 miles to the east of the BSA from 2020.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Asio otus	long-eared owl	**SSC**	Riparian habitat required; also uses live oak thickets and other dense stands of trees. Found in Central Valley and Southern California deserts.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.55 miles to the west, southwest of the BSA from 2019.	**Low**
Athene cunicularia	burrowing owl	**SSC, WRCMSHCP**	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is within BSA from 1989. Focused surveys were conducted in 2021 and no sign of this species was observed.	**Low /Not likely**
Buteo swainsoni	Swainson's hawk	**ST, BCC, WRCMSHCP**	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Marginally suitable foraging and nesting habitat occur within the BSA. The nearest recorded occurrence is within the BSA from 2011.	**Low**
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	**SSC, BCC, WRCMSHCP**	Southern California coastal sage scrub. Wrens require tall cactus for nesting and roosting.	No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 4.55 miles west, southwest of the BSA from 1989.	**Not Likely to Occur**
Circus hudsonius	northern harrier	**WRCMSHCP**	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Breeds from sea level to 1700 m in the Central Valley and Sierra Nevada, and up to 800 m in northeastern California.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021.	**Moderate (foraging)/Low (nesting)**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Coccyzus americanus occidentalis	western yellow-billed cuckoo	**FT, SE, BCC, WRCMSHCP**	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Suitable foraging and nesting habitat occur within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2011. This species was not observed during 2021 protocol surveys.	**Low**
Coturnicops noveboracensis	yellow rail	**SSC, BCC**	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is within the BSA from 1914.	**Not Likely to Occur**
Elanus leucurus	white-tailed kite	**FP, WRCMSHCP**	Occurs in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous and open stages of most habitats mostly in cismontane California. Nest placed near top of dense oak, willow, or another tree stand. Nest located near open foraging area.	Suitable foraging and marginally suitable nesting habitat occurs within the BSA. The nearest recorded occurrence is within the BSA from 2020.	**Moderate (foraging)/ Low (nesting)**
Empidonax traillii extimus	southwestern willow flycatcher	**FE, SE, WRCMSHCP**	Riparian woodlands in southern California	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.31 mile north, northwest of the BSA from 1990. This species was not observed during 2021 protocol surveys.	**Low**
Eremophila alpestris actia	California horned lark	**WL, WRCMSHCP**	Coastal regions, chiefly from Sonoma County to San Diego County. Also, main part of San Joaquin Valley and east to foothills. Short-grass prairie, “bald” hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Suitable habitat occurs within the BSA. This species was observed in during riparian bird surveys.	**Present**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Falco peregrinus anatum	American peregrine falcon	**FP, BCC, WRCMSHCP**	Nesting habitats contain cliffs and almost always nest near water. Open habitats are often used for foraging. Non-breeding American peregrine falcons may also occur in open areas without cliffs. Many artificial habitats like towers, bridges and buildings are also utilized.	Suitable foraging habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.11 miles north of the BSA from 2021.	**Moderate (foraging)/ Not likely (nesting)**
Haliaeetus leucocephalus	bald eagle	**Delisted, BGEPA, SE, FP, BCC, WRCMSHCP**	Range extends from the Mexico border throughout the United States and Canada. Prefer large lakes for hunting.	Marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021. A nesting bald eagle was reported within the basin in 2020/2021.	**Low (foraging)/ Moderate (nesting)**
Icteria virens	yellow-breasted chat	**SSC, WRCMSHCP**	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests, in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft. of ground.	Suitable foraging and nesting habitat occur within the BSA. This species was observed in riparian habitat in the BSA during protocol bird surveys	**Present**
Laterallus jamaicensis coturniculus	California black rail	**ST, FP**	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 4.23 miles northwest of the BSA form 1931.	**Not Likely to Occur**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Larus californicus	California gull	**WL**	Preferred habitats along the coast are sandy beaches, mudflats, rocky intertidal, and pelagic areas of marine and estuarine habitats, as well as fresh and saline emergent wetlands. Inland, frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. nests at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades, and an abundant visitor to coastal and interior lowlands in nonbreeding season.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021.	**High (foraging)/ Low (nesting)**
Plegadis chihi	white-faced ibis	**WL, WRCMSHCP**	Occurs in freshwater marshes, irrigated lands, and tules. For nesting, they select shallow marshes with scattered areas of taller emergent vegetation such as cattail, bur-reed, or bulrush.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021.	**High(foraging)/ Low (nesting)**
Polioptila californica californica	coastal California gnatcatcher	**FT, SSC, WRCMSHCP**	Obligate, permanent resident of coastal sage scrub below 2500 feet in southern California. Low, coastal sage scrub in arid washes and on mesas and slopes with California sagebrush (*Artemisia californica*) as a dominant or co-dominant species. Not all areas classified as coastal sage scrub are occupied.	Suitable foraging and nesting habitat occur within the BSA. Observed in coastal sage scrub habitat during 2021 surveys.	**Present**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Setophaga petechia	yellow warbler	**SSC, BCC, WRCMSHCP**	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Suitable foraging and nesting habitat occur within the BSA. This species was observed in riparian habitat in the BSA during protocol bird surveys.	**Present**
Spinus lawrencei	Lawrence's goldfinch	**BCC**	Oak, pinyon-juniper woodlands and chaparral habitats. Breed in streamside trees, oak woodland, open pine woods, pinyon-juniper woods, and chaparral. Often found close to water.	Suitable habitat occurs within the BSA. This species was observed in riparian habitat in the BSA during protocol bird surveys Observed during protocol riparian bird surveys.	**Present**
Vireo bellii pusillus	least Bell's vireo	**FE, SE, WRCMSHCP**	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	Suitable foraging and nesting habitat occur within the BSA. Observed during 2021 biological resources field surveys.	**Present**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
MAMMALS					
Chaetodipus fallax	northwestern San Diego pocket mouse	**SSC, WRCMSHCP**	Restricted to the central and northern Baja California Peninsula and southwestern California. Commonly found in sandy herbaceous areas, usually with coarse gravel. Habitats tend to be stony soils above sandy desert fans and rocky areas within shrub communities such as coastal sage scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent scrub, and annual grassland.	Marginally suitable habitat occurs within the BSA; however, substrates are not ideal. The nearest and most recent recorded occurrence is approximately 3.47 miles south, southeast of the BSA from 2001.	**Low**
Dipodomys stephensi	Stephens' kangaroo rat	**FE, ST, WRCMSHCP**	Require annual grasses for feeding. Prefer sparse perennial plant cover and firm soils. Often occupy abandoned pocket gopher burrows.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.61 miles east of the BSA from 1992.	**Low**
Eumops perotis californicus	western mastiff bat	**SSC**	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Suitable foraging and roosting habitat occur within the BSA. The nearest recorded occurrence is approximately 2.92 miles west, southwest of the BSA from 1992.	**Moderate**
Lasiurus xanthinus	western yellow bat	**SSC**	Prefer riparian woodland habitat, especially with palm trees (for roosting). Also occupy cottonwood-willow riparian woodlands.	Suitable foraging and roosting habitat occur within the BSA. The nearest and most recent recorded occurrence is approximately 1.14 miles southeast of the BSA from 1999.	**Moderate**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Lepus californicus bennettii	San Diego black-tailed jackrabbit	**SSC, WRCMSHCP**	Occurs primarily in arid regions with short grass. Preferred habitats include open grasslands, agricultural fields, and sparse coastal scrub.	Marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9.24 miles east of the BSA from 2001.	**Moderate**
Myotis yumaensis	Yuma myotis	**SA**	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings, or crevices.	Suitable foraging habitat occurs within the BSA however the preferred habitat for maternity colonies is absent. The nearest recorded occurrence is approximately 7.20 miles east, southeast of the BSA form 1997.	**Low**
Nyctinomops femorosaccus	pocketed free-tailed bat	**SSC**	Variety of arid areas in southern California; pinyon-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. rocky areas with high cliffs.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 1.14 miles southeast of the BSA from 1986.	**Not Likely to Occur**

Sources: CDFW 2021a, 2021b, 2021c, 2021e; Cornell 2021, WRCMSHCP 2015

Federal Rankings:
FE = Federally Endangered
FT = Federally Threatened
FC = Federal Candidate for Listing
BCC = USFWS Bird of Conservation Concern
BGEPA = Bald and Golden Eagle Protection Act
Delisted = removed from federal listing

County:
WRCMSHCP = Western Riverside County MSHCP covered

State Rankings:
FP = Fully Protected
SE= State Endangered
ST = State Threatened
SA = CDFW Special Animal
SC = State Candidate for Listing
WL = CDFW Watch List
SSC = Species of Special Concern
Delisted = removed from state listing

Table 8 WRCMSHCP Covered Species likely to Occur in the BSA[1]

Scientific Name	Common Name
BIRDS	
black-crowned night heron	*Picoides pubescens*
downy woodpecker	Tachycineta bicolor
tree swallow	*Tachycineta bicolor*
turkey vulture	*Cathartes aura*
Wilson's warbler	*Wilsonia pusilla*
MAMMALS	
bobcat	*Lynx rufus*
coyote	*Canis latrans*
long-tailed weasel	*Mustela frenata*

Note: [1] = If a WRCMSHCP covered species is listed in Table 7, it is not repeated in this table.

5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts (*Taricha torosa*), California red-legged frogs (*Rana draytoni*), western pond turtles (*Emys marmorata*), and two-striped garter snakes (*Thamnophis hammondii*) found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor" (Hunt 1993; Rathbun et al., 1992; Bulger et al. 2002; Trentham 2002; Ramirez 2003). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark 1995; Beier 1993, 1995; Noss et al. 1996; Noss et al. no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of

habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.

- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll 1997).

5.5.1 Wildlife Movement in the BSA

The BSA is located within the Santa Ana River floodplain, which has been identified as an important wildlife movement corridor/riparian linkage (Penrod et al. 2001) and is part of a large area of open space within an otherwise heavily developed region. This corridor joins upland and riparian habitats. It joins the San Bernardino Mountains in the north to the Chino Hills, and by extension the Santa Ana Mountains, to the south, and Orange County to the west. Therefore, the riparian corridor, including the BSA, would be expected to experience substantial wildlife movement as fauna travel between these mountainous regions of southern California. Within the BSA, the lack of structures or other significant development and the presence of relatively intact habitat and features such as ephemeral drainages and unpaved roads all facilitate the unimpeded movement of wildlife throughout the area. The east/west corridor of the Santa Ana River floodplain is also important due to SR-91 and developed area surrounding the BSA impeding wildlife movement, especially movement south of the BSA.

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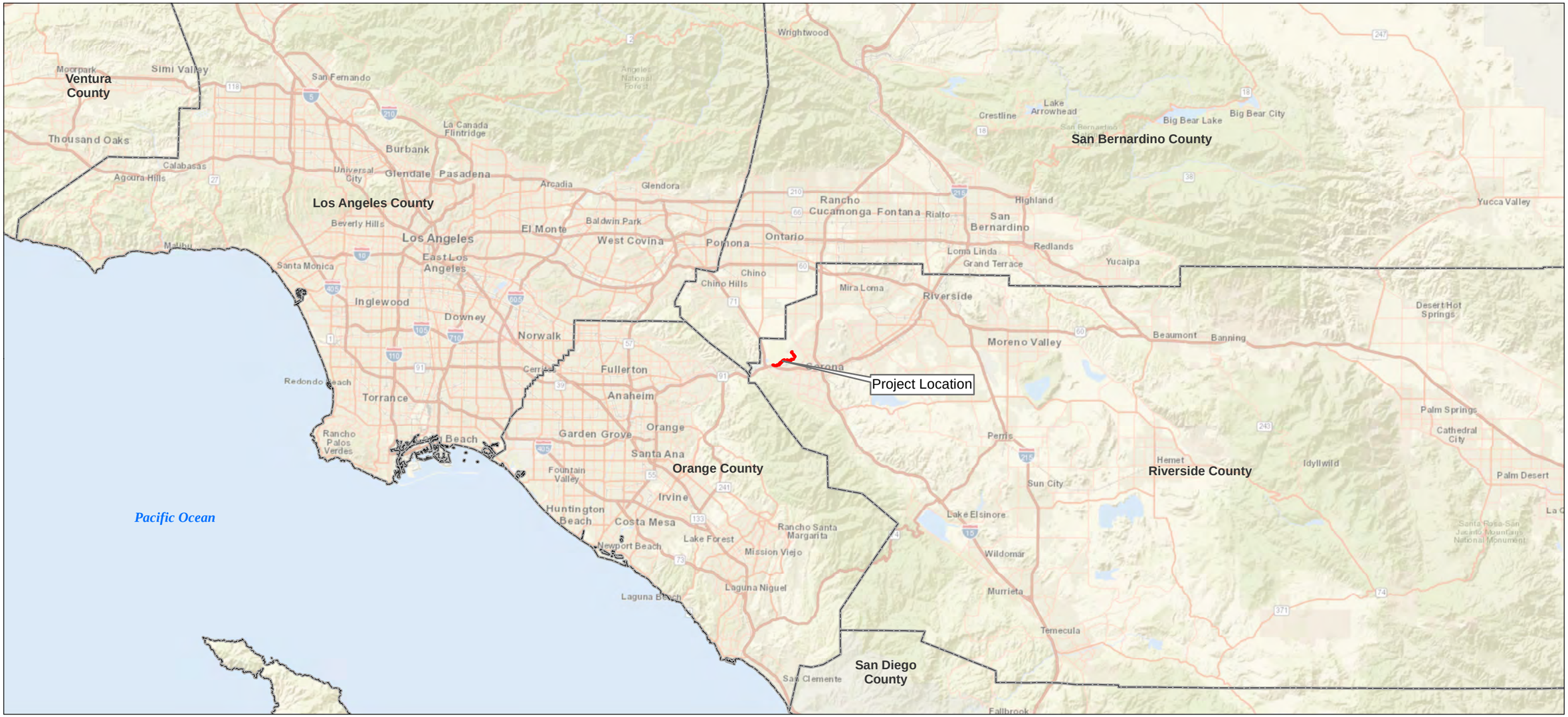
Appendix A FIGURES



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Near Corona	TR by SET on 2022-06-29
Riverside County, California	IR by JV on 2022-06-29
Client/Project	2042483140
Riverside County Regional Park & Open-Space District	
Santa Ana River Trail Project	
Biolgical Resources Technical Report	
Figure No.	
1	
Title	
Regional Location	

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
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△ Phase 2A End Location / Phase 3A Start Location

Railroad

Proposed Action (2022 Trail-60% Design)

Temporary Impact (54.00 ac.)

Permanent Impact (11.54 ac.)

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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
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2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
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Figure No.
2 - 0

Title
Site Plan

Notes
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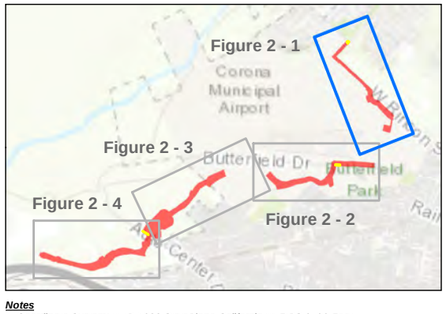

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Project Location
Near Corona
Riverside County, California

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Figure No.
2 - 1

Title
Plan Sheet 1

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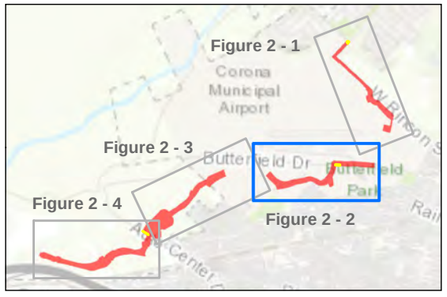

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Title	**Plan Sheet 2**

Notes

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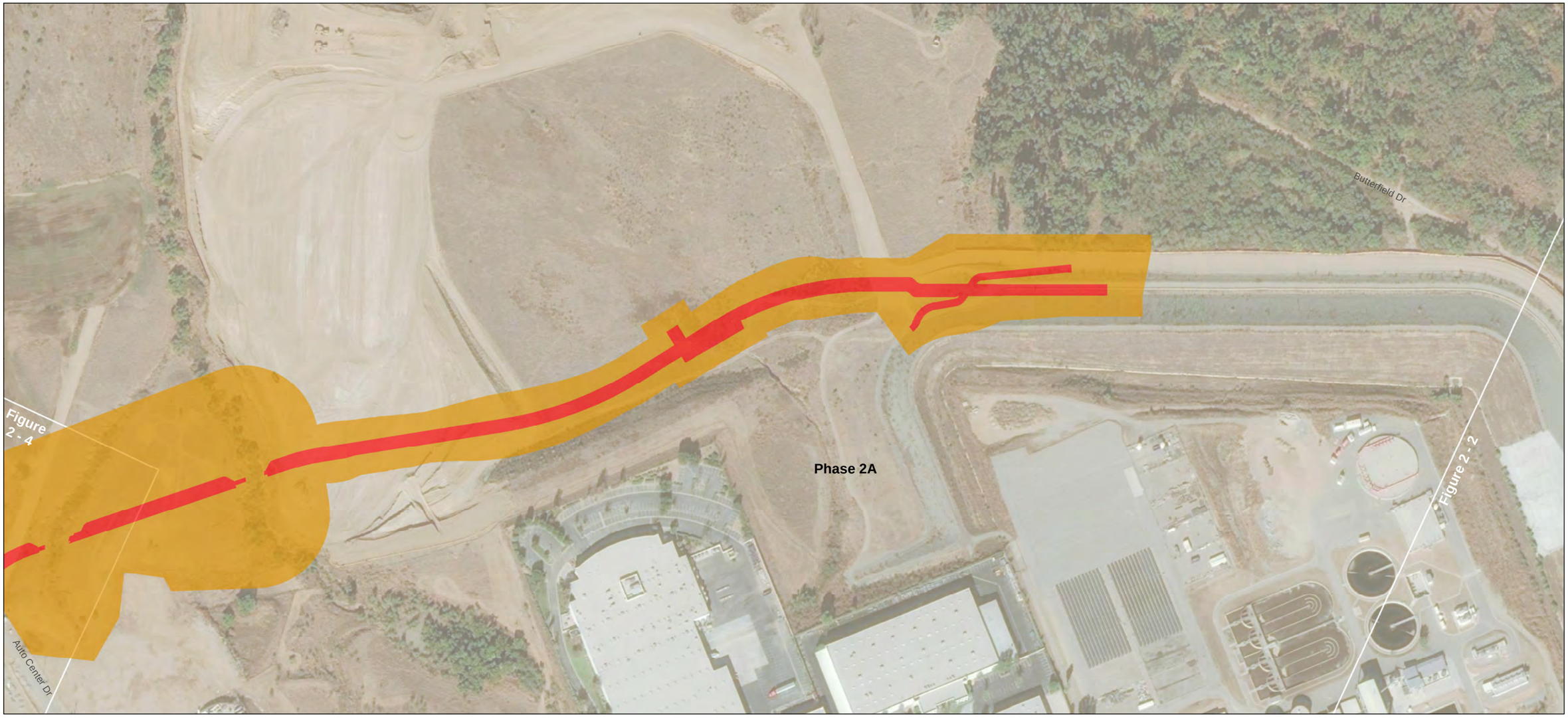

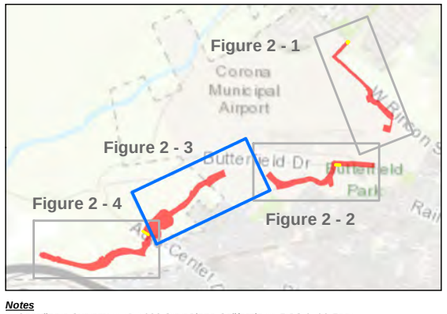

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Figure No.
2 - 3

Title
Plan Sheet 3

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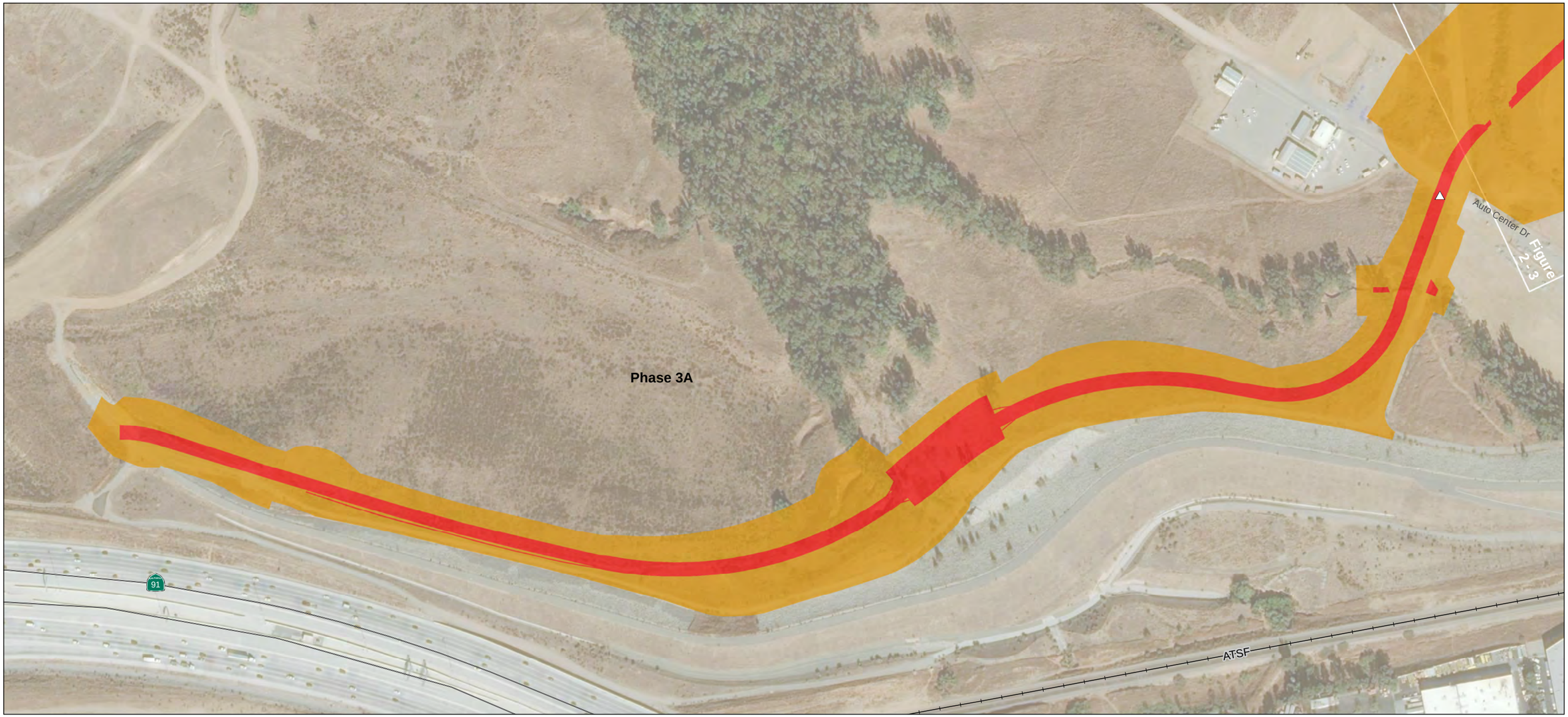

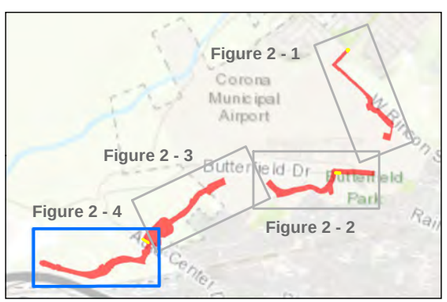

△ Phase 2A End Location / Phase 3A Start Location

Railroad

Proposed Action (2022 Trail-60% Design)

Temporary Impact (54.00 ac.)

Permanent Impact (11.54 ac.)

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Figure No.
2 - 4

Title
Plan Sheet 4

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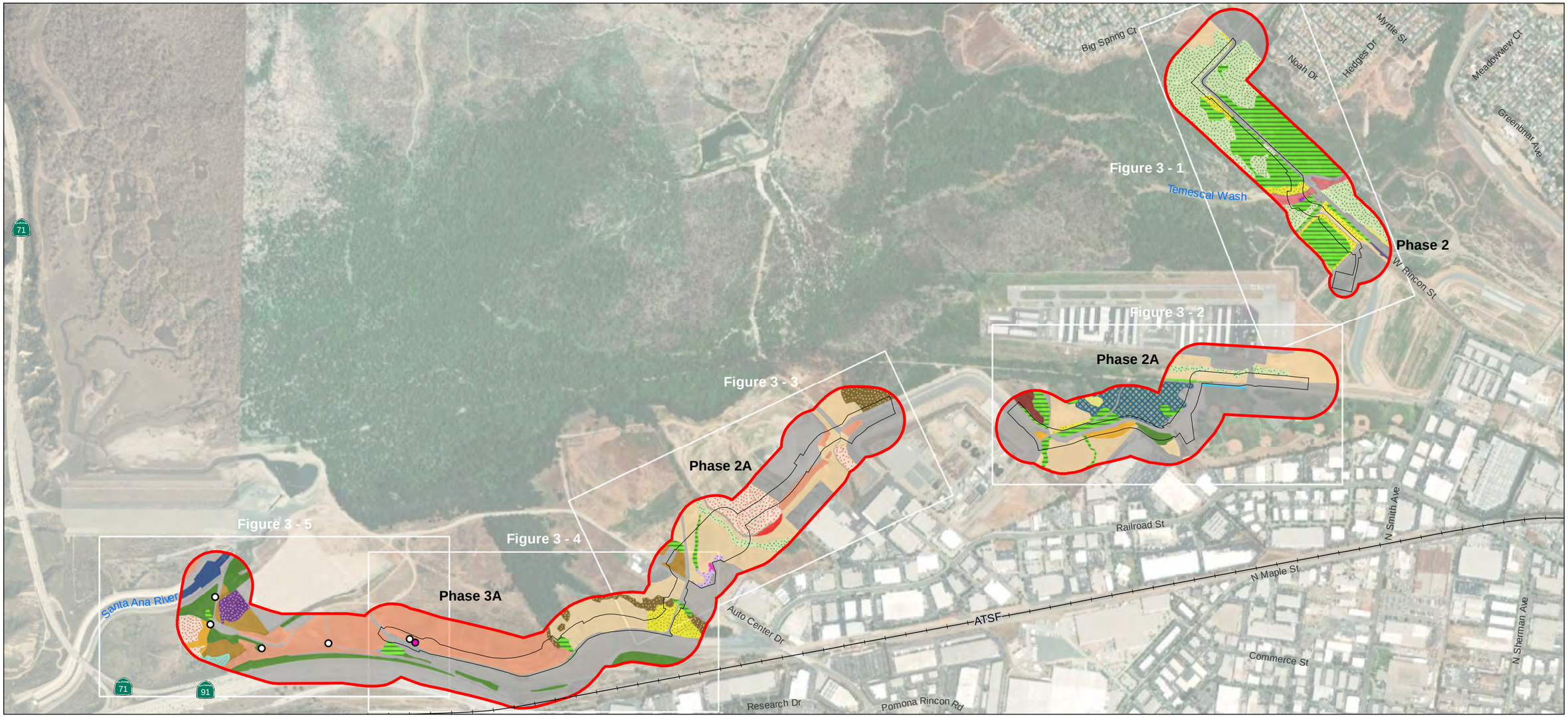

- Biological Survey Area
- Project Footprint

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
- Cheeseweed flats
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Eucalyptus groves
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Open water
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Shining willow groves
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Western ragweed meadow
- Wild oats and annual brome grasslands

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Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
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Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Project Location
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Riverside County, California

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Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
3 - 0

Title
Biological Resources

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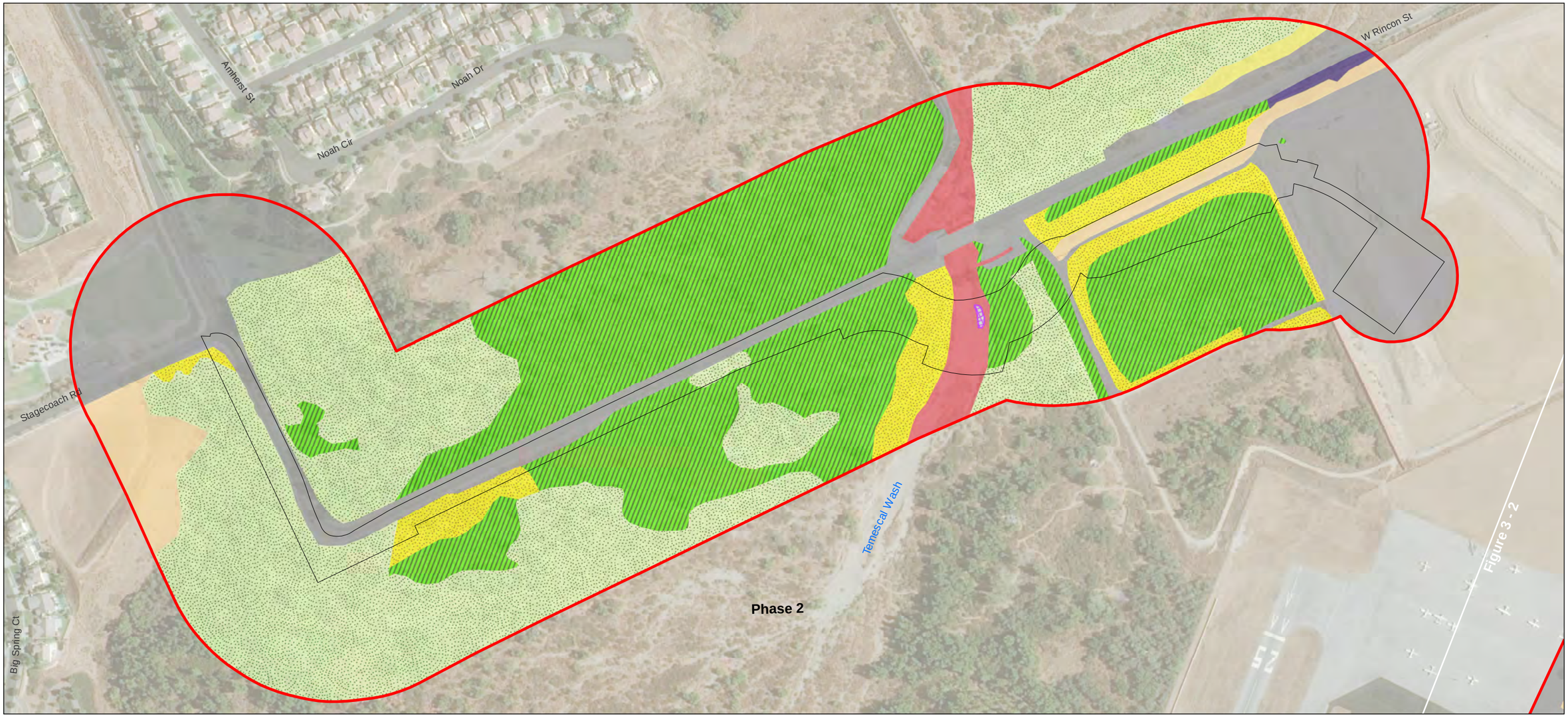

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- Disturbed/Developed
- Giant reed stands
- Mulefat thickets
- Partially vegetated channel
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 1

Title
Biological Resources

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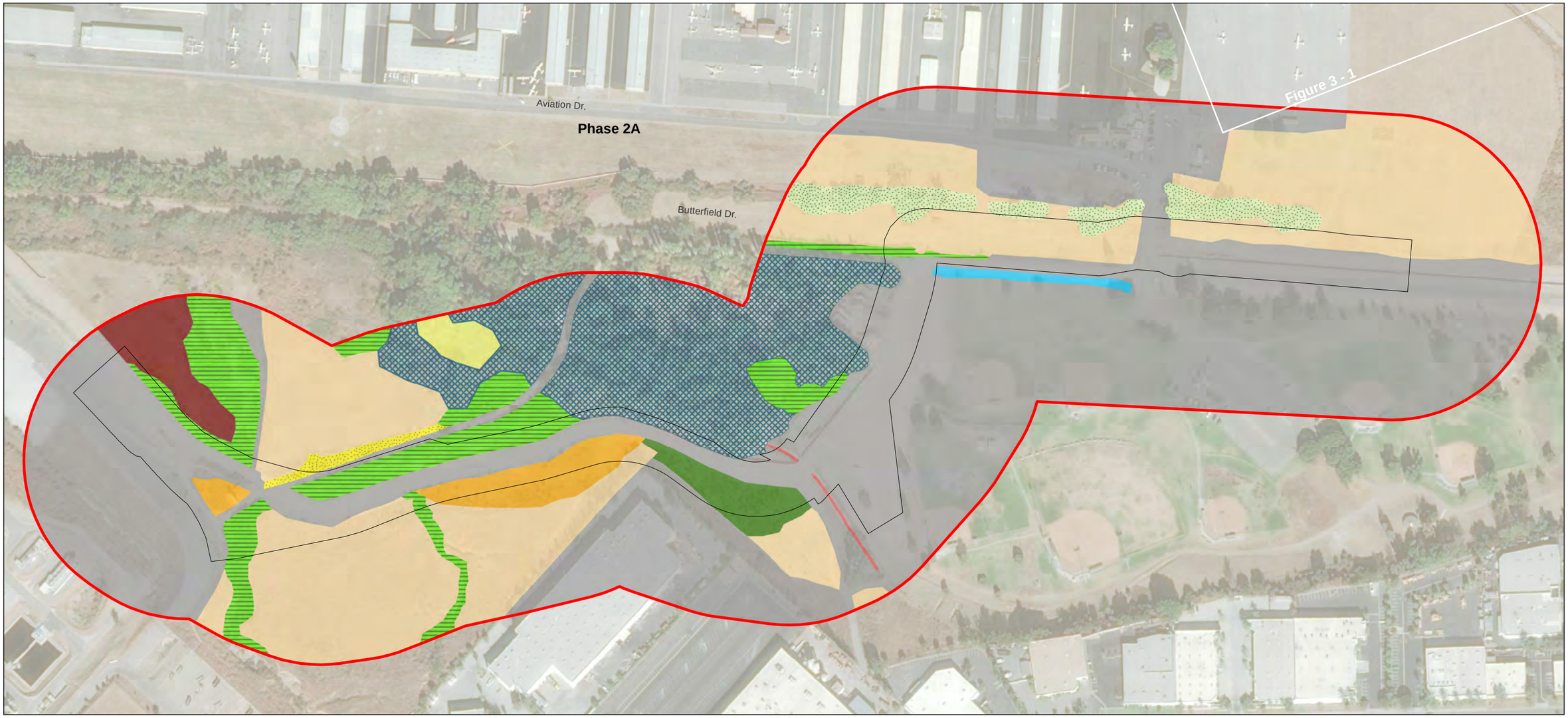
\\1185\business_development\Santa_Ana_River_Trail\BRTR_Figure3_SART_VegMap_DDP_12232021_11x17.mxd Revised: 2022-06-29 By: dalaw



Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- Coyote brush scrub
- Disturbed/Developed
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Shining willow groves
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
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Prepared by DL on 2022-06-29
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IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 2

Title
Biological Resources

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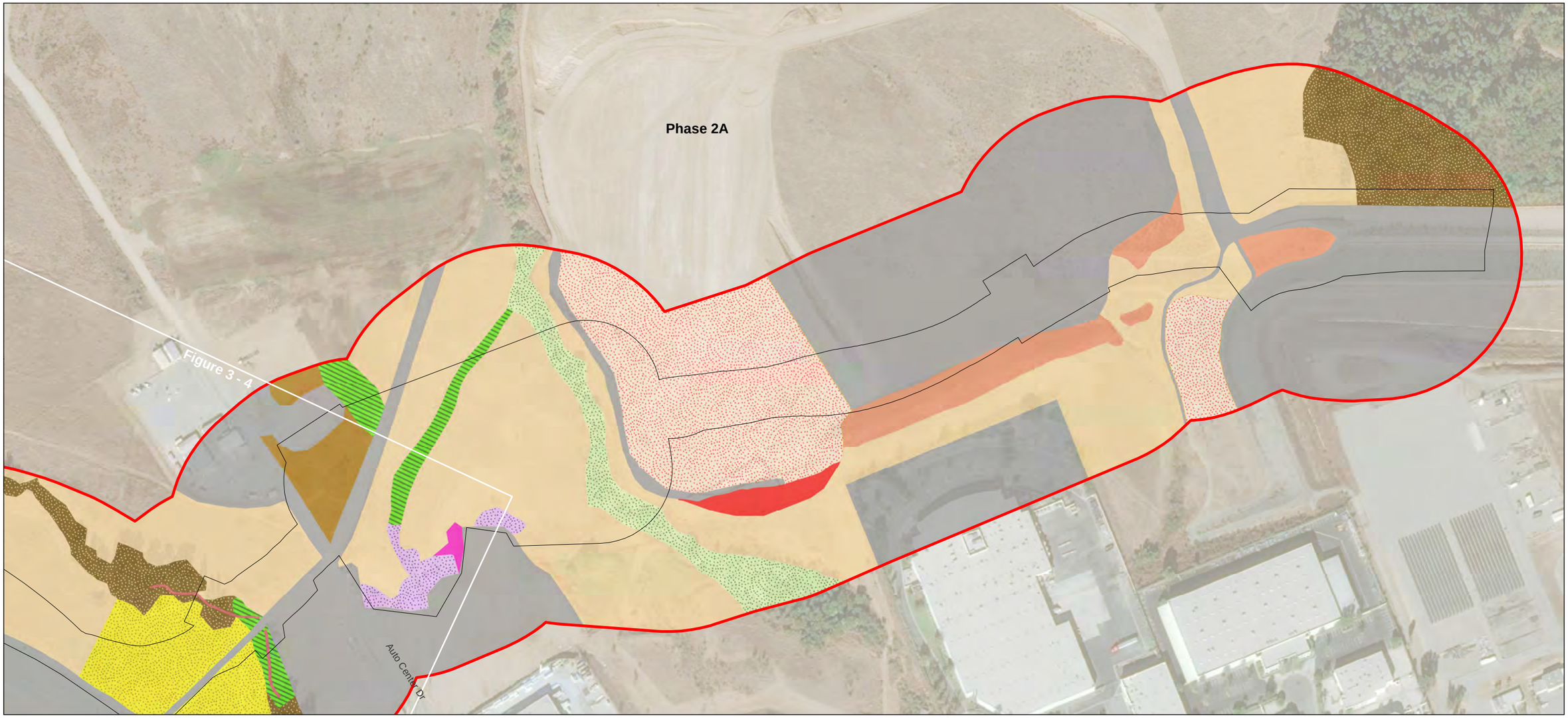

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California sagebrush scrub
- Cheeseweed flats
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 3

Title
Biological Resources

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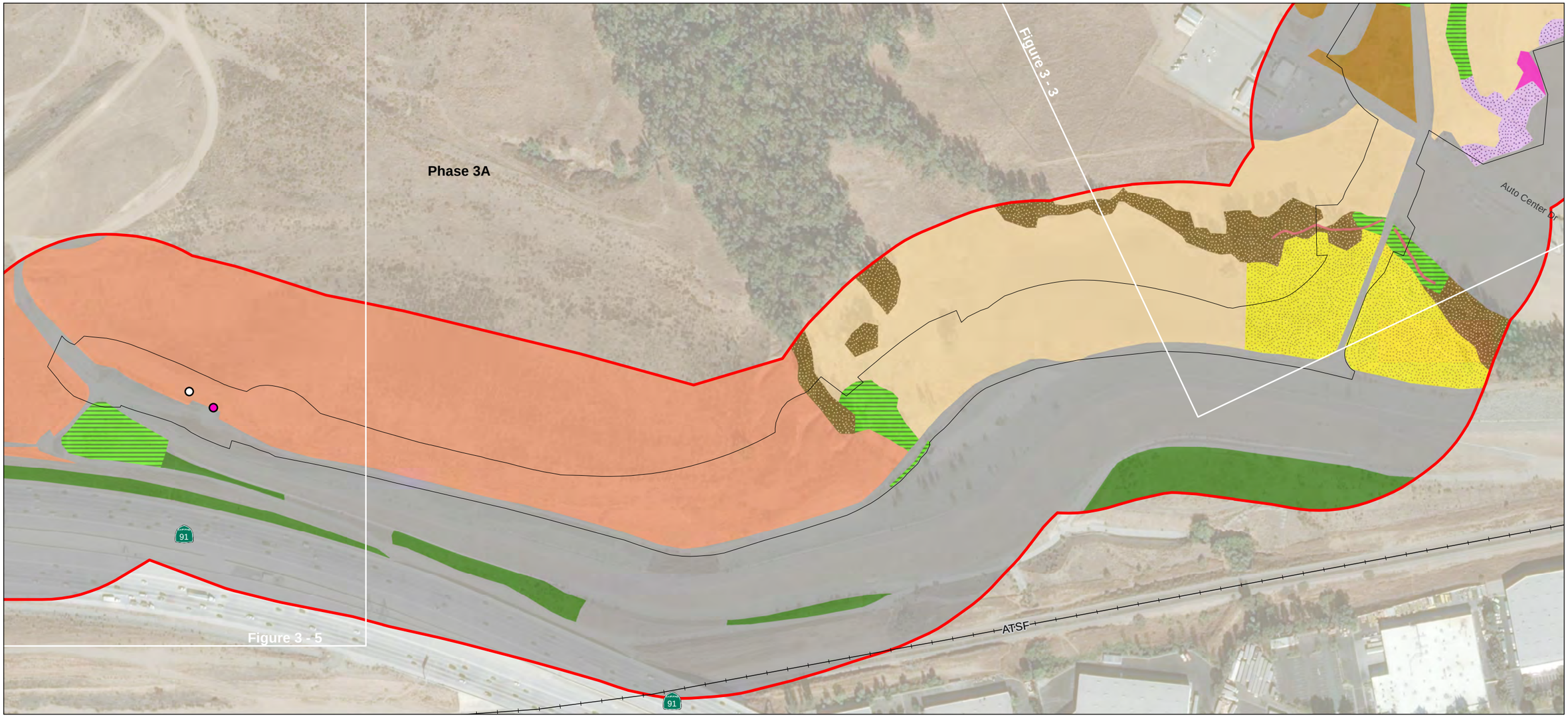

- Biological Survey Area
- Project Footprint
- Railroad

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- California buckwheat scrub
- California sagebrush scrub
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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IR by JV on 2022-06-29

Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 4

Title
Biological Resources

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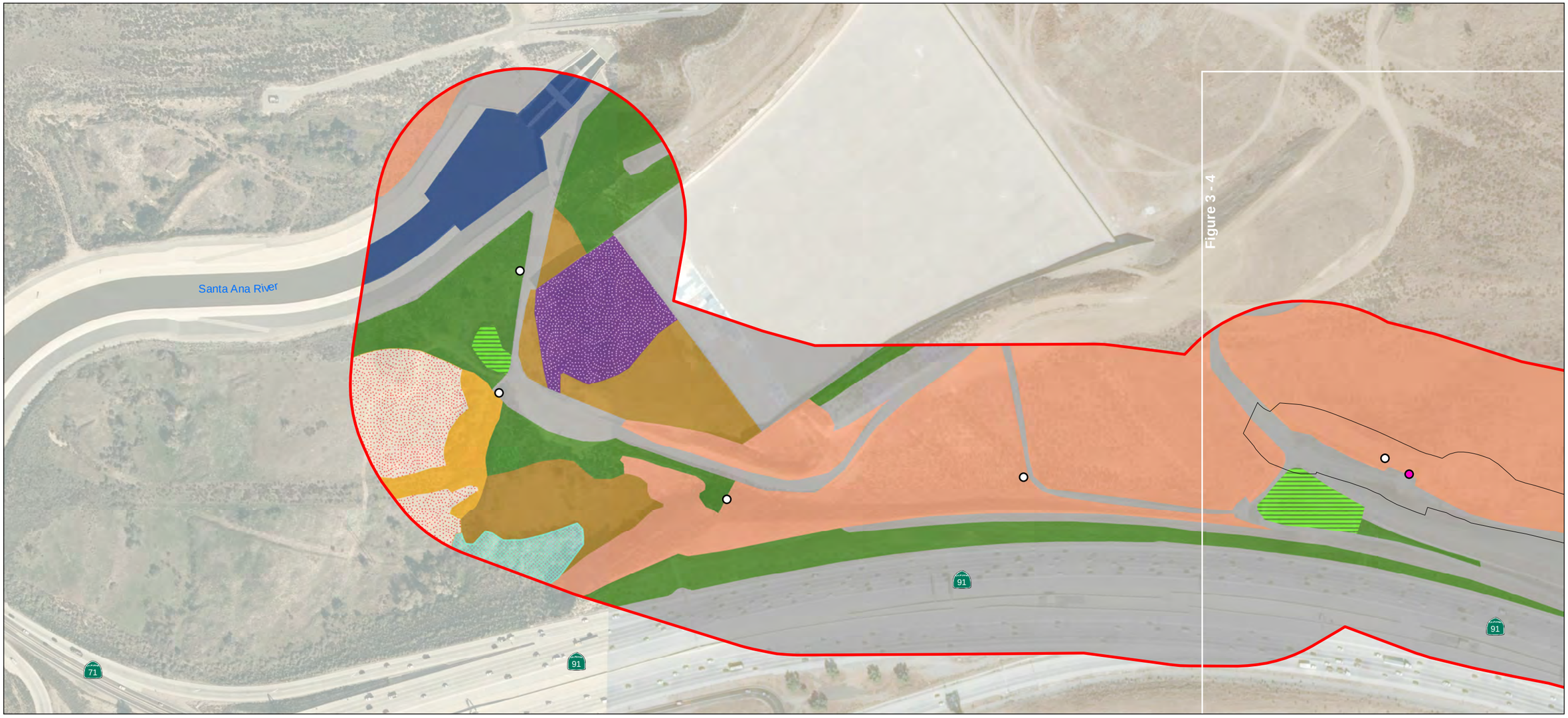

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

- Biological Survey Area
- Project Footprint

Special-Status Species
- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types
- California buckwheat scrub
- California sagebrush scrub
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Mulefat thickets
- Open water
- Restoration
- Ruderal
- Western ragweed meadow

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 5

Title
Biological Resources

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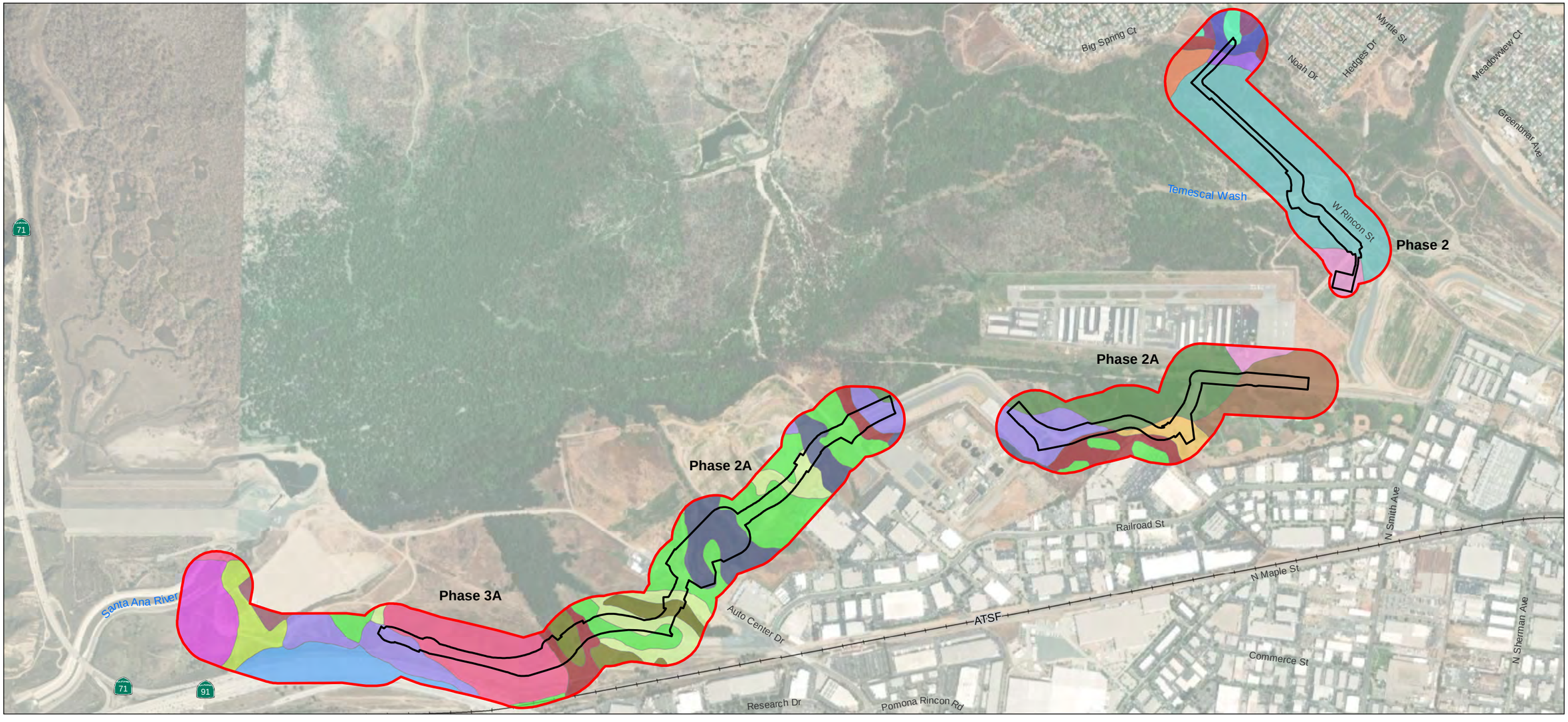

- Biological Survey Area
- Project Footprint
- Railroad

Soils Map Unit Symbol

- AkC; Arbuckle loam, 2 to 8 percent slopes
- AkD; Arbuckle loam, 8 to 15 percent slopes
- AlC; Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19
- AlE3; Arbuckle gravelly loam, 2 to 25 percent slopes, severely eroded
- BP; Borrow Pit
- DAM; Dams
- GaC; Garretson very fine sandy loam, 2 to 8 percent slopes
- GfF2; Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded
- GrB; Grangeville sandy loam, sandy substratum, drained, 0 to 5 percent slopes
- GvB; Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes
- HcC; Hanford coarse sandy loam, 2 to 8 percent slopes
- MdC; Metz loamy sand, 2 to 8 percent slopes
- MgB; Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent slopes
- MhB; Metz loamy fine sand, sandy loam substratum, 0 to 5 per cent slopes
- PeC; Perkins loam, 2 to 8 percent slopes
- PgD2; Perkins gravelly loam, 8 to 15 percent slopes, eroded
- RaD2; Ramona sandy loam, 8 to 15 percent slopes, eroded
- RaD3; Ramona sandy loam, 8 to 15 percent slopes, severely eroded
- SeC2; San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SgA; San Emigdio loam, 0 to 2 percent slopes
- TeG; Terrace escarpments

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.NRCS 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
4

Title
Historical Soils

V:\1865\business_development\Santa_Ana_River_Trail\BRTR_Figure4_SART_SoilsMap_06032021_11x17.mxd Revised: 2022-06-29 By: dalaw

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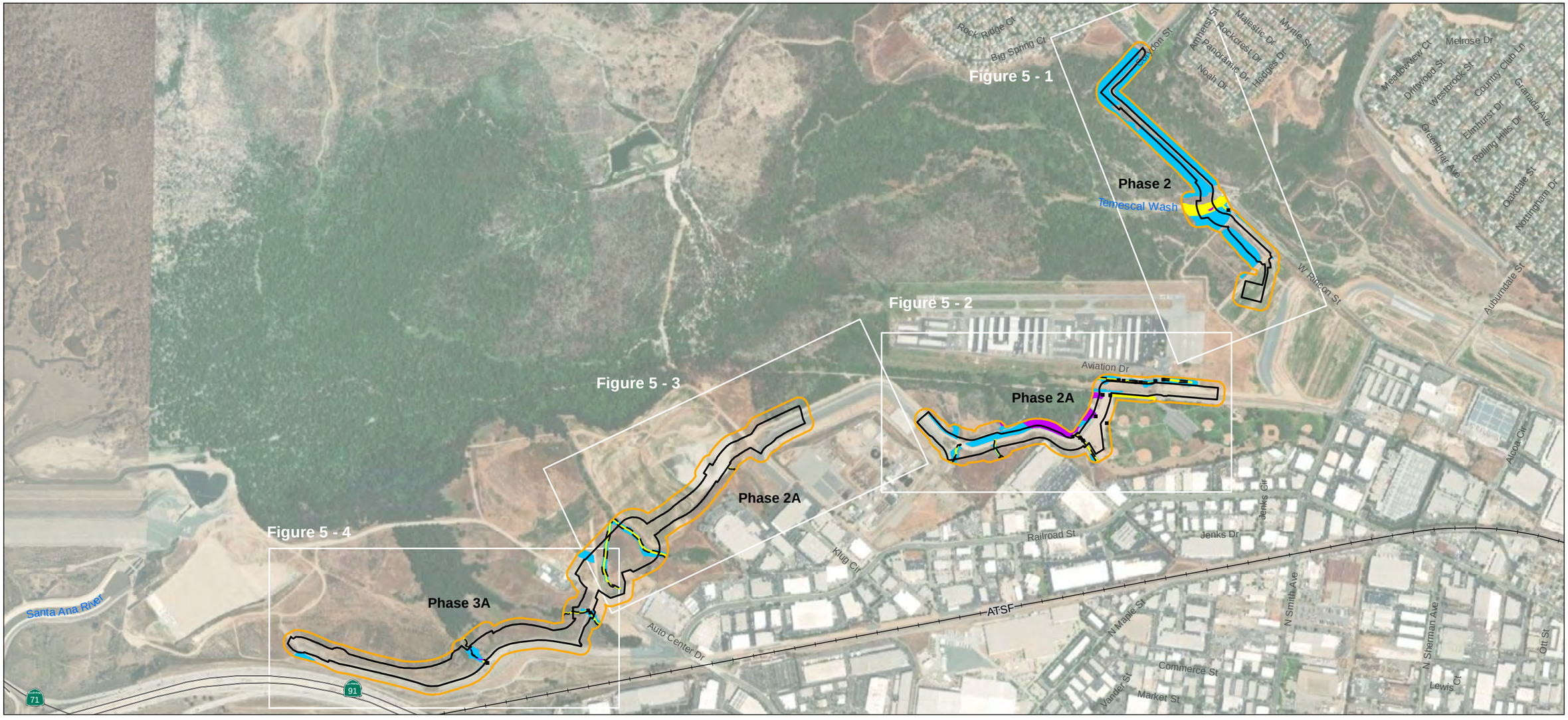

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

Potential CDFW Jurisdictional Waters

- Concrete Channel
- Riparian Wetlands and Waters

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biolgical Resources Technical Report

Figure No.
5 - 0

Title
Aquatic Resources

V:\1865\business_development\Santa_Ana_River_Trail\BRTR_Figure5_SART_WatersMap_12302021_11x17.mxd Revised: 2022-06-29 By: ddaw

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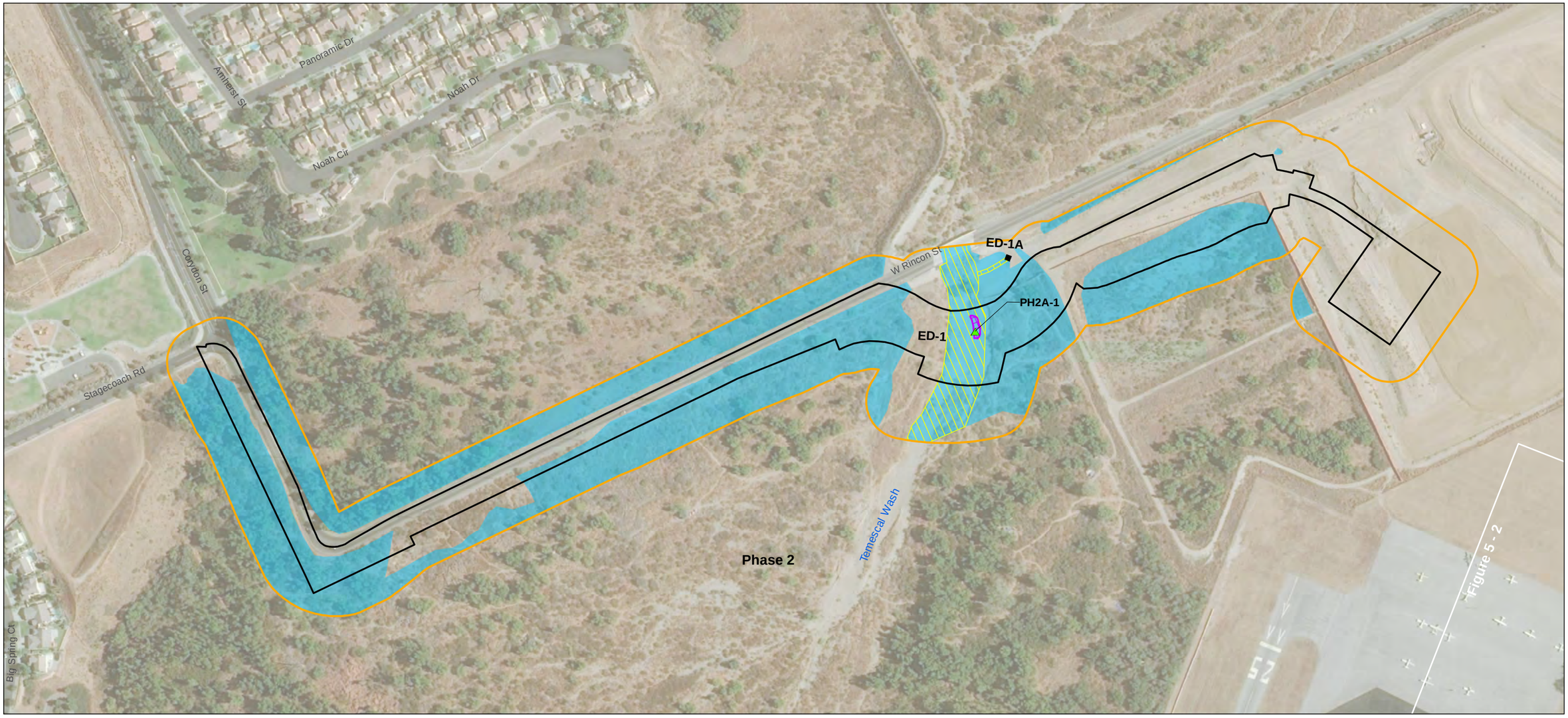

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint

Potential CDFW Jurisdictional Waters

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 1

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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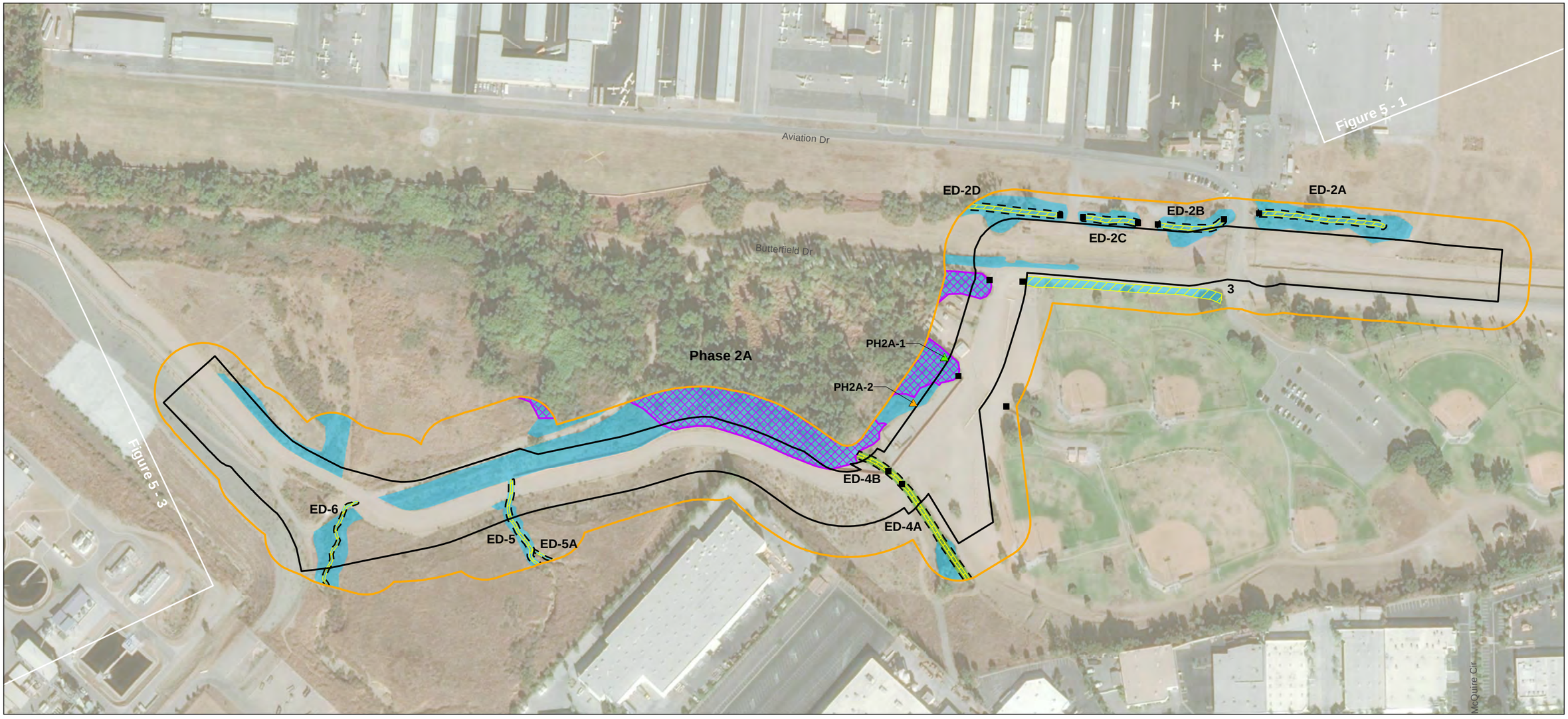
V:\1958\business_development\Santa_Ana_River_Trail\BRTR_Figure5_SART_WatersMap_DDP_12302021_11x17.mxd Revised: 2022-06-29 By: dalaw



Aquatic Resources Survey Area (100 ft Buffer)
Project Footprint

Potential RWQCB Jurisdictional Waters
Waters of the State

Potential CDFW Jurisdictional Waters
Concrete Channel
Riparian Habitat

Potential USACE Jurisdictional Areas
Waters of the U.S.
Wetlands

Culvert

Sample Point
Non-wetland
Wetland

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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(At original document size of 11x17)
1:3,240

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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 2

Title
Aquatic Resources

V:\1865\business_development\Santa_Ana_River_Trail\BRTR_Figure5_SART_WatersMap_DDP_12302021_11x17.mxd Revised: 2022-06-29 By: dalaw

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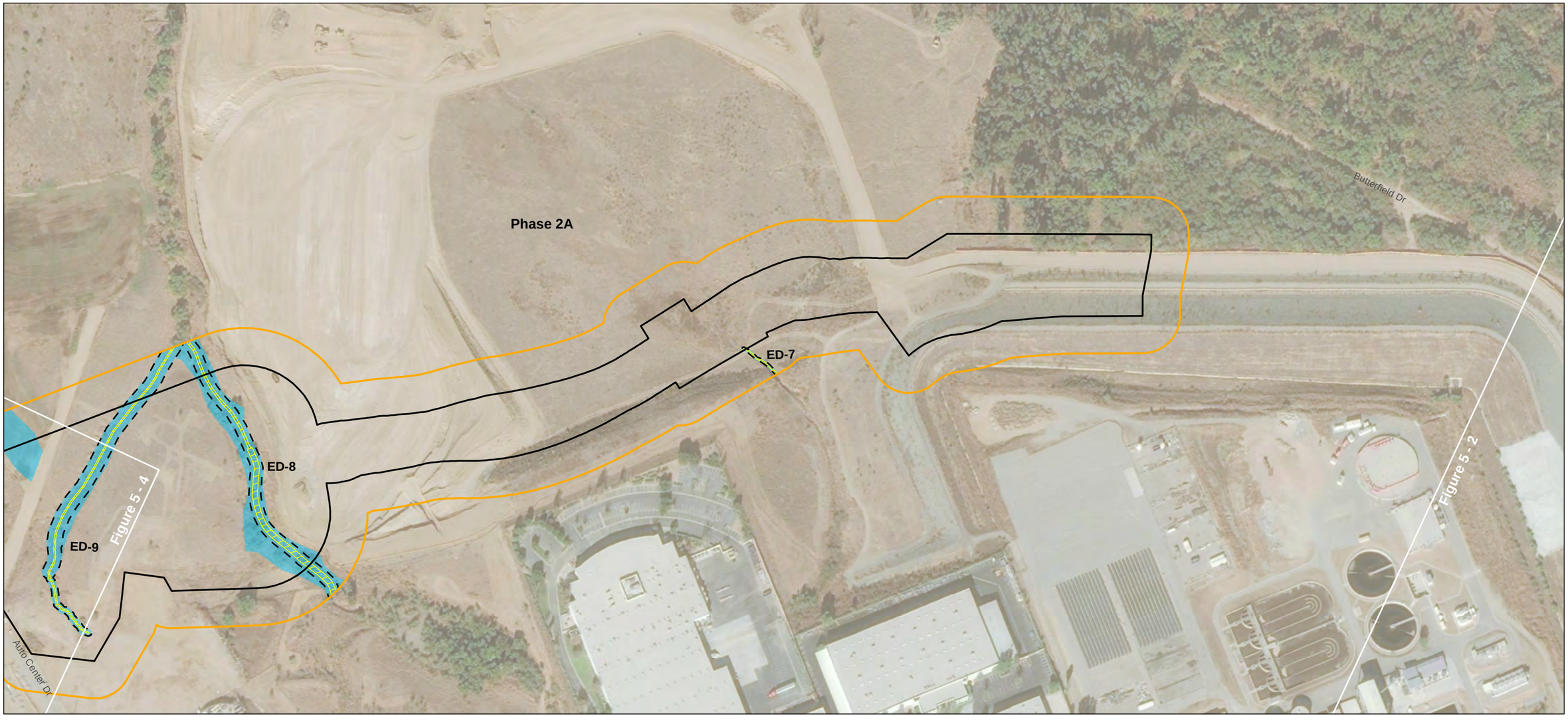

Aquatic Resources Survey Area (100 ft Buffer)

Project Footprint

Potential RWQCB Jurisdictional Waters

Waters of the State

Potential CDFW Jurisdictional Waters

Riparian Habitat

Potential USACE Jurisdictional Areas

Waters of the U.S.

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 3

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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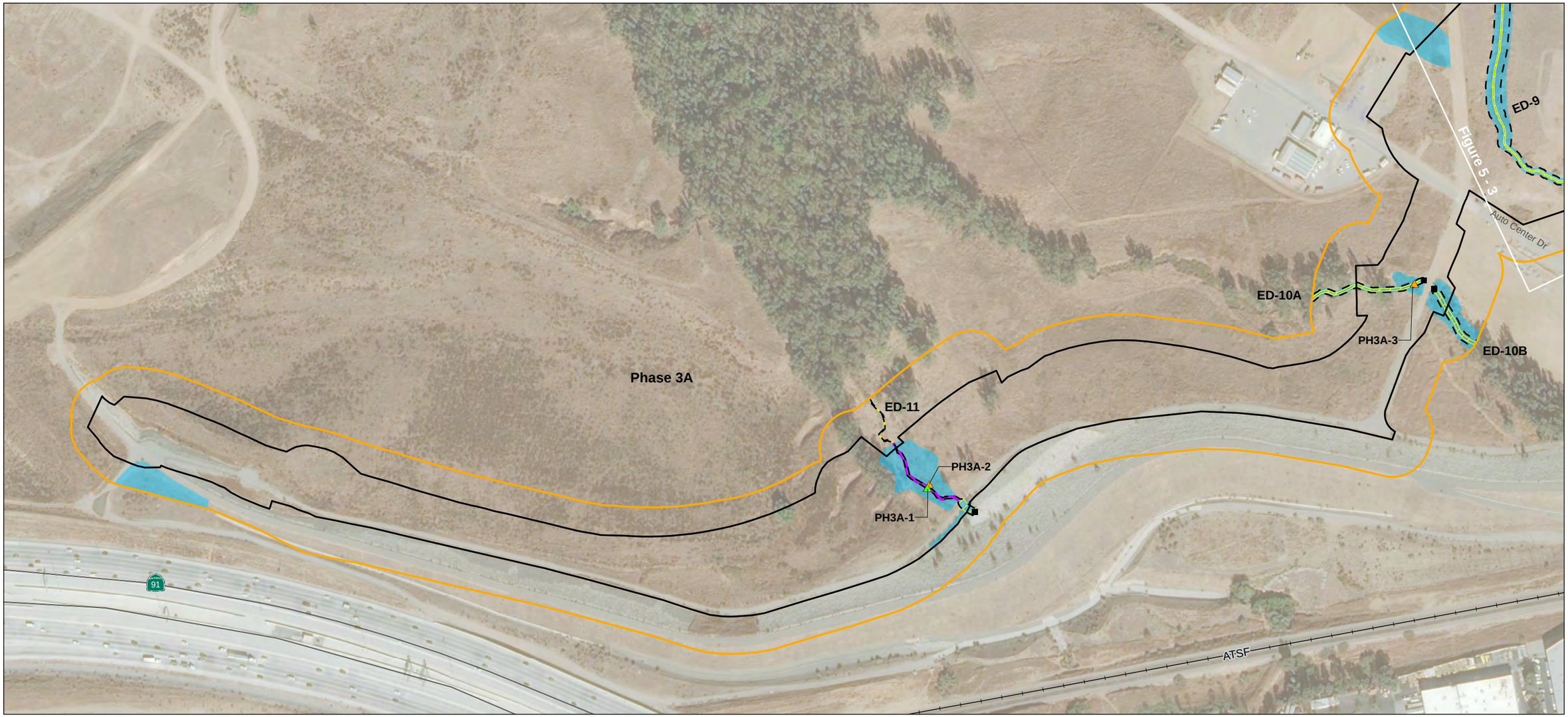

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

Potential CDFW Jurisdictional Waters

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Non-wetland
- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 4

Title
Aquatic Resources

V:\1858\business_development\Santa_Ana_River_Trail\BRTR_Figure5_SART_WatersMap_DDP_12302021_11x17.mxd Revised: 2022-06-29 By: datavv

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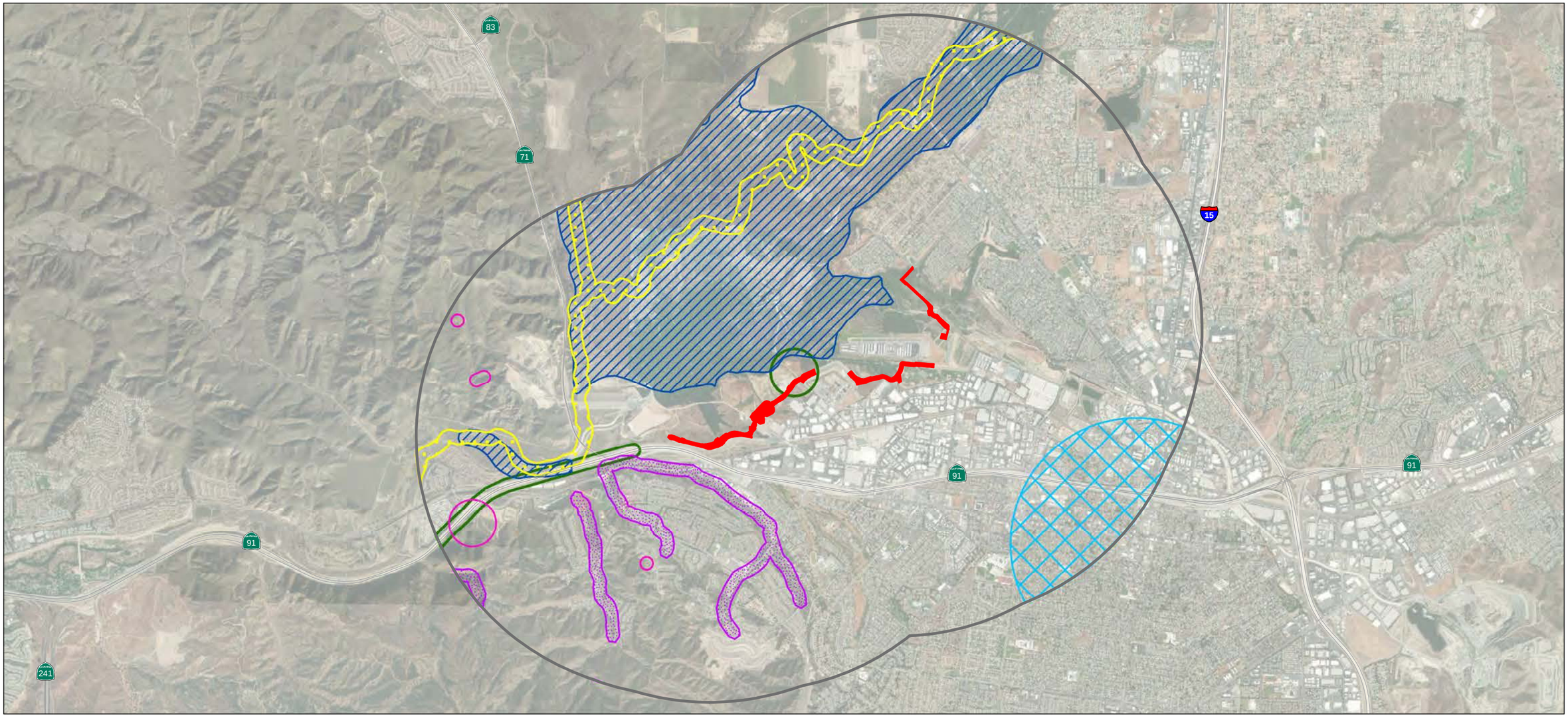

Project Location
2 Mile Search Radius

2 Mile Occurrences

Plants
- Abronia villosa var. aurita
- Dudleya multicaulis
- Lepidium virginicum var. robinsonii
- Sidalcea neomexicana

Terrestrial Communities
- Southern Cottonwood Willow Riparian Forest
- Southern Sycamore Alder Riparian Woodland

Aquatic Community
- Southern California Arroyo Chub/Santa Ana Sucker Stream

0 4,200 8,400 Feet

(At original document size of 11x17)
1:50,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-04-21
TR by SET on 2022-04-21
IR by JV on 2022-04-21

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
6A

Title
2 Mile CNDDB Occurrences - Plants, Terrestrial Community, Aquatic Communities

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.CNDDB 2022.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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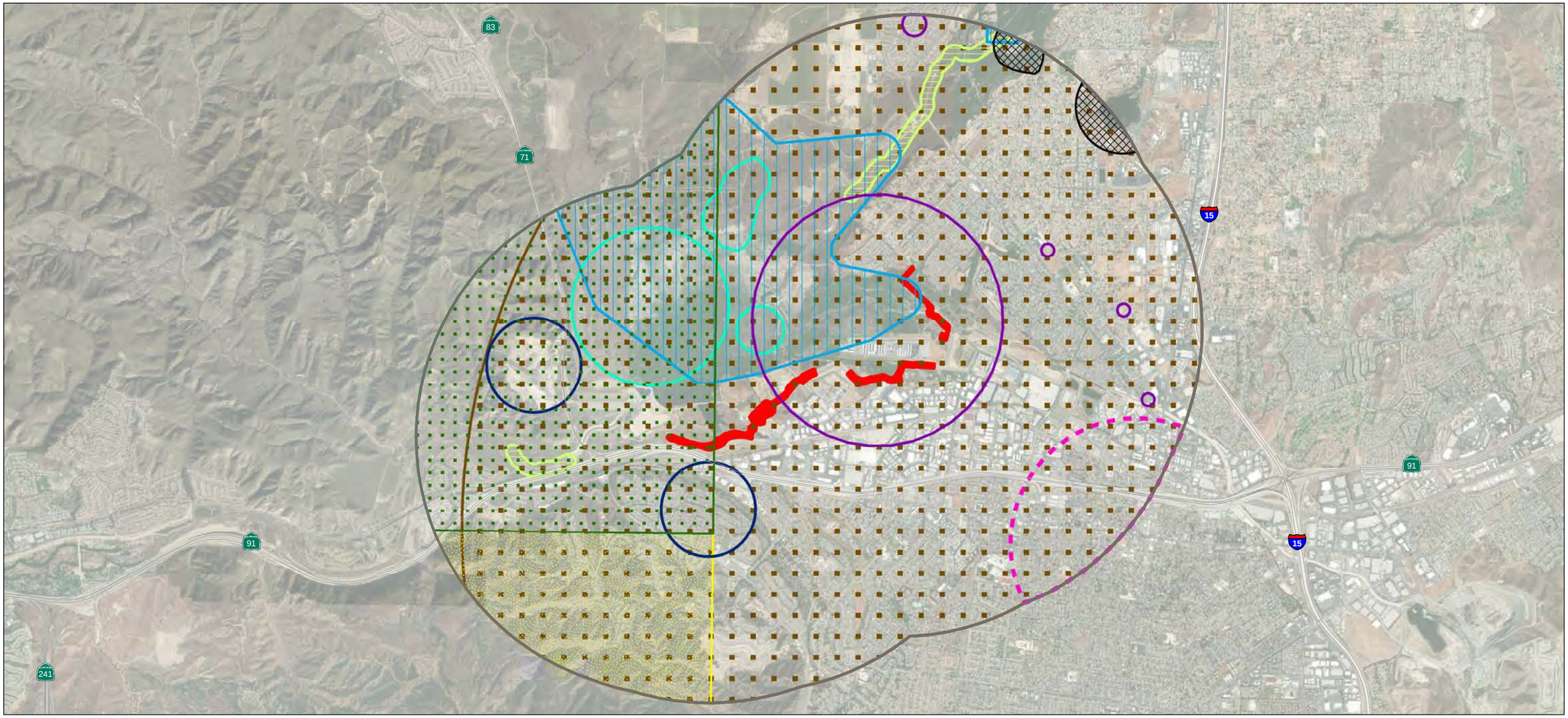

Project Location
2 Mile Search Radius

2 Mile Occurrences

Wildlife

- Agelaius tricolor
- Aquila chrysaetos
- Athene cunicularia
- Catostomus santaanae
- Coccyzus americanus occidentalis
- Coturnicops noveboracensis
- Empidonax traillii extimus
- Nyctinomops femorosaccus
- Spea hammondii
- Taricha torosa

0 4,200 8,400 Feet

(At original document size of 11x17)
1:50,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-04-21
TR by SET on 2022-04-21
IR by JV on 2022-04-21

Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
6B

Title
2 Mile CNDDB Occurrences - Wildlife

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.CNDDB 2022.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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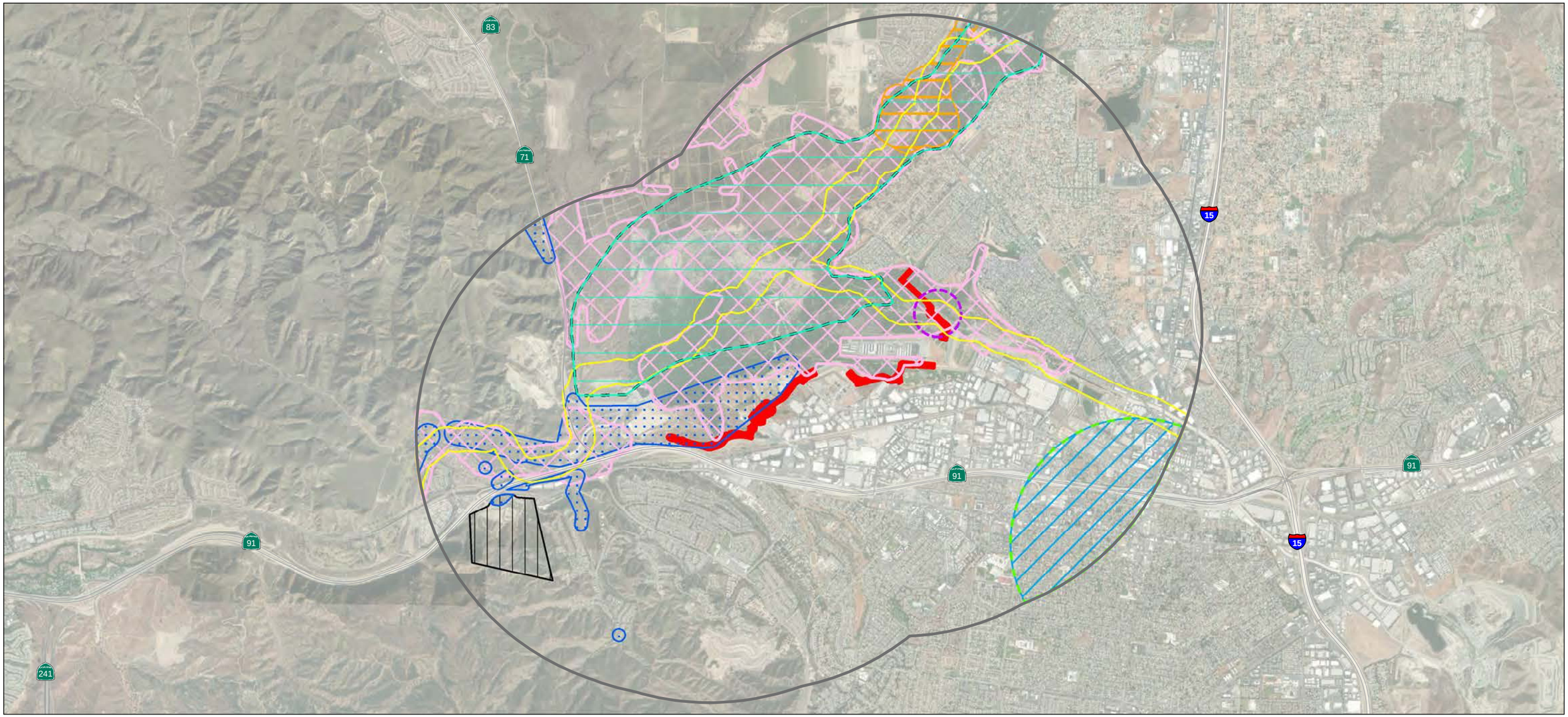
V:\195\business_development\Santa_Ana_River_Trail\Figure6B_SART_BRTR_CNDDB2MileMap_06032021_11x17.mxd Revised: 2022-04-21 By: dalaw



Project Location
2 Mile Search Radius

2 Mile Occurrences

Wildlife

- Aimophila ruficeps canescens
- Bombus crotchii
- Buteo swainsoni
- Gila orcuttii
- Icteria virens
- Lasiurus xanthinus
- Oncorhynchus mykiss irideus pop. 10
- Polioptila californica californica
- Setophaga petechia
- Vireo bellii pusillus

0 4,200 8,400 Feet

(At original document size of 11x17)
1:50,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-04-21
TR by SET on 2022-04-21
IR by JV on 2022-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
6C

Title
2 Mile CNDDB Occurrences - Wildlife Continued

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.CNDDB 2022.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Appendix B PHOTOGRAPHIC LOG

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 1: May 6, 2021

View of Temescal Wash (Drainage 1), a tributary to the Santa Ana River in Phase 2 looking northeast toward West Rincon Street

Photo 2: December 8, 2021

View of Phase 2A looking east toward Drainage 4.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	

Photo 3: May 6, 2021

View of borrow pit in Phase 2A looking northwest

Photo 4: May 6, 2021

View of ephemeral drainage channel in Phase 2A looking north.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 5: May 6, 2021

Drainage 10 in Phase 3A looking west

Photo 6: May 6, 2021

View of gravel road in Phase 3A looking east.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 7: May 6, 2021

View of a mulefat (*Baccharis salicifolia*) bush in Phase 3A occupied by least Bell 's vireo (*Vireo bellii pusillus*) looking northwest.

Photo 8: May 6, 2021

Paniculate tarplant (*Deinandra paniculat*a), California Rare Plant Rank 4.2, in Phase 3A, looking north.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend
Photo 9: May 6, 2021	
	
View of coastal California gnatcatcher (*Polioptila californica californica*) occupied coastal sage scrub habitat in Phase 3A looking north.	

Appendix C ACREAGES OF VEGETATION COMMUNITIES AND LAND COVER TYPES IN THE PROJECT AREA

Table C-1 Temporary and Permanent Impacts to Vegetation Communities and Land Cover Types within the Project Area

Vegetation Communities and Land Cover Types	Temporary Impacts[1]	Permanent Imapcts[1]	Project Area[1]
	Acres		
Vegetation Communities			
Arroyo willow thickets	2.07	0.30	2.37
California buckwheat scrub	0.50	0.24	0.74
California sagebrush scrub	6.34	2.10	8.44
Coyote brush scrub	0.76	0.17	0.93
Eucalyptus groves	0.68	0.04	0.72
Menzie's goldenbush scrub	0.04	0.00	0.04
Mulefat thickets	4.73	0.76	5.48
Perennial pepperweed patches	0.62	0.00	0.62
Poison hemlock or fennel patches	0.10	0.00	0.10
Shining willow groves	0.37	0.00	0.37
Smartweed-cocklebur patches	0.02	0.01	0.03
Upland mustards or star-thistle fields	2.48	0.62	3.10
Wild oats and annual bromes grassland	13.17	2.68	15.85
Subtotal	*31.88*	*6.92*	*38.79*
Land Cover Types			
Disturbed/Developed	18.55	4.04	22.59
Partially vegetated channel	0.47	0.06	0.53
Restoration	2.22	0.49	2.71
Ruderal	0.91	0.04	0.95
Subtotal	*22.15*	*4.63*	*26.78*
Total[1]	**54.03**	**11.55**	**65.57**

Note[1] = some of the total acreages and Project area acreages do not add up due to rounding. The Project and impact acreages in this table are from April 2022 design drawings.

Appendix D AQUATIC RESOURCES REPORT

This report will be provided separately

Appendix E RIPARIAN BIRDS

LEATHERMAN
BioConsulting, Inc.

4848 Lakeview Avenue, Suite 100E
Yorba Linda, CA 92886
(714) 701-0863

September 7, 2021

Ms. Stacey Love
USFWS
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Re: Results of Focused Surveys for the Western Yellow-billed Cuckoo, Southwestern Willow Flycatcher, and Least Bell's Vireo for the Santa Ana River Trail Project, Riverside County, California (Permit No. TE824793)

Dear Ms. Love:

This letter reports the results of focused surveys to evaluate the presence or absence of the southwestern willow flycatcher (*Empidonax traillii extimus*), (flycatcher) least Bell's vireo (*Vireo bellii pusillus*) (vireo), and western yellow-billed cuckoo (*Coccyzus americanus*) (cuckoo) conducted by Leatherman BioConsulting, Inc. (LBC) for the Santa Ana River Trail Project (Project) in Riverside County, California.

The Project is located on the Prado Dam and Corona North USGS 7.5minute series quadrangle maps in Township 2 South and Range 7 West, in an area where Section lines largely are not delineated (Figure 1). The UTM coordinates (NAD83) of the approximate survey area are 0440410 meters East (mE) and 3749650 meters North (mN) at the southwest end, and 0445675 mE and 3755765 mN at the northeast end.

The proposed alignment route includes three phases in the Prado Basin from just east of State Route 71 and proceeding east and then north to Archibald Avenue in Riverside County (Figure 2). Some phases of the alignment support little, or no habitat and other phases support stretches of nearly contiguous habitat. The survey area included all potentially suitable riparian habitat within 500 of the Project alignments for each of the three target species.

The proposed Project would assist in completing a portion of the Santa Ana Trail. It would entail construction of three (3) new trail segments (2, 2A, and 3A) within the Prado Dam Flood Control Basin area, as part of the existing Santa Ana River Trail project. Currently, only portions of the trail have been completed or are being constructed.

BACKGROUND

Willow Flycatcher

The willow flycatcher (*Empidonax traillii*) is a state-listed Endangered species (CDFG 1991), whereas only the southwestern subspecies (*E.t. extimus*) is federally listed as Endangered (USFWS 1995). This survey focused on the southwestern willow flycatcher because it is the only subspecies that nests in southern California. However, migrants of all subspecies may occur in the area during spring and fall migration, so multiple visits to the survey area are required to determine if individuals observed during the first surveys are nesting birds.

The willow flycatcher was formerly a common summer resident in suitable habitat throughout California (Grinnell and Miller 1944). It has now been extirpated as a breeding bird from most of its California range, and is seriously threatened in southern California primarily because of habitat loss and degradation, and brood parasitism by brown-headed cowbirds (*Molothrus ater*) (Garrett and Dunn 1981; USFWS 1995). The population of southwestern willow flycatcher in California was estimated to include approximately 66 territories at five sites (Kus 2019). The southwestern willow flycatcher has not shown the same recovery that the vireo has shown in response to habitat restoration and cowbird trapping (Kus 2011).

The willow flycatcher closely resembles other Empidonax flycatcher species in California, but the indistinct (or completely lacking) eye ring, broader and longer bill, and generally lighter appearance through the breast and throat help to distinguish it from other species. The species' vocalizations are the best form of identification in the field (but can't be used to identify subspecies). The southwestern willow flycatcher is a migratory bird, occurring in this region only during the breeding season (May to early August). The male arrives later in the spring than most migrants, usually in mid to late May or early June.

The southwestern willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands in floodplains and broader canyons, preferring dense riparian thickets near surface water (Sogge et al. 2010), often with adjacent open areas for foraging. Vegetation structure, composition, and extent vary widely but generally include extensive areas dominated by dense stands of willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), or other tree species (including tamarisk [*Tamarix* sp.] in some areas), usually with scattered cottonwoods (*Populus* spp.) overstory (USFWS 1995). These riparian areas provide both nesting and foraging habitat. Southwestern willow flycatcher will nest in areas with suitable habitat regardless of the elevation (from sea level to high mountains). Nests are constructed in thickets of trees and shrubs in a fork or horizontal branch between three and 15 feet above the ground.

The U.S. Fish and Wildlife Service (USFWS) published a final rule designating critical habitat for the flycatcher in 2005 (USFWS 2005); however, the USFWS proposed to revise the critical habitat designation in 2011, and a final rule was published in 2013 (USFWS 2013). Approximately 17,212 acres of critical habitat were designated in California.

Least Bell's Vireo

The vireo is a state and federally listed endangered species (USFWS 1986). This subspecies was once widespread throughout the Central Valley and other low elevation river systems of California (Grinnell and Miller 1944). The widespread loss of riparian habitat and brood parasitism by the brown-headed cowbird are the major causes of the decline of this species (Garrett and Dunn 1981). At the time of its listing, about 76 percent of the U. S. population is found in just five localities (USFWS 1994). The breeding population in California has increased dramatically because of brown-headed cowbird trapping efforts in breeding areas, and they are recolonizating areas where they were once locally extirpated; in fact, there were an estimated 3,504 territories reported in 2018 (Kus 2019). Continued cowbird control and exotic plant removal in riparian habitat are considered necessary for the foreseeable future in order to continue this increasing trend (USFWS 2006).

The vireo is a small grayish songbird with indistinct wing bars and facial markings. It is a very vocal species and can be easily detected from some distance by its unique song, which is given repeatedly. The vireo is migratory and only occurs in southern California during the breeding season. The males arrive sometime in late March to April and establish breeding territories, and the females arrive shortly thereafter. Nests are constructed (usually in willow trees) only about three to four feet off the ground where the female will lay 3 to 4 eggs on average. The vireo usually returns to the wintering grounds sometime in August or September. Preferred habitat is willow riparian woodland that supports dense understory thickets of scrubby willows and mule fat, especially within three to six feet of the ground (USFWS 1998).

The USFWS issued their final determination of critical habitat for the vireo in February 1994 (USFWS 1994). Approximately 37,560 acres of habitat were designated in California.

Western Yellow-billed Cuckoo

The cuckoo is a federally listed threatened and state listed endangered species (USFWS 2014a). The USFWS ruled that cuckoos west of the Rocky Mountains and Continental Divide meet the criteria for listing as a distinct population segment and that listing it as threatened was warranted. The current geographical range of the cuckoo in California is about 30 percent of what it was historically, and the current nesting population in the state likely does not exceed 40 to 50 pairs (USFWS 2013).

In California, the cuckoo is a rare summer visitor and breeder where it requires large blocks of riparian habitat for breeding (Halterman et al. 2015, USFWS 2021). It can occur from May to September (Grinnell and Miller 1944), but usually arrives and breeds in southern California from early June to mid-August (Garrett and Dunn 1981, USFWS 2013). It occurs almost exclusively in mature streamside forest with old growth willows and scattered cottonwoods (usually of at least 25 acres), particularly with a dense tangled understory of nettles (*Urtica* spp.), willows, blackberry (*Rubus* sp.), wild grape (*Vitus* sp.), mesquite (*Prosopis* spp.) etc. (Grinnell and Miller 1944; Garrett and Dunn 1981). Data collected in California indicate that nesting occurs in thickets dominated by willow trees along floodplains greater than 200 acres in extent and greater than 100 yards wide (USFWS 2021). It is rarely seen away from suitable breeding habitat

(Garrett and Dunn 1981). It was formerly fairly common and widespread in the broad lower floodplains of larger rivers in southern California and Central Valley (Garret and Dunn 1981). Its decline is primarily attributed to widespread habitat loss associated with agriculture, urban development, and flood control projects, and because the small, isolated populations that remain are more susceptible to decline (USFWS 2013). The current range of the cuckoo in California is estimated to be about 30 percent of its historical extent and estimates of the loss of riparian habitat state-wide are as high as 91 percent (USFWS 2013).

The USFWS published a proposed rule to designate critical habitat for the cuckoo in 2014 (USFWS 2014b); however, a proposed rule to revise the critical habitat designation was published in 2020 reopening the public comment period, and a final rule designating critical habitat was finally published in 2021 (USFWS 2021). Only two of 72 critical habitat units were designated in California (on the Sacramento River and South Fork Kern River) totaling approximately 36,580 acres, over 90 percent of which is in the Sacramento unit.

EXISTING HABITAT

Vegetation in the survey area consists of a variety of riparian communities that could be categorized under one of several riparian alliances under the current (online) classification system used by the California Native Plant Society (CNPS 2021). The extent and quality of the riparian vegetation varies widely among the Project phases, in some areas supporting sparse habitat with low diversity and others supporting dense habitat with high plant diversity. No surface water was present in any of the habitat surveyed. A description of the habitat in each of Project phases is provided below, beginning at the west end of the alignment and proceeding east.

Most of the habitat in the Phase 3A consists of high quality coastal sage scrub. Habitat at the west end of Phase 3A survey area consists of a relatively small, sparse patch of mule fat scrub with a few scattered blue elderberry (*Sambucus nigra* ssp. *caerulea*) trees providing structure similar to that provided by willow scrub. This most closely resembles the blue elderberry shrubland alliance (CNPS 2009). Below the existing dam, the habitat supports arroyo willow shrubland alliance dominated by mule fat, and arroyo willow (*Salix lasiolepis*), and blue elderberry. The alignment also traverses a low elevation area dominated by mule fat adjacent to a dense stand of eucalyptus trees (*Eucalyptus globulus*) where vegetation structure resembles the higher quality riparian habitat usually occupied by vireos.

The west end of Phase 2A consists primarily of non-native annual grassland and crosses disturbed lands recently used as a borrow area by a U.S. Army Corps of Engineers contractor to construct the Alcoa Dike adjacent to the Corona Airport. A portion of the area was recently hydroseeded with grassland species. Two incised drainages support the arroyo willow shrubland alliance dominated by mule fat, arroyo willow, and red willow (*Salix laevigata*). At the east end of Phase 2A, the alignment is adjacent to riparian habitat consisting of a variety of native and non-native trees including black willow (*Salix gooddingii*), red willow, eucalyptus, Brazilian pepper (*Schinus terebinthifolia*), fan palm (*Washingtonia* sp.), ash tree (*Fraxinus* sp.) and a mixed understory of mule fat, tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*),

and wild grape (*Vitus girdiana*). This most closely resembles the black willow woodland alliance.

The habitat along Phase 2 supports the most mature and diverse riparian forest in the survey area that includes the Fremont cottonwood forest alliance, black willow woodland alliance, arroyo willow shrubland alliance, and the mule fat shrubland alliance. Habitat at the southeast end is relatively open mule fat thickets and transitions to well developed willow forest habitat to the northwest. The willow forest habitat consists of dense stands of black willow and red willow with scattered Fremont's cottonwoods (*Populus fremontii*). Understory consists of dense patches of mule fat, arroyo willow, Pacific willow (*S. lasiandra*) and red willow. Some patches are deeply shaded and are dominated by dense cover of wild grape, other areas are more open and support a variety of non-native herbaceous cover, including large dense stands of perennial peppergrass (*Brassica latifolium*). This habitat was also occupied by several homeless camps, and associated trash and debris were evident in many areas. Lastly, sign (scat, trails, digs) of the domestic pig (*Sus scrofa*) were observed throughout this area indicating that they are common in this portion of the alignment.

METHODS

Prior to conducting the focused surveys, a search was conducted of the California Natural Diversity Data Base (CNDDB) (CDFW 2021a) for the Prado and Corona North USGS 7.5-minute series quadrangle maps and other references to determine if and to what extent the target species are known to occur in the Project region.

Survey methods followed the guidelines endorsed by the USFWS for each species as described below. In general, surveys were conducted in riparian habitat by walking slowly and methodically within and along the margins of all suitable riparian habitat for each species. The focus of the surveys was on the detection and identification of the target species, but all wildlife incidentally observed or detected in the survey area was documented. Identifications were made with the aid of high quality 8 X 42 Bosch and Lomb Elite binoculars. All focused surveys were conducted by Mr. Brian Leatherman (USFWS permit No. TE827493-9). A list of the species observed during the surveys is enclosed.

Surveys for the flycatcher followed the mandatory protocol developed by Sogge et al. (2010) and guidance promulgated by the USFWS (2000). The protocol requires that five surveys be conducted within three defined periods between May 15 and July 17 and at least five days apart. Sogge et al. (2010) recommend that surveys be conducted between dawn and 1030 under suitable weather conditions.

Surveys for the vireo followed the survey guidelines developed by the USFWS (2001), which requires that eight surveys be conducted 10 days apart between April 10 and July 31. Vireo surveys can be conducted between dawn and 1100 under suitable weather conditions, at a maximum rate of 1.5 km (0.93 mile) or 50 ha (124 acres) per day. Surveys reported here were conducted between dawn and 1115.

The surveys for the cuckoo followed the mandatory protocol developed by Halterman et al. (2015). The protocol requires that four surveys be conducted within three certain periods between June 15 and August 15. Halterman et al. (2015) recommend that surveys be conducted from 12 to 15 days apart between dawn and 1100 under suitable weather conditions. Surveys reported here were generally conducted between dawn and 1100.

Recorded vocalizations of the flycatcher and cuckoo were played as described in the survey protocols in an attempt to elicit a response from individuals potentially present. For the flycatcher, the tape was played for roughly 15 seconds, stopped for one or two minutes to listen for a response, and then played again before moving to the next spot. For the cuckoo, the prescribed 6-minute broadcast with five vocalizations spaced one minute apart was played every 328 feet (or 100 meters, per the survey protocol) before moving to the next spot. No vocalizations were used for the vireo in compliance with the protocol for that species.

Five of the eight surveys for the vireo were conducted on the same day as the flycatcher surveys. During those combined survey days, recent guidance from USFWS was followed so that surveys for both species were not conducted concurrently. Instead, surveys for the flycatcher were conducted on the outbound portion of the survey and surveys for the vireo were conducted on the return portion of each habitat segment within the survey area. Cuckoo surveys were conducted separately from the vireo and flycatcher surveys. Dates, times, and weather data for the focused surveys are shown in Table 1 and Table 2.

Table 1. Dates, Times, and Weather Data for Vireo and Flycatcher Surveys

DATE	SURVEY NO.	TIME		WEATHER CONDITIONS*					
				Temp (°F)		Winds (mph)		Cloud Cover (percent)	
		Start	End	Start	End	Start	End	Start	End
4-May	LBV1	600	1115	56	74	0-1	2-4	clear	clear
13-May	LBV2	615	1100	55	75	2-4	4-7	100	clear
24-May	LBV3/WIFL1	545	1100	54	78	0-2	4-7	clear	clear
4-Jun	LBV4/WIFL2	600	1100	59	85	0-2	8-12	clear	clear
14-Jun	LBV5/WIFL3	600	1030	64	88	2-4	4-7	clear	clear
25-Jun	LBV6/WIFL4	600	1015	62	77	0-2	2-4	clear	clear
5-Jul	LBV7/WIFL5	545	1015	63	78	2-4	4-7	clear	clear
15-Jul	LBV8	600	1030	67	83	2-4	2-4	clear	clear

LBV – Least Bell's Vireo, WIFL – Willow Flycatcher
*recorded with Kestrel 2000

Table 2. Dates, Times, and Weather Data for Cuckoo Surveys

DATE	SURVEY NO.	TIME		WEATHER CONDITIONS**					
				Temp (°F)		Winds (mph)		Cloud Cover (percent)	
		Start	End	Start	End	Start	End	Start	End
17-Jun	YBCU1	500	1000	63	83	0-2	8-12	100	20
2-Jul	YBCU2	530	1000	64	77	2-4	4-7	clear	clear
16-Jul	YBCU3	600	1015	65	79	0-2	4-7	100	clear
2-Aug	YBCU4	515	1000	67	84	0-2	2-4	30	clear

YBCU-yellow-billed cuckoo

RESULTS

No critical habitat for the cuckoo is designated in the survey area. Critical habitat for the flycatcher and vireo is designated in the Prado Basin and along the Santa Ana River in the vicinity of the Project.

Records for the flycatcher, vireo, and cuckoo were found in the CNDDB database (CDFW 2021a) for each of the two quads searched (Prado and Corona North). A large population of vireos continues to nest in Prado Basin and along the Santa Ana River on an annual basis. However, the small population of flycatchers that persisted for years has not been recorded in the basin since 2016 when only one pair was recorded (Kus 2019). The cuckoo occurred along the Santa Ana River and the Prado Basin historically, but recent records include only two birds in 2000 and one bird in 2011 (Clark et al. 2014).

No flycatchers or cuckoos were observed during the surveys. A total of an estimated 28 vireo territories were documented in the survey area during the focused survey effort (Figure 3), including four territories in Phase 3A, four in Phase 2A, and 20 in Phase 2. The presence of a territory was based on the detection of at least a singing male. Patches of habitat with mule fat or willow scrub or other suitable trees and shrubs with the vegetation structure favored by vireos were occupied along the entire Santa Ana River Trail survey area. No attempt was made to determine if each singing male was paired or nesting, but in most territories a female or breeding behavior was observed.

Due to the density of vireo territories along Phase 2 (along West Rincon Street), it was difficult to determine the number of individual territories. However, based on a review of the survey data, the distribution of the vireos in that area as depicted in Figure 3 represents our best estimate of the number of territories.

No brown-headed cowbirds were observed in riparian habitat during the surveys. Brown-headed cowbird trapping has been conducted in the Prado Basin for over two decades (although none were observed during the surveys).

CONCLUSION

Focused surveys were conducted for the flycatcher, vireo, and cuckoo along the Santa Ana River Trail Project survey area within suitable habitat for each species. No flycatchers or cuckoos were observed during the surveys. Twenty-eight vireo territories were documented in the survey area.

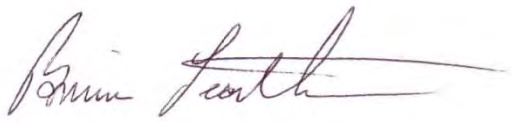
Based on the limited marginally suitable habitat and the negative focused survey results, the flycatcher and cuckoo are likely absent from the survey area at this time. In addition, based on trends in flycatcher and cuckoo populations and occurrences in the area in the recent past, none are expected to occur in the vicinity of the Project in the near future (if they are to reappear in the area, it is likely to be in the more extensive high-quality habitat immediately behind Prado Dam).

Vireos were observed throughout suitable habitat within the survey area during the focused surveys and are expected to occur in suitable riparian habitat in the Project area on an annual basis.

A copy of this letter report is being sent to the USFWS and California Department of Fish and Wildlife (CDFW) per conditions of the surveyors' 10(a)(1)(A) permit and memorandum of understanding (MOU). Figures 1-3, the references cited, a list of wildlife observed, and the required flycatcher and cuckoo survey forms are attached. Survey certification is provided below. If you have any comments or questions regarding the information provided in this report you can reach me by phone at (714) 701-0863, or by email at bleathermanwlb@aol.com.

Sincerely,

LEATHERMAN BIOCONSULTING, INC.



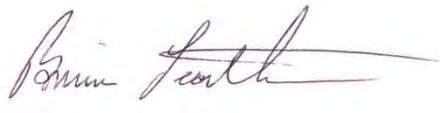
Brian Leatherman
Principal Biologist

Attachments: Figures 1-3
References
Wildlife Species List
Willow Flycatcher Survey Forms
Yellow-billed Cuckoo Survey Forms

Santa Ana River Trail Project
Survey Certification

CERTIFICATION:

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



August 26, 2021

Brian Leatherman
Permit No. TE827493-9

Date

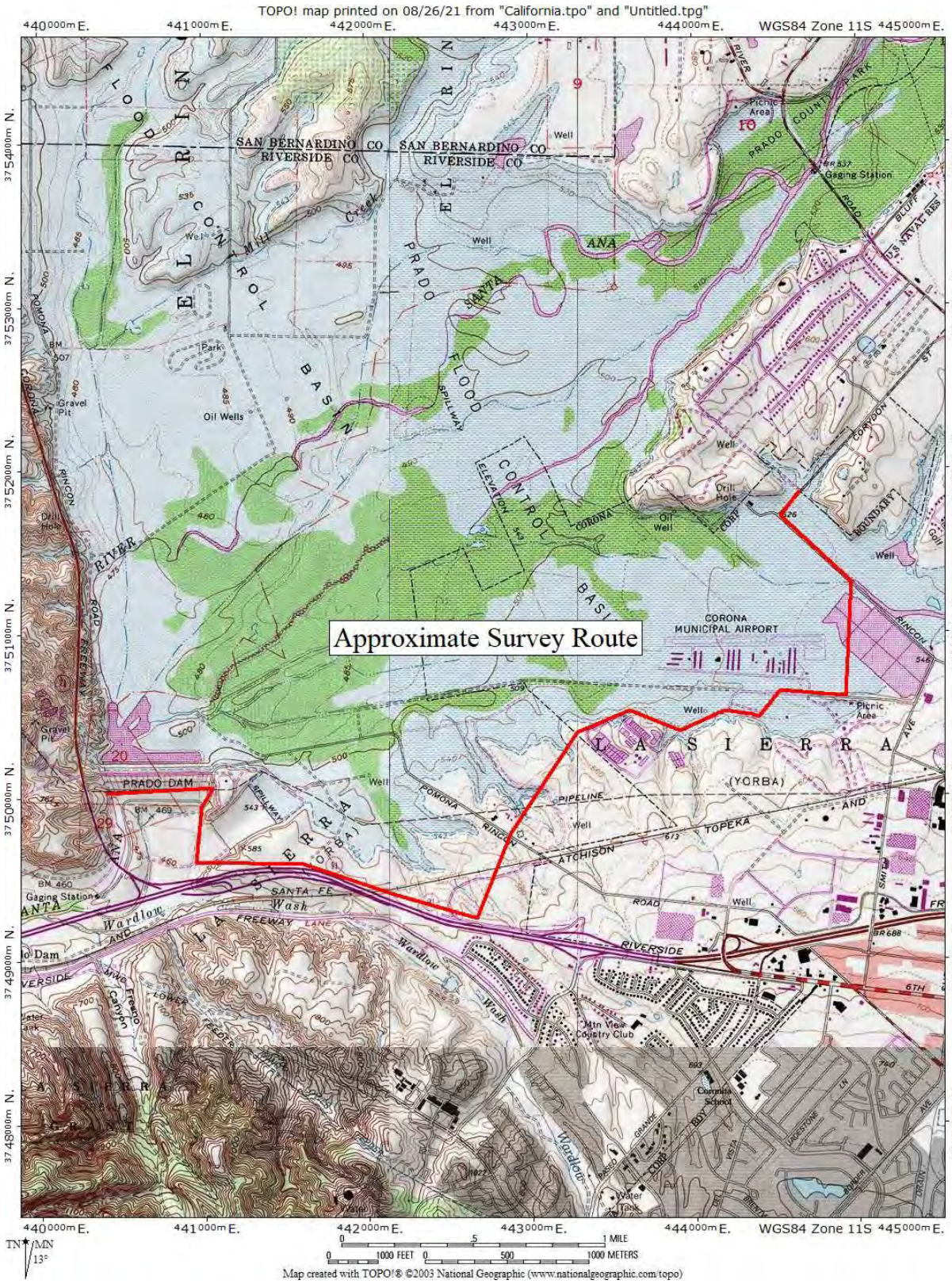


Figure 1. Santa Ana River Trail Project Region

Figure 2. Santa Ana River Trail Project Phases

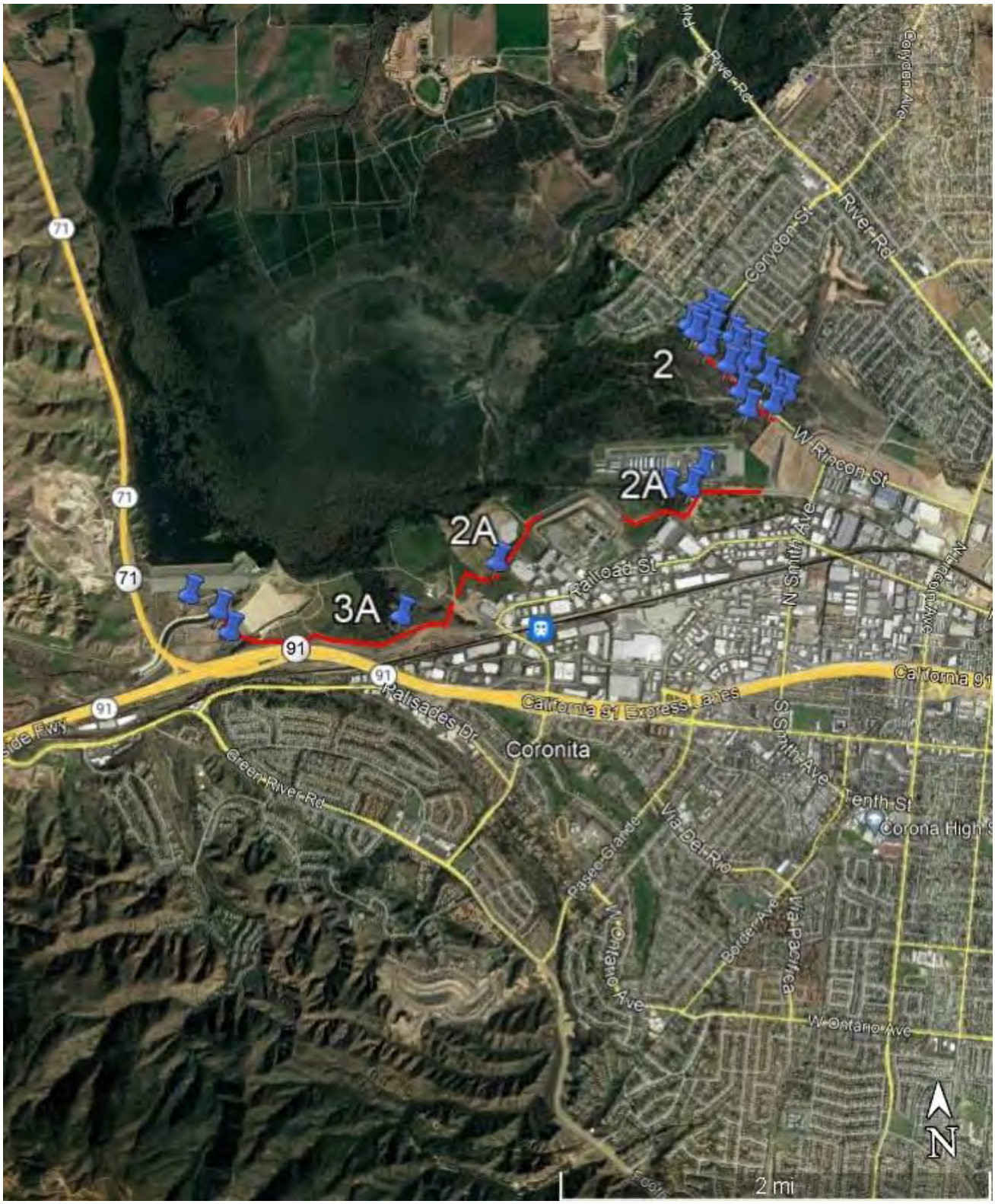


Figure 3. Least Bell's Vireo Territory Locations

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Santa Ana River Trail Project Wildlife Species List

Non-native species are indicated by an asterisk. Species on CDFW's Special Animals' list are indicated by two asterisks. Other species may have been overlooked or inactive/absent because of the season (amphibians are more active during/after rains, reptiles during summer, some birds (and bats) migrate out of the area for summer or winter, some mammals hibernate etc.), or because of the time of the survey (some species are strictly nocturnal). Taxonomy and nomenclature generally follow the Complete List of Amphibian, Reptile, Bird and Mammal Species in California (CDFW 2016).

	COMMON NAME	SCIENTIFIC NAME
	AMPHIBIANS	**AMPHIBIA**
	True Toads	**Bufonidae**
	Western toad	*Anaxyrus boreas*
	True Frogs	**Ranidae**
*	Bullfrog	*Lithobates catesbeianus*
	REPTILES	**REPTILIA**
	Box and Water Turtles	**Emydidae**
*	Pond slider	*Trachemys scripta*
	Softshells	**Trionychidae**
	Spiny softshell	*Apalone spinifera*
	Spiny Lizards, Horned Lizards, etc.	**Phrynosomatidae**
	Western fence lizard	*Sceloporus occidentalis*
	Common Side-blotched lizard	*Uta stansburiana*
	BIRDS	**AVES**
	Cormorants	**Phalacrocoracidae**
**	Double-crested cormorant	*Phalacrocorax auritus*
	Herons and Bitterns	**Ardeidae**
**	Great blue heron	*Ardea herodias*
**	Great egret	*Ardea alba*
**	Black-crowned night-heron	*Nycticorax nycticorax*
	Vultures	**Cathartidae**
	Turkey vulture	*Cathartes aura*
	Geese and Ducks	**Anatidae**
	Canada goose	*Branta canadensis*
	Mallard	*Anas platyrhynchos*
	Hawks, Eagles and Kites	**Accipitridae**
**	Cooper's hawk	*Accipiter cooperii*
	Red-shouldered hawk	*Buteo lineatus*
	Red-tailed hawk	*Buteo jamaicensis*
	Falcons	**Falconidae**
	American kestrel	*Falco sparverius*
	Quail	**Odontophoridae**
	California quail	*Callipepla californica*

Pidgeons and Doves		**Columbidae**
*	Eurasian Collared-dove	*Streptopelia decaocto*
	Mourning dove	*Zenaida macroura*
Cuckoos and Roadrunners		**Cuculidae**
	Greater roadrunner	*Geococcyx californianus*
Owls		**Strigidae**
	Great horned owl	*Bubo virginianus*
Swifts		**Apodidae**
	White-throated swift	*Aeronautes saxatalis*
Hummingbirds		**Trochilidae**
	Anna's hummingbird	*Calypte anna*
**	Allen's hummingbird	*Selasphorus sasin*
Woodpeckers		**Picidae**
**	Nuttall's woodpecker	*Dryobates nuttallii*
	Downy woodpecker	*Dryobates pubescens*
	Northern flicker	*Colaptes auratus*
Tyrant Flycatchers		**Tyrannidae**
	Western wood-pewee	*Contopus sordidulus*
	Pacific-slope flycatcher	*Empidonax difficilis*
	Black phoebe	*Sayornis nigricans*
	Say's phoebe	*Sayornis saya*
	Ash-throated flycatcher	*Myiarchus cinerascens*
	Cassin's kingbird	*Tyrannus vociferans*
Vireos		**Vireonidae**
**	Least Bell's vireo	*Vireo bellii pusillus*
Jays and Crows		**Corvidae**
	American crow	*Corvus brachyrhynchos*
	Common raven	*Corvus corax*
Larks		**Alaudidae**
**	Horned lark	*Eremophila alpestris*
Swallows		**Hirundinidae**
	Northern rough-winged swallow	*Stelgidopteryx serripennis*
	Cliff swallow	*Petrochelidon pyrrhonota*
	Barn swallow	*Hirundo rustica*
Bushtits		**Aegithalidae**
	Bushtit	*Psaltriparus minimus*
Wrens		**Troglodytidae**
	Rock wren	*Salpinctes obsoletus*
	Bewick's wren	*Thryomanes bewickii*
	House wren	*Troglodytes aedon*
Gnatcatchers		**Silviidae**
**	California gnatcatcher	*Polioptila californica*
Bluebirds and Thrushes		**Turdidae**
	Western bluebird	*Sialia mexicana*
Wrentits		**Timaliidae**
	Wrentit	*Chamaea fasciata*
Mockingbirds and Thrashers		**Mimidae**
	Northern mockingbird	*Mimus polyglottos*
Starlings		**Sturnidae**
*	European starling	*Sturnus vulgaris*

Silky Flycatchers		**Ptilogonatidae**
	Phainopepla	*Phainopepla nitens*
Wood Warblers		**Parulidae**
**	Yellow warbler	*Setophaga petechia*
	Common yellowthroat	*Geothlypis trichas*
**	Yellow-breasted chat	*Icteria virens*
Towhees and Sparrows		**Emberizidae**
	Spotted towhee	*Pipilo maculatus*
	California towhee	*Melozone crissalis*
	Song sparrow	*Melospiza melodia*
Cardinals,Grosbeaks, Buntings, Tanagers		**Cardinalidae**
	Black-headed grosbeak	*Pheucticus melanocephalus*
	Blue grosbeak	*Passerina caerulea*
	Western tanager	*Piranga ludoviciana*
Blackbirds and Orioles		**Icteridae**
	Hooded oriole	*Icterus cucullatus*
	Bullock's oriole	*Icterus bullockii*
Finches		**Fringillidae**
	House finch	*Haemorhous mexicanus*
	Lesser goldfinch	*Spinus psaltria*
**	Lawrence's goldfinch	*Spinus lawrencei*

MAMMALS		**MAMMALIA**
Hares and Rabbits		**Leporidae**
	Desert cottontail	*Sylvilagus audubonii*
Squirrels		**Sciuridae**
	California ground squirrel	*Ostospermophilus beecheyi*
Pocket Gophers		**Geomyidae**
	Botta's pocket gopher (burrows)	*Thomomys bottae*
Old World Rats and Mice		**Muridae**
	Dusky-footed woodrat (nest)	*Neotoma fuscipes*
Dogs, Wolves and Foxes		**Canidae**
	Coyote (scat, tracks)	*Canis latrans*
Pigs		**Suidae**
	Feral pig	*Sus scrofa*

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

Site Name: **Santa Ana River Trail Project** State: **CA** County: **Riverside**

USGS Quad Name: **Prado** Elevation: **155** (meters)

Creek, River, or Lake Name: **Santa Ana River**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* **X** *No* ____

Survey Coordinates: Start: E **04 40 410m** N **37 49 650m** UTM Datum: **NAD83** (See instructions)

Stop: E **04 45 675m** N **37 55 765m** UTM Zone: **11S**

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	Date: 5/25/2021	0								
Observer(s): Brian Leatherman	Start: 545									
	Stop: 1115									
	Total hrs: 5.5									
Survey # 2	Date: 6/3/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 545									
	Stop: 1100									
	Total hrs: 5.25									
Survey # 3	Date: 6/15/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 545									
	Stop: 1045									
	Total hrs: 5									
Survey # 4	Date: 6/28/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 530									
	Stop: 1030									
	Total hrs: 5									
Survey # 5	Date: 7/9/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 530									
	Stop: 1030									
	Total hrs: 5									
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: 25.0		Total Adult Residents: 0	Total Pairs: 0	Total Territories:	Total Nests:	Were any WIFLs color-banded? Yes ____ No ____ If yes, report color combination(s) in the comments section on back of form and report to USFWS.				

Reporting Individual: **Brian Leatherman** Date Report Completed: **8/19/2021**

US Fish & Wildlife Service Permit #: **TE827493-9** State Wildlife Agency Permit #: **SC-001562**

***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 Leatherman** Phone # **(714) 701-0863**

Affiliation **Leatherman BioConsulting Inc.** E-mail bleathermanwlb@aol.com

Site Name **Santa Ana River Trail** Date report Completed **8/19/2021**

Was this site surveyed in a previous year? Yes___ No_X___ Unknown___

Did you verify that this site name is consistent with that used in previous yrs? Yes____ No____ Not Applicable____

If 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____ No____ If no, summarize below.

Management Authority for Survey Area: Federal **X** Municipal/County **X** State____ Tribal____ Private____

Name of Management Entity or Owner (e.g., Tonto National Forest) **US Army Corps, Riverside County**

Length of area surveyed: **1.3** (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 name.

Salix goodingii, Salix laevigata

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.

Survey area along proposed bike trail route consists of isolated stretches of habitat in Prado Basin separated by different types of developments (housing, industrial, parks etc.) with very different vegetation components. Highest quality habitat along W. Rincon and Corydon Streets at northeast end of 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

Yellow-Billed Cuckoo Survey Summary Form (Form revised 2021)

Site Name: Santa Ana River Trail Project | County: Riverside | Elevation (m): 155 | State: CA

USGS Quad Name: Prado, Corona North | Creek, River, Wetland, Canyon, or Lake Name: Prado Basin, Santa Ana River

Site Coordinates (UTM): | UTM Zone: 11S | Start: E 440410 N 3749650 | Magnetic North Declination: 14

NAD 83 preferred | Datum: NAD83 | Stop: E 445675 N 3755765

Was site surveyed in a previous year? (Yes, No, Unknown): No | If yes, what name was used?:

Survey # Observer(s) (Last Name, First Initial)	Date (m/d/y) Survey, Time, Total Hours	Total # of YBCUs	Survey Number:	YBCU#:	Time Detected (AM):	Detection Method: I = Incidental P = Playback B=Both	Detection Type: A=Aural V=Visual B=Both	Vocalization Type: CN= Contact CO=coo AL=alarm OT=other	Number of 'kowlp' calls played prior to response:	Behavior Observed: (refer to codes)	Surveyor Detection Coordinates UTM E (6 digits)	Surveyor Detection Coordinates UTM N (7 digits)	Distance (m):	Bearing (in number degrees):	Corrected Coordinates (automatically generated) UTM E	Corrected Coordinates (automatically generated) UTM N
Survey	Date:	0	1												0	0
1	6/17/2021		1												0	0
Observer(s):	Start:		1												0	0
Brian Leatherman	500		1												0	0
	Stop:		1												0	0
	1000		1												0	0
	Total hrs:	Total:	1												0	0
	5	0	1												0	0
Survey	Date:		2												0	0
2	7/2/2021		2												0	0
Observer(s):	Start:		2												0	0
Brian Leatherman	530		2												0	0
	Stop:		2												0	0
	1000		2												0	0
	Total hrs:	Total:	2												0	0
	4.5	0	2												0	0
Survey	Date:		3												0	0
3	7/16/2021		3												0	0
Observer(s):	Start:		3												0	0
Brian Leatherman	600		3												0	0
	Stop:		3												0	0
	1015		3												0	0
	Total hrs:	Total:	3												0	0
	4.25	0	3												0	0
Survey	Date:		4												0	0
4	8/2/2021		4												0	0
Observer(s):	Start:		4												0	0
Brian Leatherman	515		4												0	0
	Stop:		4												0	0
	1000		4												0	0
	Total hrs:	Total:	4												0	0
	4.75	0	4												0	0
Survey	Date:		5												0	0
5			5												0	0
Observer(s):	Start:		5												0	0
			5												0	0
	Stop:		5												0	0
			5												0	0
	Total hrs:	Total:	5												0	0
			5												0	0

Survey Summary REQUIRED	Total Survey Hours:	Tot. # of Detections:	Total Estimated Breeding Territories: (refer to Territory Definitions below) Number of PO BreedingTerritories:	Number of PR Breeding Territories:	Number of CO Breeding Territories:	Number of Nests Found:
	18.5	0				

Sur. #:	YBCU #:	Detection Comments/Additional Behaviors/Nest UTM:

Breeding Behavior Observation Codes

Brooding/Incubating	BI
Carrying Nest Material	MAT
Copulation	COP
Distraction Display	DD
Feeds Mate	FM
Feeds Nestling	FN
Fledgling	FLG
Nest Building	NB
Carry Food	CF
Kowlp Exchange/Pair	VEX

Breeding Territory Definitions

Possible Breeding Territory (PO):	Probable Breeding Territory (PR):	Confirmed Breeding Territory (CO):
Detections within a 300 - 500 m area during at least 2 surveys and 12 - 14 days apart.	Detections within a 300-500 m area during at least 3 surveys and 12-14 days apart; or PO territory plus purposeful food carry (single observation, bird does not eat food), stick carry (single observation), multiple incidents of alarm calls in same area, or PO territory plus pair exchanging multiple kowlp or alarm calls (not coos) within 100 m of one another.	Observation of active nest (or multiple stick carries to nest being built), copulation, fledgling (unable to fly) with adult; or PR plus multiple food carries to same area or distraction display (dropped wings).

Page 2

Site Name:	Santa Ana River Trail Project	Date Report Completed:	8/26/2021
Name of Reporting Individual:	Brian Leatherman	Phone #:	714 -701-0863
Affiliation:	Leatherman BioConsulting, Inc.	Email:	bleathermanwlb@aol.com
USFWS Permit #:	TE827493-9	State Permit #:	SC-001562
Ownership: Primary:	Other (Municipal/County)	Owner Name (if applicable):	County, US ACE
Did you survey the same general area during each visit to this site this year (if no, summarize in comments section below)?			No
If site was surveyed last year, did you survey the same general area this year (if no, summarize in comments section below)?			No
Length of survey area (km):	1.26		

Overall Vegetation Characteristics:

Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

Native broadleaf plants (>75% native)		Mixed native and exotic plants (mostly native 51%-75%)	X
Exotic/introduced plants (>75% exotic)		Mixed native and exotic plants (mostly exotic 51%-75%)	

Average Overstory/Canopy (where playback calls were used):

List up to 5 species of overstory vegetation and proportion of average canopy cover of each species . Click on dropdown menu to select scientific name. If species is missing, select OTHER and include scientific name in Comments. For relative percent cover, the total should equal 100%.

		Relative				Relative	
Species 1:	Salix goodingii	% Cover	80	Species 3:	Platanus racemosa	% Cover	5
Species 2:	Populus fremontii	% Cover	10	Species 4:	Eucalyptus sp.	% Cover	5
				Species 5:	NONE	% Cover	

General Overstory/Canopy Characteristics:

Average Height (top of trees) of Overstory (meters; do not include a range):	2.5
Estimated Absolute (as opposed to relative) Canopy Cover (percent; may be < 100%):	50

Average Subcanopy (if present; where playback calls were used):

List up to 5 species of subcanopy vegetation (if present) and estimate proportion of average subcanopy cover of each species. Click on dropdown menu to select scientific name. If species is missing, select OTHER and include scientific name in Comments. For relative percent cover, the total should equal 100%.

		Relative				Relative	
Species 1:	Salix laevigata	% Cover	50	Species 3:	OTHER	% Cover	30
Species 2:	Salix lasiolepis	% Cover	20	Species 4:	NONE	% Cover	
				Species 5:		% Cover	

General Subcanopy Characteristics:

Average Height (top of trees) of Subcanopy (meters; do not include a range):	3.5
Estimated Absolute (as opposed to relative) Subcanopy Cover (percent; may be < 100%):	20

Average Understory (if present; where playback calls were used):

List up to 5 species of understory/ shrub vegetation (not all sites will have a separate understory) and estimate proportion of average understory cover of each species. Use scientific names. For relative percent cover, the total should equal 100% even if more than 5 species present.

		Relative				Relative	
Species 1:	Baccharis salicifolia	% Cover	30	Species 3:	Lepidium latifolium	% Cover	25
Species 2:	Vitus girdiana	% Cover	25	Species 4:	Salix lasiolepis	% Cover	10
				Species 5:	Brassica spp	% Cover	10

General Understory Characteristics:

Average Height (top) of Understory (meters; do not include a range):	2
Estimated Absolute (as opposed to relative) Understory Cover (percent; may be < 100%):	75

Immediate Adjacent Habitat Along Entire Transect (Outside of survey site):

Categorize adjacent habitat (e.g. rock outcrop, desert/scrub/thornscrub, urban/residential, agriculture/pasture, orchard, oak woodland, pinyon-juniper woodland, mixed conifer forest, grassland, marsh/wet meadow, open water, ditch/irrigation). List up to 5 categories of adjacent habitat, and estimate proportion of percent cover (should =100%). If adjacent habitat type is missing, select "OTHER" and enter habitat type in Comments.

Category 1:	Urban/Residential	% Cover	30	Category 3:	Desert/Scrub/thornscrub	% Cover	20
Category 2:	Grassland	% Cover	50	Category 4:		% Cover	
				Category 5:		% Cover	

Is the survey area or adjacent area (within 300 m) dominated by surface water or saturated soil during at least 2 surveys?	No
Perennial, intermittent, or ephemeral drainage (or body of water):	Perennial

Comments. If surface water changed between surveys please describe in this section. Provide comments regarding differences between the survey patches within the site. For example, if the average canopy for this site is 30% cover, but within one patch it is 60% cover--please note. Please note significant differences between dominant overstory, subcanopy, and understory vegetation among the patches. Document these differences with photographs whenever possible. referencing comments to photo number whenever available. Note potential threats (e.g., livestock, ORV, hunting, etc.) to the site. If *Diorhabda* beetles are observed, provide location and photos. Attach additional pages or use the continuation sheet if needed.

The Santa Ana River Trail Project alignment survey area spans several miles and traverses several habitat types. The riparian habitat along the alignment varies widely in composition, structure, and diversity, and most of the riparian habitat that is suitable for other species (i.e. least Bell's vireo) is not suitable for the yellow-billed cuckoo and was not surveyed. Highest qualify habitat consists of mature willow forest dominated by S. goodingii, with an understory of dense Vitus girdiana in some areas and dense Lepidium latifolium along W. Rincon Street and Corydon Street.

Appendix F BURROWING OWL

Stantec

Memo

To:	David Lewis Capital Projects Manager Project Delivery Riverside County Transportation Commission 4080 Lemon St Riverside, CA 92501	From:	Jared Varonin 290 Conejo Ridge Ave Ste 100 Thousand Oaks, CA 91361
Project/File:	Santa Ana River Trail Project	Date:	January 10, 2021

Reference: Santa Ana River Trail Project Phase 2, 2A, and 3A Burrowing Owl Habitat Assessment and Focused Surveys

1.0 Introduction

Riverside County Regional Park & Open-Space District requested Stantec Consulting Services Inc. (Stantec) conduct a burrowing owl (*Athene cunicularia*) habitat assessment for the Santa Ana River Trail Project Phases 2, 2A, and 3A (Project).

The Project is in the northwestern corner of Riverside County, California, within the United States Geological Survey (USGS) Riverside West 7.5-minute topographic quadrangle. The Project occurs within an approximately 46-acre area. The Project area is mostly open space and surrounded to the north by the Santa Ana River and the Corona Airport, to the east by light industrial and open space, and to the south/southwest by state route 91 and open space. Land use in the general area surrounding the Project area includes developed areas (Attachment A Figures 1 and 2).

The proposed Project consists of trail construction that would complete a portion of the larger 110-mile regional Santa Ana River Trail system. Specifically, the Project includes a 2.79-mile dual-track Class I multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. The Project includes the construction of three new trail segments, Phase 2 will be 0.65-mile long, Phase 2A will be 1.37-mile long, and Phase 3A will be 0.77-mile long. The three trail segments are shown in Attachment A Figures 2-1 to 2-4. The Survey Area for the burrowing owl habitat focused surveys included the Project area and a 150-meter buffer (Burrowing Owl Survey Area) (Attachment A Figure 3).

2.0 Background

The burrowing owl uses a variety of natural and modified habitats for nesting and foraging, typically low growing vegetation. The burrowing owl occupies open areas within grasslands, shrub lands, desert, golf-courses, earthen berms, unpaved airfields, drainage ditches, fallow fields, and agricultural land use areas (RCA 2006). Natural and artificial burrows are essential to burrowing owl habitat, they provide shelter and nesting locations. The burrows are typically remnant burrows of California ground squirrel (*Otospermophilus beecheyi*) but can also be man-made structures such as culverts, asphalt, cement, or wood debris piles or openings beneath cement or asphalt pavement.

Burrowing owls hunt at dawn and dusk but are often found perched in or near the entrance of their burrow during the day. They forage for small vertebrates and invertebrates in the low vegetation. Nesting season typically occurs between February 1 and August 31.

The burrowing owl was historically abundant and widely distributed within coastal southern California, but it has declined dramatically in Los Angeles, Orange, San Diego, Riverside, and San Bernardino counties. A petition was filed to list the California population of the burrowing owl as a state endangered or threatened species (Center for Biological Diversity 2003); however, the California Department of Fish and Wildlife (CDFW) declined to list the burrowing owl as either endangered or threatened. The burrowing owl is listed by the CDFW as a California Species of Special Concern (CDFW 2021a).

Burrowing owl historically occurred on the Burrowing Owl Survey Area. Based on CDFW California Natural Diversity Database (CNDDB) data, burrowing owls were documented in the Burrowing Owl Survey Area in 1989. In 2012, burrowing owl were documented near Norco College approximately 2.2 miles northeast of the Burrowing Owl Survey Area (CDFW 2021a, Cornell 2021).

3.0 Methods

The following subsections provide the resources reviewed before conducting the burrowing owl habitat assessment and the methods used to conduct the habitat assessment.

LITERATURE REVIEW AND DESKTOP ANALYSIS

A focused literature search of the Burrowing Owl Survey Area was conducted prior to the habitat assessment for this Project. The Burrowing Owl Survey Area is located within the USGS Corona North, California, 7.5-minute topographic quadrangle. A search of the CDFW CNDDB was conducted for the Burrowing Owl Survey Area and a surrounding ten-mile buffer area to determine special-status plants, wildlife, and vegetation communities that have been documented within this area (CDFW 2021a). The database included portions of the following quadrangles surrounding the Burrowing Owl Survey Area:

- Guasti
- Fontana
- Black Star Canyon
- Ontario
- Prado Dam
- Lake Mathews
- Corona South
- Riverside West

Additional data regarding the potential occurrence of burrowing owl was gathered from the following sources:

- Special Animals List (CDFW 2021b)
- Bird Species of Special Concern (CDFW 2021c)
- Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) (RCA 2006)
- WRCMSHCP (2015)
- WRCMSHCP Burrowing Owl Reports (RCA 2017)
- WRCMHCP Burrowing Owl Survey Area (RCA 2021)

BURROWING OWL HABITAT ASSESSMENT

Based on the Burrowing Owl Survey Instructions for the WRCMSHCP (RCA 2006), three qualified biologists walked the entire Project area to identify the presence or absence of burrowing owl habitat (RCA 2006) (Attachment A Figures 2-1 to 2-4). In areas with potential habitat for burrowing owls (primarily open grassland or ruderal habitat), the biologists surveyed for burrows or other potential signs of burrowing owl. Ground squirrel burrows were mapped with ArcCollector connected to a sub-meter Arrow global positioning system receiver.

FOCUSED BURROW SURVEYS

One qualified biologist conducted the four focused surveys. The biologist used binoculars to scan suitable habitat and the area of mapped burrows to determine owl presence prior to walking the Burrowing Owl Survey Area. The biologist walked transects through the area adjacent to the ground squirrel burrows.

4.0 Existing Conditions

The Burrowing Owl Survey Area is adjacent to the Santa Ana River, the Prado Basin, and the Corona Municipal Airport within unincorporated Riverside County. Elevations within the Project area range from 500 to 600 feet above mean sea level.

VEGETATION COMMUNITIES AND LAND COVER TYPES

As defined in the Manual of California Vegetation, Second Edition (MCVII) (Sawyer et al. 2009), a vegetation alliance is “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors.” Generally, Stantec’s mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, (generally disturbed) habitat occurs within the Burrowing Owl Survey Area that is not defined in MCVII. Therefore, land cover types assigned to these types of habitats are descriptive in nature and are not specifically referenced in the MCVII. The scientific and common names of each species detailed within this report correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al. 2012).

The vegetation communities and land cover types in the Burrowing Owl Survey Area are presented on Figures 3-1 to 3-4 in Attachment A.

Vegetation Communities

Arroyo Willow Thickets (Salix lasiolepis Shrubland Alliance)

This vegetation classification generally consists of arroyo willow (*Salix lasiolepis*) as the dominant in the tall shrub or low tree canopy with bigleaf maple (*Acer macrophyllum*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood (*Cornus sericea*), California wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), other willows (*Salix* sp.), and black elderberry (*Sambucus nigra*) as co-dominants. Emergent trees may be present at a low cover.

The plants are usually less than 10 meters in height, canopy is open to continuous, and the herbaceous layer is variable.

Within the Burrowing Owl Survey Area, this vegetation community is dominated by arroyo willow with smaller amounts of mulefat shrubs and scattered black willows. Most of the arroyo willow thickets occur in the Survey Area surrounding Phase 2.

California Buckwheat Scrub (Eriogonum fasciculatum Shrubland Alliance)

This vegetation classification generally consists of California buckwheat (*Eriogonum fasciculatum*) as a dominant in the shrub canopy in cismontane stands with California sagebrush (*Artemisia californica*), coyote brush, sticky monkeyflower (*Diplacus aurantiacus*), bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), Menzies' goldenbush (*Isocoma menziesii*), common deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), white sage (*Salvia apiana*), or black sage (*Salvia mellifera*) as co-dominant species. Emergent trees may be present at low cover. Shrubs are usually less than two meters in height, canopy is continuous or intermittent, and the herbaceous layer is variable and may be grassy.

Within the Burrowing Owl Survey Area, this vegetation is dominated by California buckwheat with smaller amounts of California sagebrush, deerweed, and California brittlebush. California buckwheat scrub occurs in small patches in the Burrowing Owl Survey Area surrounding Phases 2A, 3, and 3A.

Coastal Sagebrush Scrub (Artemisia californica Shrubland Alliance)

This vegetation classification generally consists of California sagebrush as the dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod (*Cleome isomeris*), sticky monkeyflower, bush sunflower, brittlebush, desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal buckwheat (*Eriogonum cinereum*), California buckwheat, yellow yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), Menzie's goldenbush, heart leaved keckella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina*), chaparral prickly pear (*Opuntia littoralis*), evergreen buckthorn (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including southern California black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), or black elderberry. Shrubs are less than two meters in height or in two tiers with a second less than five meters tall. The canopy is intermittent to continuous, and the herbaceous layer is variable.

Within the Burrowing Owl Survey Area, this vegetation is dominated by California sagebrush with smaller amounts of California buckwheat and coyote brush. California sagebrush scrub occurs in large patches in the Survey Area in Phases 2A, 3, and 3A.

Cheeseweed Flats (Malva parviflora)

This non MCVII vegetation classification generally consists of a monoculture of cheeseweed (*Malva parviflora*). Within the Burrowing Owl Survey Area, this vegetation is dominated by monoculture of dense cheeseweed with other non-native annual species such as short-pod mustard (*Hirschfeldia incana)* occasionally observed. Cheeseweed flats occur in one patch in the Survey Area southeast of Phase 2A and

the area appears to have been previously disturbed and may have been used as an access road in the past.

Common and Giant Reed Marshes (Phragmites australis Arundo donax Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by common reed (*Phragmites australis*) or giant reed (*Arundo donax*). Within the Burrowing Owl Survey Area, this vegetation is dominated by giant reed. One reed marsh occurs in the Burrowing Owl Survey Area north of Phase 2A in an area surrounded by native riparian vegetation.

Coyote Brush Scrub (Baccharis pilularis Shrubland Alliance)

This vegetation classification generally consists of coyote brush, California coffeeberry (*Frangula californica*) and/or coast silk tassel (*Garrya elliptica*) is dominant to co-dominant in the shrub canopy with coastal sagebrush, sticky monkeyflower, California buckwheat, deerweed, California blackberry (*Rubus ursinus*), white sage*,* purple sage (*Salvia leucophylla*) and poison oak. Emergent trees may be present at low cover.

Within the Burrowing Owl Survey Area, this vegetation is dominated by coyote brush with smaller amounts of deerweed, bush sunflower, mulefat, and Menzie's goldenbush. Coyote brush scrub occurs in small patches in the Phase 2A Survey Area and in the Survey Area west of Phase 3A.

Eucalyptus Groves (Eucalyptus spp. Woodland Semi-Natural Alliance)

This non MCVII vegetation classification generally consists of eucalyptus species/gum trees (*Eucalyptus* sp.) as the dominant in the tree canopy. The trees are less than 60 meters in height, canopy is open to continuous, shrub layer is generally sparse, and the herbaceous layer is sparse to intermittent.

Within the Burrowing Owl Survey Area, this vegetation is dominated by large eucalyptus trees with bare ground along low drainage areas. Eucalyptus groves occur in the Survey Area in Phases 2A and 3A.

Menzie's Goldenbush Scrub (Isocoma menziesii Shrubland Alliance)

This vegetation classification generally consists of Menzie's goldenbush as dominant or co-dominant in the shrub canopy with coastal sagebrush, coyote brush, broom baccharis (*Baccharis sarothroides*), giant coreopsis (*Coreopsis gigantea*), matchweed (*Gutierrezia californica*), island broom (*Acmispon dendroideus)*, silver bush lupine (*Lupinus albifrons),* and Virginia glasswort (*Salicornia depressa*). Herbs commonly present include *San Miguel Island milkvetch* (*Astragalus miguelensis*), California orach (*Etriplex californica*), ripgut brome (*Bromus diandrus*), coast morning glory (*Calystegi macrostegia*), saltgrass (*Distichlis spicata*), and purple needlegrass (*Stipa pulchra*).

Within the Burrowing Owl Survey Area, this vegetation is dominated by Menzie's goldenbush with smaller amounts of coyote brush. California buckwheat, and quailbush (*Atriplex lentiformis*). This community occurs in one patch in the Survey Area north of Phase 2A.

Mulefat Thickets (Baccharis salicifolia Shrubland Alliance)

This vegetation classification generally consists of mulefat (*Baccharis salicifolia*) as the dominant in the shrub canopy with coastal sagebrush, willow baccharis (*Baccharis emoryi*), coyote brush, laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry species (*Rubus* sp.), narrow leaved willow (*Salix exigua*), arroyo willow, black elderberry, and tamarisk species (*Tamarix* sp.) as co-dominants. Emergent trees may be present at low cover, including grey pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oak species (*Quercus* sp.), or willow species (*Salix* sp.). Shrubs are less than five meters in height, the canopy is continuous with tie tiers at less than two meters and at less than five meters, and the herbaceous layer is sparse.

Within the Burrowing Owl Survey Area, this vegetation is dominated by mulefat with smaller amounts of arroyo willow and coyote brush. This community occurs in the Survey Area of all three phases and most of this vegetation in the Phase 2 Survey Area. Approximately 30 acres of this community occurs in the Survey Area.

Perennial Pepperweed Patches (Lepidium latifolium Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by perennial pepperweed (*Lepidium latifolium*). Emergent trees and shrubs may be present at low cover. Within the Burrowing Owl Survey Area, this vegetation is dominated by perennial pepperweed. This community occurs in one small patch in the Survey Area at the edge of Phases 2A and 3A.

Poison hemlock or fennel patches (Conium maculatum- Foeniculum vulgare Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of thoroughwort (*Ageratina adenophora*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), Indian teasel (*Dipsacus sativus*) and/or sweet fennel (*Foeniculum vulgare*), or another non-native invasive plant of the *Apiaceae* is dominant or co-dominant with other non-native plants in the herbaceous layer. Emergent trees and shrubs may be present at low cover, including oak trees and coyote brush.

Within the Burrowing Owl Survey Area, this vegetation is dominated by poison hemlock. This community occurs in one small patch in the Survey Area at the edge of Phases 2A and 3A.

Shining Willow Groves (Salix lucida ssp. lasiandra Forest and Woodland Alliance)

This vegetation classification generally consists of shining willow (*Salix lucida*) as dominant or co-dominant in the tree canopy with bigleaf maple, white alder (*Alnus rhombifolia*), American dogwood, California sycamore, Freemont cottonwood, black cottonwood, coast live oak, willows, and blue elderberry.

Within the Burrowing Owl Survey Area, this vegetation is dominated by shining willow with smaller amounts of mulefat, other willow species, and castor bean. This community occurs in one large patch in the Survey Area in Phase 2A west of Butterfield Park. Approximately 10 acres of this community occurs in the Survey Area.

Tamarisk Thicket (Tamarix spp. Shrubland Semi-Natural Alliance)

This vegetation classification generally consists of salt cedar (*Tamarix ramosissima*) or another *Tamarix* species dominant in the shrub canopy. Emergent trees may be present at low cover, including Freemont's cottonwoods or willow trees.

Within the Burrowing Owl Survey Area, this vegetation is dominated by salt cedar. This community occurs in one linear patch along West Rincon Street in the Survey Area east of Phase 2.

Upland mustards or star-thistle fields (Brassica nigra – Centaurea [solstitialis, melitensis] Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of black mustard (*Brassica nigra*), common mustard (*Brassica rapa*), Italian thistle (*Carduus pycnocephalus*), Maltese star thistle (*Centaurea melitensis*), yellow starthistle (*Centaurea solstitialis*), cardoon artichoke thistle (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), short-pod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*), or similar ruderal forb is dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover.

Within the Burrowing Owl Survey Area, this vegetation is dominated by short-pod mustard and Maltese star-thistle with smaller amounts of other non-native annual grasses, mostly bromes, and non-native annual herbs. This community occurs along West Rincon Street in Phase 2 and in the eastern portion of Phase 3A.

Wild Oats and Annual Brome Grasslands (Avena spp.-Bromus spp. Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of slim oat (*Avena barbata*), wildoats (*Avena fatua*), purple false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima*), ripgut brome, soft chess, and foxtail barley (*Hordeum murinum*) as dominant or co-dominant in the herbaceous layer with other non-natives such as Australian saltbush (*Atriplex semibaccata*) and barley species (*Hordeum* sp.). Emergent trees and shrubs may be present at low cover. Herbs are less than four feet in height and cover is open to continuous.

Within the Burrowing Owl Survey Area, this vegetation is dominated by bromes and other non-native annual grasses. Wild oats and annual brome grasslands occur in large patches in the Survey Area surrounding Phases 2A and 3A. Approximately 50 acres of this community occur in the Survey Area.

Land Cover Types

Disturbed/Developed

This land cover type includes areas that have been graded or paved and are developed with urban infrastructure. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil such as along disturbed areas or roadsides. The Phase 2 Survey Area includes Corydon Street, West Rincon Street, and disturbed areas between West Rincon Street and the Corona Airport. The Phase 2A Survey Area includes dirt access roads, a large borrow pit, portions of the

Corona Airport and Butterfield Park, and buildings south and west of Phase 2A. The Phase 3A Survey Area includes portions of State Route 91. Over 100 acres of this land cover type occurs in the Survey Area.

Non-vegetated Channel

Non-vegetated channel is not a MCVII classification. In this land cover type, the area is unvegetated on a relatively permanent basis. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Holland 1986).

A drainage ditch occurs along the south side of Butterfield Drive in the Phase 2A Survey Area.

Partially vegetated channel

This land cover type is like non-vegetated channel but has more than 10 percent vegetative cover. Partially vegetated channel is not a MCVII classification. The lack of vegetation is due to flowing water during the rainy season. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel.

This land cover type includes Temescal wash east and west of West Rincon Street in Phase 2. Some large willow trees have been established on the edges of the wash.

Restoration Areas

Areas mapped as restoration were either observed to be undergoing active habitat restoration activities or were areas that have been previously restored and are being monitored or have been completed. Two restoration areas occur within the Phase 2A Survey Area.

Ruderal Areas

Ruderal vegetation is not a MCVII classification. This land cover type is usually sparsely vegetated with pioneer plant species that readily colonize open disturbed soil. In the Burrowing Owl Survey Area these include non-native annual grasses, bromes, redstem filaree, and Maltese star-thistle. Ruderal patches occur in the Phase 2A Survey Area near Auto Center Drive.

5.0 Results

Based on the WRCMSHCP Burrowing Owl Survey Area and Survey Instructions and the existing conditions in the Survey Area, the entire Project area was assessed for habitat to support burrowing owl (Figure 2-1 to 2-4). On May 6, 2021, biologists from Stantec conducted the burrowing owl habitat assessment and the first focused burrow survey. The other three focused burrow surveys were conducted on June 30, August 12, and September 3, 2021.

Most of the Project area consists of unsuitable burrowing owl habitat that consists of dense riparian habitat and coastal sage scrub with an understory of non-native grasses (Figures 3-1 to 3-4).

The highest quality burrowing owl habitat was observed in disturbed non-vegetated areas in Phase 2A along Butterfield Drive just south of the Corona Airport (Figure 3-2). The mulefat thickets in the Phase 2A on along the north side of West Rincon Drive are partially disturbed and open and provide marginally suitable habitat for burrowing owl (Attachment A Figure 3-1). Marginally suitable non-native grasslands (Wild Oats and Annual Brome Grasslands) occur in Phases 2, 2A, and 3A (Attachment A Figures 3-1 to 3-4). Much of the non-native grassland habitat in the Project area consists of dense thatch that is not suitable for burrowing owl. Other potential burrowing owl habitat consists of restoration areas, ruderal habitat, and non-vegetated disturbed areas along the edge the dirt roads in Phases 2, 2A, and 3A (Attachment A Figures 3-1 to 3-4).

The four focused surveys were conducted in the Project area and the 150-meter-wide Burrowing Owl Survey Area in the suitable habitat described in the previous paragraph. The surveys were conducted in suitable conditions for burrowing owl. The temperature ranged from 60 to 81 degrees Fahrenheit (F) and it was a sunny day with clear skies and no clouds with a slight breeze during the first survey on May 6, 2021. On June 30, the temperature ranged from 68 to 85 degrees F; it was a sunny, clear day with no clouds and a slight breeze. On August 12, the temperature ranged from 86 to 95 degrees F; it was a sunny, clear day with no clouds; and windy at the start of the survey and calm by the end of the survey. On September 3, the temperature ranged from 66 to 79 degrees F; and it was a sunny, clear day with a slight breeze at the end of the survey.

Signs of ground squirrels were present, and individuals were observed, only within the eastern extent of the Project area/Survey Area; the sign/individuals were in the general vicinity of the Corona Municipal Airport. Three ground squirrel burrows were observed within a disturbed/developed area in the eastern portion of Phase 2A and mapped on Figure 3-2. The ground squirrel burrows ranged in size from 5 to 8 inches wide (Photograph 1).

No burrowing owl or sign of burrowing owl was observed.

Photograph 1. Ground squirrel burrows near Phase 2A

6.0 Conclusion

There are not any recent records of burrowing owl in the vicinity of the Survey Area and no burrowing owl or sign of burrowing owl was observed during these surveys. Based on the 2021 burrowing owl habitat assessment conducted for this Report, most of the Burrowing Owl Survey Area no longer contains suitable habitat for burrowing owl. However, pre-construction burrowing owl surveys are required by the WRCMSHCP in suitable burrowing owl habitat prior to construction. The surveys will need to be conducted no more than 30 days prior to ground disturbance.

Please contact us if you have any questions.

Respectfully,

Stantec Consulting Services Inc.

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Attachment: Attachment A Figures

References

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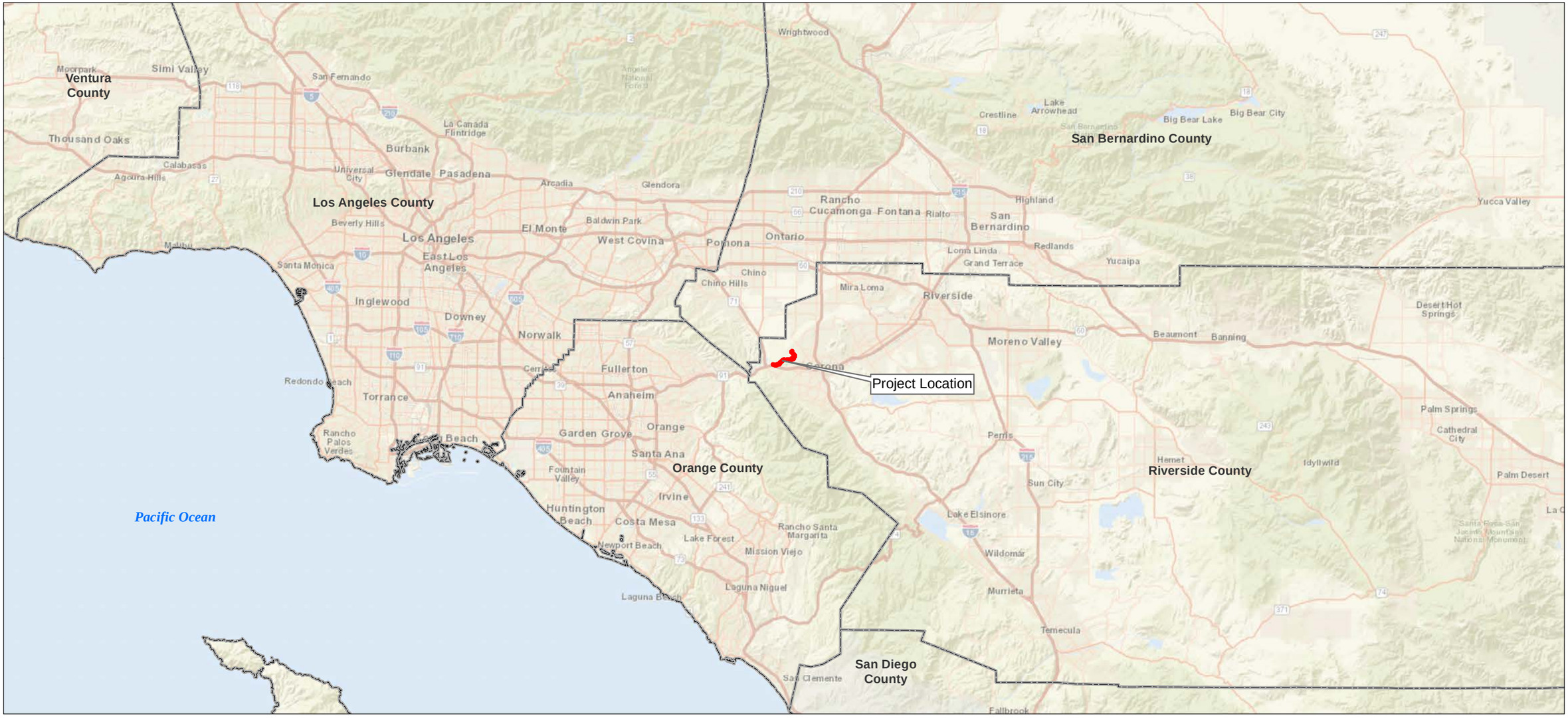
Attachment A Figures



Project Location

0 10 20 Miles

(At original document size of 11x17)
1:633,600

N

Stantec

Project Location	Prepared by DL on 2022-01-04
Near Corona	TR by SET on 2022-01-04
Riverside County, California	IR by JV on 2022-01-04
Client/Project	2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.

1

Title

Regional Location

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

V:\1858\business_development\Santa Ana River Trail\Figure1_SART_BUOW_ProjectDescription_RegionalLocationMap_12222021_11x17.mxd Revised: 2022-01-07 By: dalaw

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- Laydown Yard: Temporary Impact
- Grading: Temporary Impact
- Grading: Permanent Impact
- Riprap: Permanent Impact
- Trail: Permanent Impact
- Ingress/Egress Location
- △ Phase 2A End Location / Phase 3A Start Location
- Railroad

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location	Prepared by DL on 2022-01-04
Near Corona Riverside County, California	TR by SET on 2022-01-04 IR by JV on 2022-01-04
Client/Project	2042483140
Riverside County Regional Park & Open-Space District Santa Ana River Trail Project Burrowing Owl Habitat Assessment and Focused Surveys	
Figure No.	
2	
Title	
Site Plan	

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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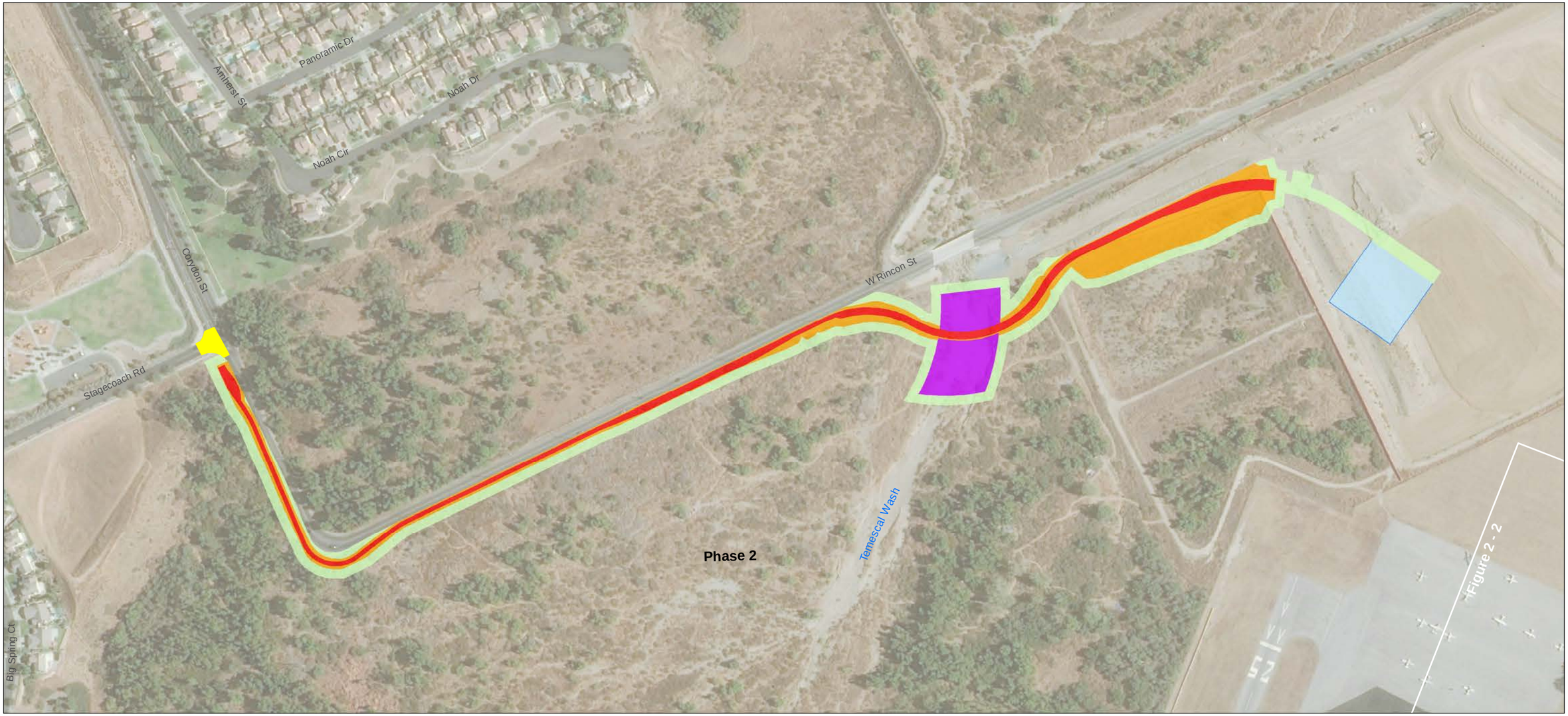

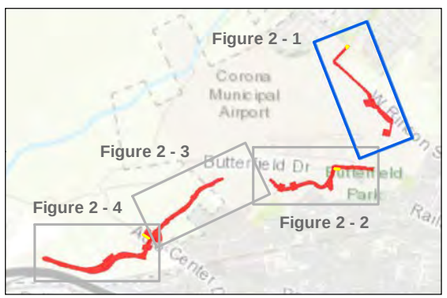

- Laydown Yard: Temporary Impact
- Grading: Temporary Impact
- Grading: Permanent Impact
- Riprap: Permanent Impact
- Trail: Permanent Impact
- Ingress/Egress Location

0 270 540 Feet

(At original document size of 11x17)
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N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 1

Title
Plan Sheet 1

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
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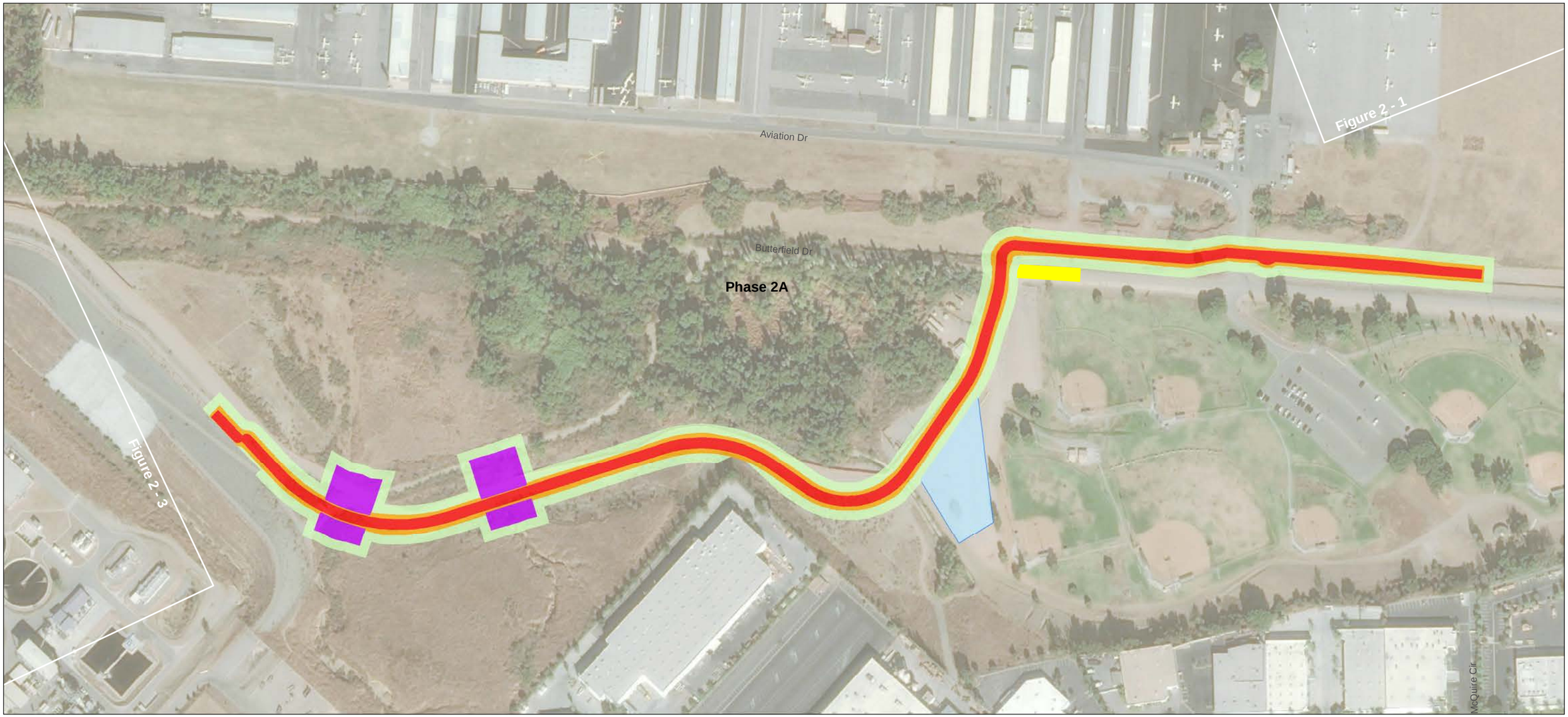

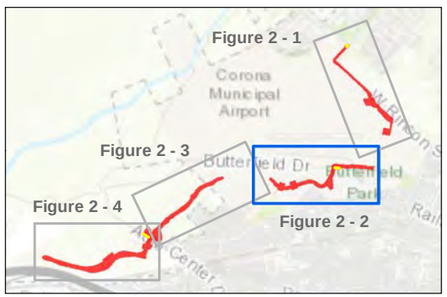

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- Grading: Permanent Impact
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- Trail: Permanent Impact
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Figure No.
2 - 2

Title
Plan Sheet 2

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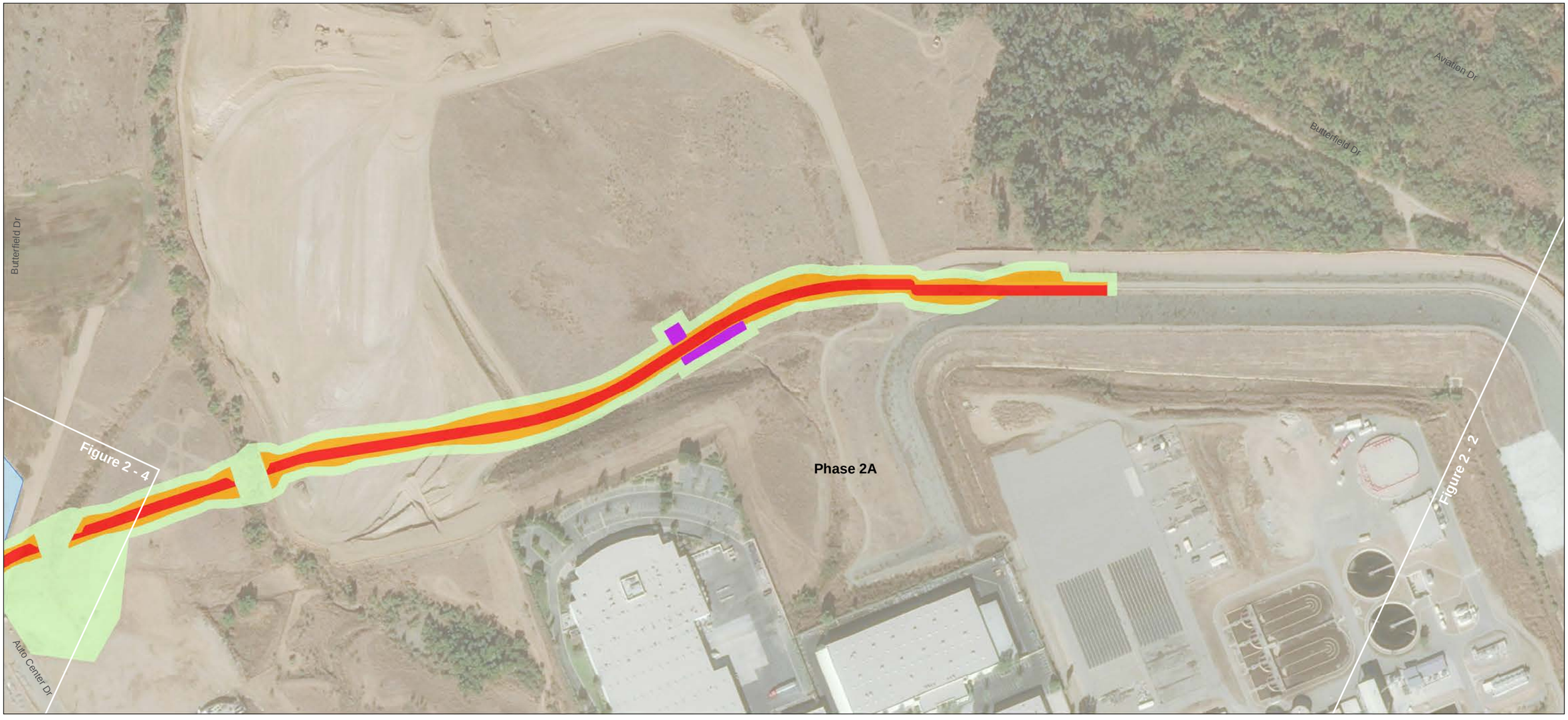

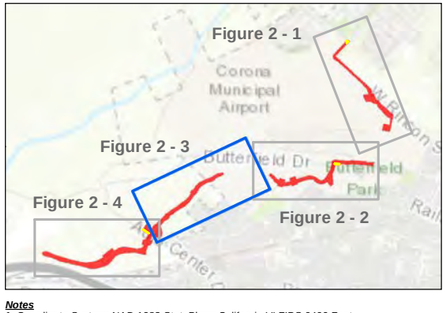

- Laydown Yard: Temporary Impact
- Grading: Temporary Impact
- Grading: Permanent Impact
- Riprap: Permanent Impact
- Trail: Permanent Impact

0 270 540 Feet

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Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 3

Title
Plan Sheet 3

Notes
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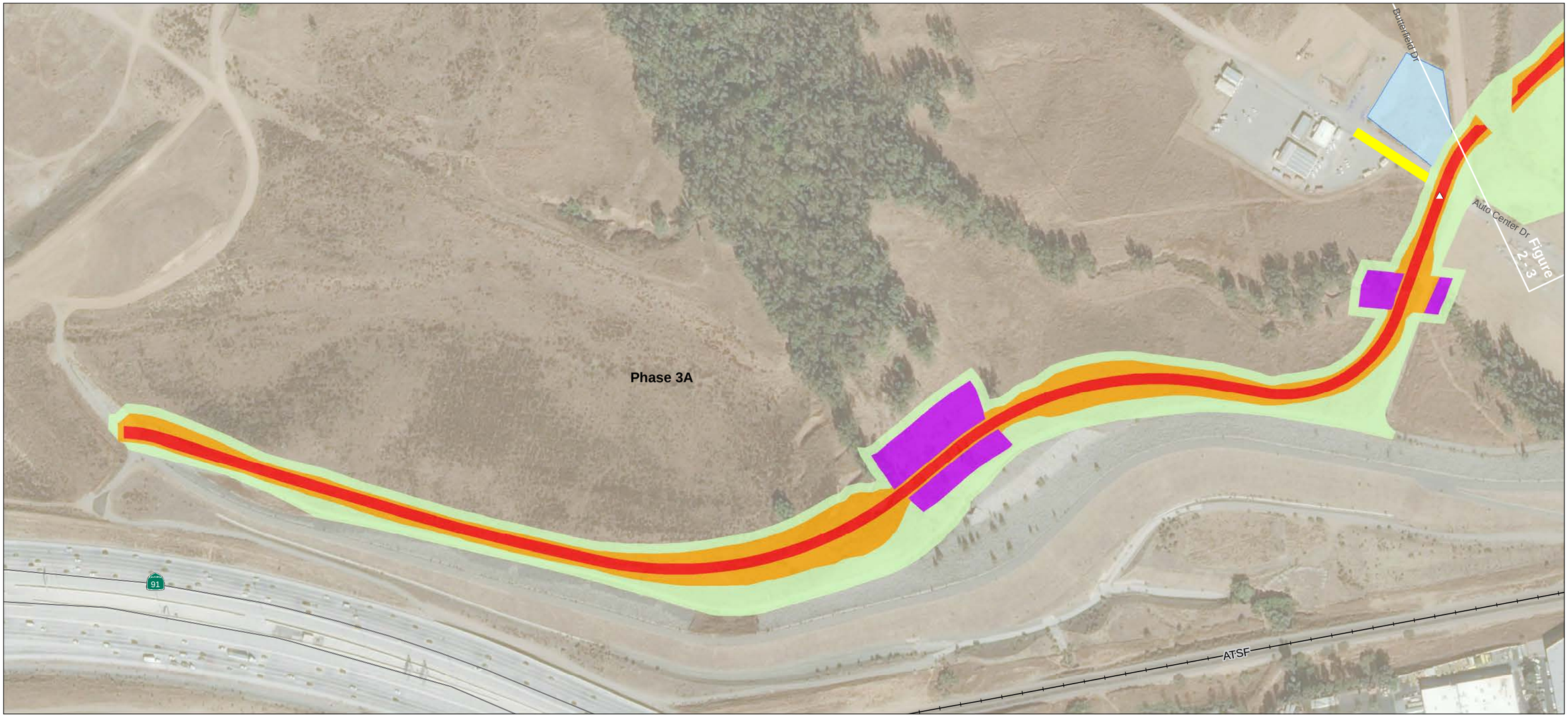

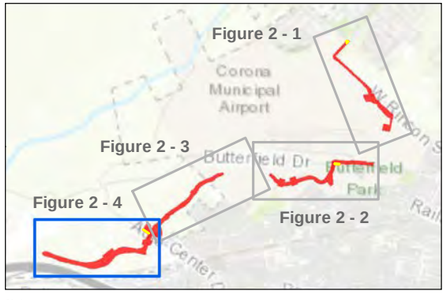

- Laydown Yard: Temporary Impact
- Grading: Temporary Impact
- Grading: Permanent Impact
- Riprap: Permanent Impact
- Trail: Permanent Impact
- Ingress/Egress Location
- △ Phase 2A End Location / Phase 3A Start Location
- Railroad

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 4

Title
Plan Sheet 4

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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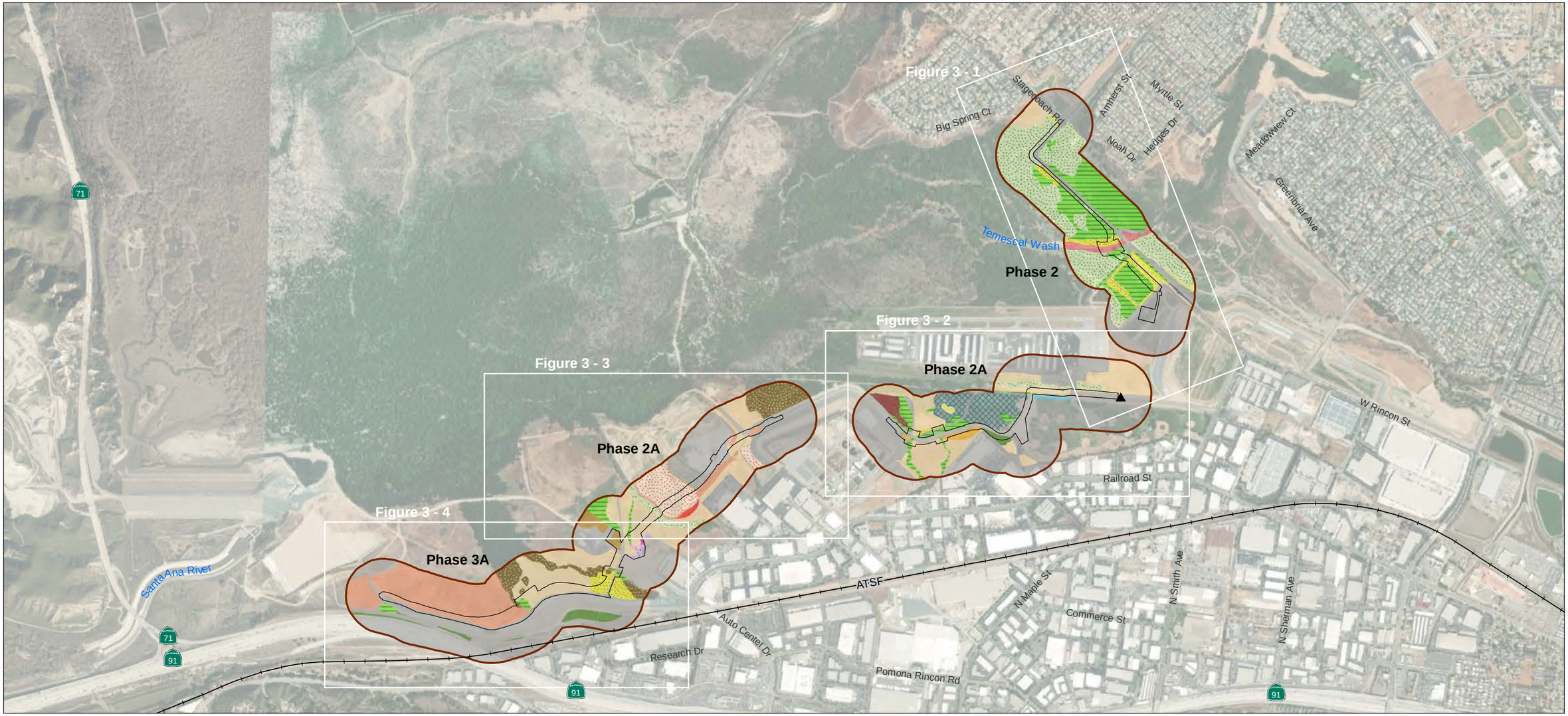

- Burrowing Owl Survey Area (150 Meter)
- Project Footprint
- ▲ Mammal burrow

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
- Cheeseweed flats
- Coyote brush scrub
- Disturbed/Developed
- Eucalyptus groves
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Shining willow groves
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 1,500 3,000 Feet

(At original document size of 11x17)
1:18,000

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 0

Title
Biological Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.NRCS 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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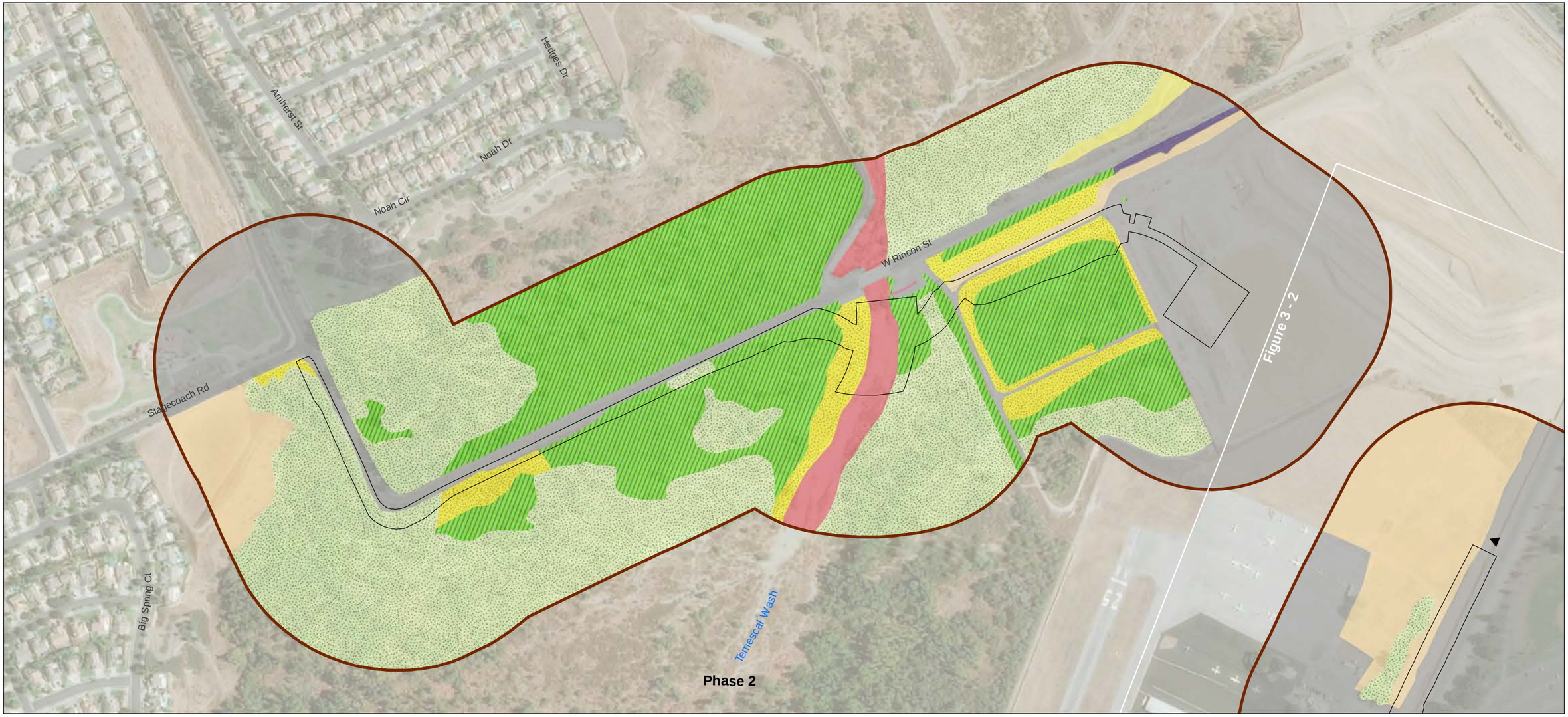

- Burrowing Owl Survey Area (150 Meter)
- Project Footprint
- ▲ Mammal burrow

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- Disturbed/Developed
- Giant reed stands
- Mulefat thickets
- Partially vegetated channel
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 350 700 Feet

(At original document size of 11x17)
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N

Stantec

Project Location
Near Corona
Riverside County, California

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Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 1

Title
Biological Resources

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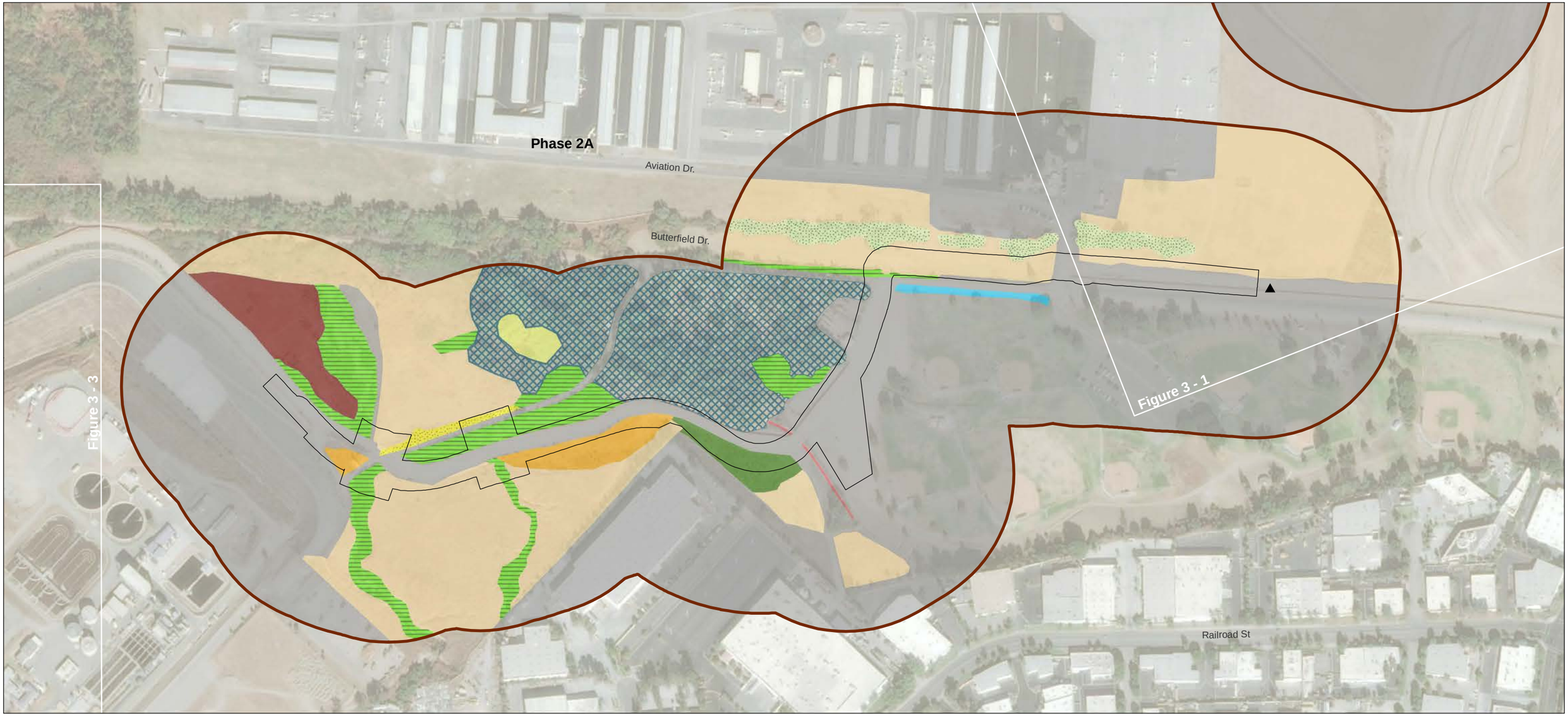

- Burrowing Owl Survey Area (150 Meter)
- Project Footprint
- ▲ Mammal burrow

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- Coyote brush scrub
- Disturbed/Developed
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Shining willow groves
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 350 700 Feet

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N

Stantec

Project Location
Near Corona
Riverside County, California

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Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 2

Title
Biological Resources

Notes
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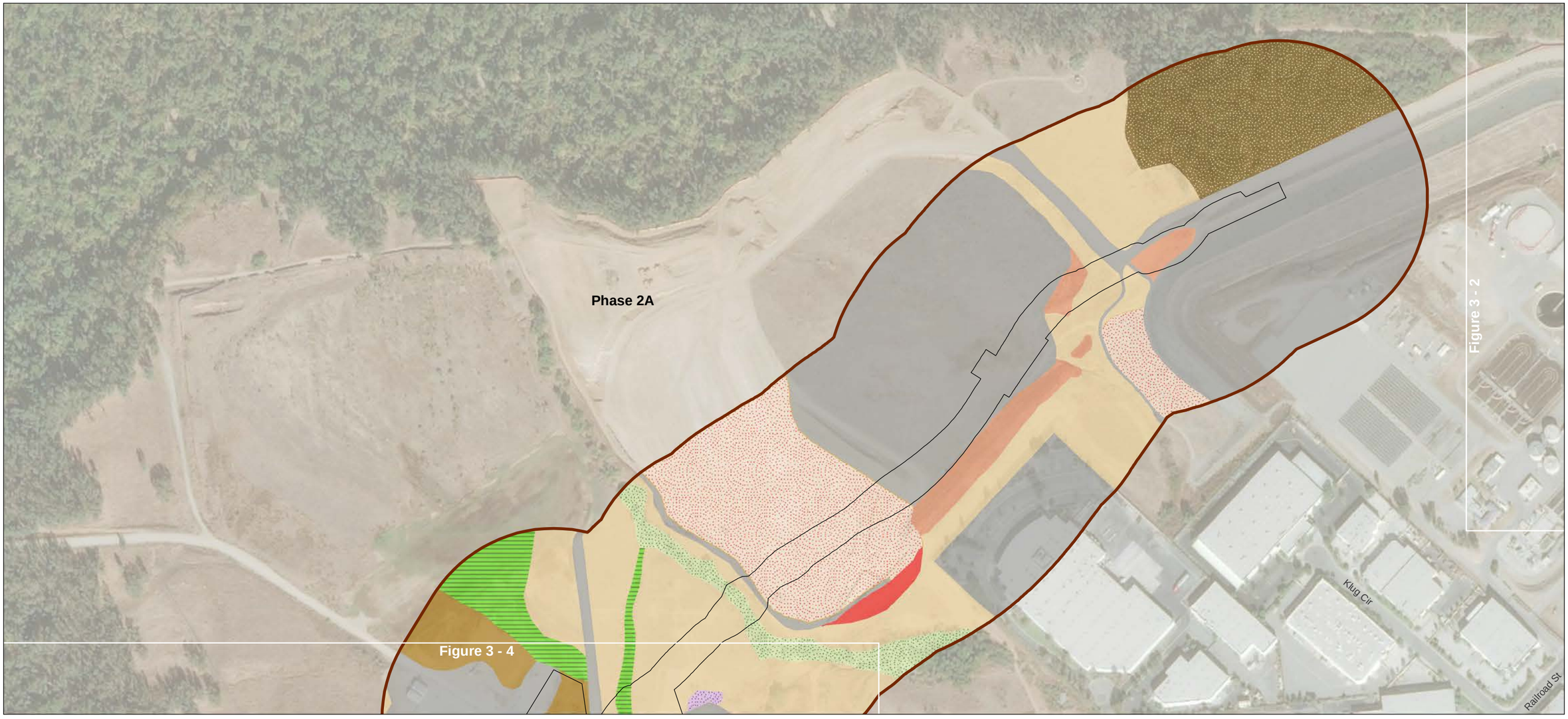

- Burrowing Owl Survey Area (150 Meter)
- Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California sagebrush scrub
- Cheeseweed flats
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Perennial pepperweed patches
- Restoration
- Ruderal
- Wild oats and annual brome grasslands

0 350 700 Feet

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Figure No.
3 - 3

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Biological Resources

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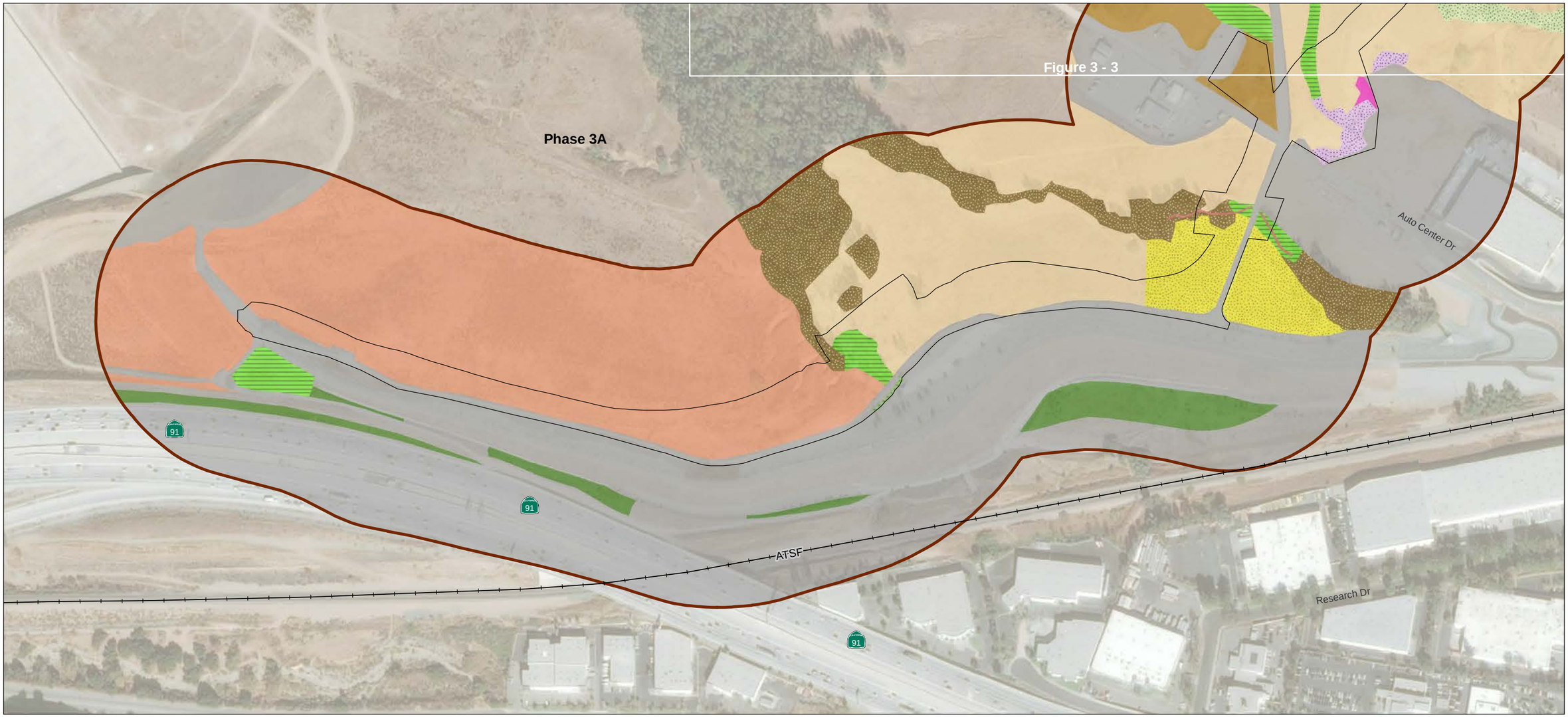
Figure 3 - 3



- Burrowing Owl Survey Area (150 Meter)
- Project Footprint
- Railroad

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
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Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 4

Title
Biological Resources

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APPENDIX D
Aquatic Resources Survey Report

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Stantec

AQUATIC RESOURCES SURVEY REPORT AND PRELIMINARY JURISDICTIONAL ASSESSMENT

Santa Ana River Trail Phases 2, 2A, and 3A

July 15, 2022

Prepared for:
Riverside County Regional Park & Open-Space District
4600 Crestmore Road
Jurupa Valley, California 92509

Prepared by:
Stantec Consulting Services Inc.
735 East Carnegie Drive Suite 280
San Bernardino CA 92408-3588

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Prepared by Hannah Hart
(signature)
Hannah Hart, Project Biologist

Reviewed by Melissa Tu
(signature)
Melissa Tu, Senior Biologist

Reviewed by
(signature)
Geoff Hoetker, Senior Biologist

Prepared and Approved by
(signature)
Jared Varonin, Principal Biologist/Ecosystems Practice Leader

Table of Contents

Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted a delineation of waters of the United States (U.S.) (WOTUS), waters of the State (WOTS), and California Department of Fish and Wildlife (CDFW) jurisdictional waters, wetlands, and riparian habitat for the Santa Ana River Trail Project Phases 2, 2A, and 3A (Project) in Riverside County, California (Appendix A, Figures 1 and 2). The delineation was conducted on May 6, May 13, and December 8, 2021 within an 126-acre Survey Area (Aquatics Resources Survey Area [ARSA]) (Appendix A, Figure 3) in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (U.S. Army Corps of Engineers 2008a) and the *Implementation Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board [SWRCB] 2020).

Potentially jurisdictional waters, wetlands, and riparian habitats were mapped within the ARSA. Approximately 2.3 acres and 6,166 linear feet of potentially jurisdictional drainage features were mapped in the ARSA. Three-parameter wetlands were delineated within three areas in the ARSA; approximately 2.0 acres of wetlands were delineated in Phases 2, 2A, and 3A. Approximately 17.7 acres of riparian habitats were mapped within the ARSA. Proposed impacts to aquatic resources and impact figures are provided in Appendix G.

The purpose of this delineation of aquatic resources is to document and describe WOTUS, WOTS, and/or CDFW jurisdictional waters in accordance with reporting standards for the U.S. Army Corps of Engineers (USACE), the Santa Ana Regional Water Quality Control Board (RWQCB), and CDFW.

This delineation is subject to verification by the USACE, Santa Ana RWQCB, and CDFW. Stantec advises all parties to treat the information contained herein as preliminary until the USACE, Santa Ana RWQCB, and CDFW provide verification of the boundaries of their jurisdiction.

Acronyms / Abbreviations

APT	Antecedent Precipitation Tool
ARSA	Aquatic Resources Survey Area
BSA	Biological Survey Area
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
GPS	Global Positioning System
HUC	Hydrologic Unit Code
MCVII	Manual of California Vegetation II
NRCS	Natural Resources Conservation Service
OHWM	Ordinary high-water mark
Project	Santa Ana River Trail Project
RWQCB	Regional Water Quality Control Board
Stantec	Stantec Consulting Services Inc.
SWRCB	State Water Resources Control Board
U.S.	United States
USACE	U.S. States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WGS	World Geodetic System
WOTS	waters of the State
WOTUS	waters of the U.S.
WRCRCA	Western Riverside County Regional Conservation Authority

1 Introduction

This Aquatic Resources Survey Report and Preliminary Jurisdictional Assessment (Report) is intended to document and assess potential jurisdiction of the aquatic resources that are within the Santa Ana River Trail Project Phases 2, 2A, and 3A (Project) site in unincorporated Riverside County, California (Appendix A Figures 1 and 2). Aquatic resource surveys were conducted for the Project site and a 100-foot buffer (Aquatic Resources Survey Area [ARSA]) by Stantec Consulting Services Inc. (Stantec) Biologists Jared Varonin, Melissa Tu, and Ashleigh Townsend on May 6, 2021, Jared Varonin on May 13, 2021, Melissa Tu on December 8, 2021, Jared Varonin and Melissa Tu, Riverside County Transportation Commission, and the U.S. Army Corps of Engineers (USACE) on June 9, 2022, and Ashleigh Townsend and Hannah Hart on June 16, 2022. The ARSA is approximately 137 acres. During the May 6, 2021, survey, a habitat assessment was also conducted for the Project site and a 300-foot buffer (Biological Resources Survey Area (BSA).

This report summarizes the methods and results of the survey and provides an assessment of potential jurisdiction of aquatic resources within the ARSA. This survey supports project permitting for resources that may be located within the following jurisdictions:

- The USACE, pursuant to Section 404 of the Clean Water Act);
- The Santa Ana Regional Water Quality Control Board (RWQCB), pursuant to the State's Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, § 13050) and/or Section 401 of the Clean Water Act; and,
- The California Department of Fish and Wildlife (CDFW), pursuant to Section 1600 of the California Fish and Game Code.

Stantec advises all parties to treat the information contained herein as preliminary until the USACE, RWQCB, and/or CDFW provide verification of jurisdictional assessments.

1.1 Purpose

The purpose of this report is to document and map aquatic resources and assess the potential jurisdiction of the aquatic resources in the ARSA. This Report is being prepared to support the proposed Project and any associated permitting or planning purposes.

1.2 Project Description

The proposed Project consists of trail construction that would complete a portion of the larger 110-mile regional Santa Ana River Trail system. Specifically, the Project includes a 2.79-mile dual-track Class I multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. The Project includes the construction of three new trail segments, Phase 2 will be 0.65-mile long, Phase 2A will be 1.37-mile long, and Phase 3A will be 0.77-mile long. The three trail segments are shown in Appendix A Figures 2-1 to 2-4.

Once constructed, the trail would be Americans with Disabilities Act compliant and follow the California Department of Transportation Highway Design Manual guidance for bicycle paths.

The following construction is proposed:

- Class I bicycle path with adjacent pedestrian and equestrian path separated by a split rail fence with a general design, as follows:
    - Eight-to-ten-foot bicycle path travel way with two-foot shoulders
    - 10-foot-wide natural surface trail (pedestrian and equestrian path
    - Five percent max longitudinal slope
    - Two percent max crossfall path and shoulder slopes
    - Minimum 2 to 1 foot slope ratio for cut / fill slopes
- Signage and striping along the trail
- Implementation of drainage improvements
- Application of native hydroseed mix along slope areas of the new trail phases

At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 11 feet wide on the bridges and at the Temescal Wash crossing be 20 feet wide. A combined paved trail will also be required for a portion of the trail along West Rincon Street and Corydon Street within Phase 2 due to right-of-way constraints and existing Southern California Edison overhead powerlines.

1.2.1 DRAINAGE CROSSINGS

To protect the trail as it crosses drainages, riprap would be installed along the alignment. Table 1: Preliminary Riprap Quantities shows the estimated square feet of riprap in each trail phase.

Table 1. Preliminary Riprap Quantities

Phase	Riprap Location	Riprap Quantity (square feet)
3A	1	28,134
	2	1,418
2A (west)	3	5,577
2A (east)	4	805
2	5	801
	6	803
	7	842
	8	21,378
	Total	59,758

Source: Stantec 2022

In Phase 2, a box culvert extending approximately 50 feet across Temescal Wash is proposed. Clear-span bridges ranging in length from approximately 100-feet to 180-feet would be used to cross two un-named drainages located in Phase 2A.

1.2.2 TRAIL ACCESS

Trail access to each of the Phases would be achieved as follows:

- Phase 2: Stagecoach Road/Corydon Street (Stagecoach Park area) and West Rincon Street/Smith Avenue (Corona Airport area)
- Phase 2A: Auto Center Drive (western portion of trail) and Butterfield Drive (eastern portion of trail)
- Phase 3A: Auto Center Drive/Railroad Street (United States Army Corps of Engineers [USACE] office)

2 Environmental Setting/Existing Site Conditions

The environment setting and existing site conditions for the Project are described in the following sections. Vegetation communities, land cover types, and soils were mapped within the BSA as part of the habitat assessment. .

2.1 Topography and Surrounding Land Uses

The Project site traverses relatively flat areas of unincorporated Riverside County near the Santa Ana River, the Prado Basin, and the Corona Municipal Airport (Appendix A Figure 2). Elevations within the Project site range from approximately 500 to 600 feet above mean sea level as you move west to east.

The Project occurs within an approximately 46-acre area. In general, the Project site is characterized as open space. Land uses to the north are comprised of natural lands, open space, and residential, while uses to the south include residential, light industrial, and a freeway (SR-91). To the east, land uses include light industrial and natural lands, while to the west, uses include natural lands and a freeway (SR-91).

2.2 Vegetation Communities and Land Cover Types

As defined in the Manual of California Vegetation II (MCVII) (Sawyer et al. 2009), a vegetation alliance is "a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors." Generally, Stantec's mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, (generally disturbed) habitat occurs within the BSA that is not defined in MCVII. Therefore, land cover types assigned to these types of habitats are descriptive in nature and are not specifically referenced in the MCVII. A list of vegetation communities and acreages in the BSA are included in Table 2. The scientific and common names of each species detailed within this report correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al. 2012).

Table 2. Acreages of Vegetation Communities and Land Cover Types

Vegetation Communities and Land Cover Types	BSA[1] *(Acres)*
Vegetation Communities	
Arroyo willow thickets	30.36
California buckwheat scrub	12.47
California sagebrush scrub	37.73
Cheeseweed flats	0.48
Common and giant reed marshes	0.88

Coyote brush scrub	2.43
Elderberry stands	0.68
Eucalyptus groves	5.44
Menzie's goldenbush scrub	1.28
Mulefat thickets	31.85
Perennial pepperweed patches	0.63
Poison hemlock or fennel patches	0.10
Shining willow groves	8.76
Smartweed-cocklebur patches	0.02
Tamarisk thickets	0.21
Upland mustards or star-thistle fields	8.62
Western ragweed meadow	2.24
Wild oats and annual bromes grassland	56.08
Subtotal	*200.26*
Land Cover Types	
Disturbed/Developed	141.44
Non-vegetated channel	0.27
Open water	2.24
Partially vegetated channel	2.13
Restoration	10.54
Ruderal	5.58
Subtotal	*162.20*
Total[1]	**362.46**

Notes: [1] = the BSA acreages do not add up due to rounding.

2.2.1 VEGETATION COMMUNITIES

2.2.1.1 Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)

This vegetation classification generally consists of arroyo willow (*Salix lasiolepis*) as the dominant in the tall shrub or low tree canopy with bigleaf maple (*Acer macrophyllum*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood (*Cornus sericea*), California wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), other willows (*Salix* sp.), and black elderberry (*Sambucus nigra*) as co-dominants. Emergent trees may be present at a low cover. The plants are usually less than 10 meters in height, canopy is open to continuous, and the herbaceous layer is variable.

Within the BSA, this vegetation community is dominated by arroyo willow with smaller amounts of mulefat shrubs and scattered black willows. Most of the arroyo willow thickets occur in the BSA surrounding Phase 2. Approximately 30 acres of this community occurs in the BSA.

2.2.1.2 California Buckwheat Scrub (*Eriogonum fasciculatum* Shrubland Alliance)

This vegetation classification generally consists of California buckwheat (*Eriogonum fasciculatum*) as a dominant in the shrub canopy in cismontane stands with California sagebrush (*Artemisia californica*), coyote brush, sticky monkeyflower (*Diplacus aurantiacus*), bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), Menzies' goldenbush (*Isocoma menziesii*), common deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), white sage (*Salvia apiana*), or black sage (*Salvia mellifera*) as co-dominant species. Emergent trees may be present at low cover. Shrubs are usually less than two meters in height, canopy is continuous or intermittent, and the herbaceous layer is variable and may be grassy. Within the BSA, this vegetation is dominated by California buckwheat.

Within the BSA, this vegetation is dominated by California buckwheat with smaller amounts of California sagebrush, deerweed, and California brittlebush. California buckwheat scrub occurs in small patches in the BSA surrounding Phases 2A, 3, and 3A. Approximately 12.5 acres of this community occur in the BSA.

2.2.1.3 Coastal Sagebrush Scrub (*Artemisia californica* Shrubland Alliance)

This vegetation classification generally consists of California sagebrush as the dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod (*Cleome isomeris*), sticky monkeyflower, bush sunflower, brittlebush, desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal buckwheat (*Eriogonum cinereum*), California buckwheat, yellow yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), Menzie's goldenbush, heart leaved keckella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina*), chaparral prickly pear (*Opuntia littoralis*), evergreen buckthorn (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including southern California black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), or black elderberry. Shrubs are less than two meters in height or in two tiers with a second less than five meters tall. The canopy is intermittent to continuous, and the herbaceous layer is variable.

Within the BSA, this vegetation is dominated by California sagebrush with smaller amounts of California buckwheat and coyote brush. California sagebrush scrub occurs in large patches in the BSA in Phases 2A, 3, and 3A. Approximately 38 acres of this community occur in the BSA.

2.2.1.4 Cheeseweed Flats (*Malva parviflora*)

This non MCVII vegetation classification generally consists of a monoculture of cheeseweed (*Malva parviflora*).

Within the BSA, this vegetation is dominated by monoculture of dense cheeseweed with other non-native annual species such as short-pod mustard (*Hirschfeldia incana*) occasionally observed. Cheeseweed flats occur in one patch in the BSA southeast of Phase 2A and the area appears to have been previously

disturbed and may have been used as an access road in the past. Approximately 0.5 acre of this community occurs in the BSA.

2.2.1.5 Common and Giant Reed Marshes (*Phragmites australis Arundo donax* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by common reed (*Phragmites australis*) or giant reed (*Arundo donax*).

Within the BSA, this vegetation is dominated by giant reed. One reed marsh occurs in the BSA north of Phase 2A in an area surrounded by native riparian vegetation. Approximately an acre of this community occurs in the BSA.

2.2.1.6 Coyote Brush Scrub (*Baccharis pilularis* Shrubland Alliance)

This vegetation classification generally consists of coyote brush, California coffeeberry (*Frangula californica*) and/or coast silk tassel (*Garrya elliptica*) is dominant to co-dominant in the shrub canopy with coastal sagebrush, sticky monkeyflower, California buckwheat, deerweed, California blackberry (*Rubus ursinus*), white sage, purple sage (*Salvia leucophylla*) and poison oak. Emergent trees may be present at low cover.

Within the BSA, this vegetation is dominated by coyote brush with smaller amounts of deerweed, bush sunflower, mulefat, and Menzie's goldenbush. Coyote brush scrub occurs in small patches in the Phase 2A BSA and in the BSA west of Phase 3A. Approximately two acres of this community occurs in the BSA.

2.2.1.7 Elderberry Stands (*Sambucus nigra*)

This non MCVII vegetation classification generally consists of elderberry tress with occasional shrubs and an understory of native and non-native grasses and annual herb

Within the BSA, this vegetation is dominated by elderberry trees. One elderberry stand occurs in the BSA west of Phase 3A. Approximately 0.7 acre of this community occurs in the BSA.

2.2.1.8 Eucalyptus Woodland (*Eucalyptus* spp. Woodland Semi-Natural Alliance)

This non MCVII vegetation classification generally consists of eucalyptus species/gum trees (*Eucalyptus* sp.) as the dominant in the tree canopy. The trees are less than 60 meters in height, canopy is open to continuous, shrub layer is generally sparse, and the herbaceous layer is sparse to intermittent.

Within the BSA, this vegetation is dominated by large eucalyptus trees with bare ground along low drainage areas. Eucalyptus groves occur in the BSA in Phases 2A and 3A. Approximately five acres of this community occurs in the BSA.

2.2.1.9 Menzie's Goldenbush Scrub (*Isocoma menziesii* Shrubland Alliance)

This vegetation classification generally consists of Menzie's goldenbush as dominant or co-dominant in the shrub canopy with coastal sagebrush, coyote brush, broom baccharis (*Baccharis sarothroides*), giant coreopsis (*Coreopsis gigantea*), matchweed (*Gutierrezia californica*), island broom (*Acmispon dendroideus*), silver bush lupine (*Lupinus albifrons*), and Virginia glasswort (*Salicornia depressa*). Herbs commonly present include San Miguel Island milkvetch (*Astragalus miguelensis*), California orach (*Etriplex californica*), ripgut brome (*Bromus diandrus*), coast morning glory (*Calystegia macrostegia*), saltgrass (*Distichlis spicata*), and purple needlegrass (*Stipa pulchra*).

Within the BSA, this vegetation is dominated by Menzie's goldenbush with smaller amounts of coyote brush. California buckwheat, and quailbush (*Atriplex lentiformis*). This community occurs in one patch in the BSA north of Phase 2A. Approximately an acre of this community occurs in the BSA.

2.2.1.10 Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance)

This vegetation classification generally consists of mulefat (*Baccharis salicifolia*) as the dominant in the shrub canopy with coastal sagebrush, willow baccharis (*Baccharis emoryi*), coyote brush, laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry species (*Rubus* spp.), narrow leaved willow (*Salix exigua*), arroyo willow, black elderberry, and tamarisk species (*Tamarix* spp.) as co-dominants. Emergent trees may be present at low cover, including grey pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oak species (*Quercus* spp.), or willow species (*Salix* spp.). Shrubs are less than five meters in height, the canopy is continuous with tie tiers at less than two meters and at less than five meters, and the herbaceous layer is sparse.

Within the BSA, this vegetation is dominated by mulefat with smaller amounts of arroyo willow and coyote brush. This community occurs in the BSA of all three phases and most of this vegetation in the Phase 2 BSA. Approximately 32 acres of this community occurs in the BSA.

2.2.1.11 Perennial Pepperweed Patches (*Lepidium latifolium* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by perennial pepperweed (*Lepidium latifolium*). Emergent trees and shrubs may be present at low cover.

Within the BSA, this vegetation is dominated by perennial pepperweed. This community occurs in one patch in the BSA at the edge of Phases 2A and 3A. Approximately 0.6 acre of this community occurs in the BSA.

2.2.1.12 Poison hemlock or fennel patches (*Conium maculatum - Foeniculum vulgare* Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of thoroughwort (*Ageratina adenophora*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), Indian teasel (*Dipsacus sativus*) and/or sweet

fennel (*Foeniculum vulgare*). Emergent trees and shrubs may be present at low cover, including oak trees and coyote brush.

Within the BSA, this vegetation is dominated by poison hemlock. This community occurs in one patch in the BSA at the edge of Phases 2A and 3A. Approximately 0.6 acre of this community occurs in the BSA.

2.2.1.13 Shining Willow Groves (*Salix lucida* ssp. *lasiandra* Forest and Woodland Alliance)

This vegetation classification generally consists of shining willow (*Salix lucida*) as dominant or co-dominant in the tree canopy with bigleaf maple, white alder (*Alnus rhombifolia*), American dogwood, California sycamore, Freemont cottonwood, black cottonwood, coast live oak, willows, and blue elderberry.

Within the BSA, this vegetation is dominated by shining willow with smaller amounts of mulefat, other willow species, and castor bean. This community occurs in one large patch in the BSA in Phase 2A west of Butterfield Park. Approximately 0.6 acre of this community occurs in the BSA.

2.2.1.14 Smartweed and Cocklebur Patches (*Polygonum lapathifolium - Xanthium strumarium* Herbaceous Alliance)

This vegetation classification generally consists of slender sunflower (*Helianthus annuus*), curlytop knotweed (*Polygonum lapathifolium*) and/or cocklebur (*Xanthium strumarium*) or other knotweed or smartweed species as dominant or co-dominant in the herbaceous layer with fiveangled dodder (*Cuscuta pentagona*), tall flatsedge (*Cyperus eragrostis*), barnyard grass (*Echinochloa* spp.), pale spikerush (*Eleocharis macrostachya*), western goldentop (*Euthamia occidentalis*), rushes (*Juncus* spp.) and docks (*Rumex* spp.).

Within the BSA, this vegetation consists of cocklebur, sunflower, and perennial pepperweed. One 0.02-acre patch occurs in the BSA in Temescal Wash in Phase 2.

2.2.1.15 Tamarisk Thicket (*Tamarix* spp. Shrubland Semi-Natural Alliance)

This vegetation classification generally consists of salt cedar (*Tamarix ramosissima*) or another Tamarix species dominant in the shrub canopy. Emergent trees may be present at low cover, including Freemont's cottonwoods or willow trees.

Within the BSA, this vegetation is dominated by salt cedar. This community occurs in one linear patch along West Rincon Street in the BSA east of Phase 2. Approximately 0.2 acre of this community occurs in the BSA.

2.2.1.16 Upland mustards or star-thistle fields (*Brassica nigra – Centaurea [solstitialis, melitensis]* Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of black mustard (*Brassica nigra*), common mustard (*Brassica rapa*), Italian thistle (*Carduus pycnocephalus*), Maltese star thistle (*Centaurea melitensis*),

yellow starthistle (*Centaurea solstitialis*), cardoon artichoke thistle (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), short-pod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*), or similar ruderal forb is dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover.

Within the BSA, this vegetation is dominated by short-pod mustard and Maltese star-thistle with smaller amounts of other non-native annual grasses, mostly bromes, and non-native annual herbs. This community occurs along West Rincon Street in Phase 2 and in the eastern portion of Phase 3A. Approximately 8.6 acres of this community occurs in the BSA.

2.2.1.17 Western Ragweed Meadow (*Ambrosia psilostachya* Provisional Herbaceous Alliance)

This vegetation classification generally consists of western ragweed as dominant or co-dominant in the herbaceous layer with ripgut brome, soft chess (*Bromus hordeaceus*), Bermuda grass (*Cynodon dactylon*), filarees (*Erodium* spp.), gumplants (*Grindelia* spp.), barely (*Hordeum murinum*), checkerbloom (*Sidalcea malviflora*), and blue-eyed grass (*Sisyrinchium bellum*).

Within the BSA, this vegetation is dominated by western ragweed. Other non-native annuals occur in the flat area at the base of the Prado Basin spillway. This community occurs in one patch west of Phase 3A at the base of the Prado Basin spillway. Approximately two acres of this community occurs in the BSA. This vegetation community does not occur in the ARSA.

2.2.1.18 Wild Oats and Annual Brome Grasslands (*Avena* spp.-*Bromus* spp. Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of slim oat (*Avena barbata*), wildoats (*Avena fatua*), purple false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima*), ripgut brome, soft chess, and foxtail barley (*Hordeum murinum*) as dominant or co-dominant in the herbaceous layer with other non-natives such as Australian saltbush (*Atriplex semibaccata*) and barley species (*Hordeum* sp.). Emergent trees and shrubs may be present at low cover. Herbs are less than four feet in height and cover is open to continuous.

Within the BSA, this vegetation is dominated by bromes and other non-native annual grasses. Wild oats and annual brome grasslands occur in large patches in the BSA surrounding Phases 2A and 3A. Approximately 57 acres of this community occur in the BSA.

2.2.2 LAND COVER TYPES

2.2.2.1 Disturbed/Developed

This land cover type includes areas that have been graded or paved and are developed with urban infrastructure. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil such as along disturbed areas or roadsides. The Phase

2 BSA includes Corydon Street, West Rincon Street, and disturbed areas between West Rincon Street and the Corona Airport. The Phase 2A BSA includes dirt access roads, a large borrow pit, portions of the Corona Airport and Butterfield Park, and buildings south and west of Phase 2A. The Phase 3A BSA includes portions of SR-91. Approximately 140 acres of this land cover type occurs in the BSA.

2.2.2.2 Non-vegetated Channel

Non-vegetated channel is not a MCVII classification. In this land cover type, the area is unvegetated on a relatively permanent basis. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Holland 1986).

A drainage ditch occurs along the south side of Butterfield Drive in the Phase 2A BSA. Approximately 0.3 acre of this land cover type occurs within the BSA.

2.2.2.3 Open Water

This land cover type was used to map the approximate limits of the open water habitat within the Santa Ana River in the western portion of the BSA west of Phase 3A. Approximately two acres of this land cover type occurs within the BSA. This land cover type does not occur in the ARSA.

2.2.2.4 Partially Vegetated Channel

This land cover type is similar to non-vegetated channel but has more than 10 percent vegetative cover. Partially vegetated channel is not a MCVII classification. The lack of vegetation is due to flowing water during the rainy season. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel.

This land cover type includes Temescal Wash east and west of West Rincon Street in Phase 2. Some large willow trees have been established on the edges of the wash. Approximately two acres of this land cover type occur within the BSA.

2.2.2.5 Restoration Areas

Areas mapped as restoration were either observed to be undergoing active habitat restoration activities or were areas that have been previously restored and are being monitored or have been completed.

Two restoration areas occur within Phase 2A, and two restoration areas occur in the western portion of the BSA west of Phase 3A. Approximately 10.5 acres of this land cover type occur within the BSA.

2.2.2.6 Ruderal Areas

Ruderal vegetation is not a MCVII classification. This land cover type is usually sparsely vegetated with pioneer plant species that readily colonize open disturbed soil. In the BSA these include non-native annual grasses, bromes, redstem filaree, and Maltese star-thistle.

Ruderal patches occur in western portion of the BSA west of Phase 3A. Approximately 5.5 acres of this land cover type occur within the BSA.

2.3 Soils

Prior to conducting the field reconnaissance, historic soils data from the Natural Resources Conservation Service (NRCS) was used to determine potential soil types that may occur within the BSA (Appendix A Figure 4). Characteristics of soils present on the site are summarized in Table 3.

Table 3. Historic Soil Units Occurring within the BSA

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
AkC	Arbuckle loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; loam, gravelly loam, and stratified sandy loam to vert gravelly sandy clay loam; parent material consists of alluvium derived from metasedimentary rock; minor components include Cortina, Garretson, and Perkins.	32.57
AkD	Arbuckle loam, 8 to 15 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; loam, gravelly loam, and stratified sandy loam to very gravelly sandy clay loam; parent material consists of alluvium derived from metasedimentary rock; minor components include Perkins, Garretson, and Cortina.	17.81
AlC	Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19	A well-drained non-hydric soil associated with fan remnants at elevations between 690 and 1,470 feet, medium runoff; gravely loam, gravelly very fine sandy loam, gravelly loam, gravelly clay loam, and very gravelly sandy loam; parent material is derived from alluvium derived from igneous, metamorphic, and sedimentary rock; minor components include Perkins, Garretson, and Cortina.	5.26
AlE3	Arbuckle gravelly loam, 2 to 25 percent slopes, severely eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; gravelly loam, gravelly clay loam, and stratified very gravelly sandy loam to very gravelly sandy clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Garretson, Cortina, and Unnamed.	22.27
BP	Borrow pit	A hole, pit, or excavated area that was dug for the purposes of removing soils for a construction project.	32.20
DAM	Dams	Impounded waterbody.	2.16

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
GaC	Garretson very fine sandy loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 430 and 1,740 feet, medium runoff; very fine sandy loam and loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle, Perkins, and Cortina.	11.05
GfF2	Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded	A well-drained non-hydric soil associated with hills at elevations between 100 and 4,000 feet, medium runoff; very fine sandy loam and unweathered; parent material is derived from residuum weathered from sandstone; minor components include Altamont, Vallecitos, and Gaviota.	9.17
GrB	Grangeville sandy loam, sandy substratum, drained, 0 to 5 percent slopes	A moderately well-drained non-hydric soil associated with alluvial fans at elevations between 600 and 1,800 feet, very low runoff; sandy loam; parent material is derived from alluvium derived from granite; minor components include Dello and Traver.	3.59
GvB	Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes	A somewhat poorly drained non-hydric soil associated with alluvial fans at elevations between 10 and 1,800 feet, low runoff; fine sandy loam and sandy loam; parent material is derived from alluvium derived from granite; minor components include Dello and Traver.	29.23
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 150 to 900 feet, low runoff; coarse sandy loam, fine sandy loam, and stratified loamy sand to coarse sandy loam; parent material is derived from alluvium derived from granite; minor components include Greenfield, Ramona, Tujunga, and two unnamed soils.	3.48
MdC	Metz loamy sand, 2 to 8 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, low runoff; loamy sand and stratified sand to loamy sand; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and two unnamed soils.	16.17
MgB	Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, very low runoff; loamy sand, stratified sand to silt loam, and stratified gravelly coarse sand to gravelly sand; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and an unnamed soil.	57.04
MhB	Metz loamy fine sand, sandy loam substratum, 0 to 5 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, very low runoff; loamy fine sand and stratified sand to silt loam; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and an unnamed soil.	8.01
PeC	Perkins loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 60 and 1,700 feet, high runoff; loam and stratified very gravely sandy loam to very gravelly clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle and Garretson.	48.97

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
PgD2	Perkins gravelly loam, 8 to 15 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 60 and 1,700 feet, high runoff; gravelly loam and stratified vert gravelly sandy loam to very gravelly clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle and Garretson.	18.78
RaD2	Ramona sandy loam, 8 to 15 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans and terraces at elevations between 250 and 3,500 feet, medium runoff; sandy loam, fine sandy loam, sandy clay loam, and gravelly sandy loam; parent material is derived from alluvium derived from granite; minor components include Greenfield, Tujunga, and Hanford.	1.93
RaD3	Ramona sandy loam, 8 to 15 percent slopes, severely eroded	A well-drained non-hydric soil associated with alluvial fans and terraces at elevations between 250 and 3,500 feet, high runoff; sandy loam, fine sandy loam, sandy clay loam, and gravelly sandy loam; parent material is derived from alluvium derived from granite; minor components include Tujunga, Hanford, and Greenfield.	1.62
SeC2	San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 600 and 1,800 feet, low runoff; fine sandy loam and stratified sandy loam to silt loam; parent material is derived from residuum weathered from sedimentary rock; minor components include Metz and San timoteo.	2.24
SgA	San Emigdio loam, 0 to 2 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 430 and 2,340 feet, very low runoff; loam, fine sandy loam, and stratified sandy loam to silt loam; parent material is derived from alluvium derived from sedimentary rock; minor components include Metz and San timoteo.	20.93
TeG	Terrace escarpments	A steep slope pf 15 percent or greater made up of various layers of soil; parent material is derived from alluvium derived from mixed sources.	17.97
		Total	**362.45**

2.4 Climate

The weather of northwestern Riverside County is characteristic of the Mediterranean climate typical of southern California. It is characterized by warm, dry summers and wet, cooler winter months with relatively low amounts of rainfall. The annual high temperature in the region averages 78.2 °F (degrees Fahrenheit) and the annual low temperature average is 48.3°F. The region typically receives an average annual rainfall of 12.71 inches (WRCC 2021).

Average annual precipitation ranges from 12 inches per year in the coastal plain to 18 inches per year in the inland alluvial valleys, reaching 40 inches or more per year in the San Bernardino Mountains. Most of the precipitation occurs between November and March in the form of rain with variable amounts of snow in the higher mountains of the watershed. The climatological cycle of the region results in high surface water flows in the spring and early summer period, followed by typically low flows during the dry season.

Winter and spring floods generated by precipitation in the high mountains are not uncommon. Similarly, during the dry season, severe thunderstorms in the high mountains have periodically generated torrential floods in local streams (Santa Ana Watershed Project Authority 2005).

The Antecedent Precipitation Tool (APT) was queried for May 6, 2021, using six weather stations within 16 miles of the project site, including Chino Airport, Norco 1.7 W, Norco 1.2 S, Riverside Municipal Airport, Walnut NI FC102C, and Riverside Fire Station 3. The APT compares recent rainfall conditions within a given area to the rainfall conditions of the last 30 years. The APT shows that the May 6, 2021, survey dates had normal conditions and the drought index states that there was extreme drought (Appendix B).

2.5 Hydrology and Geomorphology

The ARSA is located within the Santa Ana Hydrologic Region of southern California. The Santa Ana Hydrologic Area is composed of 10 Hydrologic Areas: Bear Creek, Chino Creek, Headwaters Santa Ana River, Lower Santa Ana River, Lytle Creek, Middle Santa Ana River, San Timoteo Wash, Santiago Creek, Temescal Wash, and Upper Santa Ana River. The project is located within three different Hydrologic Unit Codes (HUC): Aliso Creek-Santa Ana River (HUC 180702031001) on the east, and East Etiwanda Creek-Santa Ana River (HUC 180702030804) and Lake Norconian-Temescal Wash (HUC 180702030606) to the west.

The Santa Ana Region covers approximately 2,650 square miles and encompasses most of Los Angeles County as well as portions of Orange, Riverside, and San Bernardino counties. The Santa Ana Region is bounded to the northwest by the Los Angeles County line which approximates the hydrologic divide. The east-west alignment of the San Gabriel and San Bernardino Mountains separates the Santa Ana Region basin from the Mojave Desert creating the northern divide. The Region is bounded to the south by the Santa Margarita River drainage area of the San Jacinto River that typically terminates at Lake Elsinore. The Santa Ana River flows through the Santa Ana Mountains into the Orange County coastal Plain, and ultimately into the Pacific Ocean creating its western boundary (SWRCB 2019).

The water features in the ARSA are ephemeral channels that flow to the Santa Ana River.

2.6 Geology

The Santa Ana Region occurs within the southwestern portion of California. It is bounded by the San Gabriel and San Bernardino Mountains of the Lahontan Basin to the north, the Los Angeles County line to the north-northwest, Santa Margarita River drainage area of the San Jacinto River to the south, and the Colorado River Basin Region to the east. Near Corona, the Santa Ana River has carved through the Santa Ana Mountains and flows into the Orange County coastal plain. The Pacific Ocean coast of the Santa Ana Region extends from north of Laguna Beach to the Los Angeles County line. This area of southern California is a geologically active area, including many major earthquake faults such as the San Andreas Fault, San Jacinto Fault, Elsinore-Whittier Fault, and the Newport-Inglewood Fault. The San Gabriel Mountains is divided from the San Bernardino Mountains by the San Andreas Fault. The San Jacinto Fault breaks from the San Andreas Fault near San Bernardino, affecting groundwater flows of the Santa Ana and San Jacinto Rivers by forcing groundwater to the surface at the Bunker Hill Dike. The

Elsinore-Whittier Fault travels under Prado Dam trending northwest to the southeast. The Newport-Inglewood Fault enters the region from the adjoining Los Angeles Basin and passes offshore at Newport Beach (SWRCB 2019a).

3 Assessment/Delineation Methods

The aquatic resource assessment includes three steps: a desktop review, a field assessment, and a jurisdictional assessment. Methods for each step are described below.

3.1 Desktop Review

Prior to conducting fieldwork, the following map resources were reviewed:

- U.S. Fish and Wildlife Service National Wetland Inventory (USFWS 2021).
- Google Earth color aerial imagery dating back to 1994 (Google Earth 2021).
- U.S. Geological Survey (USGS) 7.5-minute topographic maps dating back to 1896 (USGS 2021a).
- USGS National Hydrography Dataset Plus (USGS 2021b).

In addition to the previously listed resources that are routinely used as references to support aquatic resource delineations, the following regulatory information was also reviewed and used for reference. Additional regulatory information is provided in Appendix C.

- Sections 401 and 404 of the Clean Water Act.
- Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, § 13050).
- Section 1600 of the California Fish and Game Code.
- Western Riverside County Multiple Species Habitat Conservation Plan (WRCRCA 2021).

These resources were used to identify potential aquatic features based on changes in vegetation, topographic changes, and/or visible drainage patterns.

3.2 Field Assessment

The aquatic resources field assessment was conducted by Stantec Biologists Jared Varonin, Melissa Tu, and Ashleigh Townsend on May 6, 2021, Jared Varonin on May 13, 2021, Melissa Tu on December 8, Jared Varonin, Melissa Tu, Kevin Brant, Riverside County Transportation Commission staff, and the USACE staff on June 9, 2022, and Ashleigh Townsend and Hannah Hart on June 16, 2022. The last appreciable rainfall prior to the start of the field assessment as recorded by the Corona Municipal Airport Station was 0.48 inch and occurred on March 10, 2021 (NRCS 2021). No other rainfall was recorded for the duration of the field assessment.

Representative photographs of the aquatic resources in the ARSA were taken and are presented in Appendix D. Wetland determination data forms were completed and are provided in Appendix E. Plant species observed during field surveys were recorded using botanical nomenclature following the Jepson Herbarium online database, eFlora (Jepson Flora Project 2022), and are included in Appendix F.

All aquatic resources on-site were mapped with a Global Positioning System (GPS) receiver and documented to conduct a jurisdictional assessment for each agency on a feature-by-feature basis.

3.2.1 DRAINAGES AND OTHER WATERS

Drainages and other waters that do not fall within the "wetland" category (e.g., impoundments, tidal channels, etc.) but do potentially fall under the jurisdiction of USACE, RWQCB, and/or CDFW were also mapped within the ARSA. As with wetlands, the definition of what constitutes a "drainage" or other water varies between the agencies. As such, a variety of data was collected on the ground in order establish adequate documentation per the various agency requirements. Additional detail for each agency is included below.

- **USACE**: Drainages were mapped based on the presence of an ordinary high-water mark (OHWM). Culverts were also mapped to assist with determining overall connectivity.
- **RWQCB:** The RWQCBs follow the USACE methods to determine the presence of a drainage, following previously listed guidance and methods based on presence of an OHWM. The RWQCB also takes jurisdiction over bed and bank to the extent of the top of bank.
- **CDFW:** Typically, top of bank measurements would be noted for each drainage, also called a "stream" and defined under Title 14, CCR Section 1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that support or has supported riparian vegetation." The term "stream" does not include areas under tidal influence. In general, CDFW jurisdiction generally extends beyond the bed and banks of a stream to the extent of contiguous riparian habitat.

Drainages were mapped using a combination of mapping lines along the non-wetland aquatic resources within the ARSA. Sample points were also mapped to mark locations where drainage data was collected. Spatial data mapping was the same as outlined above for wetlands: using a sub-meter Arrow GPS receiver paired with Collector for ArcGIS™ (Collector) . All spatial data was collected in the World Geodetic System (WGS) 84 datum. Representative photographs were also taken of sample points and features. The following attributes were collected or measured for each mapped drainage where applicable: OHWM width and depth, hydrologic regime, OHWM indicators, substrate below OHWM, and depth of water based on OHWM indicators. All potentially jurisdictional drainages with primary or secondary indicators of OHWM and bed and bank were mapped.

3.2.2 WETLANDS

All potential wetland aquatic resources were evaluated within the ARSA. The definition of what constitutes a "wetland" varies between the agencies. As such, a variety of data was collected on the ground to establish adequate documentation per the various agency requirements. The definition of a "wetland" summarized by agency is as follows:

- **USACE**: Wetland delineation per USACE guidance follows the routine determination method given in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the revised procedures in the Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). This methodology entails examination of specific sample points in both wetlands and uplands (i.e., paired points) to determine the boundaries of wetland features. Sample points are examined for hydrophytic vegetation, hydric soils, and wetland hydrology. In most cases, by the federal definition, all three parameters must be present for an area to be considered a wetland. Problematic situations in which only two parameters are met do occur in the Arid West (outlined in the Arid West Regional Supplement), especially in areas that have been altered by human activity.

- **RWQCB:** Wetlands as defined and adopted on April 2, 2019, and updated on April 6, 2021, by the SWRCB largely follow the USACE three-parameter requirement as outlined above. However, unlike the federal definition, the SWRCB wetland definition allows for the presence of a hydric substrate (i.e., a substrate with anaerobic conditions in the upper substrate) as a criterion for wetland identification (not just wetland soils) and wetland hydrology for an area devoid of vegetation (less than 5 percent cover) to be considered a wetland.

- **CDFW:** Previous guidance by CDFW considers riparian canopy and riparian wetlands under the jurisdiction of CDFW when a wetland, shrub, or forest community associated with a drainage feature or “stream” passes the USACE criterion for hydrophytic vegetation.

Three-parameter sampling points were collected at three locations. Two sample points were collected in Phase 2A and one in Phase 3A. Three-parameter wetlands were documented in the Phase 2A Study Area.

CDFW riparian features were mapped using a sub-meter Arrow GPS receiver paired with Collector f based on the limits of the hydrophytic vegetation. All spatial data was collected in the WGS 84 data. The riparian features were assigned a vegetation community based on dominant vegetation within each delineated feature. Nomenclature for vegetation communities contained within aquatic resources follows the alliances and associations used in the MCV and updated in the online edition (Sawyer et al. 2009, CNPS 2021). Detailed descriptions applicable at the aquatic resource survey level (i.e., vegetation for each delineated feature) are provided in the Results Section.

3.2.3 NEGATIVE DATA COLLECTION

Prior to field surveys, suspected wetland areas within the ARSA were detected based on available resources such as aerial imagery and topography. These areas were verified during field surveys and when a feature was not detected, a negative or “upland” sample point was mapped and characterized to document a lack of wetland and/or drainage indicators for all three agencies.

3.3 Jurisdictional Assessment

A jurisdictional assessment was made for each feature after completion of field work and completion of a working aquatic resource map. Once the resource map was completed, each feature was analyzed per a

variety of requirements to determine potential jurisdiction under each of the four resource agencies. All jurisdictional assessments in this report should be considered preliminary until the USACE, RWQCB, and/or CDFW provide verification. Specifics as to potential jurisdiction for each agency are described below.

3.3.1 DRAINAGES AND OTHER WATERS

The potential jurisdiction of one agency or another once a feature is defined as non-wetland drainage (or other water) varies across the agencies. All potential drainages and other waters were evaluated to identify their connection to on-site and off-site hydrologic resources. All mapped features were then assessed for potential jurisdiction under each agency following agency guidance:

- **USACE:** Other waters are defined as traditional navigable waters and their tributaries (33 Code of Federal Regulations [CFR] 329). Delineation of other waters was based on presence of an OHWM as defined in USACE regulations (33 CFR 328.3 and 33 CFR 328.4). Physical characteristics of an OHWM include but are not limited to the following conditions: a natural line impressed on the bank, shelving, changes in the characterof the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washedaway, scour, deposition, presence of bed and bank, and water staining. At least one data point was selectedto best represent the OHWM of other waters for each other waters type. These data points were used to collect information regarding the OHWM, along with dominant substrate, anthropogenic influences, and other features (floodplain, low flow channel, etc.) associated with the other waters' type.

- **RWQCB:** The RWQCB generally takes jurisdiction over all waters defined as "drainages" based upon the presence of OHWM and/or bed and bank; connectivity is not considered. In addition, isolated open waters or impoundments are also generally considered under the jurisdiction of the RWQCB. Therefore, all drainages (tidal or otherwise) or other non-wetland waters on-site are considered potentially jurisdictional.

- **CDFW:** "Stream" is not defined in the Fish and Game Code and CDFG has not promulgated any regulation that defines "stream." However, the Fish and Game Commission has defined "stream" in section 1.72 in Title 14 of the California Code of Regulations as follows:

  – A body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.

  In general, CDFW jurisdiction generally extends beyond the bed and banks of a stream to the extent of contiguous riparian habitat.

3.3.2 WETLANDS

As with what defines a "wetland", the potential jurisdiction of a wetland under one or more agencies varies. All mapped features were assessed for potential jurisdiction under each agency following their specific guidance:

- **USACE:** all three-parameter wetlands adjacent to WOTUS.
- **RWQCB:** Under the broad Porter-Cologne definition of WOTS, all waters defined as “wetlands” under the USACE three-parameter requirement, including isolated features, would likely be considered RWQCB jurisdictional. Therefore, all wetlands that meet the three-parameter wetland criterion are considered potentially jurisdictional.
- **CDFW**: Wetlands typically fall under the jurisdiction of CDFW when they are adjacent to or associated with a drainage feature or “stream”. However, Under Title 14, CCR Section 1.72, a “stream” is defined as “a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.”

In summary, potential jurisdiction of wetlands by agency was assessed and generally assigned as follows: all three-parameter wetlands within the ARSA were considered potentially RWQCB jurisdictional; all three-parameter wetlands adjacent to an (a)(1) – (a)(3) WOTUS were considered potentially USACE jurisdictional. Assessment of each mapped resource was on a case-by-case basis; additional details on each case are included in the results section.

4 Results

The ARSA includes ephemeral channels, three-parameter wetland features, wetland and non-wetland sample points, and riparian vegetation that are described in the following sections.

4.1 Drainages and Other Waters

Ten earthen bottom drainages and one concrete lined channel occur in the ARSA (Appendix A Figures 5 and 6). The acreages and linear feet of the eleven WOTUS/WOTS are presented in Table 4 and described in the following sections. A list of WOTUS/WOTUS temporary and permanent impact acreages and impact figures are included in Appendix G.

Table 4. Waters of the U.S./Waters of the State Acreages within the ARSA and Project Area

Trail Phase	Drainage Segment	Jurisdiction	ARSA		Project Area[1]	
			Acreage	Linear Feet	Acreage	Linear Feet
2	1	CDFW, RWQCB, USACE	1.216	616	0.464	337
	1A	CDFW, RWQCB, USACE	0.022	121	-	-
2A	2A	CDFW, RWQCB, USACE	0.078	334	-	-
	2B	CDFW, RWQCB, USACE	0.042	180	-	-
	2C	CDFW, RWQCB, USACE	0.034	149	-	-
	2D	CDFW, RWQCB, USACE	0.056	246	-	-
	3	CDFW, RWQCB, USACE	0.274	537	-	-
	4A[a]	CDFW, RWQCB, USACE	0.066	310	0.022	34
	4B[a]	CDFW, RWQCB, USACE	0.018	97	0.012	14
	5	CDFW, RWQCB, USACE	0.035	254	0.015	104
	5A	CDFW, RWQCB, USACE	0.009	65	-	-
	6	CDFW, RWQCB, USACE	0.037	265	0.030	212
	7	CDFW, RWQCB, USACE	0.011	339	-	-
	8	CDFW, RWQCB, USACE	0.200	879	0.153	166
	9	CDFW, RWQCB, USACE	0.084	791	0.068	390
3A	10A	CDFW, RWQCB, USACE	0.044	318	0.026	202
	10B	CDFW, RWQCB, USACE	0.034	188	0.011	73
	11[b]	CDFW, RWQCB, USACE	0.030	477	0.015	277
Total			**2.290**	**6,166**	**0.816**	**1,809**

Note: [1] = The Project area acreages are from the June 2022 design.
[a] = Concrete lined channel. Additional 0.112 acre and 0.029 acre of RWQCB and CDFW jurisdiction between the channel and top of bank for 4A and 4B, respectively.
[b] = Most of the channel is a 3-Paramer wetland and is included in Table 5.

4.1.1 DRAINAGE 1

Drainage 1, Temescal Wash, an ephemeral channel is in Phase 2 and is the largest drainage in the ARSA (Appendix A Figure 5-1). It flows from east to west under West Rincon Drive. The edges of the drainage near West Rincon Drive are lined with riprap and cement. The channel is mostly non-vegetated, but some large willows occur along the edge of the channel. A culvert and side channel connect to Temescal Wash on the southwest side of the wash. Temescal Wash flows west and connects to the Santa Ana River. Drainage 1A is a north/south channel that flows from a culvert into Temescal Wash. Impacts to Drainage 1 will be minimized but temporary and permanent impacts are anticipated from the implementation of the Project.

4.1.2 DRAINAGE 2

Drainage 2, an ephemeral channel, occurs in the ARSA north of Phase 2A (Appendix A Figure 5-2). It is north of Butterfield Drive and south of the Corona Airport. It collects stormwater flows and runoff. Drainage 2 is broken up into four segments, A to D. The drainage flows from east to west through culverts under roads to the Corona Airport. It continues west outside the ARSA and flows to the Santa Ana River. No impacts are expected to occur to Drainage 2.

4.1.3 DRAINAGE 3

Drainage 3, an ephemeral channel, occurs in the ARSA south of Phase 2A (Appendix A Figure 5-2). It is an unvegetated roadside ditch that collects storm flows and runoff on the southside of Butterflied Drive. It flows through a culvert south of Butterfield Drive and connects to a drainage within a wetland on the west side of the ARSA. The drainage flows to the Santa Ana River. No impacts are expected to occur to Drainage 3.

4.1.4 DRAINAGE 4

Drainage 4, an almost flat concrete channel, occurs in the Phase 2A ARSA (Appendix A Figure 5-2). Drainage 4 is divided in into 4A and 4B. Segment 4A is on the south side of the dirt road and Segment 4B is on the north side of the dirt road. A culvert connects the two segments under the dirt road. This channel is likely fed by off-site runoff. Sediment is accumulating along the edges of the channel that supports hydrophytic vegetation. Small portions of the Drainage 4 are within the Project area. Most of the Project alignment is within the dirt road over the concrete channel.. Impacts will be minimized but temporary and permanent impacts are anticipated from the implementation of the Project.

4.1.5 DRAINAGE 5

Drainage 5, an ephemeral channel, occurs in the Phase 2A ARSA (Appendix A Figure 5-2). It has a defined bed south of the dirt access road in Phase 2A; however, the channel does not continue north of the dirt road. This drainage is presented as a USACE regulated WOTUS. However, there is not a direct connection the Santa Ana River due to the dirt road and other disturbances in the area. The channel historically connected to riparian vegetation northeast of the road and ultimately the Santa Ana River.

Flows from this drainage currently sheet-flow towards the riparian areas to the east. Impacts will be minimized but temporary and permanent impacts are anticipated from the implementation of the Project.

4.1.6 DRAINAGE 6

Drainage 6, an ephemeral channel, occurs in the Phase 2A ARSA (Appendix A Figure 5-2). It has a defined bed south of the dirt access road in Phase 2A; however, the OHWM and channel does not continue north of the dirt road. This drainage is presented as a USACE regulated WOTUS. However, there is not a direct connection the Santa Ana River due to the dirt road and other disturbances in the area. The channel historically connected to riparian vegetation northeast of the road and ultimately the Santa Ana River. Flows from this drainage currently sheet-flow towards the wetland areas to the east. Impacts will be minimized but temporary and permanent impacts are anticipated from the implementation of the Project.

4.1.7 DRAINAGE 7

Drainage 7, an ephemeral channel, occurs in the ARSA south of Phase 2A (Appendix A Figure 5-3). It has a OHWM south of the disturbed borrow pit, but the drainage does not continue and does not connect to the Santa Ana River. This drainage is presented as a USACE regulated WOTUS. However, there is not a direct connection the Santa Ana River due to the borrow pit and other disturbances in the area. The channel historically connected to the Santa Ana River. No impacts are expected to occur to Drainage 7.

4.1.8 DRAINAGE 8

Drainage 8, an ephemeral channel, occurs in the Phase 2A ARSA (Appendix A Figure 5-3). It is a partially vegetated channel surrounded by arroyo willow thickets. The drainage continues north and connects to the Santa Ana River; a bridge over this drainage is proposed. Impacts will be minimized but temporary impacts during bridge construction are anticipated from the implementation of the Project.

4.1.9 DRAINAGE 9

Drainage 9, an ephemeral channel, occurs in the Phase 2A ARSA (Appendix A Figure 5-3). It is a partially vegetated channel surrounded by mulefat thickets. The drainage continues north and connects to drainage 8; a bridge over this drainage is proposed. Impacts will be minimized but temporary impacts during bridge construction are anticipated from the implementation of the Project.

4.1.10 DRAINAGE 10

Drainage 10, an ephemeral channel, occurs in the Phase 3A ARSA (Appendix A Figure 5-4). It is a partially vegetated channel surrounded by mulefat thickets and eucalyptus groves. Drainage 10 is divided in into 10A and 10B. Segment 10A is on the east/southeast side of the dirt road and Segment 10B is on the west/northwest side of the dirt road. A culvert connects the two segments under the dirt road. This drainage continues west and connects to the Santa Ana River. Impacts will be minimized but temporary and permanent impacts are anticipated from the implementation of the Project.

4.1.11 DRAINAGE 11

Drainage 11, an ephemeral channel, occurs in the Phase 3A ARSA (Appendix A Figure 5-4). It is a partially vegetated channel surrounded by mulefat thickets. The drainage continues north through a Eucalyptus grove and connects to the Santa Ana River. Impacts will be minimized but temporary and permanent impacts are anticipated from the implementation of the Project.

4.2 Wetlands

Approximately 2.0 acres of three-parameter wetlands occur in three areas of the ARSA (Table 5 and Appendix A Figure 6).

A small 0.046-acre wetland (sample point PH2-1) was mapped in Temescal Wash (Drainage 1) on June 9, 2022 (Appendix A Figure 5-1 and Figure 6 and Appendix E Wetland Determination Forms). Hydrophytic vegetation dominated by cocklebur occurs in the wetland. Hydric soil and wetland hydrology were also documented. Half of the wetland will be temporarily or permanently impacted by the Project (refer to Appendix G Table G-1).

Approximately 1.9 acres of shining willow groves occur in Phase 2A (Appendix A Figure 5-2 and Figure 6). Wetland sample point PH2A-1 was documented in the shining willow grove (Appendix A Figure 5-2 and Appendix E Wetland Determination Forms). Hydrophytic vegetation dominated by shining willows, arroyo willow, and mulefat occur in the wetlands. Standing water was present during the delineation on May 6, 2021. Hydric soil was assumed because the soil was too wet to dig a soil pit. These wetlands are adjacent to the Project Area and will be avoided.

The Drainage 11 channel surrounded by mulefat thickets was mapped as a wetland (sample point PH3A-1) (Appendix A Figure 5-4 and Figure 6). Hydrophytic vegetation dominated by mulefat occurs over the wetland. Hydric soil and wetland hydrology were also documented. Most of the wetland/channel will be impacted by the Project (refer to Appendix G Table G-1).

Table 5. Three-Parameter Wetlands within the ARSA and Project Area

Trail Phase	Drainage(s)	Wetland ID	Jurisdiction	ARSA	Project Area
				Acreage	Acreage
2	1	PH2-1	USACE, CDFW, RWQCB	0.046	0.023
2A	3, 4	PH2A-1	USACE, CDFW, RWQCB	1.897	0
3A	11	PH3A-1	USACE, CDFW, RWQCB	0.033	0.032
			Total	1.976	0.055

4.3 Riparian Habitat

Approximately 17.7 acres of riparian habitat occurs in the ARSA and approximately 8.2 acres of riparian habitat occurs in the Project area. Riparian habitat occurs in all three phases of the Project. The Phase 2 ARSA is dominated by riparian vegetation (Appendix A Figure 5-1). The Phase 2 Project area includes impacts to dense arroyo willow thickets along the north side and open mulefat thickets along the west

side (Appendix A Figure 3-1). The Phase 2A ARSA includes patches of riparian habitat (Appendix A Figures 5-2 and 5-3). The Phase 2A Project area includes impacts to riparian vegetation along drainages 5, 6, 8 and 9 (Appendix A Figures 5-2 and 5-3). The Phase 3A ARSA includes three mulefat thicket patches (Appendix Figure 3-4). The Phase 3A Project area includes impacts to the mulefat thickets along drainages 10 and 11 (Appendix A Figure 5-4).

4.4 Negative Data Points

Non-wetland sampling points PH2A-2, PH3A-2, and PH3A-3 were recorded in Phases 2A and 3A of ARSA (Appendix A, Figures 5-2 and 5-4 and Appendix E Wetland Determination Forms). Sample point PH2A-2 was next to the wetland sample point PH2A-1 wetland area in Phase 2A. Hydrophytic vegetation dominated by mulefat occurred in the sample area. The soil in the pit was not hydric and the area did not have any wetland hydrology. The soil was hard and dry, and the pit could only be dug a few inches The soil was uniform in color and did not display any hydric characteristics.

Sampling point PH3A-2 was near wetland sampling point PH3A-1 wetland area in Phase 3A (Appendix A Figure 5-4). Hydrophytic vegetation dominated by mulefat with short-pod mustard and ripgut brome occurred in the sample area. The soil in the pit was not hydric and the area did not have any wetland hydrology. The soil was hard and dry, and the pit could only be dug a few inches The soil was uniform in color and did not display any hydric characteristics (Appendix E Wetland Determination Forms).

Sample point PH3A-3 was in Drainage 10 downstream of the large rocks (Appendix A Figure 5-4). Hydrophytic vegetation dominated by mulefat occurred in the sample area. The soil in the pit was not hydric and the area did not have any wetland hydrology. The soil was uniform in color and did not display any hydric characteristics (Appendix E Wetland Determination Forms).

5 Conclusion

Eleven ephemeral drainage channels and top of banks, three 3-parameter wetland areas, and riparian habitat were mapped within the ARSA and assessed for potential jurisdiction. All the aquatic features are potentially jurisdictional under the CDFW and Santa Ana RWQCB. The eleven drainage channels and wetlands are also potentially jurisdictional WOTUS/WOTS.

Approximately 2.3 acres and 6,166 linear feet of potentially jurisdictional non-wetland drainage channels were delineated within the ARSA. Approximately two acres of three-parameter wetlands were delineated in Phases 2A and 3A of the ARSA. Riparian habitat delineated within the ARSA encompassed a total of 17.7 acres of habitat.

Determinations of jurisdictional waters, wetlands, and riparian habitat in this report were based on current conditions, (i.e., normal circumstances) and were made in accordance with relevant USACE, SWRCB and CDFW guidance. Determinations are subject to verification by the USACE, Santa Ana RWQCB and CDFW. Stantec advises all interested parties to treat the information contained herein as preliminary pending verification of jurisdictional boundaries by the regulatory agencies.

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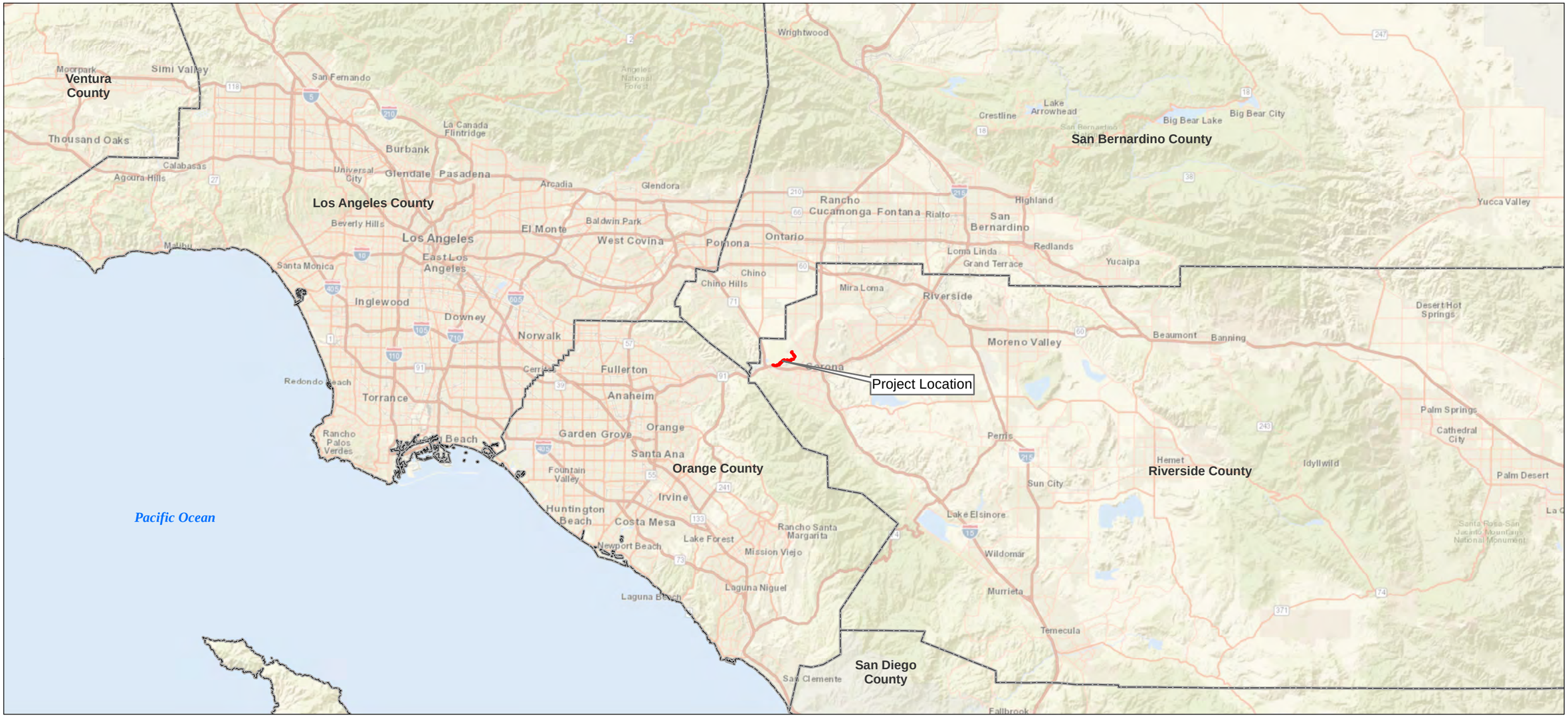
APPENDICIES

Appendix A Figures



Project Location

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Stantec

Project Location	Prepared by DL on 2022-06-29
Near Corona	TR by SET on 2022-06-29
Riverside County, California	IR by JV on 2022-06-29
Client/Project	2042483140
Riverside County Regional Park & Open-Space District	
Santa Ana River Trail Project	
Aquatic Resources Survey Report	
Figure No.	
1	
Title	
Regional Location	

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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△ Phase 2A End Location / Phase 3A Start Location

Railroad

Proposed Action (2022 Trail-60% Design)

Temporary Impact (54.00 ac.)

Permanent Impact (11.54 ac.)

0 1,200 2,400 Feet

(At original document size of 11x17)
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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
2 - 0

Title
Site Plan

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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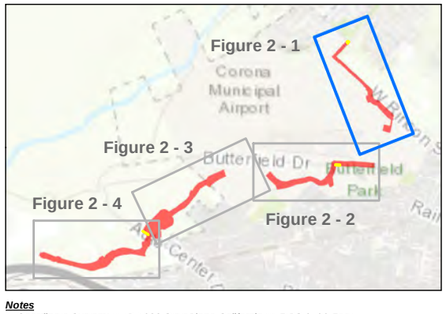

Proposed Action (2022 Trail-60% Design)

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- Permanent Impact (11.54 ac.)

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(At original document size of 11x17)
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N

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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
2 - 1

Title
Plan Sheet 1

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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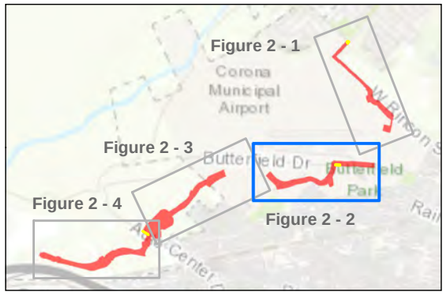

Proposed Action (2022 Trail-60% Design)

- Temporary Impact (54.00 ac.)
- Permanent Impact (11.54 ac.)

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N

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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
2 - 2

Title
Plan Sheet 2

Notes
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2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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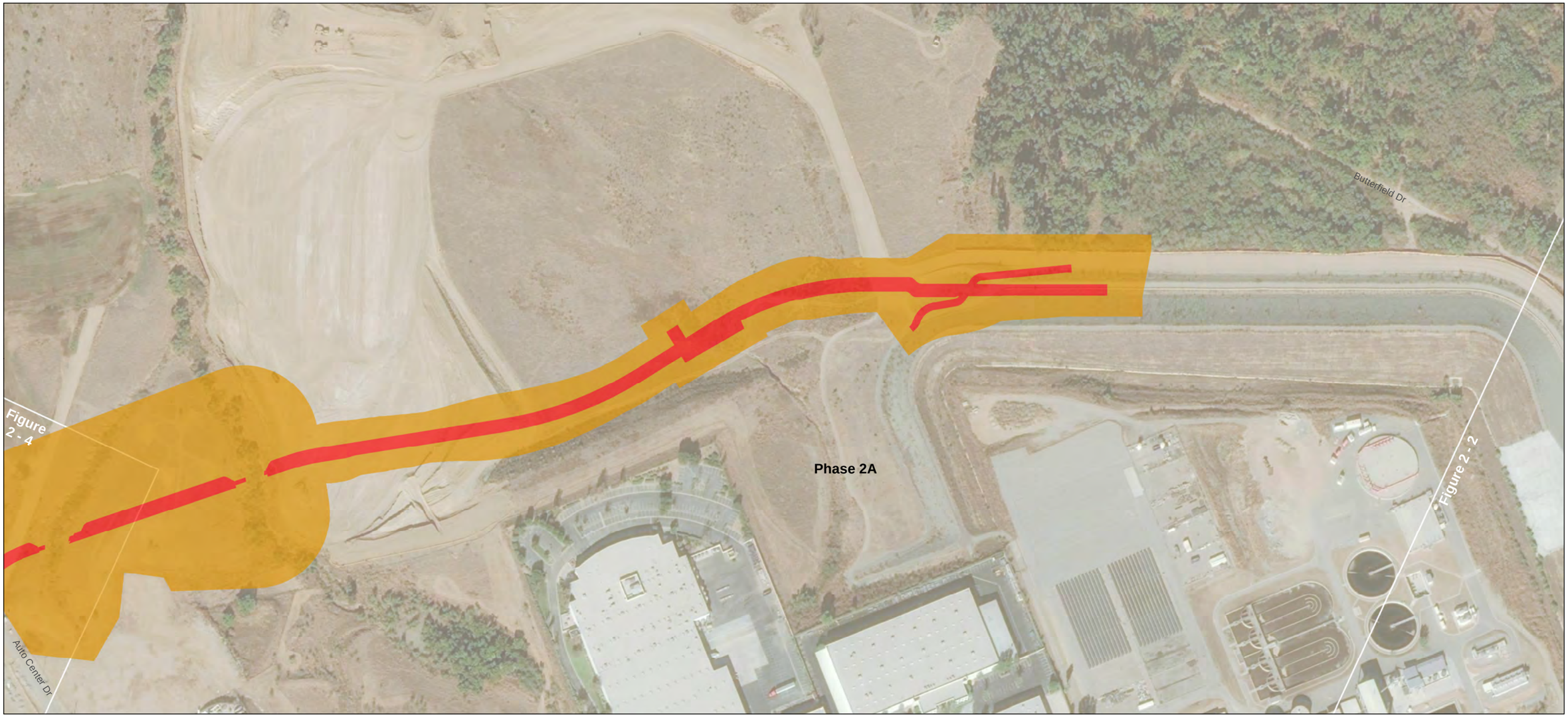

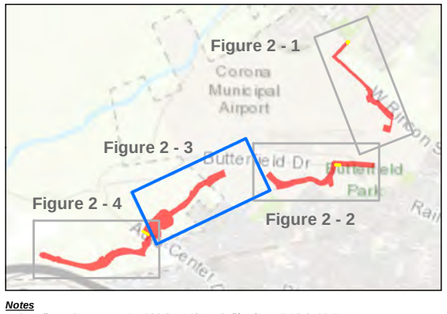

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- Permanent Impact (11.54 ac.)

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Stantec

Project Location	Prepared by DL on 2022-06-29
Near Corona	TR by SET on 2022-06-29
Riverside County, California	IR by JV on 2022-06-29
Client/Project	2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
2 - 3

Title
Plan Sheet 3

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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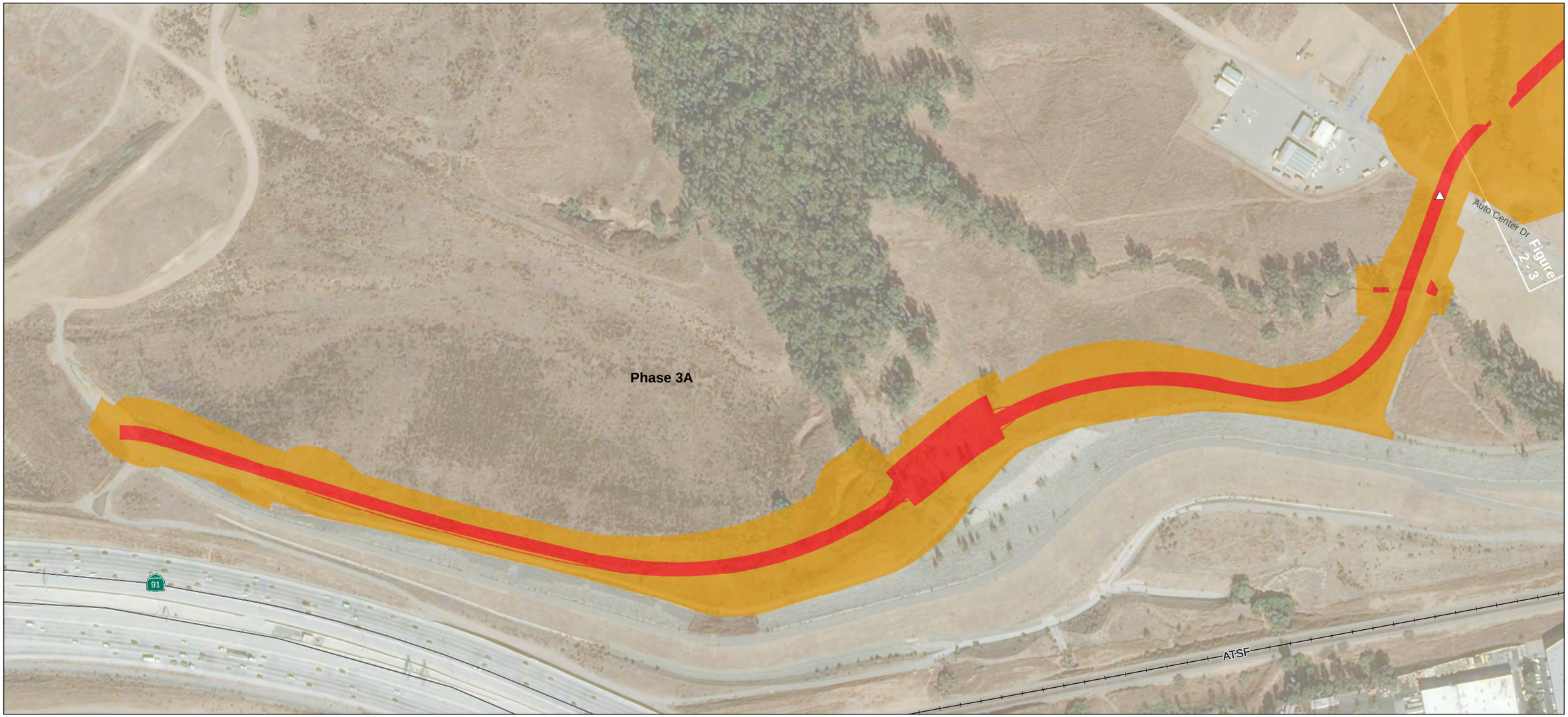

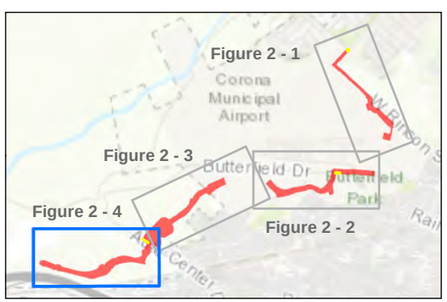

△ Phase 2A End Location / Phase 3A Start Location

Railroad

Proposed Action (2022 Trail-60% Design)

Temporary Impact (54.00 ac.)

Permanent Impact (11.54 ac.)

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N

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Project Location
Near Corona
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
2 - 4

Title
Plan Sheet 4

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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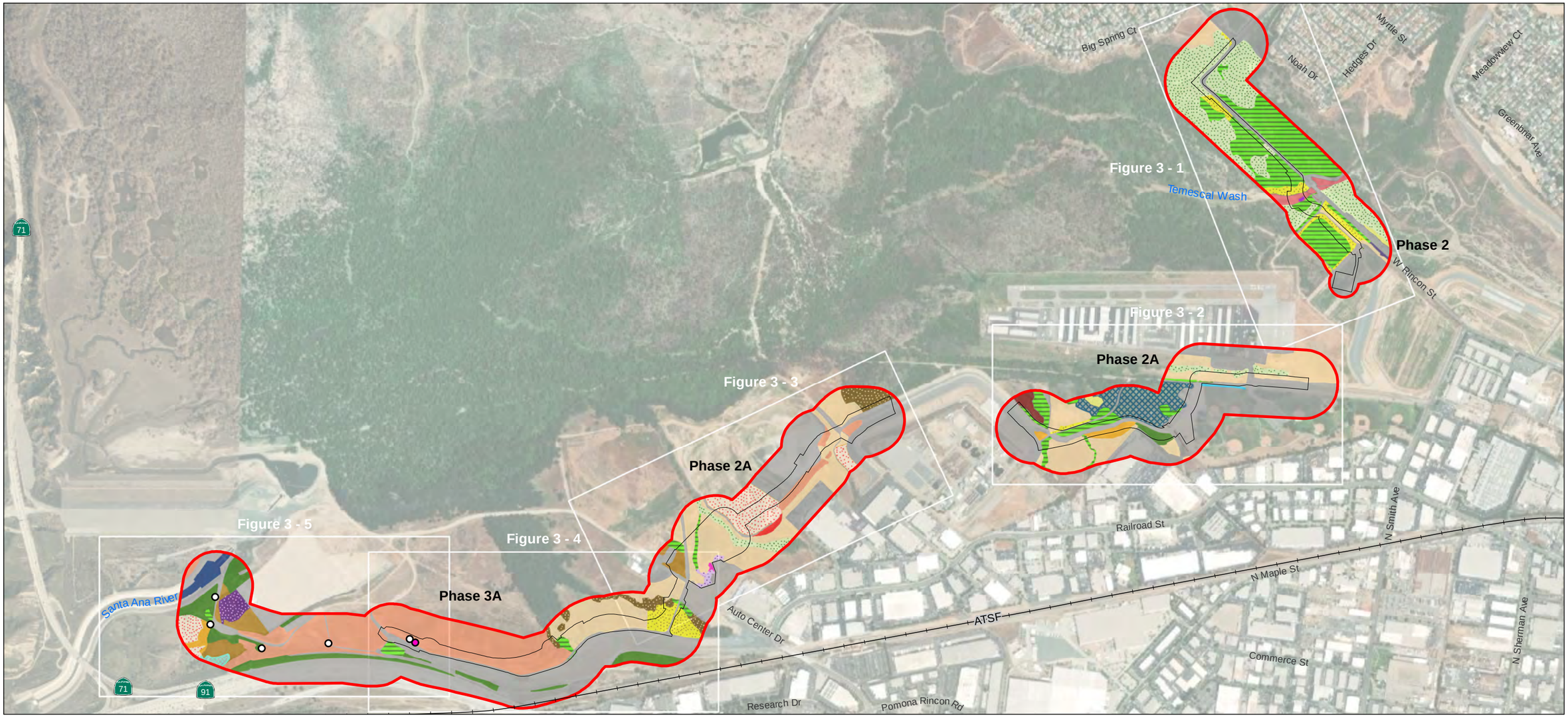

- Biological Survey Area
- Project Footprint

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
- Cheeseweed flats
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Eucalyptus groves
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Open water
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Shining willow groves
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Western ragweed meadow
- Wild oats and annual brome grasslands

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
3 - 0

Title
Biological Resources

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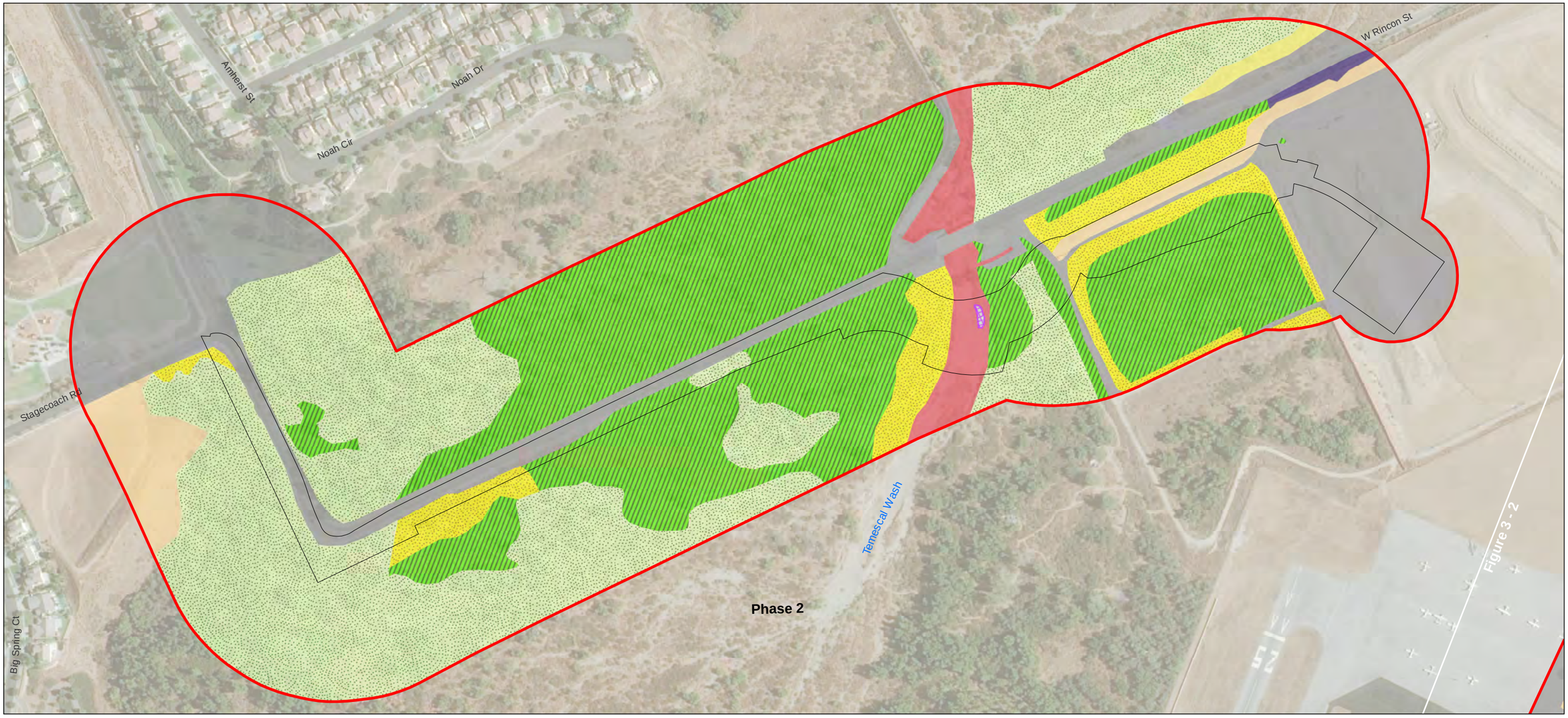

- Biological Survey Area
- Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- Disturbed/Developed
- Giant reed stands
- Mulefat thickets
- Partially vegetated channel
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
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Stantec

Project Location
Near Corona
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Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure
3 - 1

Title
Biological Resources

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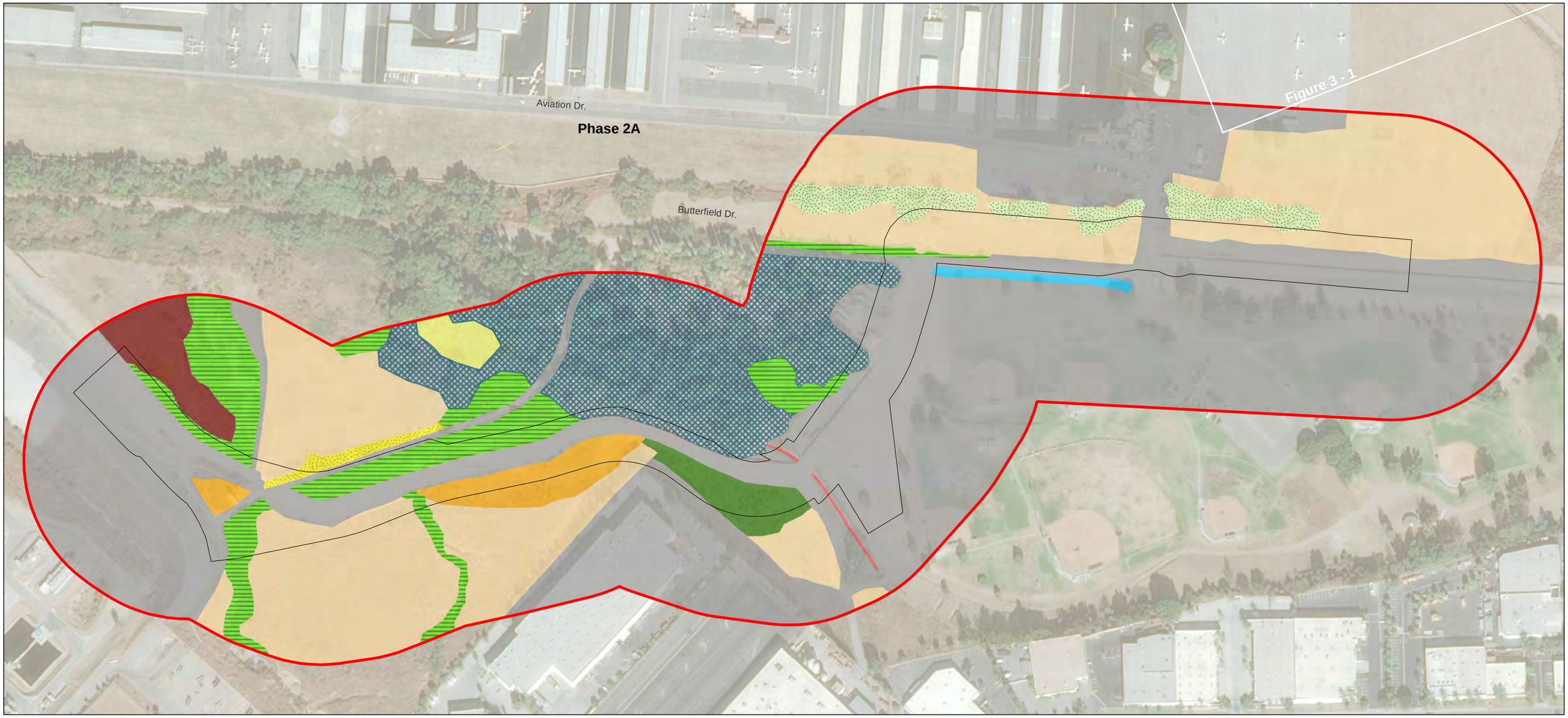

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- Coyote brush scrub
- Disturbed/Developed
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Shining willow groves
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

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2. Data Sources:Stantec 2021.
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Stantec

Project Location
Near Corona
Riverside County, California

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Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure
3 - 2

Title
Biological Resources

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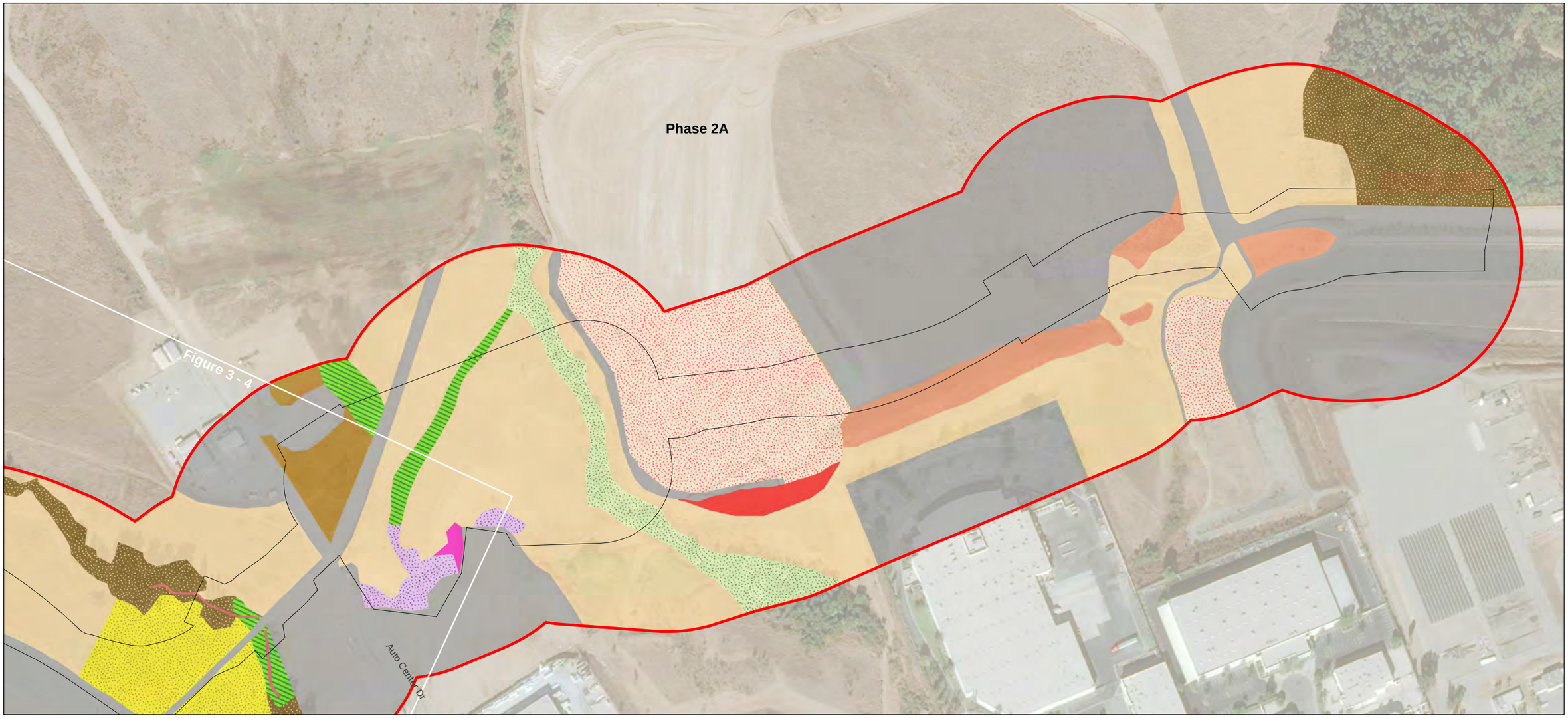

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California sagebrush scrub
- Cheeseweed flats
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

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Notes
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Stantec

Project Location
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure
3 - 3

Title
Biological Resources

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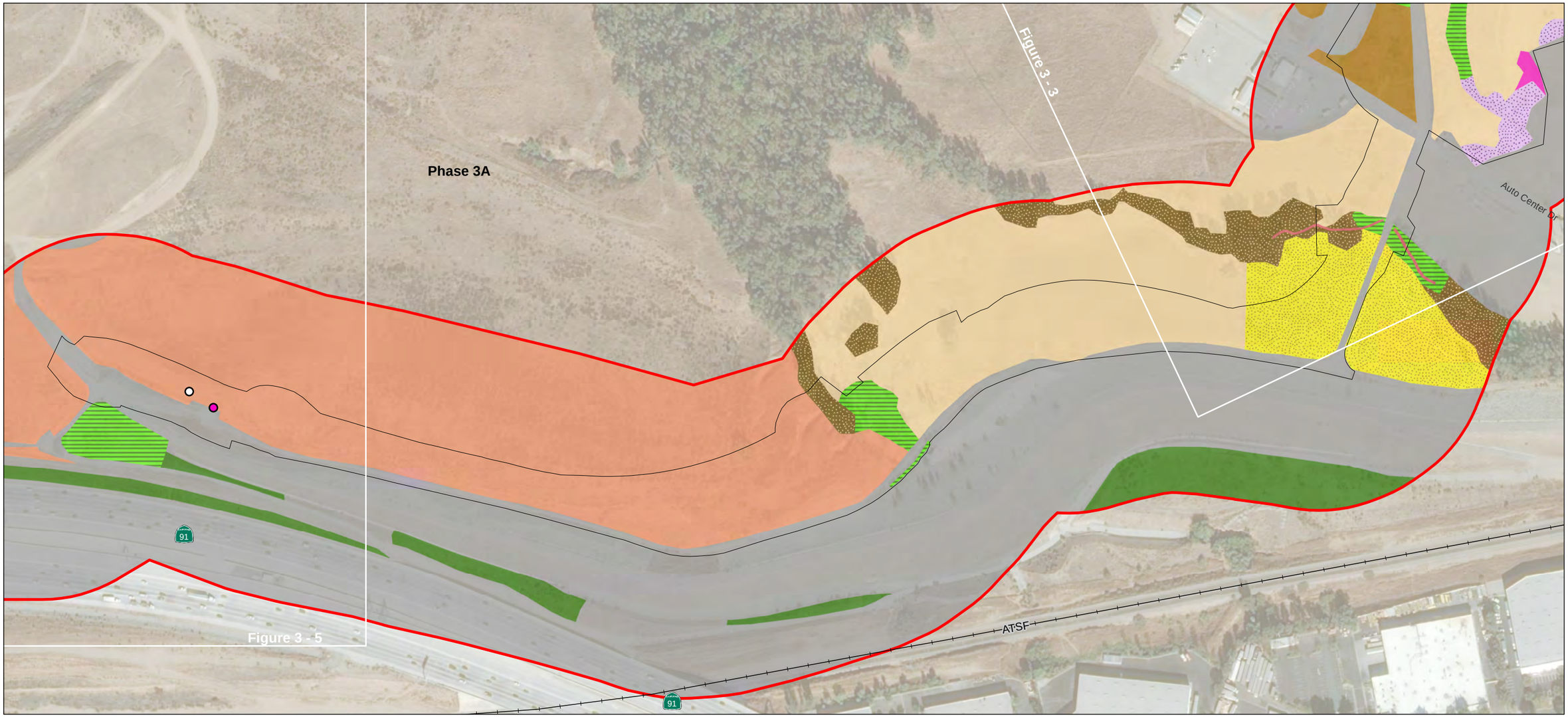

Biological Survey Area
Project Footprint
Railroad

Special-Status Species
- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types
- California buckwheat scrub
- California sagebrush scrub
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure
3 - 4

Title
Biological Resources

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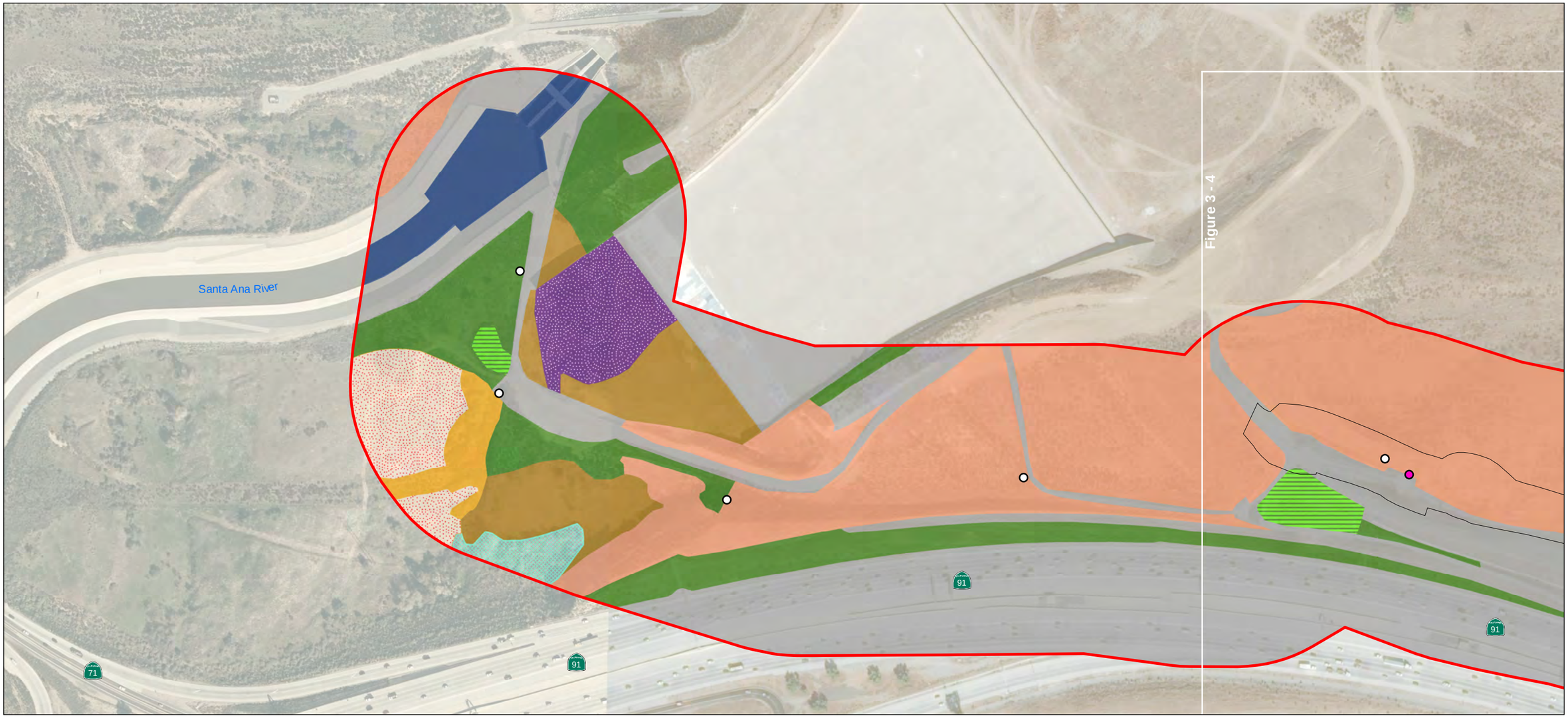

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

- Biological Survey Area
- Project Footprint

Special-Status Species
- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types
- California buckwheat scrub
- California sagebrush scrub
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Mulefat thickets
- Open water
- Restoration
- Ruderal
- Western ragweed meadow

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure
3 - 5

Title
Biological Resources

V:\1858\business_development\Santa Ana River Trail\BRTR_Figure3_SART_VegMap_DDP_12232021_11x17.mxd Revised 2022-06-30 By: dblaw

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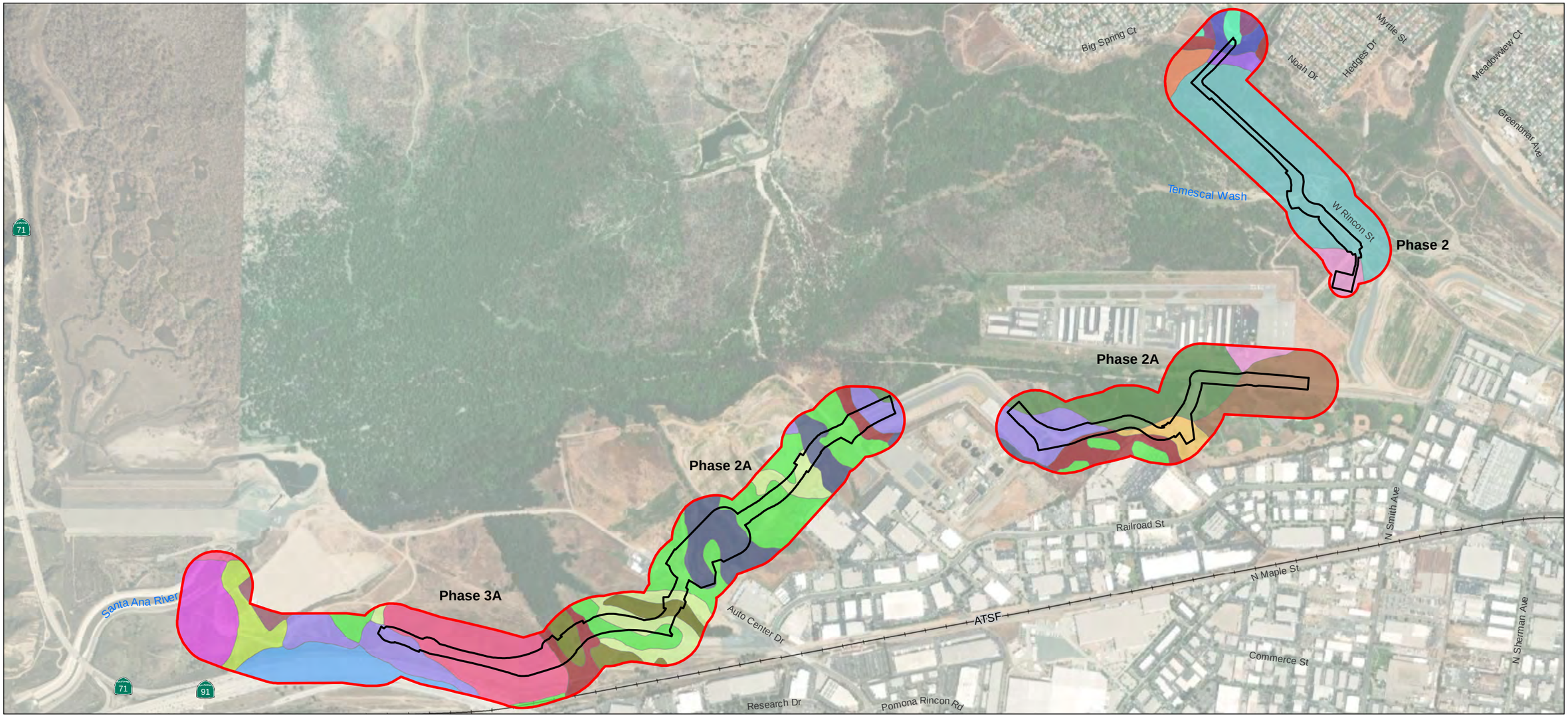

Biological Survey Area
Project Footprint
Railroad

Soils Map Unit Symbol

- AkC; Arbuckle loam, 2 to 8 percent slopes
- AkD; Arbuckle loam, 8 to 15 percent slopes
- AlC; Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19
- AlE3; Arbuckle gravelly loam, 2 to 25 percent slopes, severely eroded
- BP; Borrow Pit
- DAM; Dams
- GaC; Garretson very fine sandy loam, 2 to 8 percent slopes
- GfF2; Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded
- GrB; Grangeville sandy loam, sandy substratum, drained, 0 to 5 percent slopes
- GvB; Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes
- HcC; Hanford coarse sandy loam, 2 to 8 percent slopes
- MdC; Metz loamy sand, 2 to 8 percent slopes
- MgB; Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent slopes
- MhB; Metz loamy fine sand, sandy loam substratum, 0 to 5 per cent slopes
- PeC; Perkins loam, 2 to 8 percent slopes
- PgD2; Perkins gravelly loam, 8 to 15 percent slopes, eroded
- RaD2; Ramona sandy loam, 8 to 15 percent slopes, eroded
- RaD3; Ramona sandy loam, 8 to 15 percent slopes, severely eroded
- SeC2; San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SgA; San Emigdio loam, 0 to 2 percent slopes
- TeG; Terrace escarpments

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.NRCS 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
4

Title
Historical Soils

V:\1865\business_development\Santa_Ana_River_Trail\BRTR_Figure4_SART_SoilsMap_06032021_11x17.mxd Revised: 2022-06-30 By: dalaw

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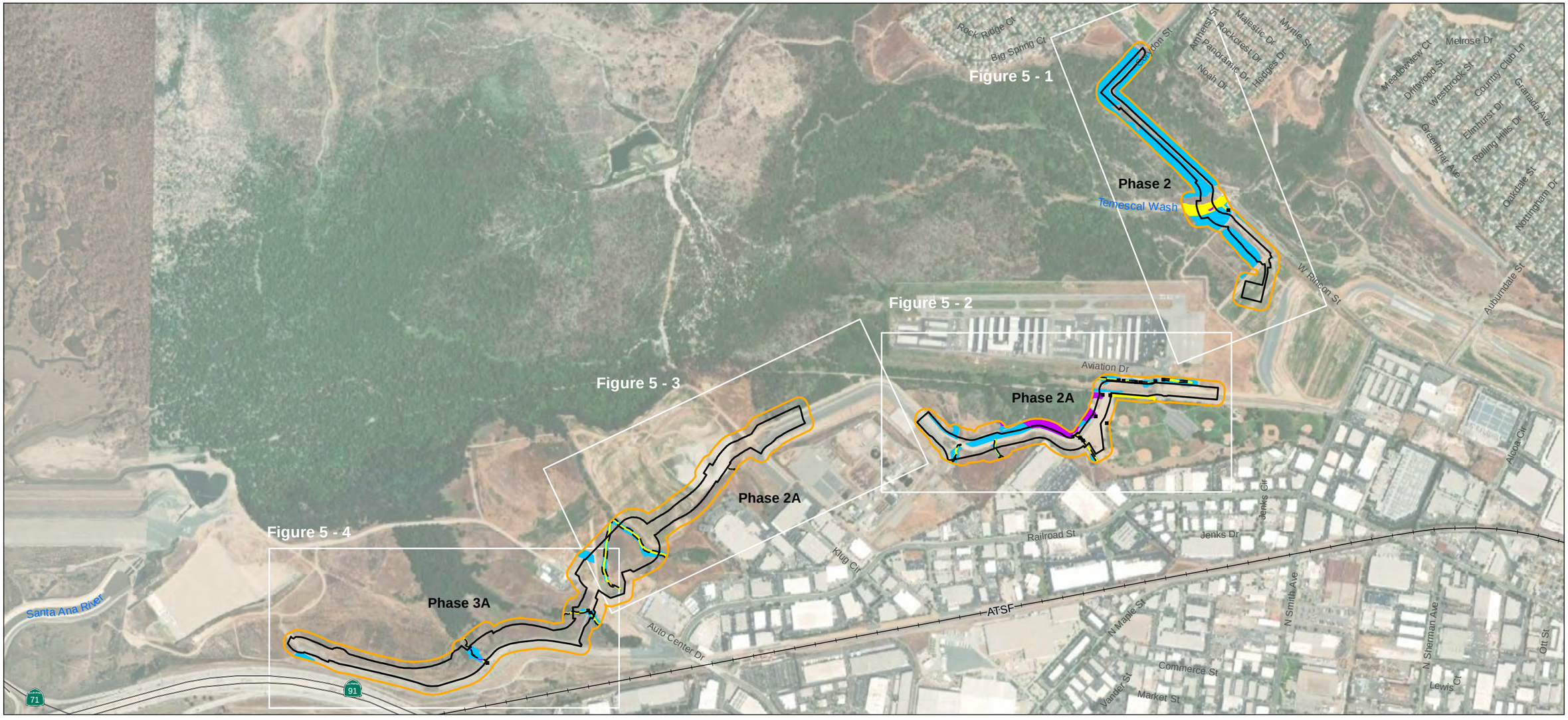

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

Potential CDFW Jurisdictional Waters

- Concrete Channel
- Riparian Wetlands and Waters

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands

- Culvert

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
5 - 0

Title
Aquatic Resources

V:\1865\business_development\Santa_Ana_River_Trail\BRTR_Figure5_SART_WatersMap_12302021_11x17.mxd Revised: 2022-06-30 By: ddaw

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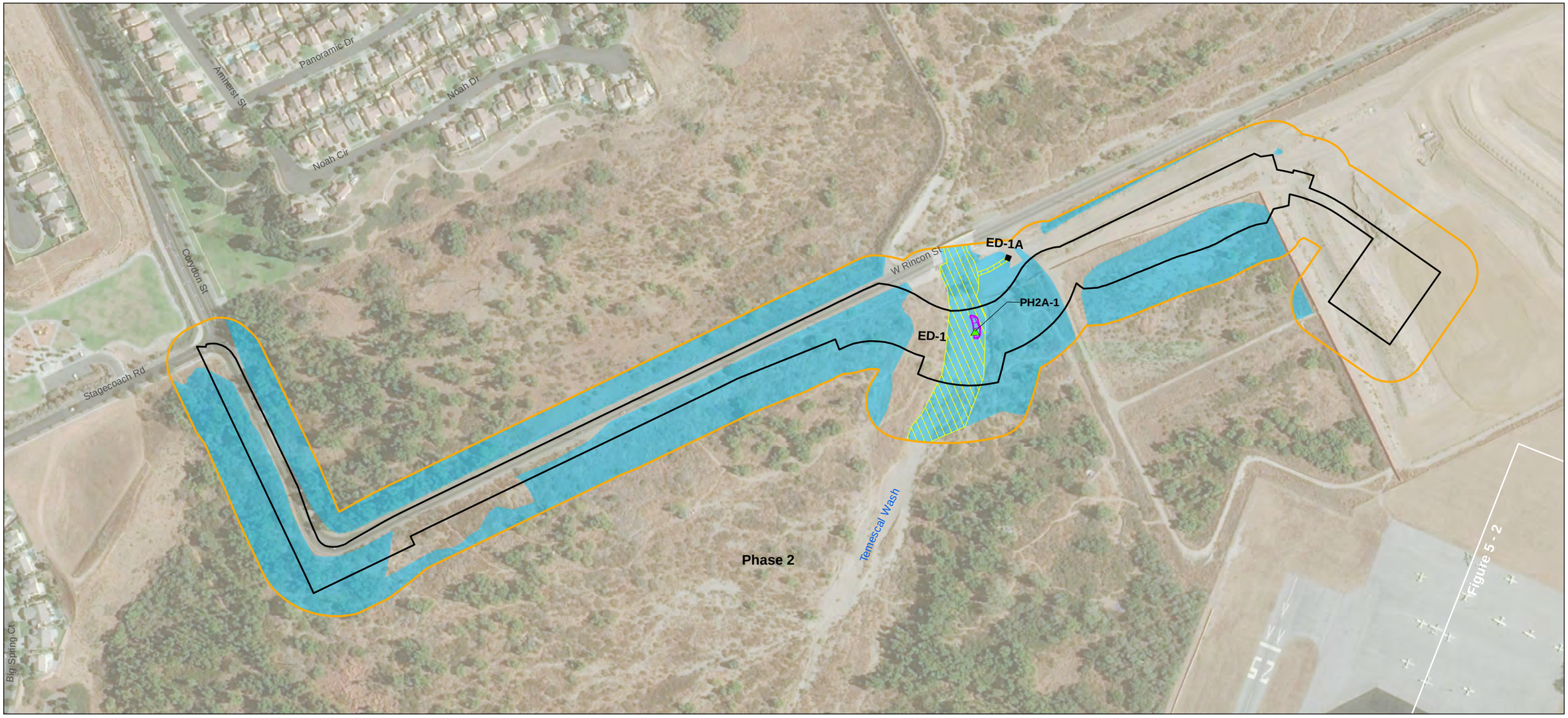

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint

Potential CDFW Jurisdictional Waters

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
5 - 1

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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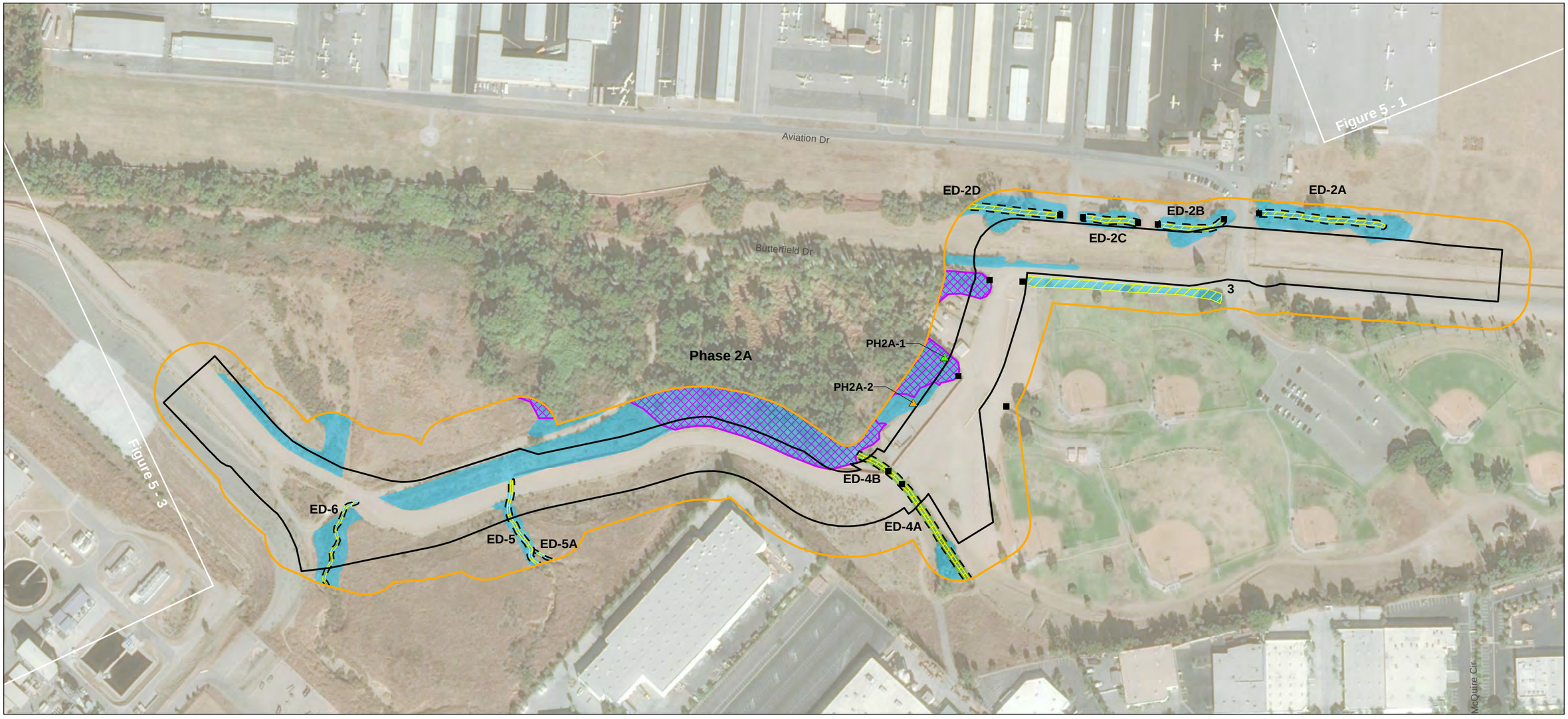

Aquatic Resources Survey Area (100 ft Buffer)
Project Footprint

Potential RWQCB Jurisdictional Waters
Waters of the State

Potential CDFW Jurisdictional Waters
Concrete Channel
Riparian Habitat

Potential USACE Jurisdictional Areas
Waters of the U.S.
Wetlands

Culvert

Sample Point
Non-wetland
Wetland

0 270 540 Feet
(At original document size of 11x17)
1:3,240

N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Project Location
Near Corona
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Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
5 - 2

Title
Aquatic Resources

V:\1865\business_development\Santa_Ana_River_Trail\BRTR_Figure5_SART_WatersMap_DDP_12302021_11x17.mxd Revised: 2022-06-30 By: dalaw

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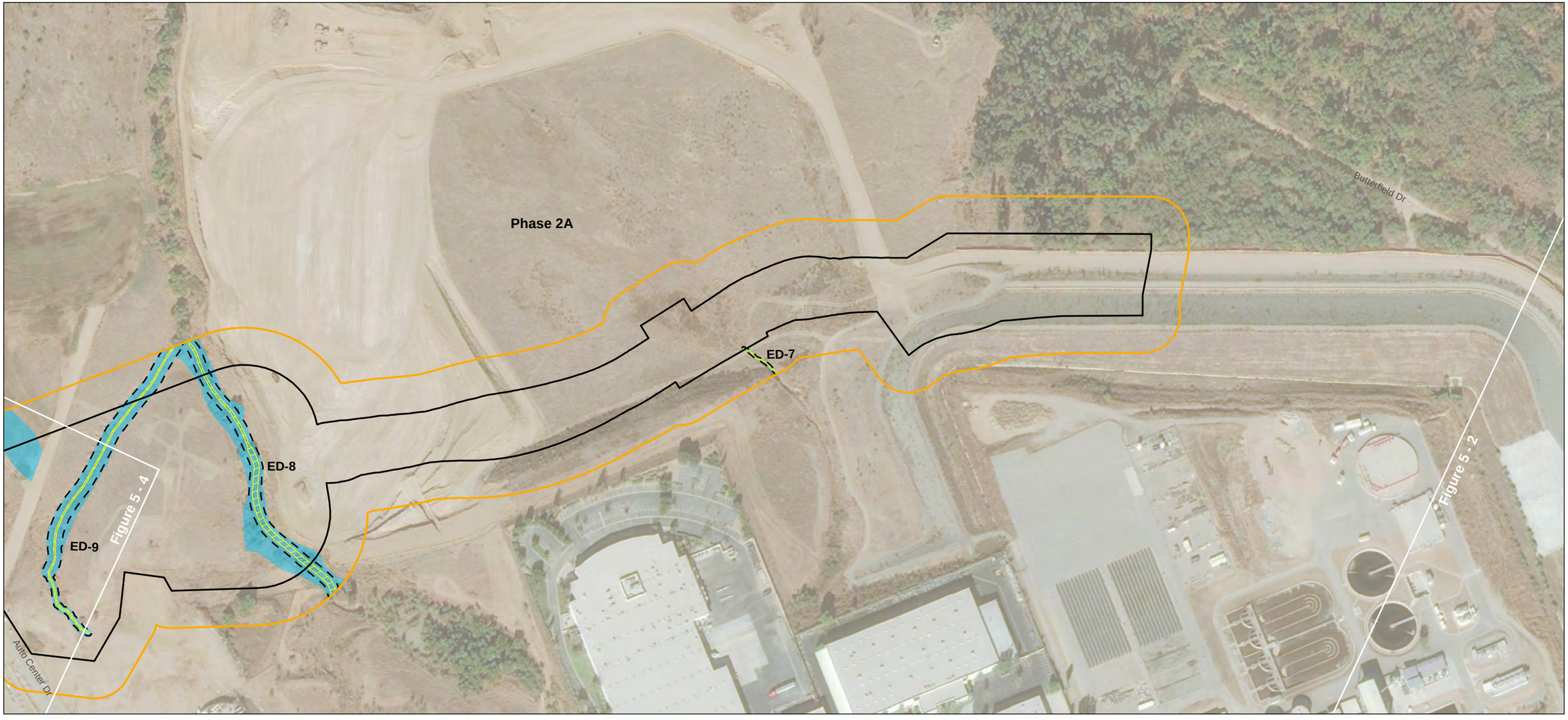

Aquatic Resources Survey Area (100 ft Buffer)

Project Footprint

Potential RWQCB Jurisdictional Waters

Waters of the State

Potential CDFW Jurisdictional Waters

Riparian Habitat

Potential USACE Jurisdictional Areas

Waters of the U.S.

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

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IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
5 - 3

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
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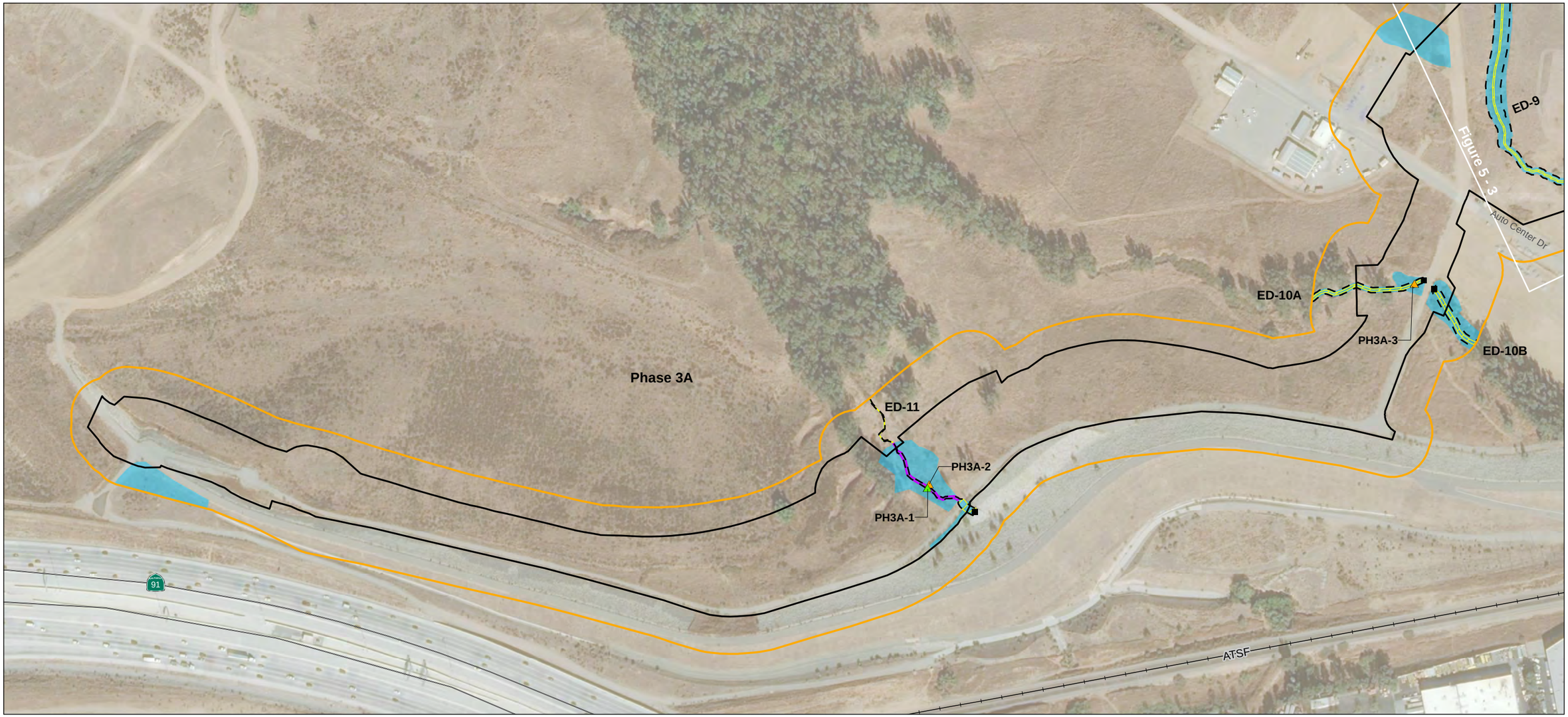

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

Potential CDFW Jurisdictional Waters

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Non-wetland
- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Stantec

Project Location
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
5 - 4

Title
Aquatic Resources

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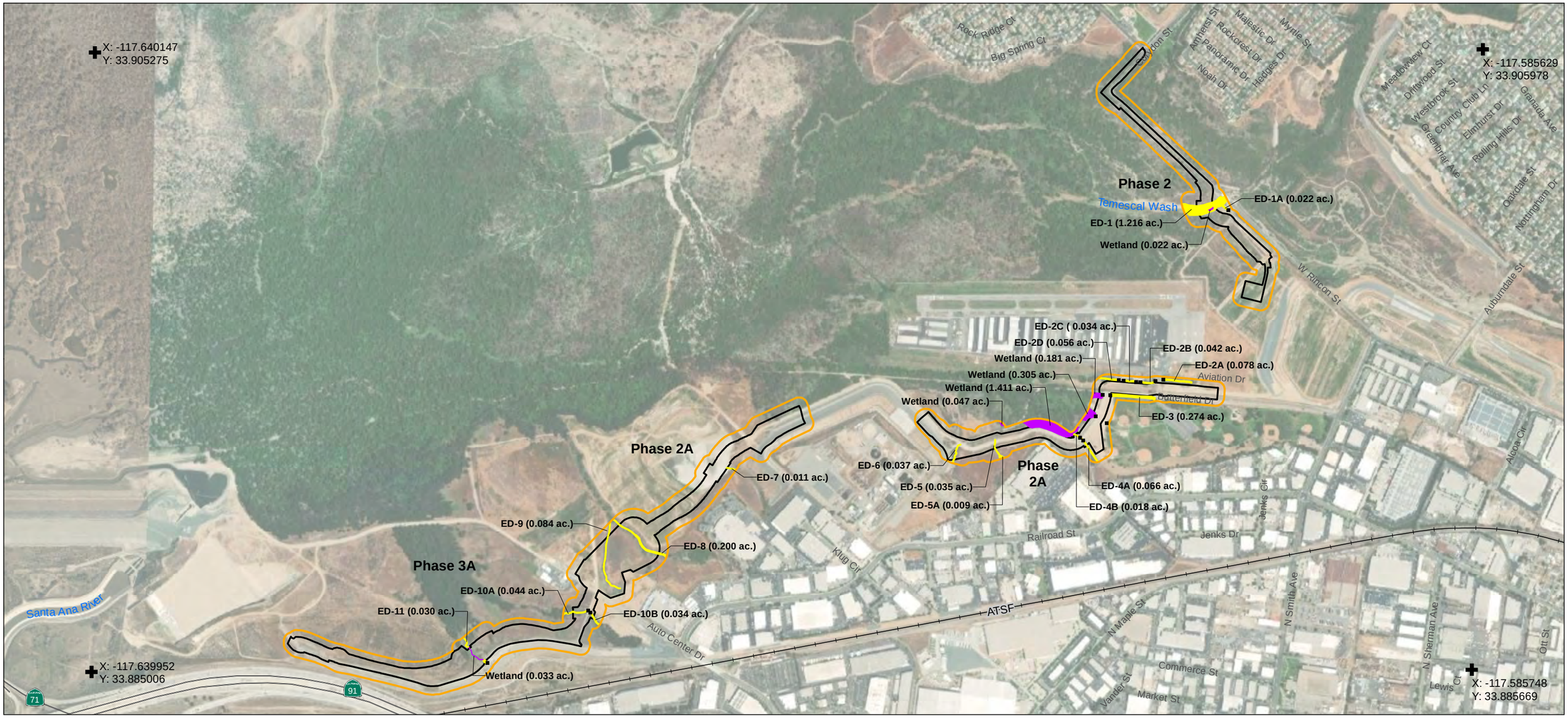

Aquatic Resources Survey Area (100 ft Buffer)
Project Footprint
Railroad

Potential Other Waters (2.289 ac.)
Ephemeral Drainage [ED] (2.289 ac.)

Potential Wetlands (1.998 ac.)
Wetland (1.998 ac.)

Culvert
Reference Point

0 1,200 2,400 Feet
(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
6

Title
Potential Wetlands and Other Waters of the U.S.

Sheet 1 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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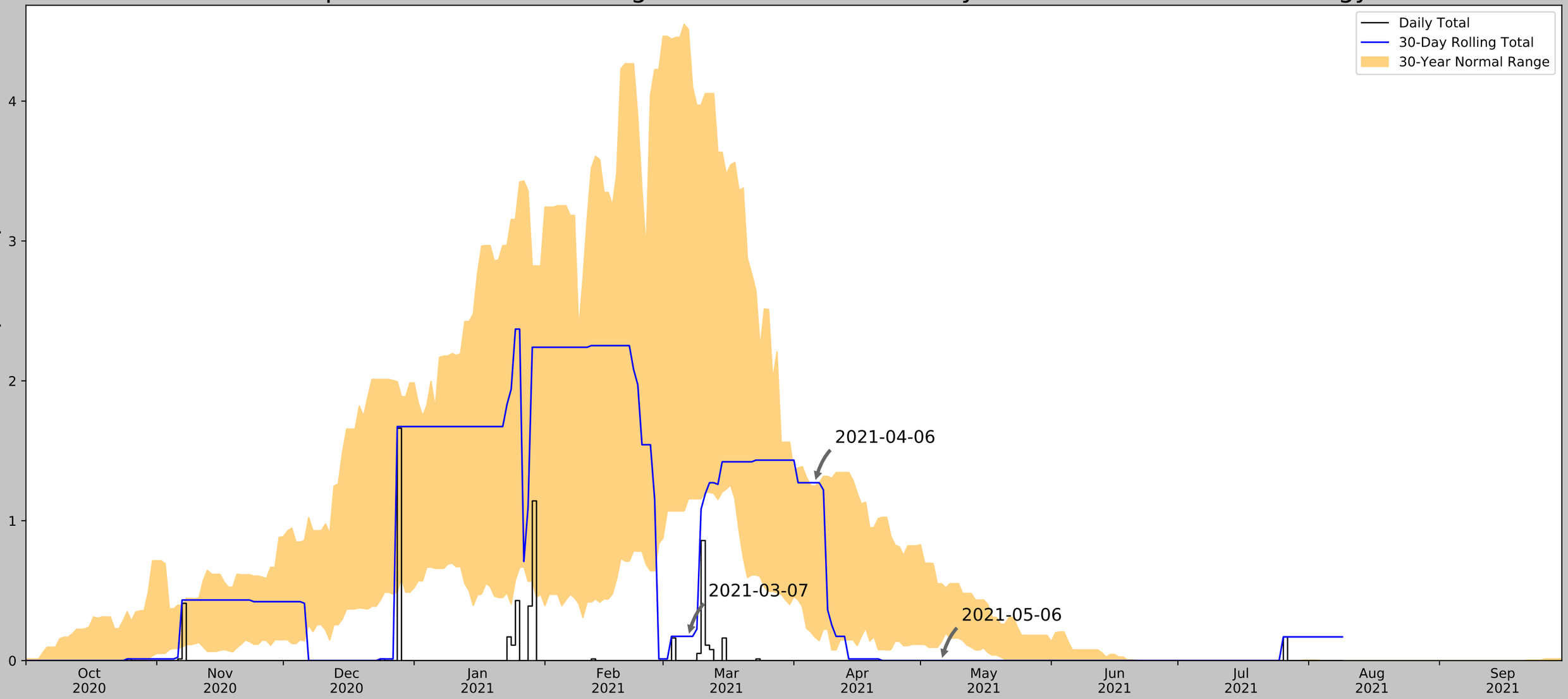
Appendix B Antecedent Precipitation Tool

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



Coordinates	33.892192, -117.613564
Observation Date	2021-05-06
Elevation (ft)	553.99
Drought Index (PDSI)	Extreme drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-05-06	0.135827	0.550394	0.0	Dry	1	3	3
2021-04-06	0.166929	1.247638	1.271654	Wet	3	2	6
2021-03-07	1.156693	4.513386	0.173228	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
CHINO AP	33.9753, -117.6361	649.934	5.886	95.944	3.213	8181	90
NORCO 1.7 W	33.9254, -117.5816	625.984	2.937	71.994	1.533	3	0
NORCO 1.2 S	33.908, -117.548	661.089	3.915	107.099	2.181	8	0
RIVERSIDE MUNI AP	33.9519, -117.4386	805.118	10.846	251.128	7.605	7	0
WALNUT NI FC102C	34.0017, -117.8658	487.861	16.318	66.129	8.422	3120	0
RIVERSIDE FIRE STN 3	33.9511, -117.3881	839.895	13.552	285.905	9.973	34	0

Appendix C Regulatory Background

Regulatory Background Information

Section 404 of the Clean Water Act (CWA)

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within “waters of the U.S.” (WOTUS) (resulting in more than incidental fallbackof material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). “WOTUS” are defined by the CWA as “rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands.” Wetlands are defined by the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.” The U.S. Army Corps of Engineers (USACE) has adopted several revisions totheir regulations in order to more clearly define “WOTUS” Until the beginning of 2001, “WOTUS” included, among other things, isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable “WOTUS.”

The protection of federal jurisdictional WOTUS has been historically contentious and subject to numerous legal decisions. The jurisdictional extent of USACE regulation changed with the 2001 SWANCC (Solid Waste Agencyof Northern Cook County) ruling. The U.S. Supreme Court held that the USACE could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-statewaters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to USACE jurisdiction.

Federal jurisdictional WOTUS protected under the CWA were defined in a 2015 Final Rule by USACE and the U.S. Environmental Protection Agency (USEPA); however, the Sixth Circuit U.S. Court of Appeals issued an order staying the new Clean Water Rule nationwide, pending a determination by the court on jurisdiction to review the rule. The 2015 Clean Water Rule was stayed, and the prior regulations published in 1986, along with some changes in 2008 as a result of the Rapanos U.S. Supreme Court decision, remained in effect.

On February 28, 2017, the Trump Administration issued Executive Order 13778, “Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the ‘WOTUS’ Rule.” The executive order directed the USACE and USEPA to review the 2015 Rule for consistency with the policy outlined in Section 1 of the order and to issue a proposed rule rescinding or revising the 2015 Rule as appropriate and consistent with law. On September 12, 2019, the USACE and USEPA repealed the 2015 Rule and restored the previous regulatory regime as it existed prior to finalization of the 2015 Rule. This final rule, “Definition of ‘WOTUS’—Recodification of Pre-Existing Rules” was published in the Federal Register on October 22, 2019.

On January 23, 2020, the USEPA and U.S. Department of the Army (U.S. Army) issued the Navigable Waters Protection Rule (NWPR) to define WOTUS. The agencies streamlined the definition so that it included four simple categories of jurisdictional waters, provided clear exclusions for many water features that traditionally have not been regulated, and defined terms in the regulatory text that had never been defined before. Congress, in the CWA, explicitly directed the agencies to protect “navigable waters.” The NWPR regulated these waters and the core tributary systems that provide perennial or intermittent flow into them and excluded ephemeral waters. The final NWPR fulfilling Executive Order 13788, and reflecting legal precedent set by key Supreme Court cases, became effective on June 22, 2020.

On June 9, 2021, the USACE and USEPA under the Biden Administration announced intent to protect more U.S. waterways through environmental regulations, beginning a new rulemaking process that restores protections put in place before 2015. On August 30, 2021, a federal judge in the district of Arizona issued an order vacating the 2020 NWPR and remanded the rule back to the USEPA for further review. Since the court's ruling was issued, USEPA has announced on its website that both it and the USACE will cease implementation of the NWPR and are instead interpreting WOTUS consistent with pre-2015 regulatory regime (i.e., the 2015 Clean Water Rule) until further notice. The implications of the recent ruling are such that ephemeral waters not considered protected under the 2020 NWPR may now be protected.

Section 401 of the CWA

Section 401 of the CWA requires that any applicant for a Federal permit for activities that involve a discharge to 'waters of the State,' shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act. Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the local Regional Water Quality Control Board (RWQCB). Applications to the RWQCB must include a complete CEQA document (e.g., Initial Study/Mitigated Negative Declaration).

Porter-Cologne Water Quality Control Act

California RWQCBs regulate the "discharge of waste" to "waters of the State". All projects proposing to discharge waste that could affect waters of the State must file a Waste Discharge Report with the appropriate RWQCB. The board responds to the report by issuing Waste Discharge Requirements or by waiving them for that project discharge. Both terms "discharge of waste" and waters of the State are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other "discharge." Isolated wetlands within California, which are no longer considered waters of the State, as defined by Section 404 of the CWA, are addressed under the Porter Cologne Water Quality Control Act. The Project is under the jurisdiction of the Region 8 – Santa Ana RWQCB.

Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires any person, State or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, orlake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river,stream, or lake, to first notify the California Department of Fish and Wildlife (CDFW) of the proposed project. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. Thisincludes rivers or streams that flow at least periodically or permanently through a bed or channelwith banks that support fish or other aquatic life and watercourses having a surface or subsurfaceflow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW will determine if the proposed project may impact fish or wildlife resources. If the CDFW determines that a proposed project may substantially adversely affect existing fish orwildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be required. A completed California Environmental Quality Act document must be submitted to CDFW before a SAA will be issued.

Appendix D Photographic Log

STANTEC CONSULTING SERVICES INC.
PHOTOGRAPHIC RECORD

Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 1: December 8, 2021

Arroyo willow (*Salix lasiolepis*) thickets in Phase 2 along Corydon Street looking west

Photo 2: December 8, 2021

Sparse mulefat (*Baccharis salicifolia*) thickets in Phase 2 along West Rincon Street looking south

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 3: May 6, 2021

View of Temescal Wash (Drainage 1), a tributary to the Santa Ana River in Phase 2 looking northeast toward West Rincon Street

Photo 4: December 8, 2021

Closeup view of Temescal Wash (Drainage 1) in Phase 2 looking north under West Rincon Street

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 5: December 8, 2021

Access road to the Corona Municipal Airport and arroyo willow thickets along Drainage 2 in Phase 2A north of Butterfield Drive looking northeast

Photo 6: December 8, 2021

Drainage 3 - non vegetated channel looking west

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 7: December 8, 2021

Shining willow (*Salix lasiandra*) grove in Phase 2A looking west

Photo 8: May 6, 2021

Phase 2A wetland sample PH2A-1 in shining willow grove looking northwest

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 9: December 8, 2021

Phase 2A upland sample point PH2A-2 in mulefat thickets looking northwest

Photo 10: December 8, 2021

View of Drainage 4, a concrete-lined channel, in Phase 2A looking southeast

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 11: December 8, 2021

Phase 2A Drainage 5 looking southeast upstream

Photo 12: May 6, 2021

View of Drainage 7 in Phase 2A looking southeast

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 13: May 6, 2021

View of Drainage 8, an ephemeral channel, in Phase 3A looking north

Photo 14: May 6, 2021

Drainage 9, an ephemeral channel lined with mulefat thickets, in Phase 2A looking northwest

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 15: May 6, 2021

Drainage 10, an ephemeral channel, in Phase 3A looking west

Photo 16: May 6, 2021

Drainage 11, an ephemeral channel, in Phase 3A looking northwest

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 17: May 6, 2021

Ordinary-high water mark and upland sample point PH3A-1 along the eastern edge of Drainage 11 looking southeast

Photo 18: May 6, 2021

Drainage 11 in Phase 3A surrounded by mulefat thickets looking north

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 19: June 9, 2022

Wetland sample pit in Temescal Wash (Drainage 1) in Phase 2

Photo 20: June 9, 2022

Three-parameter wetland on the south side of Temescal Wash (Drainage 1) in Phase 2 looking east.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 21: June 19, 2022

Phase 2A Drainage 6 looking northeast

Photo 22: June 16, 2022

Non-wetland sample pit in Drainage 10 in Phase 3A

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend
Photo 23: June 16, 2022	
	
Soil sample in Drainage 10 in Phase 3A.	

Appendix E Wetland Determination Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail Phases 2, 2A, and 3A City/County: Riverside County Sampling Date: 06/09/2022

Applicant/Owner: Riverside County Parks, RCTC, USACE State: CA Sampling Point: PH2-1

Investigator(s): Jarod Varonin, Melissa Tu Section, Township, Range: NA

Landform (hillslope, terrace, etc.): channel/wash Local relief (concave, convex, none): none Slope (%): 5

Subregion (LRR): C Lat: 33.900624 Long: -117.596274 Datum: decimal de

Soil Map Unit Name: MgB; Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent sl NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

An approximately 50% cover vegetated area on the south side of Temescal Wash in the Project area. The rest of the channel we mostly non-vegetated. The wetland area is a little lower in elevation than the rest of the wash.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 1 meter)			
1. Salix lasiolepis	10	Y	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Xanthium strumarium	20	Y	FAC
2. Ricinis communis	15	Y	FACU
3. Lepidium latifolium	4		FAC
4. mustard	1		NI
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.67 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

A small wetland area on the south side of Temescal Wash in

SOIL

Sampling Point: PH2-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/3	98	10YR 5/6	2			sandy loa	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Surface soil cracks. The wetland area is a little lower in elevation than the rest of the wash.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail Phase 2, 2A, and 3A City/County: Corona, Riverside County Sampling Date: 5/06/2021

Applicant/Owner: Riverside County Parks, RCTC, USACE State: CA Sampling Point: Ph2A-1

Investigator(s): Melissa Tu Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): C Lat: 33.38939412613 Long: -117.600772577 Datum: decimal de

Soil Map Unit Name: GvB-Grangeville fine sandy loam, saline-alkali NWI classification: PFOAh-Freshwater For

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

Are Vegetation _____, Soil _____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

wetland in willow grove. Fed by channels from the east

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 1 meter)			
1. Salix lasiandra	40	Y	FACW
2. Salix laevigata	20	N	FACW
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Bare ground and saturation under willow canopy.

SOIL

Sampling Point: Ph2A-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

Hydric soil assumed since standing water was present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 1

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✓ **No** _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail Phases 2, 2A, and 3A City/County: Riverside County Sampling Date: 12/08/2021

Applicant/Owner: Riverside County Parks, RCTC, USACE State: CA Sampling Point: PH2A-2

Investigator(s): Melissa Tu, Ashleigh Townsend Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): C Lat: 33.8936031354 Long: -117.601042844 Datum: decimal de

Soil Map Unit Name: G-Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19 NWI classification: PEM1Ch-Freshwater E

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

Are Vegetation _____, Soil _____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Sample area consists of mulefat (Baccharis salicifolia) thicket along edge of Drainage 11. Upstream disturbance -concrete structure. Dirt access road through drainage.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 1 meter)			
1. Baccharis salicifolia	15	Y	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Hirschfeldia incana	8	Y	NI
2. Bromus diandrus	2	N	NI
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	25 = Total Cover		

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species 10	x 3 =	30
FACU species _____	x 4 =	_____
UPL species 10	x 5 =	50
Column Totals: 30 (A)		80 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Bareground consisted of drainage 11 and open areas in the non-native vegetation surrounding the mulefat. The area east of the channel was dominate by non-native grasses.

SOIL

Sampling Point: PH2A-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
3	10YR3/2	100						uniform

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: clay

Depth (inches): 3 inches

Hydric Soil Present? Yes _____ No ✓

Remarks:

Dry/drought conditions, could only dig pit a few inches. Uniform soil. No hydric soil indicators were observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

The drainage channel had an OHWM. This sample pit was just west of the OHWM. The area was flat with some mulefat but no wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail Phases 2, 2A, and 3A City/County: Riverside County Sampling Date: 6/09/2021

Applicant/Owner: Riverside County Parks, RCTC, USACE State: CA Sampling Point: PH3A-1

Investigator(s): Melissa Tu, Jared Varonin Section, Township, Range: NA

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): C Lat: 33.88567717 Long: -117.6248296 Datum: decimal de

Soil Map Unit Name: G-Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19 NWI classification: PEM1Ch-Freshwater E

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

Are Vegetation _____, Soil _____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Sample area consists of mulefat (Baccharis salicifolia) thicket along east edge of Drainage 11. Upstream disturbances include dirt access road through drainage and concrete structure upstream of the dirt road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 1 meter)			
1. Baccharis salicifolia	40	Y	FAC
2.			
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Bareground consisted of drainage 11 and open areas in the non-native vegetation surrounding the mulefat. The area east of the channel was dominated by non-native grasses.

SOIL

Sampling Point: PH3A-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	98	10YR5/6	2			sandy loa	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: clay

Depth (inches): 6 inches

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Mostly uniform soil with some redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

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

Remarks:

The drainage channel had an OHWM. This sample pit was near the OHWM. The area was flat with mulefat on the bank and over the channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail Phases 2, 2A, and 3A City/County: Riverside County Sampling Date: 5/06/2021

Applicant/Owner: Riverside County Parks, RCTC, USACE State: CA Sampling Point: PH3A-2

Investigator(s): Melissa Tu, Ashleigh Townsend Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 45

Subregion (LRR): C Lat: 33.88567717 Long: -117.6248296 Datum: decimal de

Soil Map Unit Name: G-Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19 NWI classification: PEM1Ch-Freshwater E

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

Are Vegetation _____, Soil _____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Sample area consists of mulefat (Baccharis salicifolia) thicket along east edge of Drainage 11. Upstream disturbances include dirt access road through drainage and concrete structure upstream of the dirt road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 1 meter)			
1. Baccharis salicifolia	15	Y	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Hirschfeldia incana	8	Y	NI
2. Bromus diandrus	2	N	NI
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	25 = Total Cover		

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 10	x 3 = 30
FACU species _____	x 4 = _____
UPL species 10	x 5 = 50
Column Totals: 30 (A)	80 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Bareground consisted of drainage 11 and open areas in the non-native vegetation surrounding the mulefat. The area east of the channel was dominated by non-native grasses.

SOIL

Sampling Point: PH3A-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
3	10YR3/2	100						uniform

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: clay

Depth (inches): 3 inches

Hydric Soil Present? Yes _____ No ✓

Remarks:

Dry/drought conditions, could only dig pit a few inches. Uniform soil. No hydric soil indicators were observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

The drainage channel had an OHWM. This sample pit was just east of the OHWM. The area was flat with some mulefat but no wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Santa Ana River Trail Phases 2, 2A, and 3A City/County: Riverside County Sampling Date: 06/09/2022

Applicant/Owner: Riverside County Parks, RCTC, USACE State: CA Sampling Point: PH3A-3

Investigator(s): Hannah Hart, Ashleigh Townsend Section, Township, Range: NA

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): C Lat: 33.887786 Long: -117.620231 Datum: decimal de

Soil Map Unit Name: GaC; Garretson very fine sandy loam, 2 to 8 percent slopes NWI classification: PFOCh-Freshwater For

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks:

Ephemeral drainage surrounded by mule fat thickets

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Baccharis salicifolia	90	Y	FACW
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

The bottom of the channel was bare ground/non-vegetated channel. The mule fat was on the banks and hung over the channel.

SOIL

Sampling Point: PH3A-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6.5	10YR4/3						sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: rocks

Depth (inches): 6.5

Hydric Soil Present? Yes _____ No ✓

Remarks:

the soil was uniform and no hydric soil indicators were observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Appendix F Plant Species Observed

Table 1 Plant Species Observed in the BSA

Scientific Name[1]	Common Name	Wetland Indicator[2]
Acmispon glaber	deerweed	NI
Acmispon strigosus	strigose lotus	NI
*Ailanthus altissima**	tree of heaven	FACU
Ambrosia psilostachya	western ragweed	FACU
Amsinckia intermedia	fiddleneck	NI
*Anagallis arvensis**	scarlet pimpernel	NI
Artemisia californica	California sagebrush	NI
Artemisia douglasiana	mugwort	FAC
Artemisia dracunculus	tarragon	FACU
*Arundo donax**	giant reed	FACW
Asclepias fascicularis	narrow leaf milkweed	NI
Atriplex canescens	hoary saltbush	NI
Atriplex lentiformis	big saltbush (quailbush)	FAC
*Atriplex semibacatta**	Australian saltbush	FAC
*Avena fatua**	wild oats	NI
Baccharis pilularis	coyote bush	NI
Baccharis salicifolia	mulefat	FAC
Baccharis sarothroides	scale broom	FACU
*Bromus diandrus**	ripgut brome	NI
*Bromus madritensis**	foxtail brome	NI
*Bromus rubens**	red brome	NI
Calystegia macrostegia	coast morning glory	NI
Camissoniopsis micrantha	Spencer primrose	NI
*Carduus pycnocephalus**	Italian thistle	NI
Carya illinoinensis	pecan	FAC
*Centaurea melitensis**	Maltese star-thistle	NI
Chenopodium californicum	California goosefoot	NI
Chrysanthemum coronarium*	garland daisy	NI
*Cirsium vulgare**	bull thistle	NI
*Conium maculatum**	poison hemlock	FACW
Corethrogyne filaginifolia	common sandaster	NI
Croton californicus	California croton	NI
Croton setigerus	turkey mullen	NI
Cryptantha intermedia	common cryptantha	NI
Cucurbita foetidissima	coyote gourd	NI
Cuscuta californica	California dodder	NI
Datura wrightii	jimsonweed	NI
Deinandra fasciculata	clustered tarweed	FACU

Scientific Name[1]	Common Name	Wetland Indicator[2]
Deinandra paniculata+	paniculate tarplant	FACU
Diplacus aurantiacus	sticky monkeyflower	FACU
*Dysphania ambrosioides**	Mexican tea	FAC
Eleocharis macrostachya	spike rush	FACW
Elymus condensatus	giant wildrye	NI
Encelia californica	bush sunflower	NI
Encelia farinosa	brittlebush	NI
Ericameria palmeri	Palmer goldenweed	NI
Erigeron canadensis	Canada horseweed	FACU
Eriogonum fasciculatum	California buckwheat	NI
*Erodium cicutarium**	redstem filaree	NI
*Eucalyptus sp.**	gum tree	FAC/NI
Euphorbia polycarpa	smallseed sandmat	NI
*Festuca perenniis**	Italian ryegrass	NI
*Foeniculum vulgare**	sweet fennel	NI
Helianthus annuus	hairy-leaved sunflower	FACU
Helminthotheca echioides	bristly ox-tongue	FAC
Heteromeles arbutifolia	toyon	NI
Heterotheca grandiflora	telegraph weed	NI
*Hirschfeldia incana **	Short-pod mustard	NI
*Hordeum marinum**	barley	FAC
*Koelreuteria bipinnata**	goldenrain tree	NI
*Lactuca serriola **	prickly lettuce	FACU
Lasthenia californica	goldenfields	FACU
*Lepidium latifolium**	perennial pepperweed	FAC
Lupinus bicolor	lupine	NI
Malosma laurina	laurel sumac	NI
*Malva parviflora**	cheeseweed	NI
Marah macrocarpa	chilicothe	NI
*Marrubium vulgare**	horehound	NI
*Medicago polymorpha**	California burclover	NI
*Melilotus indicus**	annual yellow sweetclover	FACU
*Nicotiana glauca**	tree tobacco	NI
Nicotiana quadrivalvis	Indian tobacco	FACU
*Oncosiphon piluliferum**	stinknet	FACU
Opuntia oricola	chaparral pricklypear	NI
*Parkinsonia aculeata**	Jerusalem thorn	FAC
Phacelia ramosissima	Branching phacelia	FACU
Plantago erecta	dot-seed plantain	NI

Scientific Name[1]	**Common Name**	**Wetland Indicator[2]**
Platanus racemosa	California sycamore	FAC
Pluchea sericea	arrow weed	FACW
Polypogon monspeliensis	rabbits foot grass	FACW
Populus fremontii	Fremont cottonwood	FAC
Pseudognaphalium californicum	California cudweed	NI
Pseudognaphalium luteoalbum	cudweed	FAC
Quercus agrifolia	coat live oak	NI
*Raphanus sativus**	wild radish	NI
*Ricinus communis**	castor bean	FACU
Rosa californica	California wild rose	FAC
Rubus ursinus	pacific blackberry	FAC
Rumex pulcher	fiddle dock	FAC
Salix gooddingii	black willow	FACW
Salix laevigata	red willow	FACW
Salix lasiandra	shining willow	FACW
Salix lasiolepis	arroyo willow	FACW
*Salsola tragus**	Russian thistle	FACU
Salvia apiana	white sage	NI
Salvia melliefera	black sage	NI
Sambucus nigra ssp. *caerulea*	blue elderberry	FACU
*Schinus molle**	Peruvian peppertree	FACU
*Schinus terebinthifolia**	Brazilian peppertree	FAC
*Schismus barbatus**	old han schismus	NI
Schoenoplectus californicus	California bulrush	OBL
*Silybum marianum**	milk thistle	NI
*Sisymbrium irio**	London rocket	NI
Solanum douglasii	Douglas' nightshade	FAC
*Sonchus arvensis**	perennial sow thistle	NI
*Sonchus asper**	spiny sow thistle	FAC
*Sorghum halepense**	johnsongrass	FACU
*Stipa miliacea**	smilo grass	NI
Stipa pulchra	purple needlegrass	NI
Trifolium willdenovii	tomcat clover	FACW
Toxicodendron diversilobum	poison oak	NI
*Typa angustifolia**	narrowleaf cattail	OBL
Typa domingensis	southern cattail	OBL
Urtica dioica	stinging nettle	FAC
*Urtica urens**	dwarf nettle	NI
*Veronica anagallis-aquatica**	water speedwell	OBL

Scientific Name[1]	Common Name	Wetland Indicator[2]
Vitis girdiana	California wild grape	FACU
*Washingtonia robusta**	Mexican fan palm	FACW
Xanthium strumarium	cocklebur	FAC

Notes: [1] * = Non-native species, + = California Rare Plant Rank 4.2

[2] Wetland Indicators: NI = no indicator, FACU = facultative upland, FAC = facultative, FACW = facultative wetland

Appendix G Waters of the U.S./Waters of the State Impact Acreages

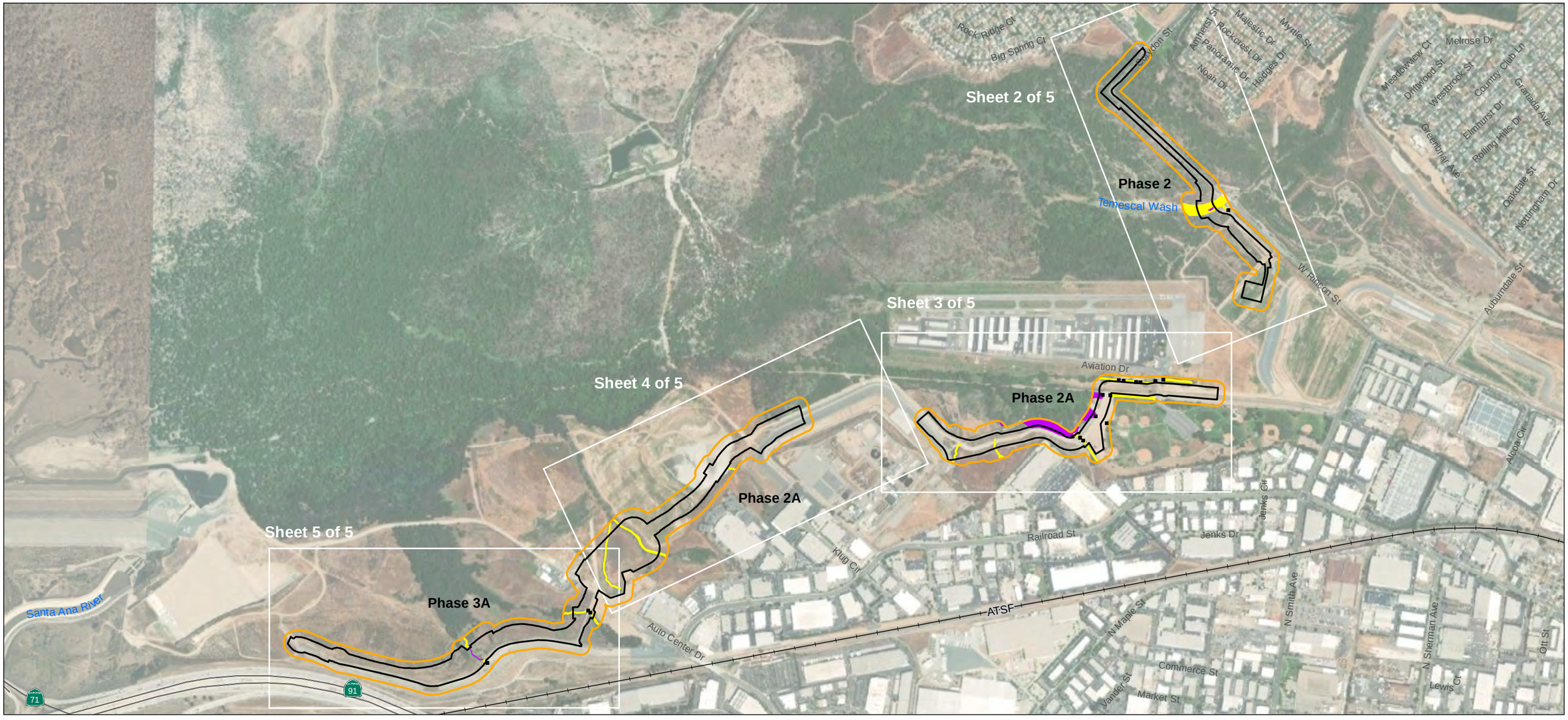
Table G-1 Waters of the U.S. Temporary and Permanent Impacts

Trail Phase	Drainage Segments	Jurisdiction	Temporary Impacts[1]	Permanent Impacts[1]	Project Area[1]
			Acres		
2	**1**	CDFW, RWQCB, USACE	0.418	0.046	0.464
	1A	CDFW, RWQCB, USACE	-	-	-
2A	**2A**	CDFW, RWQCB, USACE	-	-	-
	2B	CDFW, RWQCB, USACE	-	-	-
	2C	CDFW, RWQCB, USACE	-	-	-
	2D	CDFW, RWQCB, USACE	-	-	-
	3	CDFW, RWQCB, USACE	-	-	-
	4A[b]	CDFW, RWQCB, USACE	0.016	0.006	0.022
	4B[b]	CDFW, RWQCB, USACE	0.012	-	0.012
	5	CDFW, RWQCB, USACE	0.008	0.007	0.015
	5A	CDFW, RWQCB, USACE	-	-	-
	6	CDFW, RWQCB, USACE	0.023	0.007	0.030
	7	CDFW, RWQCB, USACE	<0.001	-	<0.001
	8	CDFW, RWQCB, USACE	0.153	-	0.153
	9	CDFW, RWQCB, USACE	0.068	-	0.068
3A	**10A**	CDFW, RWQCB, USACE	0.014	0.012	0.026
	10B	CDFW, RWQCB, USACE	0.009	0.002	0.011
	11	CDFW, RWQCB, USACE	0.015	-	0.015
		Total	**0.736**	**0.080**	**0.816**

Note[1] = some of the acreages do not add up due to rounding. The Project area and impact acreages are from the June 2022 design.

Table G-2. Three-Parameter Wetland Temporary and Permanent Impacts

Trail Phase	Drainage	Wetland ID	Jurisdiction	Temporary Impacts	Permanent Impacts	Project Area
				Acres		
2	**1**	**PH2-1**	USACE, CDFW, RWQCB	0.016	0.007	0.023
3A	**11**	**PH3A-1**	USACE, CDFW, RWQCB	0.014	0.018	0.032
			Total	**0.030**	**0.025**	**0.055**



- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad
- Culvert

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands

0 1,200 2,400 Feet

(At original document size of 11x17)
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N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
Exhibit 1

Title
Aquatic Resources

Sheet 1 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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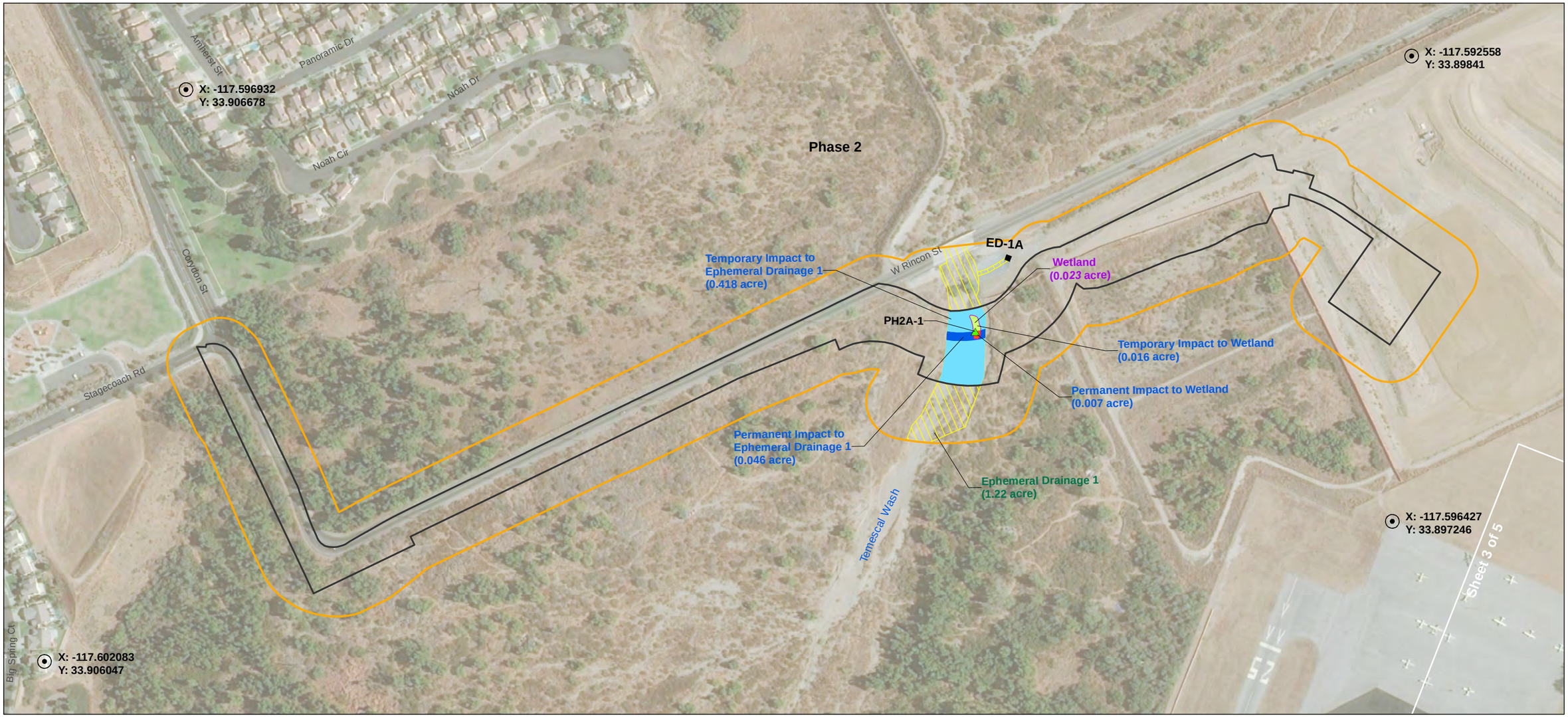

Aquatic Resources Survey Area (100 ft Buffer)
Project Footprint

Potential USACE Jurisdictional Areas
Waters of the U.S.
Wetlands

Impacts to Potential USACE Jurisdictional Areas
Waters of the U.S. Temporary Impact
Waters of the U.S. Permanent Impact
Wetlands Temporary Impact
Wetlands Permanent Impact

Reference Point
Culvert

Sample Point
Wetland

0 270 540 Feet
(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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IR by JV on 2022-06-29

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Santa Ana River Trail Project
Aquatic Resources Survey Report

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X: -117.608495
Y: 33.896123

X: -117.598889
Y: 33.895893

Sheet 2 of 5

Aviation Dr

Phase 2A

Ephemeral Drainage 3
(0.042 acre)

ED-2D

Temporary Impact to Wetland
(0.063 acre)

ED-2A

ED-2C

Butterfield Dr

Wetland
(0.181 acre)

Temporary Impact to
Ephemeral Drainage 4A
(0.002 acre)

Temporary Impact to Wetland
(0.063 acre)

Wetland
(0.305 acre)

Wetland
(1.411 acre)

PH2A-1

Temporary Impact to
Ephemeral Drainage 4A
(0.004 acre)

Temporary Impact to Wetland
(0.239 acre)

Temporary Impact
to Wetland (0.000004 acre)

Ephemeral Drainage 3
(0.274 acre)

PH2A-2

Permanent Impact to
Ephemeral Drainage 4A
(0.006 acre)

Sheet 4 of 5

Permanent Impact to
Ephemeral Drainage 6
(0.007 acre)

Permanent Impact to
Ephemeral Drainage 5
(0.007 acre)

Ephemeral Drainage 4A
(0.018 acre)

Temporary Impact to
Ephemeral Drainage 4A
(0.016 acre)

Temporary Impact to
Ephemeral Drainage 5
(0.008 acre)

Temporary Impact to
Ephemeral Drainage 4B
(0.012 acre)

Ephemeral Drainage 5A
(0.008 acre)

Ephemeral Drainage 4A
(0.066 acre)

Temporary Impact to
Ephemeral Drainage 6
(0.023 acre)

X: -117.596854
Y: 33.891979

McQuire Cir

X: -117.607748
Y: 33.891614

Ephemeral Drainage 6
(0.037 acre)

Ephemeral Drainage 5
(0.035 acre)

Aquatic Resources Survey Area (100 ft Buffer)

Project Footprint

Potential USACE Jurisdictional Areas

Waters of the U.S.

Wetlands

Impacts to Potential USACE Jurisdictional Areas

Waters of the U.S. Temporary Impact

Waters of the U.S. Permanent Impact

Wetlands Temporary Impact

Reference Point

Culvert

Sample Point

Non-wetland

Wetland

0 270 540 Feet

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1:3,240

N

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Near Corona
Riverside County, California

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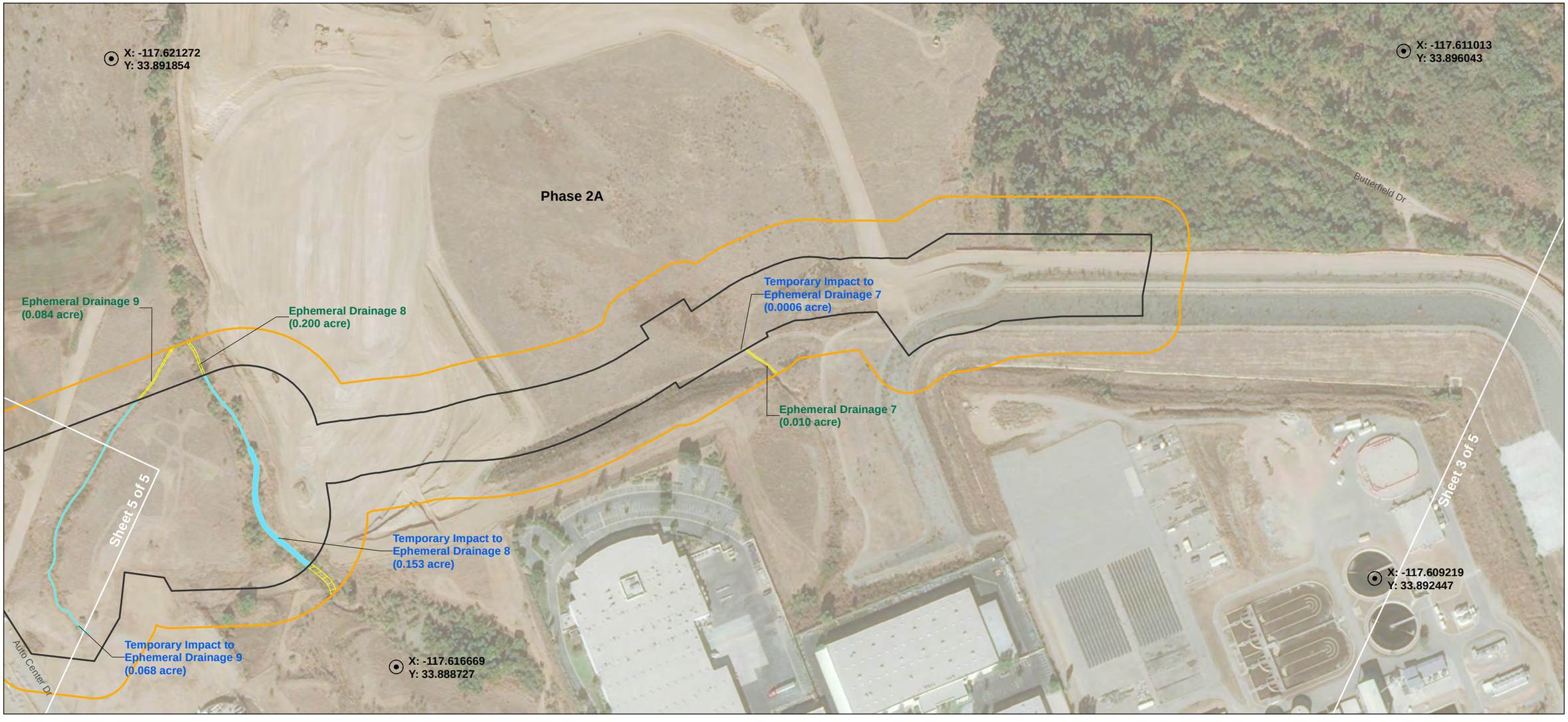

Aquatic Resources Survey Area (100 ft Buffer)

Project Footprint

Potential USACE Jurisdictional Areas

Waters of the U.S.

Impacts to Potential USACE Jurisdictional Areas

Waters of the U.S. Temporary Impact

Reference Point

0 270 540 Feet

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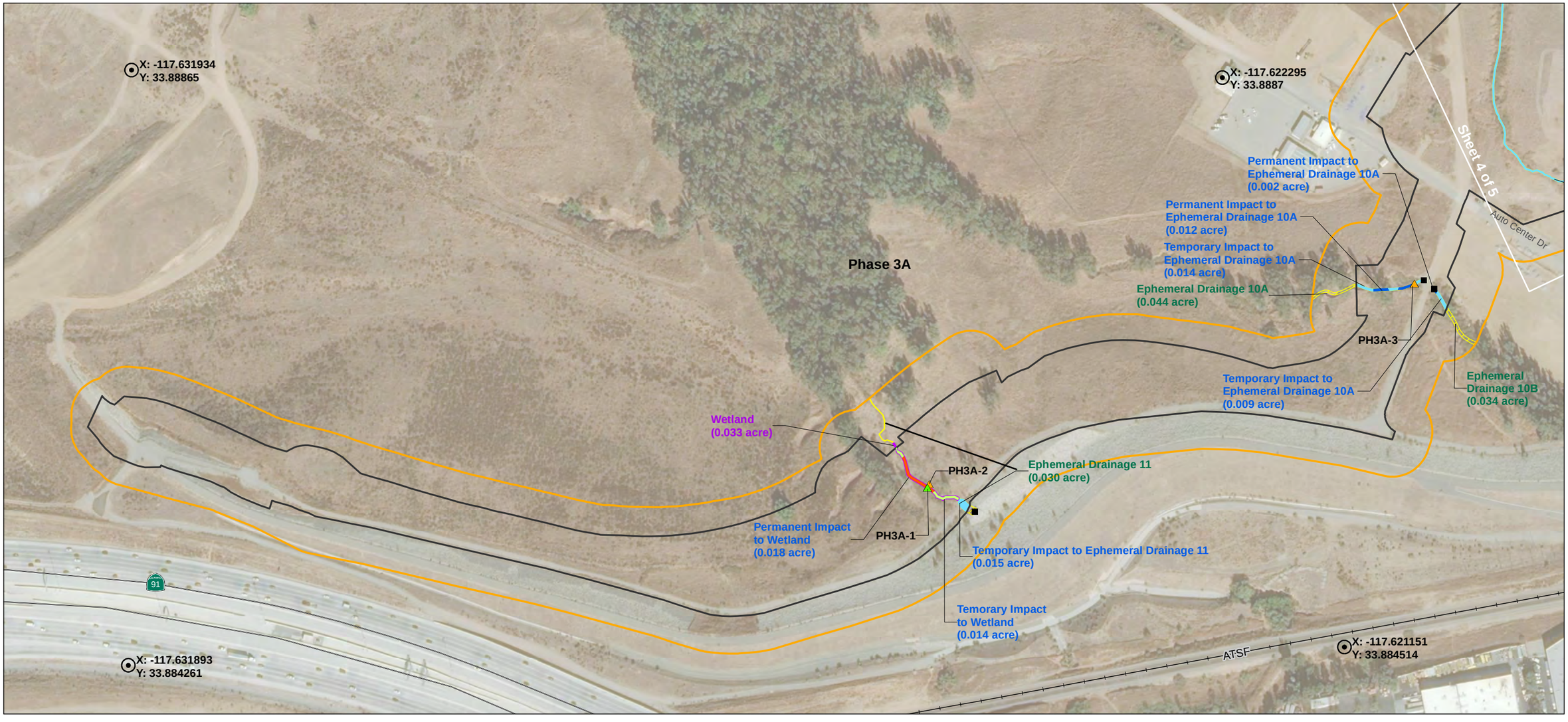

Aquatic Resources Survey Area (100 ft Buffer)
Project Footprint
Railroad

Potential USACE Jurisdictional Areas
Waters of the U.S.
Wetlands

Impacts to Potential USACE Jurisdictional Areas
Waters of the U.S. Temporary Impact
Waters of the U.S. Permanent Impact
Wetlands Temporary Impact
Wetlands Permanent Impact

Reference Point
Culvert

Sample Point
Non-wetland
Wetland

0 270 540 Feet
(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

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Santa Ana River Trail Project
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APPENDIX E

Determination of Biologically Equivalent or Superior Preservation and Addendum

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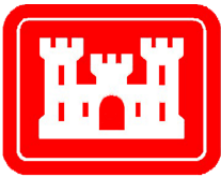
FIRSTCARBONSOLUTIONS™

Final Determination of Biologically Equivalent or Superior Preservation (DBESP) Analysis
Santa Ana River Trail
City of Corona, City of Eastvale, City of Norco, and Riverside County, California

Prepared for:



U.S. Army Corps of Engineers
Assessment Management Division
P.O. Box 532711
Los Angeles, CA 90053
213.452.3392

Contact: Megan Wong, Planning Division

Prepared by:
FirstCarbon Solutions
650 E. Hospitality Lane, Suite 125
San Bernardino, California 92408
909.884.2255

Contact: Vanessa Welsh, Project Manager

Date: July 17, 2018

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Table of Contents

List of Tables

List of Exhibits

List of Appendices

ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
AMSL	above mean sea level
APN	Assessor's Parcel Number
CAD	Computer Assisted Drawings
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFG Code	California Fish and Game Code
CSS	coastal sage scrub
CWA	federal Clean Water Act
DBESP	Determination of Biologically Equivalent or Superior Preservation
District	Riverside County Parks and Open Space District
EA	Environmental Assessment
ECORP	ECORP Consulting, Inc.
I	Interstate
IA	Implementing Agreement
JCSD	Jurupa Community Services District
KSHB	Kuroshio shot hole borer
LBVI	least Bell's vireo
MBA	Michael Brandman Associates
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
OCWD	Orange County Water District
PCEs	Primary Constituent Elements
PQP	Public/Quasi-Public
PSHB	polyphagous shot hole borer
RCA	Regional Conservation Authority
RCRCD	Riverside-Corona Regional Conservation District
RWQCB	Regional Water Quality Control Board
SART	Santa Ana River Trail
SAWA	Santa Ana Watershed Association
SAWPA	Santa Ana Watershed Project Authority

SR	State Route
SWFL	southwestern willow flycatcher
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WQMP	Riverside County Water Quality Management Plan
YBCU	western yellow-billed cuckoo

SUMMARY

The Riverside County Parks and Open Space District, in cooperation with the United States Army Corps of Engineers, the County of Riverside, the City of Corona, the City of Norco, and the City of Eastvale, proposes to construct a 12.8-mile section of the Santa Ana River Trail (SART) and Parkway Project (project) to facilitate pedestrian, equestrian, and bicycling trail use through both new construction and improvements to existing trail features. The project would fill in the gaps of the SART within the Prado Basin. Approximately 70 percent of the proposed alignment incorporates existing trails, while only 30 percent is projected to impact previously undisturbed native soils. Roughly a quarter of the existing trails are paved, while the remaining segments are composed of either well-defined or washed out dirt trails. Depths of excavation within the alignment are currently projected to be minimal with only select areas receiving light restoration grading, resulting in a 1- to 2-foot cut below the current surface. This 12.8-mile segment of the overall trail system (approximately 110 miles) is located within the cities of Corona, Eastvale, Norco, and unincorporated Riverside County, California. The project area encompasses approximately 184.88 acres within the Prado Basin. It is located in western Riverside County and within areas covered by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

MSHCP riparian/riverine habitats occur within multiple areas of the project area. The riparian/riverine areas are generally located adjacent to the Santa Ana River floodplain within the Prado Basin and along the north bank of the Santa Ana River. The project is anticipated to impact MSHCP Riverine/Riparian resources; therefore, the MSHCP requires a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis to evaluate whether the project is biologically equivalent or superior to the baseline conditions. This report presents the results of a DBESP analysis for the project as required under Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools* of the MSHCP. The subject DBESP analysis includes a detailed discussion of the on-site riparian/riverine habitat that are proposed to be impacted, and incorporates adequate avoidance, minimization, and/or mitigation measures to offset impacts and reduce them to a less than significant level.

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SECTION 1: INTRODUCTION

The Riverside County Parks and Open Space District (District), in cooperation with the United States Army Corps of Engineers (USACE), the County of Riverside, the City of Corona, the City of Norco, and the City of Eastvale, proposes to construct of a 12.8-mile section of the Santa Ana River Trail (SART) and Parkway Project (project). This 12.8-mile segment of the overall SART system (approximately 110 miles) is located within the cities of Corona, Eastvale, Norco, and unincorporated Riverside County, California. The project area encompasses approximately 184.88 acres within the Prado Basin (Exhibit 1: Regional Location Map). When complete the project will provide the only direct trail connection through Orange, Riverside, and San Bernardino counties. The proposed 12.8-mile section of the SART would facilitate pedestrian, equestrian, and bicycling trail use with nature-viewing opportunities within Prado Basin and would provide a non-motorized transit route that does not otherwise exist in the area.

Through both new construction and improvements to existing trail features, the project would fill in the gaps of the SART within the Prado Basin. Approximately 70 percent of the proposed alignment incorporates existing trails, while only 30 percent is projected to impact previously undisturbed native soils. Roughly a quarter of the existing trails are paved, while the remaining segments are composed of either well-defined or washed-out dirt trails. Depths of excavation within the alignment are currently projected to be minimal with select areas receiving light restoration grading resulting in a 1- to 2-foot cut below the current surface.

The project area is located in western Riverside County and within areas covered by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). MSHCP riparian/riverine habitats occur within multiple areas of the project area. The riparian/riverine areas are generally located adjacent to the Santa Ana River floodplain within the Prado Basin and along the north bank of the Santa Ana River. The project is anticipated to impact MSHCP Riverine/Riparian resources; therefore, the MSHCP requires a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis to evaluate whether the project is biologically equivalent or superior to the baseline conditions. This report presents the results of a DBESP analysis for the project as required under Section 6.1.2, *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools* of the MSHCP. The subject DBESP analysis includes a detailed discussion of the on-site riparian/riverine habitat that are proposed to be impacted, and incorporates adequate avoidance, minimization, and/or mitigation measures to offset impacts and reduce them to a less than significant level.

The Riverside County Parks and Open Space District (District) is the lead agency under the California Environmental Quality Act (CEQA) and the USACE is the lead agency under the National Environmental Policy Act (NEPA). Previous to 2012, the project, as a 25-mile-long trail segment of the SART was evaluated in both a NEPA Environmental Assessment (EA) prepared for the USACE and a CEQA Mitigated Negative Declaration (MND) for the District. The documents were approved in 2011 and 2012 respectively (MBA 2011). For reference, the project as it was approved in the NEPA/CEQA documents (25-mile long segment) is referred to as the "Previously Approved Action" (Reaches I–XII). The current project as it is presented in this document (the revised 12.8-mile

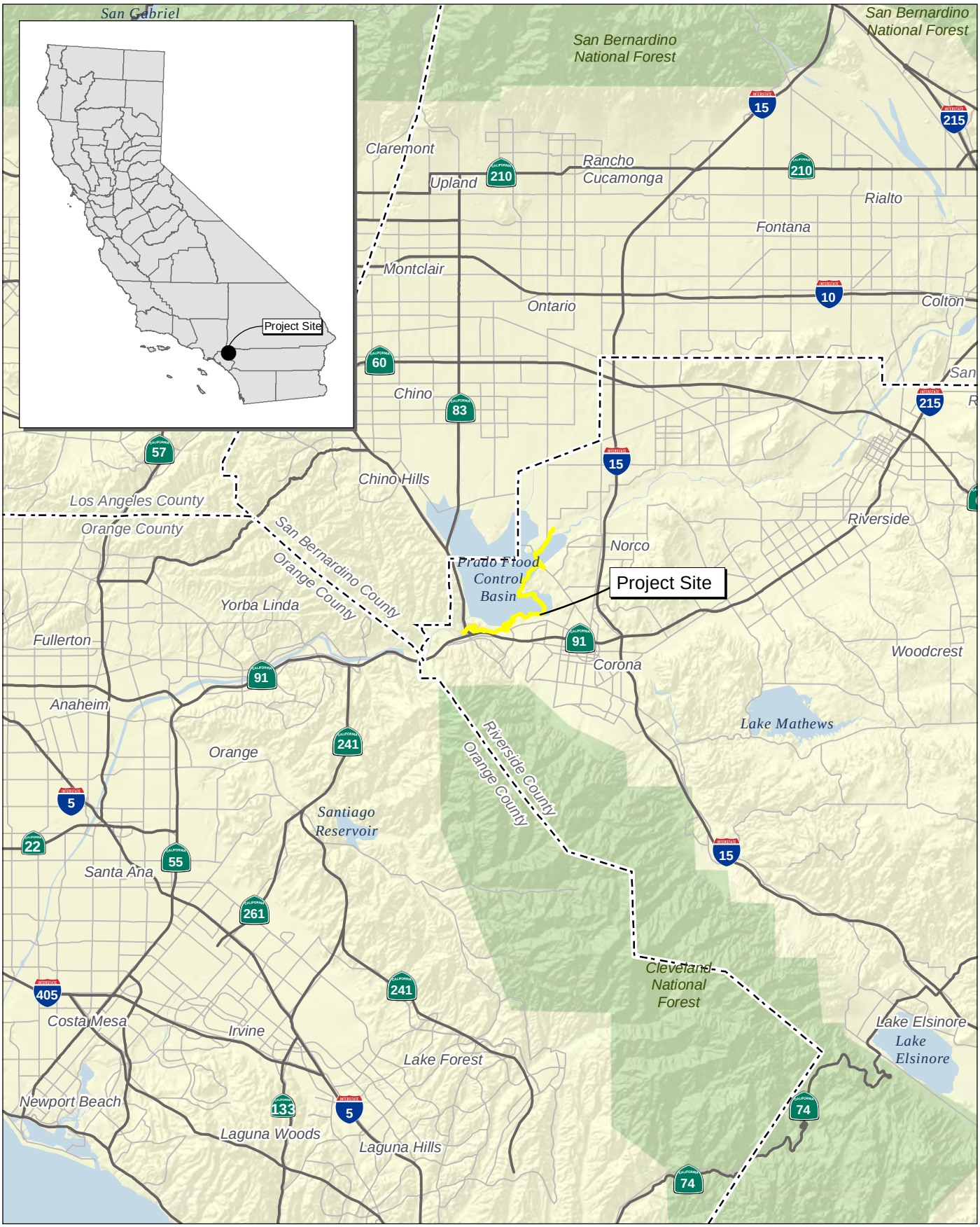
segment slated for construction based on 95 percent design plans and specifications) is referred to as the "Proposed Action" (Reaches I–IX). This report provides an update on the trail configuration at the 95-percent design phase and evaluates the impacts of the 12.8-mile segment. Exhibit 2: Comparison of Proposed Action and Previously Approved Action demonstrates the currently Proposed Action in comparison with the Previously Approved Action. The approvals associated with Reaches X through XII remain unchanged at this time, and will be the subject of a separate environmental analysis when designs for these reaches have been completed.

The 95-percent design plans have been developed since October 2016 to incorporate recommendations provided to the project team by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). The Proposed Action will develop a dual trail system to separate bicyclists and pedestrians from equestrians to facilitate both safety and movement along the trail system. In instances where space does not permit two trails, a combined multi-use trail will be constructed. A staging area is also needed to provide the public with access to the SART trail area within Reach III. The staging area is proposed to be located on Orange County land and would be subject to additional review and analysis by Orange County. The staging area would include limited equestrian facilities, approximately 85 vehicles and five horse trailers, a restroom building, a picnic pavilion, interpretive signage, a buffer zone, and utilities.

The Proposed Action differs from the Previously Approved Action in the NEPA/CEQA documents approved in 2012 by avoiding all impacts to coastal sage scrub and increasing utilization of disturbed areas, thus reducing the impacts to high-quality native habitat, where possible. The trail alignment and the operations and management of the Proposed Action have also been revised as the result of input from the USFWS, CDFW, USACE, and Orange County Water District (OCWD) in late 2016.

The SART system (approximately 110 miles) was included in the MSHCP Master Plan as a planned trail with impacts associated with the trail development included in the assessment. MSHCP Exhibit 7.4, Planned Trails within Criteria Area, shows a trail paralleling the Santa Ana River throughout Riverside County. The Proposed Action is a Conditionally Compatible Use under Section 7.4.2 of the MSHCP. Compliance with Section 7.4.2 is discussed in detail in Section 6 of this report. The MSHCP allows for a 20-foot wide trail corridor in the Prado Basin and the project plans have been designed using this guideline.

The acreage for the project area is discussed in two ways. The first acreage calculation for the project area uses a 100-foot buffer area that is calculated by adding a 100-foot buffer from the centerline (50 feet on each side of the centerline) of the proposed trail alignment around the project staging area and around the project amenities. The total project area with the 100-foot buffer is 184.88 acres. This 100-foot buffer calculation is used to give a sense of the overall trail area and to represent the survey area for cultural resources and biological surveys. The 100-foot buffer calculation does not, however, represent the area for project impacts. The second acreage calculation for the project area is represented by using the 95% construction drawings to represent the areas of temporary and permanent impacts. The drawings are all within the 20-foot trail corridor, allowable by the MSHCP in Prado Basin.



Source: Census 2000 Data, The CaSIL.

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Exhibit 1
Regional Location Map

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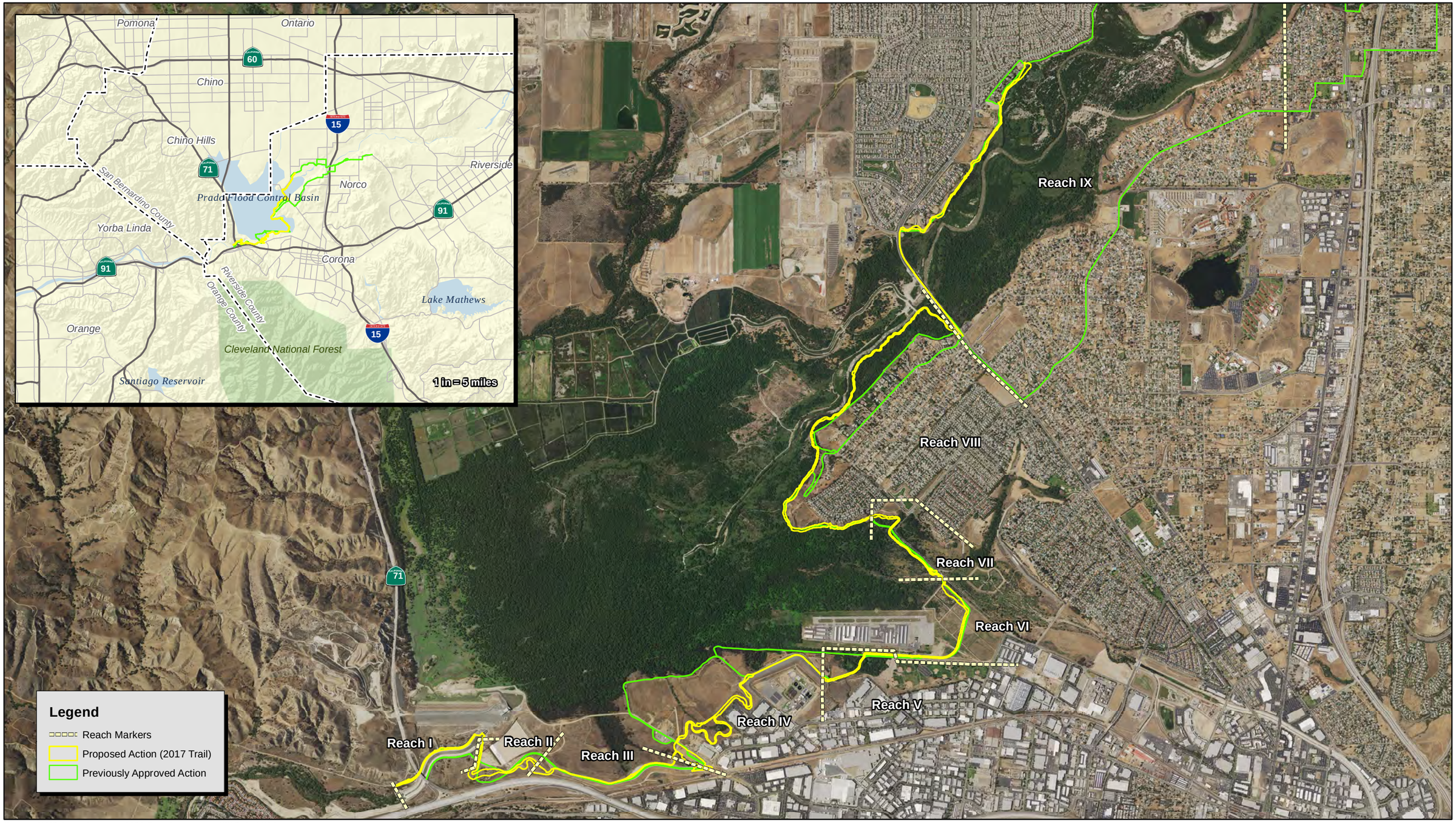

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2014.

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Exhibit 2
Comparison of Proposed Action and Previously Approved Action

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The District's Master Lease Agreement (Master Lease) with USACE has a 25-lease term, which expires on August 19, 2025. Previous to the current Master Lease, established in 2000, the County Parks Department (a County entity) held a long-term lease with USACE for the property which was operated as the Prado Regional Park (Prado Regional Park Lease). Because the Prado Regional Park Lease was between USACE and the County Parks Department (former entity), not the District (current entity), the Master Lease is not technically a renewal but a new lease between different entities. However, USACE regards the Master Lease to be a renewal of the Prado Regional Park Lease. The Prado Regional Park Lease was established for a 25-year term in the mid 1970s—then "renewed" in 2000 as the Master Lease.

USACE reserves the right to use the project area for flood control at any time. Additionally, the lease may be revoked in the event of non-compliance or failure to obtain deficiencies. USACE reserves the right to use the area for flood control at any time, but revocation/termination of the lease is limited to Section 21: revocable in the event of "non-compliance or failure to obtain deficiencies."

The District has two sublessees under the Master Lease. The first of the two subleases is to Riverview Recreation for an area within the Master Lease, which does not overlap with the proposed mitigation at the Mill Creek parcels. The activities undertaken by Riverview Recreation under the sublease include their annual Renaissance Festival, annual haunted trail, and other seasonal events at the site. The activities conducted by Riverview Recreation under the sublease will have no impact on the Mill Creek parcels, or the District's ability to perform or maintain mitigation on the parcels.

The second of the two subleases is to Riverside County Flyway Foundation (formerly Splatter "S") for the operation of a seasonal migratory waterfowl hunting area. The planned mitigation at the Mill Creek parcels is designed to incorporate the sublessees' ongoing operations at the site and is intended to supplement flow to the ponds in a way that is beneficial to waterfowl hunting.

Both of the District's subleases under the Master Lease are set to expire concurrently with the Master Lease—August 19, 2025. The District intends to renew the Master Lease as well as both subleases at that time.

Within the boundaries of the MSHCP, the project area falls within Core A, Subunit 2—Prado Basin within Criteria Cells 1612 and 1616 of the Temescal Canyon Area Plan. Additionally, the southwestern corner of the project area intersects the northern extent of Proposed Constrained Linkage 2 within Criteria Cell 1612 of the MSHCP (Exhibit 3: MSHCP Criteria Areas Map). In total, the Proposed Action would utilize up to 47.02 acres of non-federal land within Core A, subject to MSHCP compliance, and 16.5 acres of non-federal land outside of Core A. In total, 91.44 acres of the trail project within Core A are on lands owned and managed by the USACE, which is not a participating entity in the MSHCP, and 29.9 acres outside of Core A. Impacts to federal and non-federal lands are discussed separately in this DBESP document.

A goal of this analysis is to meet, or exceed, the original criteria discussed in the 2012 NEPA/CEQA documents. The refinements to the route are associated with conflicts with ongoing USACE activities in the Prado Basin, opportunities for cooperation with the OCWD on lands along the river between Rincon Road and River Road, and more detailed engineering work along the river between

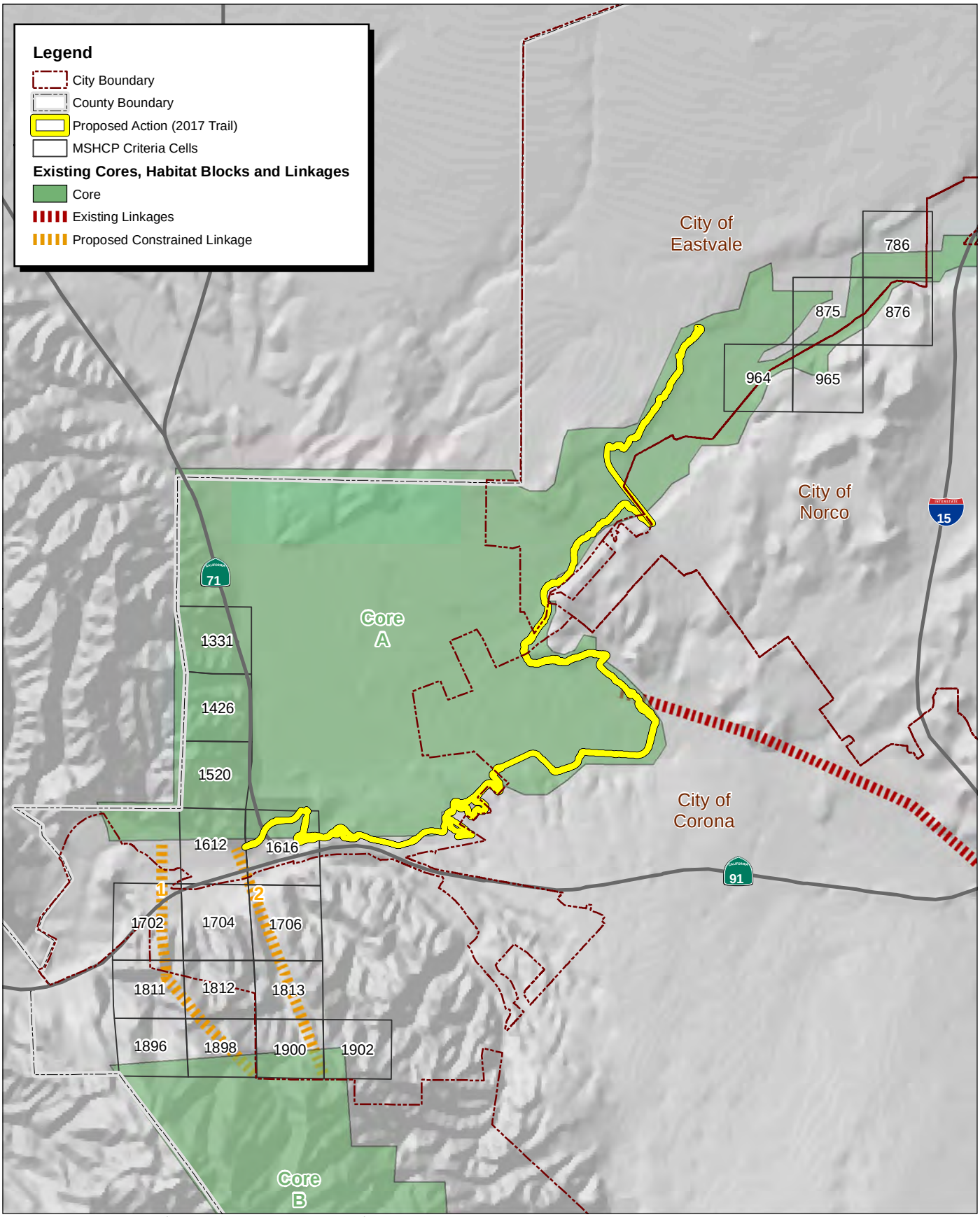
Archibald Street and Tisdale Street. Exhibit 4: Proposed Action, gives an overview of the Proposed Action, and Exhibit 5: Previously Approved Action, gives an overview of the Previously Approved Action for reference.

Avoidance measures for the project include the use and/or improvement of existing culvert and water crossing infrastructure, complete avoidance of coastal sage scrub habitat, trail narrowing in areas of sensitive habitat, construction outside of nesting bird season, and informational signage and public outreach, among others.

Mitigation for permanent impacts includes: the addition of lands at the Hidden Valley Wildlife Area and along the trail alignment to PQP for the MSHCP; the ecological reconnection of recreational duck hunting ponds to the Mill Creek riparian corridor in Prado Basin by extending the existing riparian forest adjacent to the creek, and earth moving activity to reconnect the creek with its floodplain; arundo (=giant reed) (*Arundo donax*) removal in the Prado Burn Area; and funding for ongoing monitoring and mitigation efforts in Prado Basin.

Project design includes the restoration of the areas of temporary impact with native vegetation, and the ongoing monitoring and removal of invasive and non-native plant species in the restored areas. This establishment of native vegetation in areas of temporary impact allows for the conversion of areas within the trail corridor currently inhabited with non-native grassland and disturbed vegetation types to riparian/riverine forest and coastal sage scrub vegetation community types. The restoration will follow the OCWD's ongoing prescriptions for vegetation restoration in the Prado Basin using native seed pallets approved by the USFWS and CDFW. In an effort to reduce invasive and non-native plant species along the trail corridor, and to reduce potential water quality impacts, routine scheduled maintenance will include horse manure removal by the District at least once a month. The manure would be properly disposed of at approved/permitted facilities.

The Final DBESP document is the product of multiple rounds of review and feedback on the project from USFWS, CDFW, and the Regional Conservation Authority (RCA). The trail alignment and various features of the project have been modified and the document updated accordingly since late 2015 with the intent of reducing adverse impacts to riparian/riverine resources and special-status species in the Prado Basin. The Draft DBESP was submitted to the RCA on July 31, 2017 and comments on the draft from CDFW and USFWS were received on September 12, 2017. It was agreed at that time that the CDFW and USFWS would review the project team's responses to their comments, in piecemeal, to allow for agency guidance throughout the process where changes to complex management, mitigation scenarios, and logistics were necessary in response to comment. Responses to comment were approved on this piecemeal basis and on June 1, 2018 when the agencies signed off on the final round of responses. It was agreed at that time that this Final DBESP document would be submitted to the RCTC with all changes from this iterative process incorporated into the document for final approval.



Source: USGS NED, Riverside County MSHCP, Census 2000 data.

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Exhibit 3
MSHCP Criteria Areas Map

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2014.

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Exhibit 4
Proposed Action

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DANGERMOND GROUP/RIVERSIDE COUNTY PARKS • SANTA ANA RIVER TRAIL
DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

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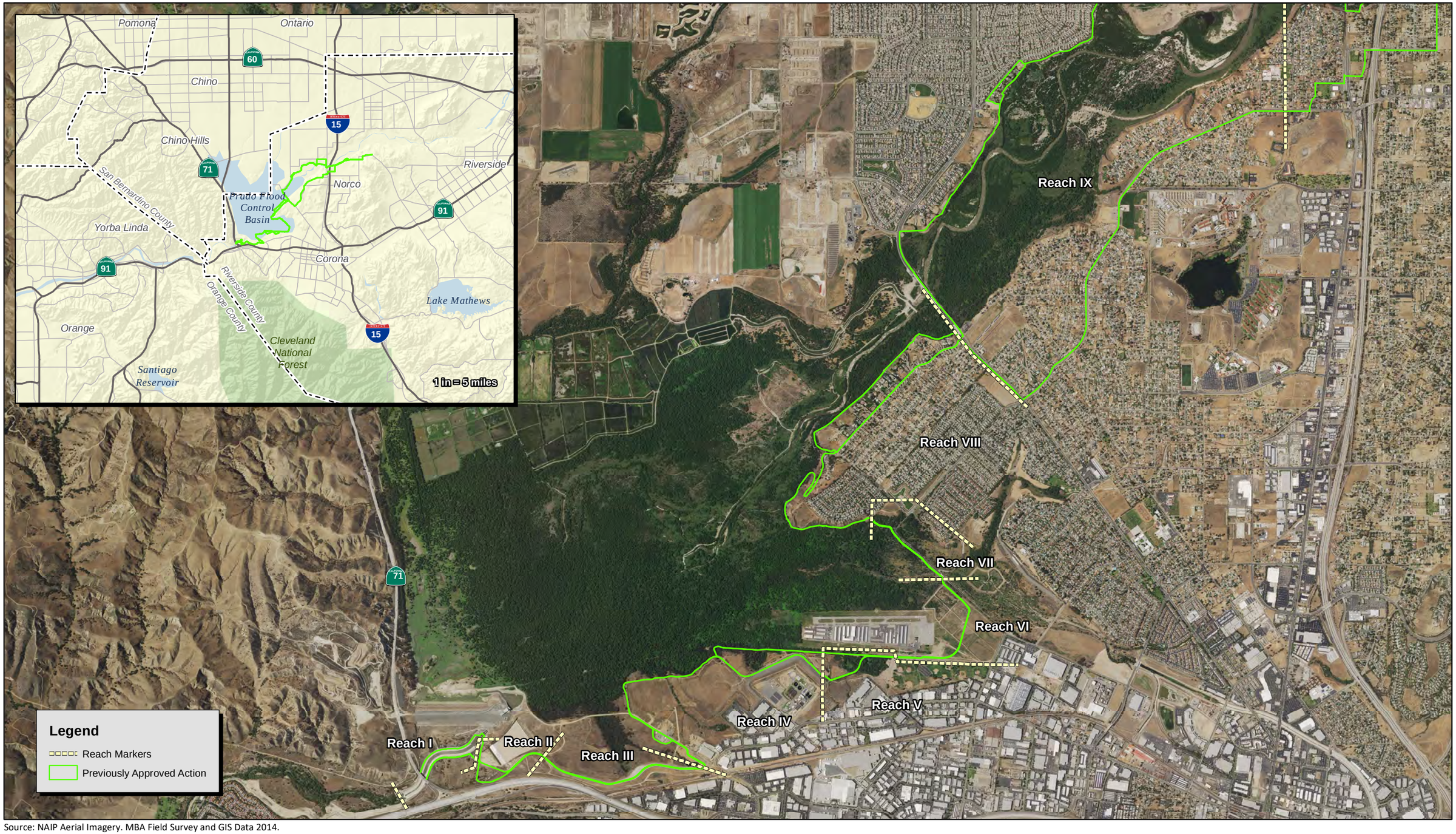

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2014.

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Exhibit 5
Previously Approved Action

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SECTION 2: SANTA ANA RIVER TRAIL PROJECT HISTORY

A recreational trail that would follow the Santa Ana River from the San Bernardino Mountains to the Pacific Ocean was envisioned more than 100 years ago. In 1955, the concept of a Santa Ana River Trail and Parkway was formalized among agencies. Once completed, the regional SART would extend nearly 110 miles from the Pacific Ocean in the City of Huntington Beach to the Pacific Crest Trail in the San Bernardino Mountains. As envisioned, the majority of the 75-mile segment from Huntington Beach to San Bernardino County would be a dual-track trail consisting of 1) paved Class I and Class II Bikeways for bicyclists and pedestrians and 2) decomposed granite (DG) surfaced riding and hiking trail for equestrians, mountain bicyclists, and hikers. In Orange County, most of the SART trail and bikeway systems have been completed; approximately sixty percent is complete in Riverside County; and over 75 percent is complete in San Bernardino County. The existing built reaches of the SART currently serve the needs of recreational pedestrians, bicyclists, and equestrians, and an opportunity for alternative routes of transportation.

The original project design for the Corona-Norco-Eastvale segment of the SART was based on a review of opportunities and constraints that could assist trail designers in having the best trail capable of satisfying the goals of a trail system paralleling the Santa Ana River where feasible, and connecting with the upstream and downstream portions of the existing SART system. Following the Master Plan phase, completed in 2012, steps for the final design on the 12.8 miles of Reaches I through IX of the Proposed Action, evaluated herein were initiated. Subsequent to the completion of the Master Plan, opportunities to move the trail away from sensitive riparian areas, while still providing a nature-viewing opportunity in Reaches VII, VIII and IX have been explored and designed in accordance with input from the USFWS and the CDFW. Through cooperation with OCWD and the results of geotechnical investigations along the bluff in Reach IX, impacts within Public/Quasi-Public (PQP) lands have remained similar, while avoiding impacts to native vegetation.

Other substantive changes to the Corona-Norco-Eastvale segment of the SART were associated with USACE lands at the “borrow site.” Ongoing development at the Prado Basin will keep the borrow site in operation for an unknown number of years into the future. The new design moved the permanent trail to the southern boundary of the borrow site rather than the northern edge to avoid future conflict.

The project design team established alignment goals to guide the selection of the recommended and alternative alignments through the development of the 2011 SART Master Plan. The identified goals specified that the alignments should:

- Maximize the avoidance of environmental impacts.
- Be technically feasible.
- Be safe for users.
- Provide facilities for bicyclists, equestrians, and pedestrians.
- Be scenic.
- Have connections to neighborhoods and other trails.
- Meet Americans with Disabilities Act (ADA) standards where feasible.
- Be affordable.

The trail would avoid conflict with ongoing USACE construction activities and would allow a phased construction event to accommodate the USACE in the project area. The trail would also avoid impacts to previously restored areas of the borrow pit and impacts to known LBVI territories.

In late 2016, the USFWS and CDFW visited the project site to discuss potential improvements to the project's design with regard to the trail's crossing through areas of sensitive habitat. The outcome of this site visit by the agencies was modifications to the trail alignment to further avoid areas of sensitive habitat, and other improvements to the project's design. Modifications were made to the Proposed Action in late 2016 resulting from this input from the USFWS and CDFW, as well as the USACE, and the OCWD. Changes to the Proposed Action since the approval of the 2012 NEPA/CEQA documents include:

- Improvements in Reach III include a new ramp from the Auxiliary Dike to the Staging Area. The ramp will be constructed as part of the USACE improvements to the Auxiliary Dike. Incorporating the ramp into the closure for the Auxiliary Dike will eliminate the need to remove and replace portions of the dike with the subsequent improvements for the trail and staging area in Reach III. Improved utilities for the staging area will include the construction of a sewer system to connect the restroom building to the City of Corona's trunk sewer system.
- Improvements to Reach V where an extension of the original trail has also been added to connect the trail system with the City of Corona's Butterfield Park. The new connection will allow for a new terminus and potential staging area for the trail prior to the construction of the Alcoa Dike. The trail would route along the southern edge of the park and provide a connection to existing Class II bikeways along Smith Avenue.
- Improvement to the Temescal Creek crossing in Reach VII where the proposed alignment for the trail would require construction of a new trail low-water crossing at Temescal Creek, located downstream (southwest) of the existing vehicular bridge. To reduce the footprint, and to avoid impacts on the riparian ecosystem, the crossing would be a single-lane, multi-use, low-water bridge. Low-flow culverts would be included to maintain a dry trail during non-rain events.
- Trail realignment where Reaches VII and VIII meet near the intersection of Rincon Street and Corydon Street, the trail alignment has been moved closer to Stagecoach Drive and along the perimeter of the native vegetation in the area to avoid impacts to native vegetation in response to input from USFWS and CDFW during a site visit of sensitive areas in October of 2016.
- Trail alignment rerouted at River Road to avoid a sensitive ecological area, to further avoid riparian impacts, and to avoid inundation in the vicinity of the bridge due to historic rainfall in 2016. The approximately 1,100-foot portion of trail was formerly proposed to be on the east side of River Road Bridge is proposed to be relocated onto the west side of the bridge in response to USFWS and CDFW input late in 2016.
- Where feasible, the paved bikeway and DG trail would run parallel to each other, although the alignments could merge if constrained by technical or biological conditions. This is consistent with existing built reaches of the SART in Orange and Riverside Counties.

- Trail realignment at the northernmost point of Reach IX in order to move the trail away from the river and areas of higher-quality vegetation toward the bluff adjacent to Grapewin Street to further avoid biological impacts with regard to vegetation, special-status species, and the riparian corridor. This change to the trail alignment was made in late 2016 in response to input from USFWS and CDFW during a site visit of ecologically sensitive areas along the proposed trail alignment. This realignment of the trail is approximately 1,200 feet in length.

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SECTION 3: PROJECT MSHCP OVERVIEW

The MSHCP is a comprehensive, multijurisdictional habitat conservation plan and Natural Communities Conservation Plan (NCCP). The MSHCP focuses on the conservation of species and their associated habitats in western Riverside County. The MSHCP allows Permittees to obtain take of plant and animal species identified by the MSHCP. Regulation of take of threatened, endangered, and rare species is authorized by the wildlife agencies (USFWS and CDFW). The wildlife agencies allow take authorization for otherwise lawful actions (e.g., public and private projects) in exchange for the assembly and management of a coordination Reserve.

The MSHCP plan area encompasses approximately 1.26 million acres and includes all unincorporated land in Riverside County west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Eastvale, Jurupa Valley, Wildomar, Menifee, San Jacinto, Hemet, Perris, Calimesa, Beaumont, Banning, Moreno Valley, Riverside, Corona, Norco, Canyon Lake, Lake Elsinore, Murrieta and Temecula. The Conservation Area, or Reserve, will be assembled from the area referred to as the Criteria Area, which consists of one-quarter-section cells of approximately 160 acres, each with specific descriptions, or criteria, identifying the conservation requirements. The Conservation Area will total 500,000 acres when complete, which is projected to occur by 2028.

Of those 500,000 acres, 347,000 acres were already conserved at the time the MSHCP was adopted in 2003. The 347,000 acres are referred to as Public/Quasi-Public (PQP) Lands, as they are under a type of government ownership where development is not likely. The cities and the County of Riverside, as the Local Permittees, have the responsibility to build out the remaining acreage of the Reserve, which equates to 153,000 acres by 2028. It is through the development and entitlement process that the majority of the 153,000 acres will be assembled for Conservation.

Riverside County Parks and Open Space District (District) is a Permittee to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) was adopted by the County of Riverside in June 2003. As a Permittee, the District has the responsibility to implement and adhere to the provisions of the MSHCP as well as the Implementing Agreement issued by the USFWS and CDFW. A summary of the obligations specific to implementation is as follows:

- Adopt and maintain resolutions as necessary to implement the requirements and fulfill the purposes of the Permits, the MSHCP, and the Implementing Agreement (IA) for covered activities. Such requirements include compliance with: (1) the policies for the protection of species associated with riparian/riverine areas and vernal pools as set forth in Section 6.1.2 of the MSHCP, (2) the policies for the protection of narrow endemic plant species as set forth in Section 6.1.3 of the MSHCP, (3) the urban/wildlands interface guidelines as set forth in Section 6.1.4 of the MSHCP, and (4) the BMPs and all other requirements of Section 7.0 and Appendix C of the MSHCP. The requirements also include conducting surveys as set forth in Section 6.3.2 of the MSHCP.

- Contribute to Plan implementation and the Reserve Assembly as determined by the District for covered activities, including one or both of the following: (1) acquisition of replacement habitat at a 1:1 ratio is biologically equivalent or superior to the property being disturbed or (2) payment of Local Development Mitigation Fees as established by the County for commercial and industrial development. Such contribution shall occur prior to impacts to covered species and their habitats.
- Manage and monitor land owned or leased within the MSHCP Conservation Area that has been set aside for conservation purposes pursuant to Section 5.0 of the MSHCP; funding for such management and monitoring shall be provided pursuant to Section 8.0 of the MSHCP.

3.1 - Project Relationship to the MSHCP

As discussed in Section 2, Santa Ana River Trail Project History, the establishment of a trail along the margins of the Prado and Santa Ana River is a Conditionally Compatible Use under Section 7.4.2 of the MSHCP, and would satisfy a primary MSHCP objective of "provid[ing] recreational and educational opportunities within the MSHCP Conservation Area, while providing adequate protection for the biological resources" (Authority 2004).

The SART was included in the MSHCP Master Plan as a planned trail with impacts associated with the trail development included in the assessment. MSHCP Exhibit 7.4, Planned Trails within Criteria Area, shows a trail paralleling the Santa Ana River throughout Riverside County. The SART Master Plan trail alignment avoided following the river in several areas, due to construction constraints and to avoid impacts to sensitive habitat.

3.2 - Project MSHCP Lands

The Prado Basin covers approximately 4,000 acres, and is within the MSHCP Conservation Area, residing on PQP Lands maintained and operated by USACE, Riverside County, and OCWD. More specifically, the Prado Basin and Santa Ana River are located within MSHCP Core A, and sections of the Santa Ana River act as a Riparian Linkage: connecting Orange County, to the west, with San Bernardino County, to the north.

Within the boundaries of the MSHCP, the project area falls within Core A, Subunit 2—Prado Basin within Criteria Cells 1612 and 1616 of the Temescal Canyon Area Plan. Additionally, the southwestern corner of the project area intersects the northern extent of Proposed Constrained Linkage 2 within Criteria Cell 1612 of the MSHCP (Exhibit 3: MSHCP Criteria Areas Map). In total, the project area would be located on 47.02 acres of non-federal land within Core A, subject to MSHCP compliance, and 16.5 acres of non-federal land outside of Core A. In total, 91.44 acres of the project area would be located within Core A are on lands owned and managed by the USACE, which is not a participating entity in the Western Riverside MSHCP, and 29.9 acres would be located outside of Core A.

3.2.1 - Existing Core A

Existing Core A consists of Prado Basin and the Santa Ana River, located in the northwest region of the Plan Area. This southwest-to-northeast trending swath of land is composed largely of Public/Quasi-Public Lands owned by a variety of entities, but it also contains a small number of privately-owned lands. Core A also functions as a linkage, connecting Orange County to the west with San Bernardino County to the north. Existing Core A is connected to Existing Core B (Cleveland National Forest) via both and upland and a riparian connection (Proposed Constrained Linkage 1 and Proposed Constrained Linkage 2, respectively).

Core A is constrained on all sides by existing urban development and agricultural use, and planned land uses surrounding the Core consist largely of high-impact land uses such as city and community Development. Therefore, high quality riparian Habitat within the Core and along the edges must be maintained for species including the SWFL, yellow warbler, yellow-breasted chat, western yellow-billed cuckoo (YBCU), and others listed in Table 1: Overview Existing Core A. Maintenance of existing floodplain processes and water quality along the Santa Ana River is also important to Santa Ana River woollystar and arroyo chub. Management entities in Existing Core A include the County of Riverside Parks and Open Space District, USACE, Orange County Water District, and California Department of Parks and Recreation.

3.2.2 - Proposed Constrained Linkage 2

A linkage is a connection between core areas with adequate size, configuration, and vegetation characteristics to provide “live-in” habitat or genetic flow for identified planning species. Live-in habitat refers to areas with suitable living conditions. Areas identified as linkages in the MSHCP may provide movement habitat but not live-in habitat for some species, thereby functioning more as movement corridors. It is expected that every linkage could provide live-in habitat for at least one species.

A constrained linkage is a constricted connection that is expected to provide for movement of identified planning species between core areas where options for the connection are limited by existing patterns of use.

Proposed Constrained Linkage 2 provides a riparian connection from the Prado Basin and Santa Ana River to the Cleveland National Forest, thus allowing for movement of species such as coast range newt and western pond turtle. This linkage is also likely to be important for mountain lion movement from the Santa Ana Mountains to the Chino Hills beyond the project area. As currently designed, no existing culverts and crossings will be permanently impacted and no habitat will be fragmented or interrupted in a way that would adversely affect the movement of wildlife beyond that which already exists on-site.

Table 1: Overview Existing Core A

Approximate Dimension Data for Core					Planning Species	Adjacent Proposed General Plan Land Use	Major Covered Activities Potentially Affecting Core
Approx. Total (ac.)	Approx. Edge (ac.)	Approx. Interior (ac.)	Approx. Perimeter/ Area Ratio (ft/ac)	Approx. Distance to Nearest Connected Core (miles)			
Existing Core A							
10,740	1,640	9,100	33	1.7	Santa Ana sucker, arroyo chub, western pond turtle, Cooper's hawk, tricolored blackbird, burrowing owl, American bittern, cactus wren, northern harrier, western yellow-billed cuckoo, yellow warbler, white-tailed kite, southwestern willow flycatcher, California horned lark, peregrine falcon, yellow-breasted chat, loggerhead shrike, black-crowned night heron, osprey, double-crested cormorant, downy woodpecker, white-faced ibis, tree swallow, least Bell's vireo, bobcat, mountain lion, and Santa Ana River woollystar.	City (Corona, Norco, Riverside), Community Development, Open Space/ Conservation	SR-71, River Road, Hammer, I-15, Schleisman, Van Buren, Mission, Market

Criteria Cells 1612 and 1616

The conservation goals for Criteria Cells 1612 and 1616 are summarized in Table 2: Criteria Cells and Proposed Conservation Goals. The locations of the cells are shown in Exhibit 3: MSHCP Criteria Areas Map.

Table 2: Criteria Cells and Proposed Conservation Goals

Cell ID	Subunit	Cell Group	USGS Section	Quarter Section	Cell Criteria
1612	2: Prado Basin	B	30	NE	Conservation within this Cell Group will contribute to assembly of Proposed Extension of Existing Core 1 and Existing Core A. Conservation within this Cell Group will focus on a variety of wetland habitat associated with the Prado Flood Control Basin and the Santa Ana River, and grassland. Areas conserved within this Cell will be connected to wetlands and uplands proposed for conservation in Cell #1616 to the east, and Cell Group A to the north. Conservation within this Cell Group will range from 20%–30% focusing on the northern and southeastern portions of the Cell Group.
1616	2: Prado Basin		29	NW	Conservation within this Cell will contribute to assembly of Existing Core A. Conservation within this Cell will focus on a variety of wetland habitat associated with the Prado Flood Control Basin and the Santa Ana River, and grassland. Areas conserved within this Cell will be connected to wetlands and uplands proposed for conservation in Cell Group B to the west and Cell #1706 to the south. Conservation within this Cell Group will range from 25%–35% focusing on the central and western portions of the Cell.

Table 3: Project Area MSHCP Lands describes the project area using the 100-foot buffer calculation located on lands subject to MSHCP jurisdiction, according to land ownership or jurisdiction in acres. Criteria Cells 1612 and 1616 are both located within Core A.

Table 3: Project Area MSHCP Lands

Jurisdiction/Landowner	MSHCP Core A (acres)	Outside MSHCP Core A (acres)	Grand Total
City of Norco	1.55	1.28	2.83
City of Corona	1.48	0	1.48
City of Eastvale	5.07	0.03	5.10
Riverside County	0	0.41	0.41
Riverside County Regional Parks & Open Space District	4.84	0	4.84

Table 3 (cont.): Project Area MSHCP Lands

Jurisdiction/Landowner	MSHCP Core A (acres)	Outside MSHCP Core A (acres)	Grand Total
Orange County Flood Control Division	0	8.78	8.78
Orange County Water District	21.7	0	21.7
Weyerhaeuser Mortgage Co. (currently being acquired by the District)	4.70	0	4.70
Private	7.68	6.0	13.68
Grand Total Core A	47.02	—	—
Grand Total Outside Core A	—	16.5	—
MSHCP Lands Project Total			63.52
Source: FCS 2017.			

In total, the trail project area consists of up to 47.02 acres within Core A, subject to MSHCP compliance, and 16.5 acres outside of Core A. Again, these acreages do not represent the actual areas of temporary and permanent impact for trail development.

3.2.3 - Project Area Lands in Federal Ownership

Portions of Reaches I–IX of the Corona-Norco-Eastvale SART Segment in the western portion of Riverside County are located on lands owned by the USACE, which is not a participating entity in the Western Riverside MSHCP. Table 4: Project Area Non-MSHCP Lands describes the project area within MSHCP lands owned by USACE. In total, 91.44 acres of the project area is in Federal ownership within Core A are on lands owned and managed by the USACE, and 29.9 acres are located outside of Core A.

Table 4: Project Area Non-MSHCP Lands

Jurisdiction/Landowner	MSHCP Core A (acres)	MSHCP Outside Core A (acres)	Grand Total
USACE	91.44	29.9	121.34
Source: FCS 2017.			

Tables 7.17 and 7.18 of the MSHCP list the total number of acres of anticipated impacts associated with the Covered Trails and Facilities within the MSHCP Conservation Area (PQP lands). Table 5: Permanent Vegetation Impacts Associated with the Santa Ana River Trail within the MSHCP Conservation Area describes the permanent vegetation impacts by vegetation type to the MSHCP

Conservation Area as a result of the construction and operation of the SART trail system, and lists them adjacent to the range of acres allowed under the MSHCP. Acreages are based on the project's 95-percent design drawings, representing permanent impacts, using vegetation types as they are described in the MSHCP.

Table 5: Permanent Vegetation Impacts Associated with the Santa Ana River Trail within the MSHCP Conservation Area

Vegetation Community	MSHCP Anticipated Impacts (acres)	Proposed Action Impacts Non-federal Land	Proposed Action Impacts on Federal Land
Agricultural Land	50 to 600	0	0
Chaparral	215 to 230	0	0
Coastal Sage Scrub	185 to 200	0	0
Developed or Disturbed Land	65 to 80 (-3.53 within PQP)	7.03	8.52
Mule Fat Scrub	Not Applicable	0	0.95
Non-Native Grassland	145 to 155 (-11.82 within PQP [Non-Native])	2.39	22.21
Peninsular Juniper Woodland and Scrub	0 to 10	0	0
Riparian Scrub, Woodland, Forest (mapped herein as Southern Willow Scrub)	90 to 100 (-14.77 within PQP)	7.08	8.86
Riversidean Alluvial Fan Sage Scrub	35 to 45	0	0
Woodlands and Forests	25 to 30 (0 within PQP)	0	0
Source: MSHCP Section 7.4.2 Conditionally Compatible Uses, Table 7-18 on page 7-73 (Authority 2004) and FCS 2017.			

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SECTION 4: PROJECT DESCRIPTION

4.1 - Definition of the Project Site

The SART is generally located north of State Route-91 (SR-91), west of Interstate 15 (I-15), and east of SR-71 with a small section extends west of SR-71. The SART is located within the cities of Corona, Eastvale, Norco, unincorporated Riverside County, and the USACE Prado Basin in Riverside County, California. Reach I commences at the western end of the project area—the downstream edge of the Prado Dam outflow channel just west of SR-71. Exhibit 6: Jurisdictional Boundaries demonstrates the jurisdictional boundaries of the Proposed Action.

For aerial photography detail of each of the project reaches, please refer to the exhibits in Section 8, Vegetation Community Impacts, to this report.

4.1.1 - Assessor's Parcel Number (APN)

The trail alignment crosses a total of 46 Assessor's Parcel Numbers (APNs). Every APN in the project area touches Core A. APN 101140005 is in Criteria Cell 1612, and APNs 101140006, 101040010 and 101170001 are in Criteria Cell 1616. Table 6: Project Area Assessor's Parcel Numbers (APN) lists the project's APNs.

Table 6: Project Area Assessor's Parcel Numbers (APN)

Project Area Assessor's Parcel Numbers (APN)			
102020005	**102020030**	**130070002**	**130070018**
102020031	**121130002**	**130070004**	**130070003**
101140005	**102020029**	**130070005**	**121030007**
101170001	**121120024**	**130070006**	**121040003**
101100002	**121020002**	**130070007**	**121020001**
101110002	**130080004**	**130460045**	**121030001**
101140006	**130070010**	**130460044**	**121040004**
101040010	**130070009**	**130460060**	**130671005**
121120023	**130080033**	**130070011**	**130671006**
119200009	**130060006**	**130070019**	**121050005**
102020027	**130080006**	**130070012**	
102020026	**130070008**	**130070021**	

4.1.2 - Acreage of Site Surveyed

The acreage for the project area is discussed in two ways within this document. The first acreage calculation for the project area uses a 100-foot buffer area, which is calculated by adding a 100-foot buffer from the centerline of the proposed trail alignment (i.e. 50 feet on each side of the centerline), around the project staging area, and around the project amenities. The total project area with the 100-foot buffer is 184.88 acres. This 100-foot buffer calculation is used to give a sense of the overall trail area, and to represent the survey area for cultural resources and biological surveys. The 100-foot buffer calculation does not, however, represent the area for actual project

impacts. The second acreage calculation for the project area is represented by using the project's 95% construction drawings to represent the areas of temporary and permanent impacts. On non-federal land that is subject to the MSHCP, the construction drawings are all within the 20-foot trail corridor that is allowable by the MSHCP in Prado Basin. In areas with riparian vegetation types, the trail has been limited to 17 feet wide or less, to avoid impacts to riparian areas.

4.2 - Proposed Action

The Proposed Action will develop a dual trail system to separate bicyclists and pedestrians from equestrians to facilitate both safety and movement along the trail system. In instances where space does not permit two trails, a combined multi-use trail would be constructed to facilitate all uses. In these areas, the trail is merged as to be narrower to avoid impacts in areas of sensitive habitat. One staging/trailhead area is proposed to provide the public with access to County-identified area Reach III, and was evaluated in the environmental analysis for the SART project's Master Plan. The staging area would include limited equestrian facilities, parking for approximately 85 vehicles and five horse trailers, a restroom building, a picnic pavilion, interpretive signage, a buffer zone, and utilities. The staging area is the only portion of the Proposed Action to feature new lighting.

4.2.1 - Trail Reaches

The proposed Reaches of the SART would be a dual-track trail composed of natural and paved trail in most areas. The natural trail and paved trail would merge into a combined multi-use trail at more constricted areas, and in these areas the trail would be paved. A combined multi-use trail would be shared by all users where space is limited, such as on bridges, narrow bluffs, or areas within existing MSHCP PQP lands. The proposed trail would be at grade for accessibility, and as not to function as a barrier to wildlife passage. Because of constraints associated with the construction of the trail, the various portions of the trail will be built in phases over a five-year period. A total of 121.34 acres of the project area occur within the Prado Basin on lands controlled by the USACE, which are planned for future flood control improvements with uncertain timing—thus, trail construction in this area must proceed in conjunction with USACE plans.

Through both new construction and improvements to existing trail features, the project would fill in the gaps of the SART within the Prado Basin. Approximately 70 percent of the proposed alignment incorporates existing trails, while only 30 percent is projected to impact previously undisturbed native soils. Roughly a quarter of the existing trails are paved, while the remaining segments are composed of either well-defined or washed-out dirt trails. Depths of excavation within the alignment are currently projected to be minimal with only select areas receiving light restoration grading resulting in a 1- to 2-foot cut below the current surface. At the northeastern terminus of the trail, a slope resulting in approximately 15- to 20-foot elevation gain will be constructed to raise the Santa Ana River Trail to current street grade.

The trail alignment among all reaches has been designed to be within the 20-foot trail corridor allowable by the MSHCP in Prado Basin.

Source: Bing Aerial Imagery.

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2,500 1,250 0 2,500 Feet

Exhibit 6
Jurisdictional Boundaries

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Reach I

The proposed Reach I alignment would extend from about 600 feet downstream (west) of SR-71, at the terminus of the Prado Basin outflow channel, to the upstream end of the outflow channel maintenance road. The area is constrained by Prado Dam on the north and SR-91 on the south. To minimize existing habitat disturbance, the paved bike path and the natural surface trail would be located on the existing maintenance roads found on each side of the Santa Ana River.

To connect to the proposed paved SART segment downstream, the natural surface trail and the paved bike path would be located on the northern maintenance road. Ultimately, trails would connect to both the proposed natural surface trail downstream of the Reach I terminus and the Aliso Canyon entry to Chino Hills State Park further downstream. At the upstream end of the maintenance road, the natural surface trail would utilize the existing paved maintenance bridge to cross the river.

Only minimal changes to the approved Reach I segment occur. Changes would affect the natural surface trail, with a divergence for the existing maintenance road about 1,400 feet west of the outflow channel. The trail would then follow an existing disturbance road under SR-71 and connecting with a defined segment of the SART west of SR-71.

Reach II

The proposed Reach II alignment would extend from the upstream end of the USACE outflow channel maintenance roads to the western end of the spillway. Both the paved bike path and natural surface trail would traverse the spillway plain on federal fee property to reach the base of the bluff. Both proposed alignments would be subject to inundation. After traversing the spillway plain, both the paved bike path and natural surface trails would climb the bluff. The route in this reach has been modified to allow for ADA accessibility and avoidance of proposed OCWD activities southeast of the spillway. This would be accomplished through a series of switchbacks with extensive cut and fill to provide a gentle gradient and would therefore achieve the accessibility goal of the Master Plan. Non-native grasslands would be disturbed as was the case with the original alignment.

Reach III

The proposed Reach III alignment would extend from the downstream to the upstream edge of the proposed Auxiliary Embankment. The paved bike path would be located on top of the Auxiliary Embankment, where there is adequate room for only the paved bike path. The natural surface trail would be located at the base of the Auxiliary Embankment on the north side. All disturbed areas resulting from construction activities would be reseeded with a USACE-recommended seed mix to restore the area to its existing conditions. This is unchanged from the 2012 NEPA/CEQA documents. The project's staging area would be located in Reach III. The staging area would include limited equestrian facilities, parking for approximately 85 vehicles and 5 horse trailers, a restroom building, a picnic pavilion, interpretive signage, a buffer zone, and utilities. The utilities will include the construction of a sewer system to connect the restroom building to the City of Corona's trunk sewer system, see Section 4.2.7–Staging Area. The connection point is located under the future extension of the USACE's Auxiliary Dike, and the sewer will require construction prior to the USACE dike to avoid impacts to the facility.

The Reach III improvements also include a new ramp from the Auxiliary Dike to the Staging Area. The ramp will be constructed as part of the USACE improvements to the Auxiliary Dike. Incorporating the ramp into the closure for the Auxiliary Dike will eliminate the need to remove and replace portions of the dike with the subsequent improvements for the trail and staging area in Reach III.

Reach IV

The proposed Reach IV alignment would extend from the upstream end of the USACE Auxiliary Embankment to the upstream end of the Wastewater Treatment Dike. The proposed alignment for the trails would vary from the original, following the southern boundary of the existing USACE borrow area rather than being adjacent along the northern boundary of the borrow area. The trails would separate to avoid stream crossing impacts before converging west of the Wastewater Treatment Dike. The Wastewater Treatment Dike already has an existing paved and natural surface trail at the base constructed by USACE, in anticipation of the remainder of the SART. The route change would eliminate conflicts with scheduled USACE developments associated with the Alcoa Dike and the raising of the Spillway. The shift to the southern portion of the borrow area would allow for trail construction and use at a much earlier date and would avoid construction of the original trail segment, abandonment for future construction, and reconstruction following construction of the Alcoa Dike.

Reach V

The proposed Reach V alignment would extend from the upstream end of the Wastewater Treatment Dike, then around and through portions of Butterfield Park. The paved bike path and natural surface trail would exit at the eastern end of the Wastewater Treatment Dike. This differs from the original route that utilized the existing Butterfield Drive dirt maintenance road to the paved portion of Butterfield Drive at the park as well as the small trail connection from the Dike. An extension of the original trail has also been added to connect the trail system with the City of Corona's Butterfield Park. The new connection will allow for a new terminus and potential staging area for the trail prior to the construction of the Alcoa Dike. The trail would route along the southern edge of the park and provide a connection to existing Class II bikeways along Smith Avenue.

Reach VI

The proposed Reach VI alignment would extend from the western boundary of Butterfield Park to the Temescal Creek vehicular crossing (bridge). An exhibit showing the cross section of the bridge is provided in Section 4.2.8, below. The trail in this area will utilize an existing, unpaved access road. Both the paved bike path and the natural surface trail would permanently traverse the southern and eastern boundary of the Corona Municipal Airport along property leased from the USACE. The trails would then proceed along the northern side of the paved portion of Butterfield Drive to the proposed USACE Alcoa Dike. Both the paved bike path and the natural surface trail would run parallel at the western base of the proposed Alcoa Dike. The natural surface trail would be located on the airport side, while the paved bike path would be on a newly created bench at the base of the dike. After leaving the Alcoa Dike area, both trail alignments would traverse the existing water pond berms on federal fee property to reach Temescal Creek at West Rincon Street.

In addition to this long-term trail, a temporary trail would be constructed along the southern border of Butterfield Park between the existing ball fields and the existing commercial development. The trail

would exit at North Smith Avenue and head north along Smith Avenue in a striped bike lane or lanes to West Rincon Street, where it would rejoin the proposed route at Temescal Creek. This temporary segment is proposed to provide a connection of trail segments between Reaches V and VII during USACE construction of the Alcoa Dike, which is anticipated for funding in federal fiscal year 2019.

Reach VII

The proposed Reach VII alignment would extend from Temescal Creek at West Rincon Street near the Temescal Creek Bridge to the base of the knoll northwest of the intersection of West Rincon Street and Corydon Street, and north of the Corona Municipal Airport. The proposed alignment for the trails would require construction of a new trail low-water crossing at Temescal Creek, located downstream (southwest) of the existing vehicular bridge. To reduce the footprint and cost, and to avoid impacts to the riparian ecosystem, the crossing would be a single-lane, multi-use, low-water bridge. Low-flow culverts would be included to maintain a dry trail during non-rain events.

Both the trail and bikeway would parallel West Rincon Street on property owned by USACE. The trails would be routed through this area to avoid nearby willow (*Salix* sp.) habitat to the maximum extent feasible. Trimming of native trees may be required to provide adequate width and height for construction and operation of the combined multi-purpose trail. Habitat along this alignment is already degraded with a mixture of non-native trees and brush. Future coordination with the USACE on habitat restoration efforts would aim to restore this area to a native plant community.

Both the trail and bikeway would extend through about 800 linear feet of existing willow habitat to the base of the knoll northwest of the intersection of West Rincon Street and Corydon Street. In this vicinity, the trail will cross through the Weyerhaeuser Parcel, recently acquired by the District to implement the trail project. The Weyerhaeuser Parcel would be used for conservation, placement into PQP land for the MSHCP, fuels management, and trail development.

Where Reaches VII and VIII meet near the intersection of Rincon Street and Corydon Street, the trail alignment has been moved closer to Stagecoach Drive and along the perimeter of the native vegetation in the area as close to the base of the knoll to minimize impacts to native vegetation in response to input from USFWS and CDFW in October of 2016.

Reach VIII

The proposed Reach VIII alignment would extend from the base of the knoll northwest of the intersection of West Rincon Street and Corydon Street near Holster Street, and north of the Corona Municipal Airport, to the base of the River Road Bridge. The alignment would share the trails with the existing maintenance road around the base of the knoll. The majority of this property on the south side of the knoll is owned by the USACE, although one privately owned parcel would need to be purchased. A portion of the property would be used for conservation, and a portion would be used for trail development. On the north side of the knoll, the multi-use trail would traverse OCWD property and follow an OCWD maintenance road to the River Road Bridge. Again, trimming of native trees may be required to provide adequate width and height for construction and operation of the multi-purpose trail. Habitat along this alignment is already degraded with a mixture of non-native trees and brush. Future coordination with the USACE on habitat restoration efforts would aim to restore this area to a

native plant community. This represents a significant change from what is represented in the 2012 NEPA/CEQA documents, although impacts to riparian/riverine habitat would remain similar and, in fact, since the bluff would not be impacted, construction-related impacts would be lessened.

In response to USFWS and CDFW input late in 2016, the trail alignment was rerouted at River Road to avoid a sensitive ecological area, to further avoid riparian impacts, and to avoid inundation in the vicinity of the bridge due to historic rainfall. The approximately 1,100-foot portion of trail was formerly proposed to be on the east side of River Road Bridge is proposed to be relocated onto the west side of the bridge.

Reach IX

The Reach IX alignment in the City of Eastvale would extend from River Road on the northwest bank of the Santa Ana River to Eastvale Community Park. Both the paved and the natural surface trails would use the proposed River Road bridge trail lane to cross the Santa Ana River.

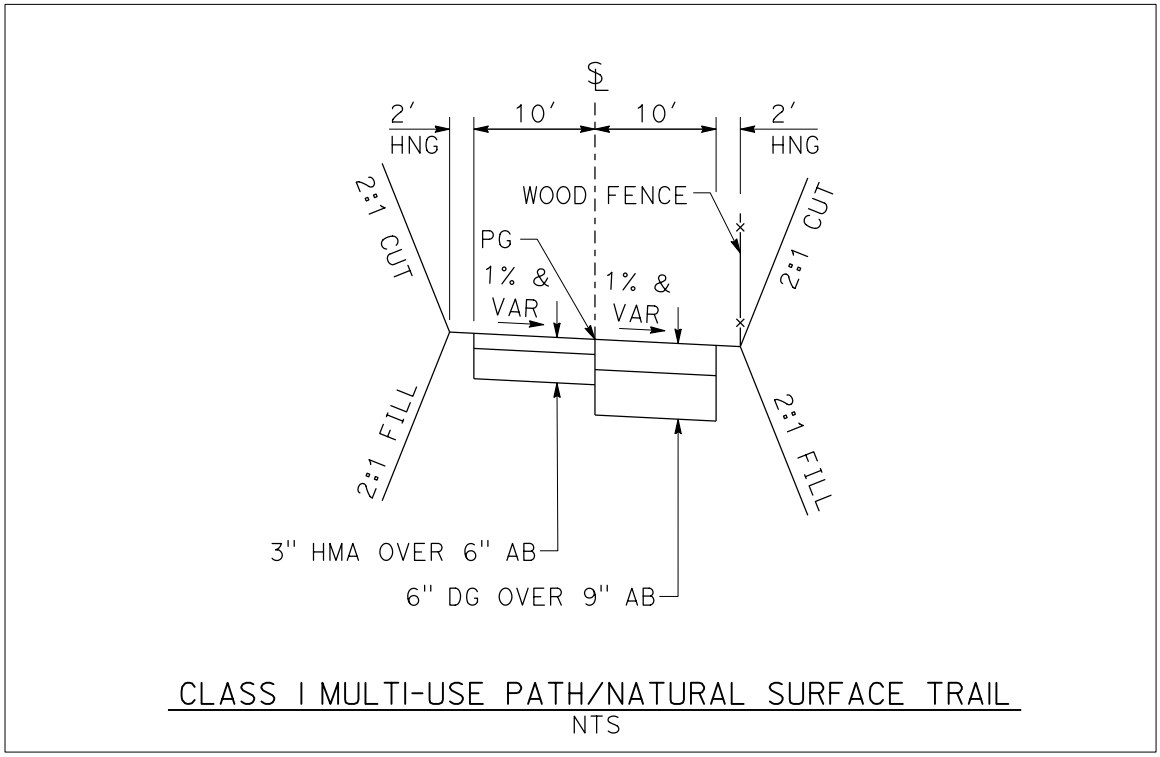
On the north side of the Santa Ana River, on USACE and Riverside County Regional Parks and Open Space District property, the multi-use trail would be located on top of the bluff from River Road to Prado Basin Road, utilizing an existing maintenance road. The multi-use trail would continue along the bluff from Prado Basin Road and then near the bluff to the existing trail at Dearborn Street and Tisdale Streets. In this area of Reach IX, the trail alignment is proposed as two alternatives in accordance with recommendations by the USFWS in 2016 to move the trail away from the Santa Ana River and closer to the bluff. The trail in this area, as planned, does not enter private property, and will not require easements.

From Dearborn Street to Sumner Avenue, both the paved and natural surface trails would utilize the existing Jurupa Community Services District (JCSD) trails. New paved and natural surface trails along the Santa Ana River, from Sumner Avenue to the western perimeter of the proposed Eastvale Community Park, are proposed for future construction. The proposed alignments and associated environmental impacts would be covered under a separate document prepared by the JCSD.

At the northernmost point of Reach IX the trail alignment has been moved away from the river and areas of higher-quality vegetation toward the bluff adjacent to Grapewin Street to further avoid biological impacts with regard to vegetation, special-status species, and the riparian corridor. This change to the trail alignment was made in late 2016 in response to input from USFWS and CDFW during a site visit of ecologically sensitive areas along the proposed trail alignment. This portion of the trail is approximately 1,200 feet in length.

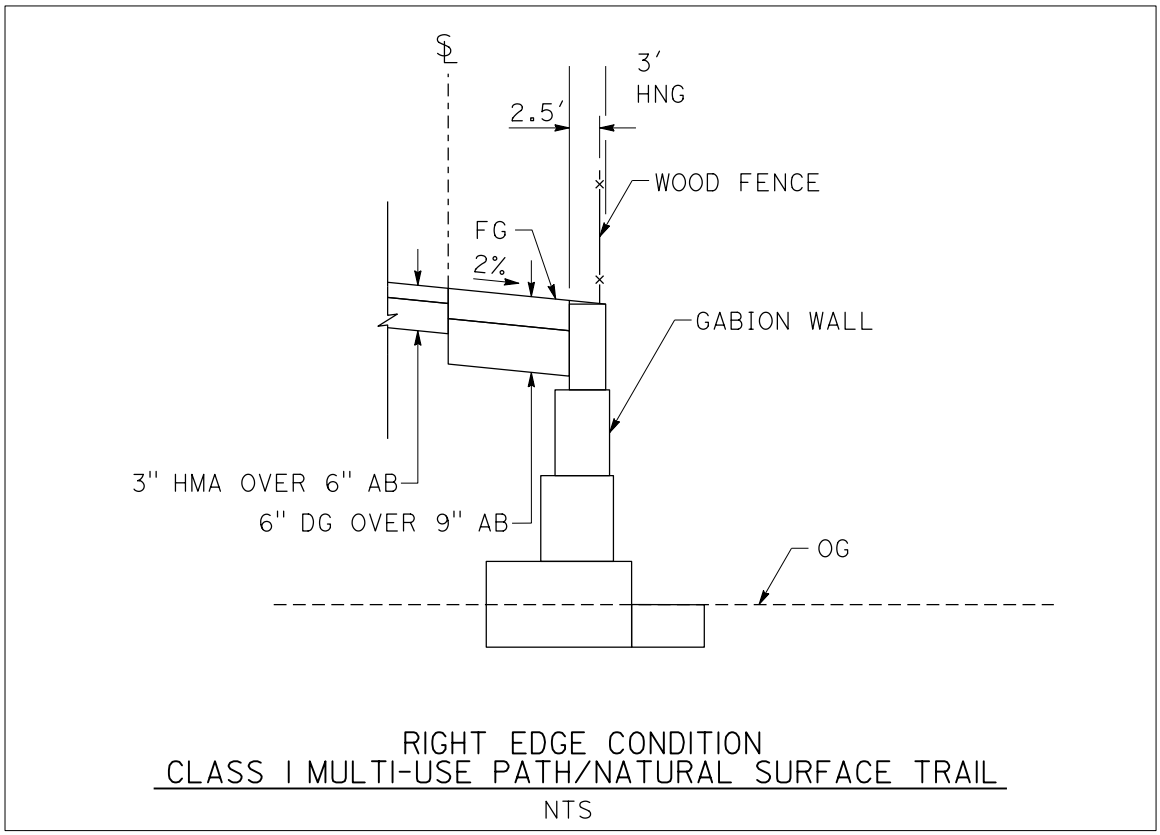
4.2.2 - Trail Characteristics

The Proposed Action would contain several different trail types. Typical trail cross-sections are provided in Exhibit 7: Trail Typical Cross Section Phase 1, Exhibit 8: Trail Typical Cross Section Phase 2A, Exhibit 9: Trail Typical Cross Section Phase 2B, Exhibit 10: Trail Typical Cross Section Phase 3 and Exhibit 11: Trail Typical Cross Section Phase 4. As the construction of the project will be phased to correspond to USACE construction activity in the project area, the typical trail cross-sections correspond to each of the Proposed Action's four construction phases.



CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 1 - Typical section



RIGHT EDGE CONDITION
CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 1 - Typical section at Gabion

Exhibit 7
Trail Typical Cross Section
Phase 1

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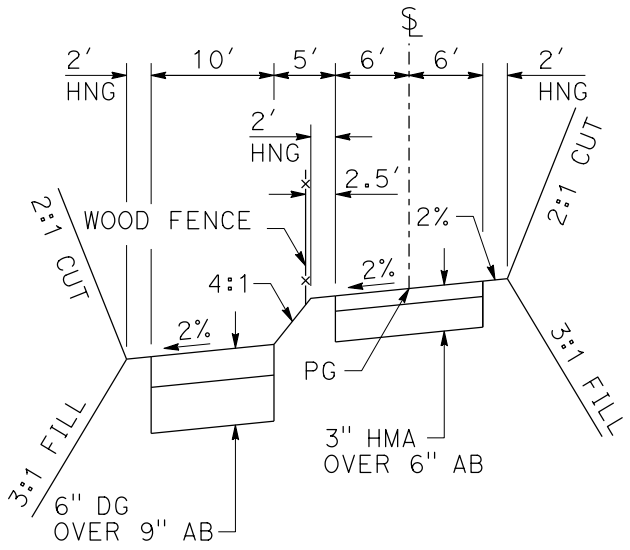
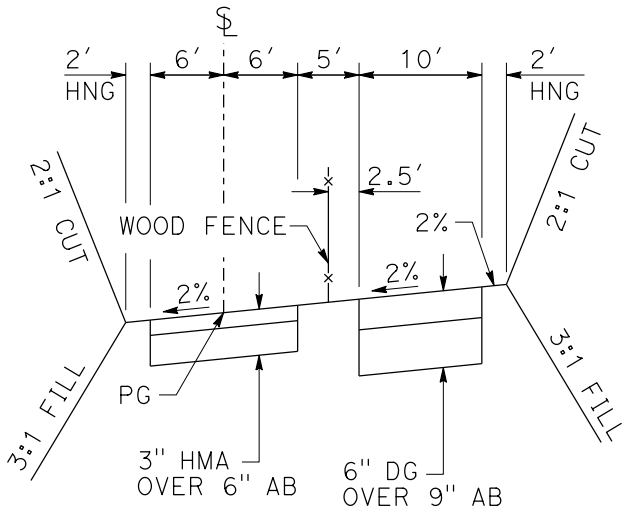


CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 2A - Typical section A



CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 2A - Typical section B

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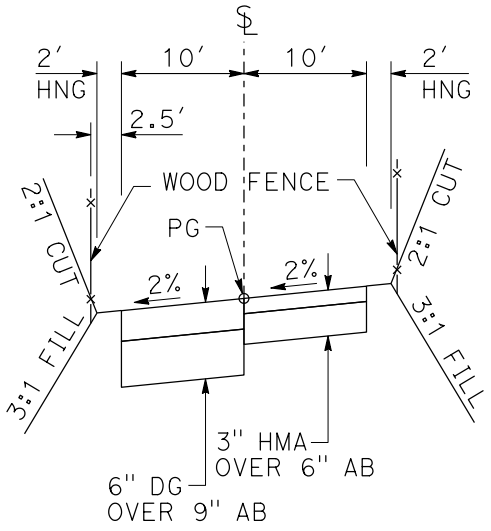
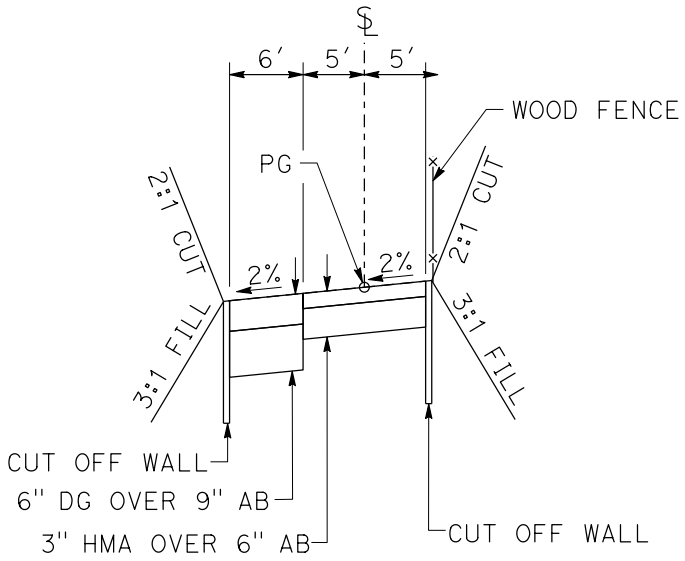


CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 2B - Typical section A



CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 2B - Typical section B

Exhibit 9
Trail Typical Cross Section
Phase 2B

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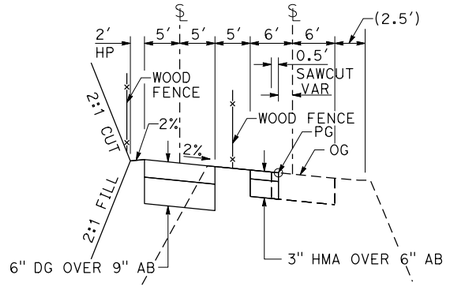
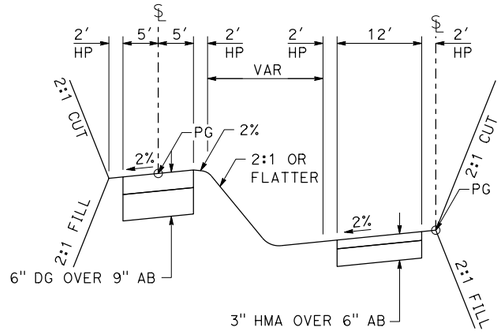
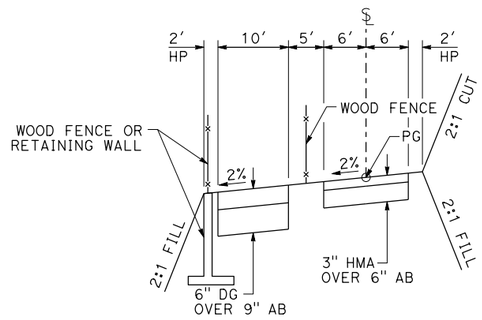


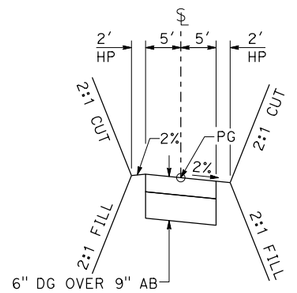
CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS
STA 19+24 TO STA 38+24



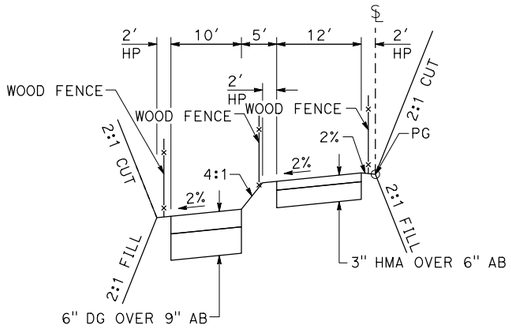
CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS
STA 74+01 TO STA 88+51



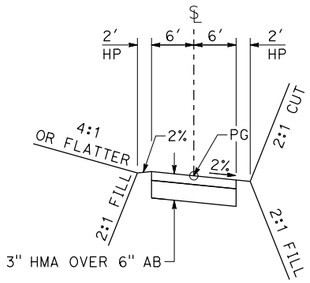
STAGING AREA
CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS
STA 180+00 TO 188+21 (Staging Area)



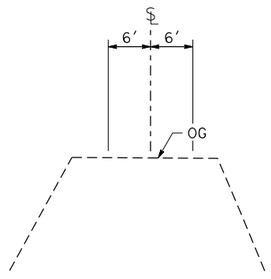
NATURAL SURFACE TRAIL
NTS
STA 10+00 TO STA 19+24
STA 136+08 TO STA 144+00



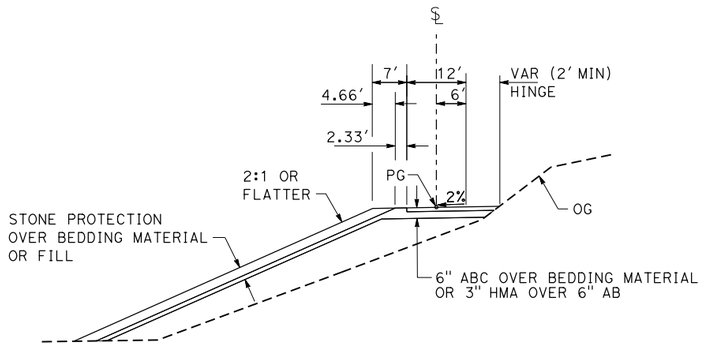
CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS
STA 50+00 TO STA 74+01
STA 88+51 TO STA 90+55



CLASS I MULTI-USE PATH
NTS
STA 10+00 TO STA 19+24



CLASS I MULTI-USE PATH
NTS
STA 38+43 TO STA 44+59
STA 100+00 TO STA 144+86



CLASS I MULTI-USE PATH
NTS
STA 150+00 TO 153+63 (Access Ramp - ACOE Dike Area)
188+21 TO 191+79 (Staging Area - ACOE Dike Area)

Source: Riverside County Regional Park and Open-Space District.

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Exhibit 10
Trail Typical Cross Section Phase 3

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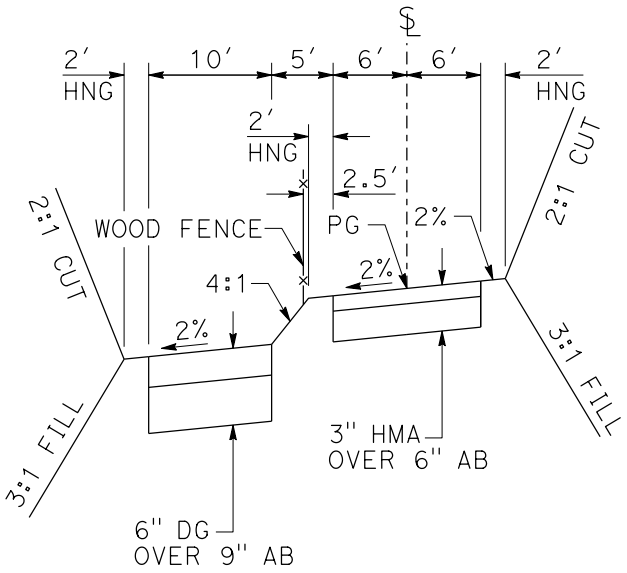
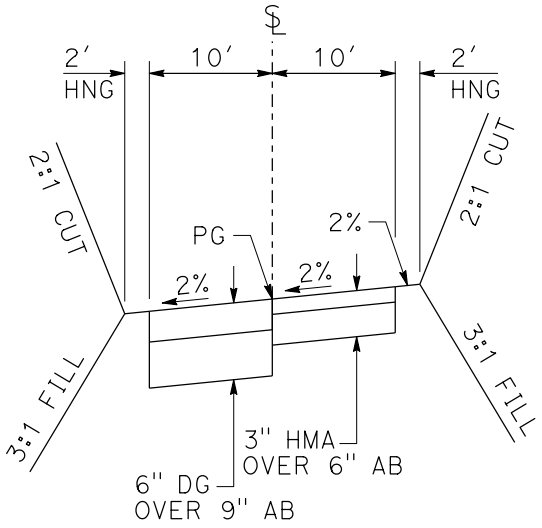


CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 4 - Typical section



CLASS I MULTI-USE PATH/NATURAL SURFACE TRAIL
NTS

Phase 4 - Typical section - Sensitive Areas

FIRSTCARBON SOLUTIONS™

Exhibit 11
Trail Typical Cross Section
Phase 4

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4.2.3 - Natural Surface Trail

The natural surface trail would be approximately 10 feet wide, consisting of decomposed granite or a similar permeable surface of compacted dirt—materials easily repaired after flooding events—with a two-foot wide dirt shoulder on each side. The natural surface trail is intended to be used by mountain bicyclists, equestrians, and pedestrians. The natural surface trail will allow for groundwater percolation, thereby reducing erosional runoff impacts. Typical trail cross sections for each phase of construction are provided as Exhibit 7–Exhibit 11. On non-federal land that is subject to the MSHCP, the construction drawings are all within the 20-foot trail corridor that is allowed by the MSHCP in Prado Basin. In areas with riparian vegetation types, the trail has been limited to 17 feet wide or less, to avoid impacts to riparian areas.

4.2.4 - Paved Bike Trail

In general, the paved bike path would be 14 to 16 feet wide, consisting of a 10- to 12-foot-wide asphaltic concrete pavement and a two-foot unpaved shoulder on each side. This trail type is intended to be used by bicyclists and pedestrians. On non-federal land that is subject to the MSHCP, the construction drawings are all within the 20-foot trail corridor that is allowed by the MSHCP in Prado Basin. In areas with riparian vegetation types, the trail has been limited to 17 feet wide or less, to avoid impacts to riparian areas. There are three different paved bike trail classifications used in the project area—Class I, Class Ib, and limited Class II:

- **Class I:** The Class I bikeway would be a two-way trail striped down the middle and separated from the existing roadway by five feet, plus two-foot dirt shoulder width on each side of the pavement. The Class I bikeways would meet Caltrans Standards.
- **Class Ib:** The Class Ib bikeway is a modified Class I. Like the Class I bikeway, it would be a two-way trail, striped down the middle. However, instead of a four-foot or more separation from the existing roadway, it would be directly adjacent to the road, due to limited space. A barrier would provide separation from the roadway.
- **Class II:** The Class II bikeway would consist of two one-way bike lanes on each side of existing streets, travelling in the same direction as traffic. The Class II bikeways would meet Caltrans Standards. The Class II bikeway in the project area would constitute less than one quarter mile.

4.2.5 - Combined Multi-Use Trail

The natural trail and paved trail would merge into a combined multi-use trail and be shared by all users where space is limited, such as on bridges, narrow bluffs, or areas within existing MSHCP PQP lands. Comprised with either the paved or the natural surface trails, the combined multi-use trail would require a larger shoulder and an increased width to accommodate bicyclists, equestrians, and pedestrians. Combined Multi-Use Trail segments would be approximately 16 feet wide and include an approximately two-foot dirt shoulder on either side, except on bridges.

4.2.6 - Trail Area Access Points

Access to this 12.8-mile segment of the SART trail will occur through six entry points (Exhibit 12: Trail System Entry Points). The entry points have been designed according to the guidelines of MSHCP Section 7.4.2, as described in Section 5, Project MSHCP Overview, of this report. From north to south,

the trail entry points are located at Dearborn Road, Archibald Road, the intersection of Bluff Road and River Road, Butterfield Park in the City of Corona, and at the staging area at Auto Center Drive.

4.2.7 - Staging Area

The Corona-Eastvale SART area contains numerous existing parks/recreational facilities near the Santa Ana River could provide public access to the proposed trails, as well as a number of amenities necessary to support trail users, with more planned for future development. Examples of facilities include Clearwater Sports Fields, Butterfield Park, and Stagecoach Park in western Corona. Because of the number of existing facilities, only one new staging area at Auto Center Drive in Reach III is proposed. The proposed Auto Center Drive Staging Area, located at the southwest corner of the intersection of Auto Center Drive and the rail right-of-way and adjacent to the existing West Corona Metrolink Station (Exhibit 13: Staging Area), would have the following features:

- Parking for 85 automobiles and 5 horse trailers
- Restrooms
- Horse corrals and tie-ups
- Drinking water
- Bicycle racks
- Bicycle service/repair areas with tools and benches
- Picnic shelter
- Benches
- Animal-Proof Trash Receptacles
- Signage
- Downward-facing solar lighting

4.2.8 - Culvert Design and Waterbody Crossing

The Proposed Action crosses the Santa Ana River once near SR-71 on existing Prado Dam outflow infrastructure with the permission of USACE (Feature 1, Exhibit 14: Culverts and Waterbody Crossings). The revised route also crosses Temescal Creek once in Reach VII at an existing crossing point that is reinforced with rip rap infrastructure, located downstream (southwest) of the existing vehicular bridge. To reduce the footprint, cost, and environmental impact the crossing would be a single-lane, multi-use low-water bridge. The crossing would require the regrade/recontour existing rip rap lining to improve the low-water crossing. High flows will go over the top of this crossing, and the crossing has been designed as not to impede or restrict flows in the river during major storm events. Consistent with input from USFWS and CDFW during an October 2016 site visit, the culvert associated with the crossing will be flat-bottomed to allow for natural substrate development in the culvert, and wildlife passage (Exhibit 15: Cross Section of Temescal Creek Crossing). The Temescal Creek crossing is identified as Feature 16 in Exhibit 14, and Table 7: Culverts and Waterbody Crossings.

All major culverts for the Proposed Action have been sized for the passage of 100-year flood flows, including debris and sediment to avoid the potential for crossing failures and resulting impacts. The project also includes small culverts, no smaller than 18 inches, which would not require a 100-year flood flow level of protection. New culverts in the project area have been designed to reduce erosional impacts from overland sheet flow and overland hillslope drainage. Table 7: Culverts and Waterbody Crossings describes the features for the project area.

Table 7: Culverts and Waterbody Crossings

Reach and Feature	Type of Infrastructure	Waterbody	Pipe Diameter (if Applicable)
Reach I—Feature 1	Crossing of Santa Ana River flow exiting Prado Basin on existing USACE Prado Dam outfall infrastructure. Trail project has been granted permission to use the feature. Project does not propose any changes to the feature.	Santa Ana River	
Reach II—Feature 2	New culvert for overland sheet flow.	None	18” RCP
Reach II—Feature 3	Swale and pipe system to account for and contain any overland hillslope drainage. This infrastructure is to control existing sheet flow and protect the trail. No water features involved.	None	24” RCP
Reach III—Feature 4	Existing culvert. No improvements needed.	Potentially jurisdictional feature	18” RCP
Reach III—Feature 5	Existing culvert. Nuisance flow from developments to the south. No improvements needed.	None	
Reach IV—Feature 6	Improvements to existing culvert at Staging Area. Unnamed jurisdictional feature.	Unnamed jurisdictional feature	18” RCP
Reach IV—Feature 7	Improvements to existing culvert at Staging Area. Unnamed jurisdictional feature.	Unnamed jurisdictional feature	18” RCP
Reach IV—Feature 8	New culvert over potentially jurisdictional feature.	Potentially jurisdictional feature	18” RCP
Reach IV—Feature 9	New culvert over potentially jurisdictional feature.	Potentially jurisdictional feature	66” RCP
Reach IV—Feature 10	New culvert for sheet flow.	None	18” RCP
Reach IV—Feature 11	Existing culvert.	Potentially jurisdictional feature	
Reach IV—Feature 12	New culvert. Jurisdictional feature.	Unnamed jurisdictional feature	36” RCP
Reach V—Feature 13	New culvert to replace collapsed culvert under existing maintenance road.	None	18” RCP
Reach V—Feature 14	Existing culvert.	None	
Reach VI—Feature 15	Extension of existing USACE culvert.	None	
Reach VII—Feature 16	Temescal Creek low water crossing utilizing existing rip rap on-site. Regrade/recontour existing rip rap lining. Concrete path low water crossing. High flows will go over the top of this crossing.	Temescal Creek	

Table 7 (cont.): Culverts and Waterbody Crossings

Reach and Feature	Type of Infrastructure	Waterbody	Pipe Diameter (if Applicable)
Reach VIII—Feature 17	New culvert to control sheet flow. Local hillslope drainage at base of bluff.	None	18" RCP
Reach VIII—Feature 18	New culvert to control sheet flow. Local hillslope drainage at base of bluff.	None	18" RCP
Reach VIII—Feature 19	New culvert to control sheet flow. Local hillslope drainage at base of bluff.	None	18" RCP
Reach VIII—Feature 20	New culvert to control sheet flow. Local hillslope drainage at base of bluff.	None	18" RCP
Reach VIII—Feature 21	Near Santa Ana River. Upsize of existing culvert in accordance with wildlife agency comment—sandy bottom to avoid wildlife impacts.	None	Oversized 42" RCP
Reach IX—Feature 22	Outlet of existing pipe. Improvements to existing pipe too steep to be a soft bottom culvert.	None	48" RCP
Reach IX—Feature 23	New culvert.	None	18" RCP
Reach IX—Feature 24	New culvert.	None	18" RCP
Reach IX—Feature 25	New pipe for hard edge of hillslope drainage.	None	18" RCP
Reach IX—Feature 26	Rip rap and bridge over area with hillslope drainage, standing water.	None	

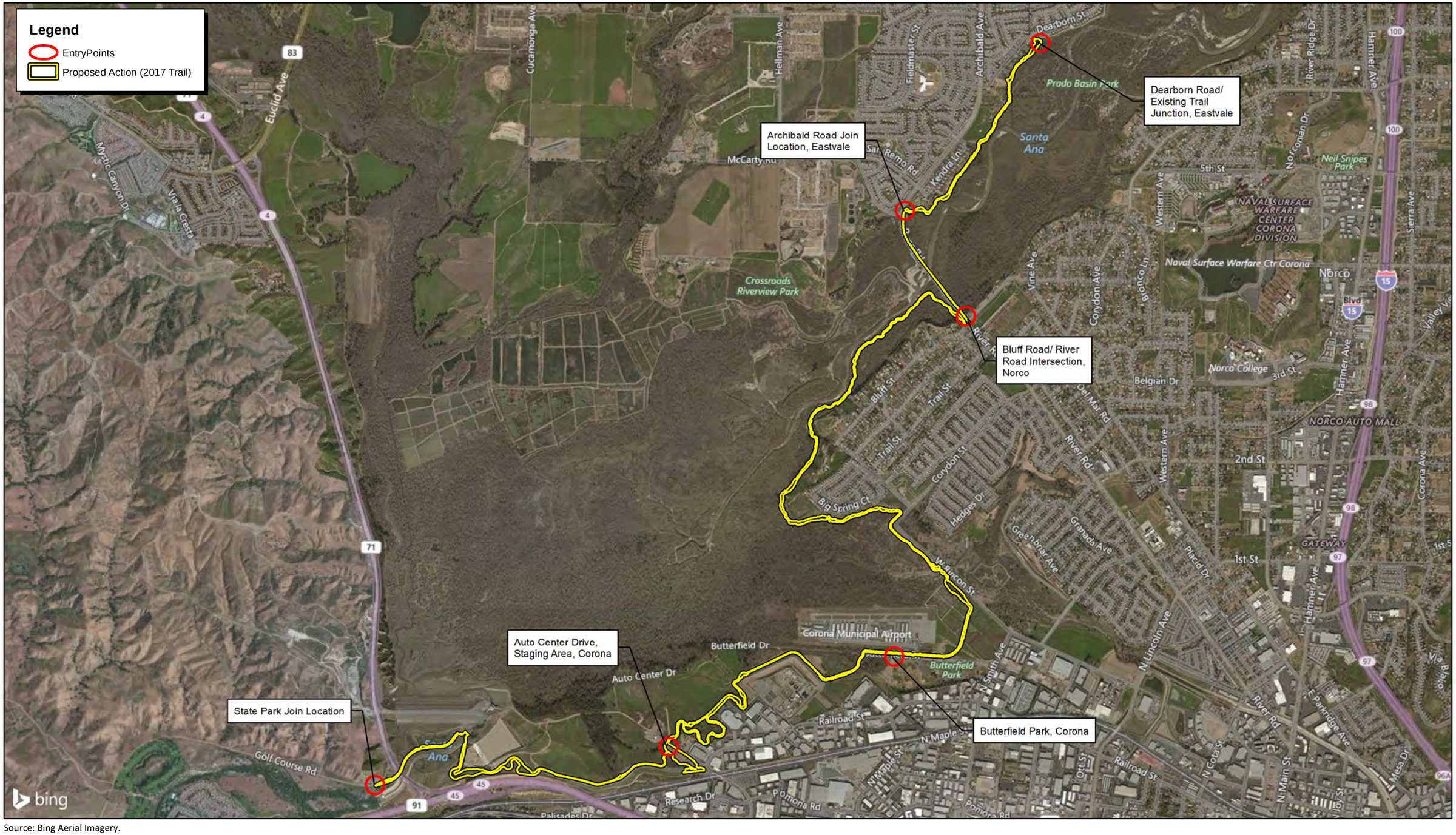
Note:
RCP = Reinforced Concrete Pipe
Source: FCS 2017, Michael Baker Associates 2017.

4.2.9 - Lighting

The Proposed Action will include lighting only at the proposed staging area in Reach III to eliminate lighting impacts to wildlife at nighttime. The lighting at the staging area will be downward-facing solar-powered lighting.

4.2.10 - Interpretive Signage and Public Outreach

Interpretive signage to notify and educate the public as to trail regulations and points of interest will be posted at the staging area and trail heads. The purpose of the interpretive signage is to help improve the likelihood that trail regulations are followed, including but not limited to regulations prohibiting off-leash dog use, off-trail hiking, littering, and camping. Interpretative signage will also serve to educate the public about the ecology of Prado Basin. The existing District website, http://www.rivcoparks.org/, will be utilized to reinforce regulations, inform the public about the trail—including any trail closures, construction, and safety information.



Source: Bing Aerial Imagery.

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Exhibit 12
Trail System Entry Points

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Source: ESRI Imagery

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Feet

Exhibit 13
Staging Area

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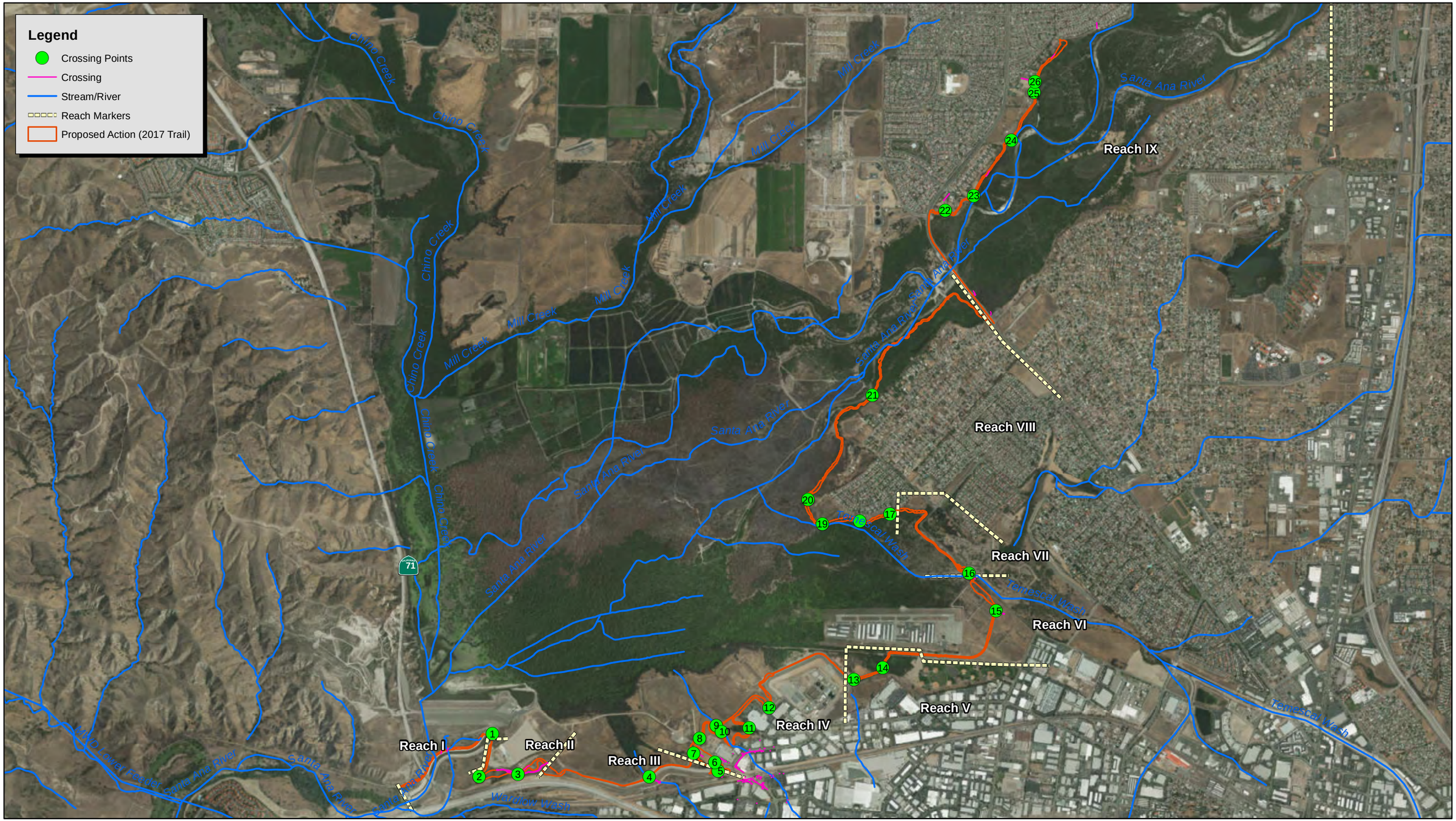

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2014.

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Exhibit 14
Culverts and Waterbody Crosings

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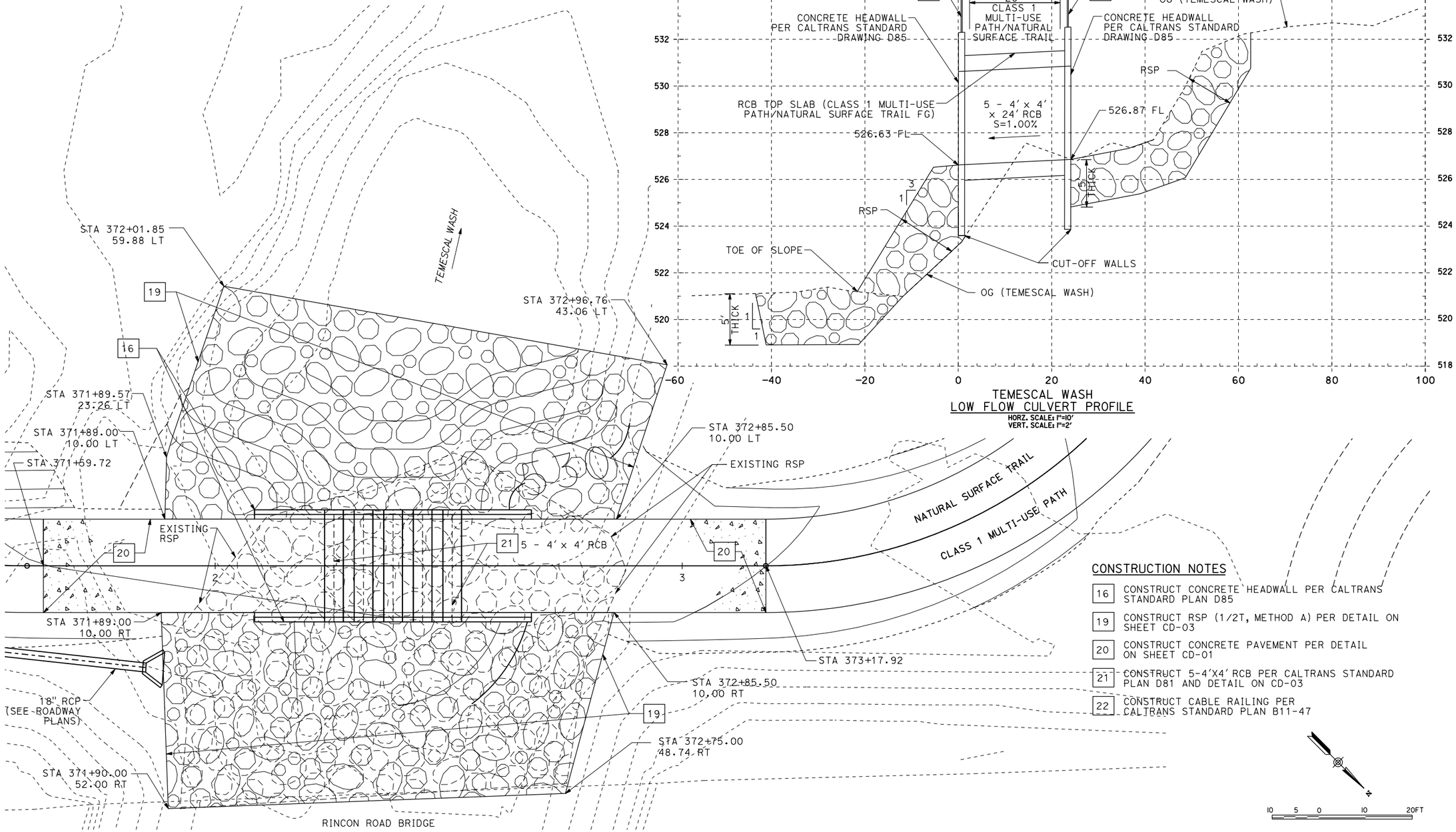

Source: Riverside County Regional Park and Open-Space District.

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Exhibit 15
Cross Section of Temescal Creek Crossing

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4.2.11 - Mitigation for Temporary Vegetation Impacts

The Proposed Action will result in temporary impacts to vegetation. The project will restore areas of temporary impact by revegetating them with appropriate native vegetation according to the ongoing management and maintenance plans currently being conducted by the OCWD. OCWD manages a large portion of the project area and has undertaken numerous habitat restoration and species recovery projects in Prado Basin. Through its restoration and management activities, OCWD has made significant contributions toward the recovery of the federally and state listed endangered least Bell's vireo (LBVI) (*Vireo bellii pusillus)* and southwestern willow flycatcher (SWFL) (*Empidonax traillii extimus*), among other species. OCWD has ongoing mitigation requirements being implemented annually within Prado Basin. The restoration for temporary vegetation impacts was developed in collaboration with OCWD to develop planting prescription and seed mixes based on lessons learned from their extensive restoration efforts in Prado Basin.

The Proposed Action will restore temporary impact areas using seed mixes and plantings of the native riparian vegetation communities, as well as coastal sage scrub cover where applicable, or with the appropriate native vegetation communities that belong in any given area of temporary impact. For example, if an area of disturbed or non-native grassland vegetation community type is temporarily disturbed, it will be revegetated with the appropriate native vegetation community type for that area. The species selected for revegetation will be a mix of species in an effort to help to bolster ecosystem resilience to the known invasive wood-boring beetles (polyphagous shot hole borer (PSHB) and the Kuroshio shot hole borer (KSHB) attacking riparian tree species found in Prado Basin. The wood-boring beetles spread a disease called Fusarium dieback caused by pathogenic fungi. Infected trees can show signs of branch dieback, canopy loss, and eventual tree mortality. In an effort to combat the wood-boring beetles, the seed mixes and plantings used to restore temporary vegetation impacts will use a diverse mixture of woody species resistant to the infestation, yet appropriate for the basin, alongside woody species to start to replace those lost to the infestation. These efforts will serve as an attempt to build ecosystem resilience against the wood-boring beetles.

Temporary vegetation impacts have been calculated using the area of temporary impacts within the project's 95% construction drawings. The Proposed Action will create a total of 36.76 acres of temporary vegetation impacts. Of these temporary impacts, 10.98 acres are composed of riparian vegetation communities (southern willow scrub, mule fat scrub, and fresh water drainage/stream/ ponded area). The project will remove 15.69 acres of non-native grassland, 0.64 acre of eucalyptus woodland, 2.0 acres of developed, and 7.11 acres of disturbed vegetation types and replace them with the native vegetation community that would naturally occur in each area. While the revised route does not impact coastal sage scrub, it will revegetate areas of temporary impact with coastal sage scrub where it would have naturally occurred.

Species used in ongoing Prado Basin restoration and proposed for the restoration of temporary riparian vegetation impacts include but are not limited to mulefat (*Baccharis salicifolia* ssp. *salicifolia*), arroyo willow (*Salix lasiolepis*), Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*), narrow-leaf willow (*Salix exigua*), emory baccharis (*Baccharis salicina*)(formerly known as *Baccharis emoryi*) black willow (*Salix gooddingii*), blue elderberry (=Mexican elderberry) (*Sambucus nigra* ssp. *caerula*), Oregon ash (*Fraxinus latifolia*), and arrowweed (*Pluchea sericea*).

The coastal sage scrub seed mix would include a mixture of California sagebrush (*Artemisia californica*), wild tarragon (*Artemisia dracunculus*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), coyote bush (*Baccharis pilularis*), bush sunflower (=California encelia) (*Encelia californica*), deerweed (*Acmispon glaber*), western ragweed (*Ambrosia psilostachya*), branching phacelia (*Phacelia ramosissima*), California croton (*Croton californicus*), deergrass (*Muhlenbergia rigens*), purple needle grass (*Stipa pulchra*), and Pacific fescue and/or six weeks fescue (*Festuca microstachys* and/or *Festuca octoflora*). *Festuca myuros* (formerly *Vulpia myuros*) will not be used in any seed mixes or revegetation plant palettes at wildlife agency's request, as it is an invasive species from Europe that outcompetes native California grasses. Any use of "festuca" will be clarified with the full scientific name.

The installation and maintenance of areas restored for temporary vegetation impacts will include temporary irrigation where needed, ongoing maintenance to prevent the encroachment of invasive and non-native species in areas disturbed by trail construction, ongoing invasive and non-native species removal, and the reseeding and replanting of native species installations until restoration is established. The Proposed Action would commit to a 5-year monitoring and maintenance period for the repair of temporary impacts, and the development of a Habitat Mitigation and Monitoring Plan (HMMP). Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5.

The OCWD 2016 Mitigation Monitoring Report for the Prado Wetlands and Surrounding Environs is included as Appendix C to this report.

4.2.12 - Mitigation for Permanent Vegetation Impacts

The Proposed Action will permanently impact 21.82 acres of vegetation, of which 6.22 acres of which are riparian vegetation communities. Specifically, within the riparian vegetation communities, 6.03 acres of southern willow scrub, 0.13 acre of mule fat scrub, and 0.06 acre of freshwater drainage/stream/pond would be impacted. Mitigation for permanent vegetation impacts is described in detail in Section 7, Impact Analysis and DBESP.

Mitigation for permanent vegetation impacts under the Proposed Action is a multi-faceted plan. The mitigation concepts for the project were developed in conjunction with OCWD, USFWS, CDFW, and the RCA. In summary, mitigation concepts for permanent impacts to PQP and riparian vegetation resulting from the Proposed Action will consist of the following:

- The addition of a non-PQP parcel (19.9 acres) at Hidden Valley Wildlife Refuge to PQP lands for the MSHCP
- The addition of a non-PQP parcel (5.6 acres) at Weyerhaeuser Parcel to PQP lands for the MSHCP
- Hydrologic and ecologic reconnection of Mill Creek to its floodplain through the creation of an oxbow feature and other habitat features, the creation of riparian forest at the Mill Creek Parcels

The concepts presented in this document were vetted by the RCA and wildlife agencies at the May 2017 and June 2017 monthly meetings of the RCA, and are described in detail within the sections of the DBESP that they pertain to, herein. The Proposed Action would commit to a 5-year monitoring and maintenance period for the repair of permanent vegetation impacts, and the development of a

Habitat Mitigation and Monitoring Plan (HMMP). Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5.

The mitigation for permanent impacts is discussed in greater detail in Section 7: Impact Analysis and DBESP.

4.2.13 - Pre-Mitigation for Trail Washout in Prado Basin

The trail corridor within the Prado Basin will be subject to an active hydrologic regime. Pre-mitigation to compensate for impacts caused by future trail washout and trail repair is proposed as part of the Proposed Action. Future trail repair would be subject to additional environmental permitting and analysis. Temporary impacts resulting from future trail restoration would follow the same mitigation prescription described in Section 4.2.11, Restoration for Temporary Vegetation Impacts. The circumstances surrounding the Prado Burn Area and the proposed pre-mitigation prescriptions are described below.

Pre-mitigation for the Proposed Action would consist of conducting arundo removal within 150 acres of the 500-acre Prado Burn Area (Exhibit 16: Prado Burn Area Overview). The OCWD to date has been able to treat 350-acres of the 500-acre burn area in the year post-fire, utilizing the fire's removal of the standing arundo stock as an opportunity to move through the area with spot-treatments and the removal of new growth while allowing native riparian species to regenerate naturally. Since the fire in 2016, arundo stands in the untreated 150-acre burn area constitute more than 95% of the vegetation coverage, with stand height reaching over 20 feet. In this untreated area, and partially because of heavy rainfall during the 2016/2017 winter season, the arundo has been able to outcompete native riparian vegetation.

Pre-mitigation in the Prado Burn Area would be a continuation of the OCWD's arundo removal efforts immediately adjacent to the treated area (Exhibit 17: Areas of Treated and Untreated Arundo in Prado Burn Area). Exhibit 17 also demonstrates OCWD's LBVI data in the area for 2016. The post-fire arundo regrowth constitutes a significant amount of arundo fuel loading in Prado Basin, as well as a significant reduction in feasible habitat for LBVI as arundo has very little habitat value. Pre-mitigation would focus first on the removal of arundo biomass, then spot-spraying for arundo regrowth. The removal of the dense stands will allow for native vegetation regrowth. Follow-on activity will consist of monitoring and treatment for other invasive and non-native species. Pre-mitigation will be accomplished through a formal funding mechanism for arundo removal activities to be carried out by OCWD, and a memorandum of understanding between the District and the OCWD. The Proposed Action would commit to a 5-year monitoring and maintenance period for pre-mitigation for trail washout, and the development of a Habitat Mitigation and Monitoring Plan (HMMP). Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5.

Mitigation work will follow, performed to similar inventory and project management standards set within the Santa Ana River Mitigation Bank (Corps File Number SPL-1995-00301) 1995 Memorandum of Agreement (MOA) Regarding Establishment, Operation of the bank and 2008 Amended. Physical

location of the mitigation credits will be determined, documented, and geo-referenced with GPS and ArcGIS technology. Sales and use of credits (mitigation ledger) will be held by Riverside County Parks Finance Department (District Finance) and will follow the same reporting and crediting standards as the Santa Ana River Mitigation Bank (see examples included with this submittal). Annual reporting—including work completed, credits created, and credits used—will be completed in December and sent to the agencies in January. Access to real-time data can be achieved by contacting District Finance or the data can be uploaded to the U.S. Army Corps of Engineers Regional In-Lieu Fee and Bank Information Tracking System (R.I.B.I.T.S.) for immediate and real-time access. The data can also be provided in the annual pre-mitigation report for the project.

An annual report to the USACE and USFWS regarding the Santa Ana River Mitigation Bank will be completed, just as the District currently does now. The District has no problem providing an annual report to USFWS and CDFW documenting the credits accrued and spent in the previous year. The District will also include the number of credits still available for use at the time that the report is finished. The annual report will document previous calendar year work results and will be submitted by April 15 of each year, which is one month after the start of the nesting bird season starts. The report will include the location of the arundo treatment, including maps. It will describe the outcome of the field inspection, describing current conditions and the work conducted during the prescribed time period for the project. The report will include any additional recommendations or observations of the site.

The District has identified acres for arundo treatment within Prado Basin that can be turned into credits for future use. Given current staffing numbers, 10.0 acres of arundo per year (treatment units) can initially be treated and 40.0 acres can be passively maintained for 5 years after initial treatment. Under normal conditions, 5 years should be enough time to allow native plant growth to gain competitive advantage within 10.0-acre treatment units. Once initiated, treatment units will be geographically identified, named, and placed on the mitigation ledger list. Once the treatment units are initially treated, they will be placed on mitigation ledger list as “credit” and become used or “spent” as maintenance to trail washout repairs are completed.

Through discussions with OCWD and historical knowledge of the area, it has been verified that there are no pre-existing mitigation obligations that overlap in the area of discussion. Many of the impacts to native riparian forest through the type conversion to non-native arundo in this area occurred after the 2016 Prado Basin wildfire. Areas for arundo removal and treatment as pre-mitigation for trail washout in Prado Basin are a combination of acres under management by OCWD and by the District.

4.2.14 - Fuels Management

Fuels management focuses on hazard reduction for humans and their property. According to the MSHCP Fuels Management Guidelines, for new development planned adjacently to all MSHCP Conservation Areas or other undeveloped areas, brush management shall be incorporated in the development boundaries and shall not encroach into the MSHCP Conservation Areas (MSHCP, p. 6-72). Any areas planted with fire-resistant, non-invasive plants must not encroach into the MSHCP Conservation Area. Accordingly, with implementation of these measures, the project will be consistent with the MSHCP Fuels Management Guidelines.

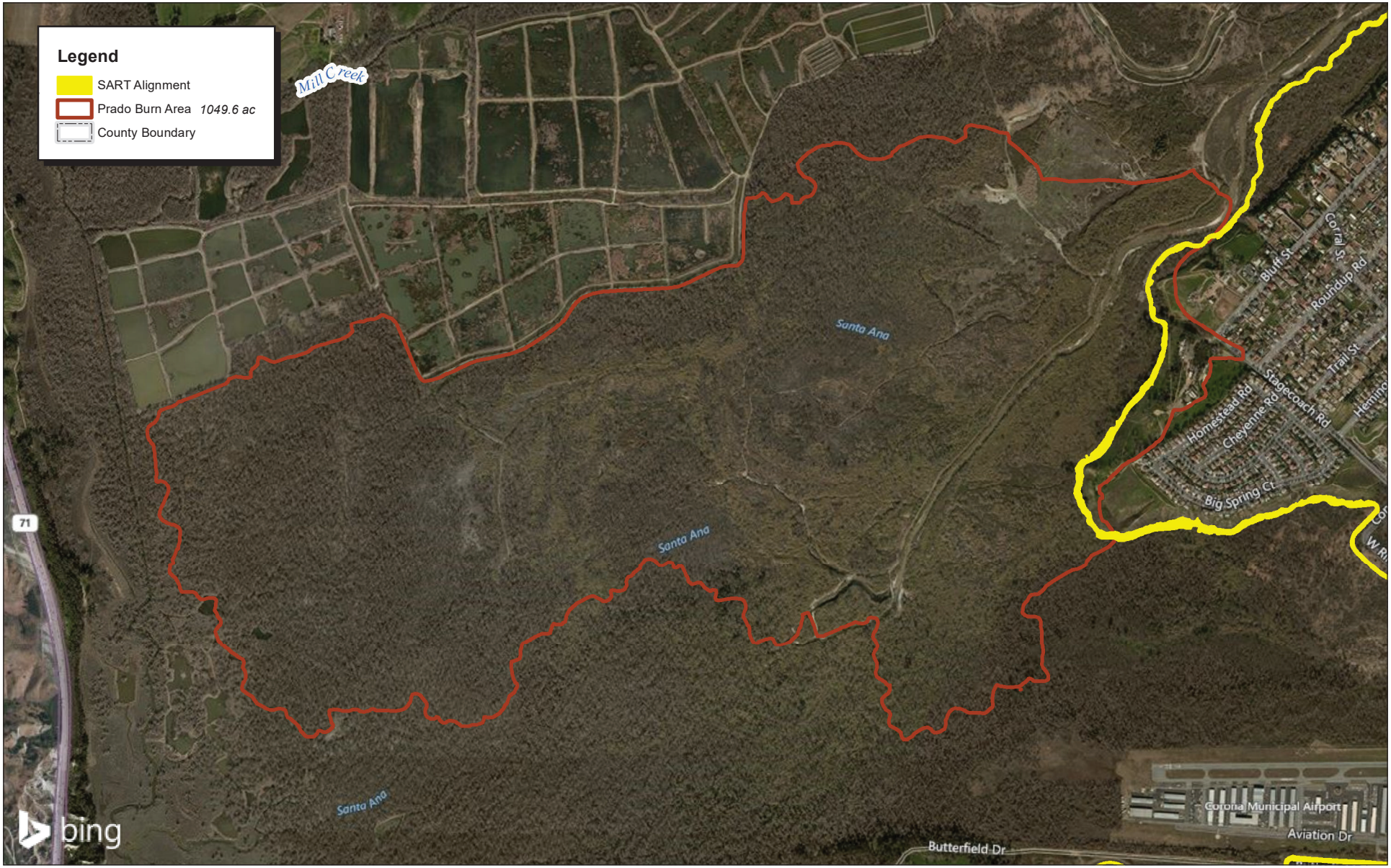

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Exhibit 16
Prado Burn Area Overview

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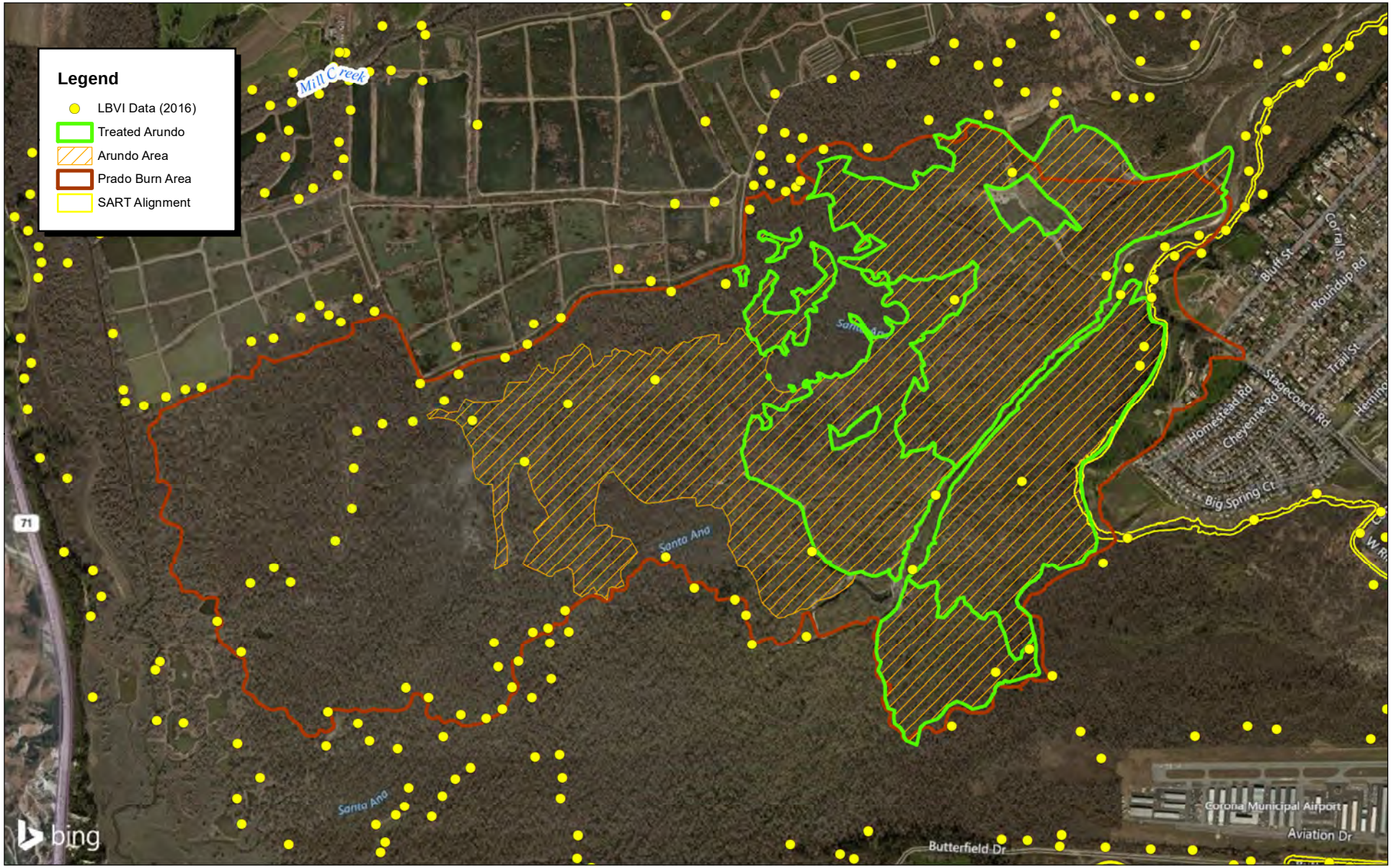

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Exhibit 17
Areas of Treated and Untreated Arundo in Prado Burn Area

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Pre-mitigation for the Proposed Action will remove stands of dense, mature arundo within Prado Basin as an extension of the OCWD's ongoing arundo removal efforts in the Prado Burn Area. The project will reduce fuel loading in the basin by removing arundo and then, with follow-on management, spot treat any new arundo growth so that native vegetation species with less fuel-loading capacity can become established.

4.2.15 - Wildlife Movement

Movement of wildlife with a home range is important for activities such as food gathering, mating, caring for young, and dispersal. Smaller species such as reptiles, amphibians, and small mammals do not typically travel long distances and rely on resource within their home range. Changes to topography, landscape, or vegetation cover can result in impediments to wildlife use and movement within an area. Sites may also be avoided because of the disruption caused by human presence or habitat changes associated with the site (e.g., soil compaction, dryness of soils and vegetation along roadsides and trails).

At the northeastern terminus of the trail, a slope resulting in approximately 15- to 20-foot elevation gain will be constructed to raise the Santa Ana River Trail to current street grade, and is not anticipated to function as a barrier to wildlife movement. The remainder of trail alignment will be at grade as to avoid acting as a wildlife movement barrier. When surrounded by sufficient vegetative cover, as is incorporated into the design features of the Proposed Action, trails can also serve as movement corridors for reptiles and small mammals because they can move easily through these areas while adjacent vegetation provides escape cover from predators. Trails can be used to facilitate movement and provide access to water, food, cover, burrow sites, or other necessary resources while enabling swifter movements through the area. Although increased levels of human activity may generate noise and create visual distractions, particularly for small mammals, many of the small mammals expected to occur in the area are nocturnal and will not be impacted by human activities, which will be restricted to daytime use. Diurnal species expected to occur in the area may avoid direct encounters with humans, but because of the sporadic nature of human occupancy along the trail, avoidance of use by these species is not expected. Habitat use and movement of reptiles and small mammal species is not expected to be significantly impacted by the trail.

Many species of amphibians require different habitats during the breeding and nonbreeding season and, therefore, move greater distances through varying habitats. Although small wetlands are required for breeding, adults and postmetamorphic juveniles live a largely terrestrial existence, occupying nonbreeding home ranges at some distance from aquatic sites. For pool-breeding amphibians in increasingly fragmented landscapes, maintaining functional connectivity between habitats will require that individuals demonstrate willingness to enter tracts of the nonforest matrix during the postmetamorphic stage (Cline et al. 2016).

Recent evidence suggests that some frogs may transit various vegetation types, including open cover, during the dispersal period, even if they are unsuitable for settling (Cline et al. 2016). Additionally, movement data collected on eight species of amphibians within a Maine forest found that although movement was inhibited across a wide forest road (12 meters) with heavy use (300

vehicles per day), habitat use and movements were generally unaffected by logging roads which experienced light to moderate vehicle use (DeMaynadier and Hunter 1995).

Because suitable habitat will be located on both sides of the trail within the line of sight and amphibians will be able to easily access the habitat on both sides, the trail is not expected to impede amphibian movement.

SECTION 5: ENVIRONMENTAL SETTING

5.1 - Project Biological Data Summary

The MSHCP has been written to adequately address 118 species of plants and wildlife within the County. No further assessments are necessary to adequately protect those species. However, the project area occurs within MSHCP-designated habitat assessment survey areas for the following MSHCP Criteria Area species—the burrowing owl (BUOW [*Athene cunicularia*])—in addition to three MSHCP Narrow Endemic Plant Species: San Diego ambrosia (*Ambrosia pumilla*), Brand's phacelia (*Phacelia stellaris*), and San Miguel savory (*Satureja chandleri*). These species, and the other species listed are not expected to occur within the project area were specifically addressed in the MSHCP Consistency Analysis document for the project to assure consistency (Appendix A). Based on the known recorded occurrences and existing habitat on-site, the three Narrow Endemic plant species listed above have a low to moderate potential to occur within the project area. Focused sensitive plant surveys were conducted in four areas that may contain suitable habitat. No sensitive plant species were observed during the focused plant surveys. Therefore, the project site is considered absent of all potentially occurring sensitive plant species.

The MSHCP has specific conservation objectives for Riparian/Riverine Areas, Vernal Pools, and Fairy Shrimp as defined in Section 6.1.2 of the MSHCP. No vernal pools or suitable habitat for vernal pool plant or wildlife species were determined to exist within any portions of the project area. The project area was determined to contain a number of Riparian/Riverine Areas associated with the encompassing reach of the Santa Ana River and its tributaries. These riverine features support southern willow scrub and mule fat scrub habitats, which provide suitable habitat for species associated with riparian/riverine areas as defined in Section 6.1.2 of the MSHCP, including the, Santa Ana sucker (*Catostomus santaanae*), LBVI, and SWFL. Additionally, portions of the project area that include the Santa Ana River have been designated by the USFWS as Critical Habitat for Santa Ana sucker and LBVI. Critical habitat for the coastal California gnatcatcher (*Polioptila californica californica*) exists just west of the western end of the Proposed Action route.

The process of project development included site visits and protocol surveys. Site visits were conducted to discuss the various Proposed Action routes, during which time the existing environmental conditions and biological resources that were observed or otherwise detected were recorded. Special attention was directed to the environmental setting of the proposed route, including those areas potentially supporting sensitive plant and wildlife species, specifically BUOW and narrow endemic plants, and to assess the possible presence of vernal pools, jurisdictional features, and riparian/riverine habitat. Parameters assessed regarding the habitat requirements for sensitive species included plant communities, soil conditions, presence of indicator species, slope, aspect, and hydrology. Focused surveys were conducted for BUOW, LBVI, and Narrow Endemic plants according to protocol. The documentation of these surveys is listed in Section 4.1.1, below. Species observed during the site visits and protocol surveys are included in Section 3.3 of Appendix A.

Suitable breeding and foraging habitat for the BUOW was determined to exist within limited portions of the project area. However, no BUOWs were observed during the focused surveys. The habitat assessment for BUOW conducted as part of the MSHCP Consistency Analysis for this project is located in Section 5.2.1, Burrowing Owl, of Appendix A. Focused surveys were conducted for BUOW repeated in 2016, the results of those surveys are provided in Appendix B to this report. The 2016 focused surveys for BUOW found none of the species in the project area.

In addition to the MSHCP requirements, other biological resources constraints associated with the project area were identified. The project area contains suitable habitat for a number of special-status species that are not covered under the MSHCP, including the federally listed plant and wildlife species associated with riparian/riverine areas discussed above. Additionally, portions of the project area contain suitable nesting habitat for bird species protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503 and 3511 (CFG Code). These are described in greater detail, below.

A formal jurisdictional delineation has not been conducted to address all potentially jurisdictional areas occurring within the project area; however, a jurisdictional assessment has been completed. A jurisdictional assessment of drainage features confirmed the presence of 14 areas within the project area that may support waters, wetlands, and/or streambed, which may be considered jurisdictional by the USACE, Regional Water Quality Control Board (RWQCB), and CDFW. Any impacts to jurisdictional features would require permitting with the appropriate regulatory agencies pursuant to Sections 404 and 401 of the federal Clean Water Act (CWA), the State Porter-Cologne Water Quality Act, and Section 1600 of the CFG Code. Mitigation to offset impacts to jurisdictional features would be identified during the regulatory permitting process. When final design drawings are prepared, a formal jurisdictional delineation and assessment of impacts will be prepared and mitigation developed to avoid any impacts or permanent losses.

5.1.1 - Documentation of Biological Data

First Carbon Solutions (formerly MBA) conducted a review of existing documents for the Proposed Action and other relevant reference material prior to the subject analysis. Previous documentation for the Proposed Action utilized for the preparation of the subject DBESP includes the following:

- Habitat Assessment and MSHCP Consistency Analysis for the Santa Ana River Trail Project Riverside County, California (MBA 2011).
- Burrowing Owl Focused Survey Santa Ana River Trail Riverside County, California (MBA 2010a).
- Least Bell's Vireo Focused Survey Report Santa Ana River Trail Riverside County, California (MBA 2010).
- 2016 Focused Burrowing Owl Survey Report for the Santa Ana River Trail Project Riverside County, California (ECORP Consulting, Inc. 2016a)
- Riparian Bird Survey Report 2016 Southwestern Willow Flycatcher, Least Bell's Vireo, and Western Yellow-Billed Cuckoo Surveys for the Santa Ana River Trail Project Riverside County, California (ECORP Consulting, Inc. 2016b)

5.1.2 - Field Reconnaissance Surveys

The habitat assessment component of the subject DBESP report is based in part on the findings of field reconnaissance surveys for the MSHCP Consistency Analysis (MBA 2011) (Appendix A), and focused surveys conducted for riparian bird species and BUOW in 2016 (Appendix B). Methodology followed during these surveys is contained within their respective source documents in Appendix A and Appendix B. ECORP Consulting, Inc. (ECORP) conducted focused surveys for BUOW (BUOW), in support of the proposed SART project within Reaches I–IX. The surveys were conducted during July and August of 2016 in accordance with the Burrowing Owl Survey Instructions for the MSHCP (2006). Additionally, ECORP Consulting, Inc. (ECORP) conducted presence/absence surveys for SWFL and LBVI, both federally and state-listed as endangered, and YBCU (*Coccyzus americanus occidentalis*); federally listed as threatened and state-listed as endangered, in support of the proposed SART project within Reaches I–IX in 2016. The habitat assessment component of the subject DBESP report is also based in part on these findings.

5.2 - Existing Conditions

5.2.1 - Physical Conditions

The project area is located within the Santa Ana River Canyon, in the western portion of Riverside County, between Chino Hills to the north and the Santa Ana Mountains to the south (Exhibit 18: Local Vicinity Map, Topographic Base). Overall, the entire project area is relatively flat, and gently slopes from north to the south, with an elevation range of approximately 480 to 780 feet above mean sea level (AMSL). The project area occurs within open land (generally southwest of the River Road Bridge) as well as rural-residential areas within the City of Norco and in urban interface development in the City of Eastvale.

Because of a number of previous and ongoing disturbances in the local vicinity, the project area consists of an abundant mix of native and non-native vegetation, as well as many areas of development with little vegetation. The project area and the local vicinity have been subject to previous disturbances including, but not limited to, the original construction of Prado Dam, SR-91, SR-71, the Burlington Northern Santa Fe (BNSF) railroad, the Prado Dam Construction Office Complex, commercial and residential developments, and associated roads in the local area. Ongoing disturbances located within or in the vicinity of the project area include the Prado Dam and associated dikes, and Santa Ana River spillway improvements.

Surrounding upland use in the vicinity of the project area consists of medium-density residential and commercial development, open space, the airport, and USACE land. Medium-density residential and commercial development occurs to the mainly to the northeast of the project area. Open space occurs as a natural feature to the north within the Santa Ana River or Prado Flood Control Basin, or as a park areas such as Stagecoach Park, Butterfield Park, and Prado Regional Parks. Reaches I through V of the revised route occur south of the Prado Flood Control Basin. Reaches VI through VIII occur along the eastern margins of the Prado Flood Control Basin. The trail splits at River Road, with Reach IX through X on the south side of the Santa Ana River. The trail is located above the bluffs of the river in Eastvale.

The SART proposed alignment primarily follows existing maintenance roads along the USACE outflow channel near Prado Dam, and the USACE Auxiliary Embankment. Other sections incorporate existing paved roadways, dirt access roads, OCWD maintenance roads, and future trail pathways being incorporated into current and future projects within the area; one such example is the construction of the Alcoa Dike, which will include a created bench at the base of the proposed Dike. An analysis of existing established and spur trails in the project vicinity will be incorporated into the Proposed Action as mitigation at the request of the USFWS and CDFW. The SART will traverse the Wastewater Treatment Dike, Corona Municipal Airport, and terminate at Reach IX at Eastvale Community Park. No residential or commercial development is present within the proposed SART.

5.2.2 - Topography, Hydrology, and Soils

The Santa Ana River flows east-west and is the largest river in Southern California—spanning 96 miles—originating from the San Bernardino Mountains in the east and draining into the Pacific Ocean in the City of Huntington Beach. The SART is located entirely within the Santa Ana River watershed, which spans 2,650 square miles across four counties (Santa Ana Watershed Association 2014). The SART is located within the Santa Ana River Canyon, in the western portion of Riverside County, with Chino Hills to the north and the Santa Ana Mountains to the south. The project area is adjacent to Prado Basin in its western section, and then follows the Santa Ana River north through the cities of Corona, Eastvale, and Norco. The project area contains soils with well-drained fine-sandy to gravelly sand and loam profiles originating from granitic sources that are found in alluvial fans and floodplains. Soils are discussed in further detail in Section 4, Existing Conditions, of the Habitat Assessment and MSHCP Consistency Analysis report, provided as Appendix A to this report.

5.2.3 - Riparian Habitat

The project area contains riparian/riverine areas occurring in fourteen separate locations as well as along the Santa Ana River. No portions of the project area contain areas capable of supporting vernal pools. The Santa Ana River contains perennially flowing water and dense stands of riparian vegetation. The north-south trending tributaries to the Santa Ana River contain stands of riparian vegetation, primarily mulefat scrub and southern willow scrub. All drainage features and associated vegetation within the Proposed Action routes are considered riparian/riverine areas under the MSHCP and provide suitable habitat for the following sensitive riparian species identified in Section 6.1.2 of the MSHCP: LBVI, SWFL, and Santa Ana sucker. These species are discussed in detail in Section 6, Impact Analysis and DBESP.

Legend

Proposed Action (2017 Trail)

PRADO DAM

CORONA NORTH

Source: USGS Prado Dam & Corona North 7.5' Quadrangles

FIRSTCARBON SOLUTIONS™

2,000 0 2,000 Feet

Exhibit 18
Local Vicinity Map
Topographic Base

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5.2.4 - Wildlife

Common Species

The project area provides habitat for wildlife species commonly occurring in disturbed and developed communities as well as riparian and scrub habitats. Commonly found avian and mammalian species observed within the project area include, but are not limited to:

- Mourning dove (*Zenaida macroura*)
- White-throated swift (*Aeronautes saxatalis*)
- Nuttall's woodpecker (*Picoides nuttallii*)
- Black phoebe (*Sayornis nigricans*)
- Bewick's wren (*Thryomanes bewickii*)
- House finch (*Haemorhous mexicanus*)
- California towhee (*Melozone crissalis*)
- California ground squirrel (*Otospermophilus beecheyi*) (=*Spermophilus beecheyi*)
- Audubon's cottontail (*Sylvilagus audubonii*)

A complete list of wildlife species observed during the habitat assessment survey is included in Appendix A.

Special-status Wildlife

Suitable habitat occurs within the project area for 18 sensitive wildlife species. These include:

- Santa Ana sucker (*Catostomus santaanae*)
- Blainville's horned lizard (=coast horned lizard) (*Phrynosoma blainvillii*)
- Orange-throated whiptail (*Aspidoscelis hyperythra*)
- Coast mountain kingsnake (San Bernardino population) (*Lampropeltis multifasciata*) (=*Lampropeltis zonata parvirubra*)
- Two-striped garter snake (*Thamnophis hammondii*)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- Burrowing owl (*Athene cunicularia*)
- Long-eared owl (*Asio otus*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Least Bells' vireo (*Vireo bellii pusillus*)
- Coastal California gnatcatcher (*Polioptila californica californica*)
- Yellow warbler (*Setophaga petechia*)
- Yellow-breasted chat (*Icteria virens*)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
- Western mastiff bat (*Eumops perotis californicus*)
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*)
- Western yellow bat (*Lasiurus xanthinus*)
- Pallid bat (*Antrozous pallidus*)

A list of the 29 sensitive wildlife species known to occur in the region is included in Appendix A.

Suitable habitat exists for LBVI, SWFL, and western YBCU within the southern willow scrub habitat. Recent recorded occurrences of SWFL and LBVI within the vicinity of the project area and LBVI were observed during the focused surveys. Therefore, the southern willow scrub habitat is considered occupied for SWFL and LBVI species.

The project area provides moderately suitable habitat for coastal California gnatcatcher, Southern rufous-crowned sparrow, orange-throated whiptail, and California mountain kingsnake. The suitable habitat for these species has been subject to a number of previous disturbances that have significantly reduced the overall quality and suitability of the habitat on-site. No known occurrences of these animal species have been recorded within the immediate vicinity (three miles) of the coastal sage scrub habitat within the project area.

Habitat for sensitive-status species in the project area is discussed in greater detail, below.

Riparian Habitat Species

The southern willow scrub occurring within the project area and adjacent to the Santa Ana River provides suitable habitat for a number of special status species. Suitable habitat occurs for long-eared owl and two-striped garter snake along the Santa Ana River stream course dominated by willow and Fremont's cottonwood trees. No known occurrences of these species have been recorded within the immediate vicinity (3 miles) of the project area. As currently designed, installation of the Proposed Action is not anticipated to result in direct impacts to these species. Potential project-related impacts to these species are not anticipated to be significant on a local or regional scale, and will not likely adversely jeopardize the sustainability and recovery of the greater population of these species.

Suitable habitat also occurs for yellow warbler, yellow-breasted chat, pallid bat, pocketed free-tailed bat, western mastiff bat, and western yellow bat within the riparian habitat located adjacent to the Santa Ana River. Additionally, suitable day and night roosting sites occur within the project area, along existing SR-91, SR-71, and I-15 underpasses and large culverts. As currently designed, installation of the Proposed Action is not anticipated to result in a substantial disturbance to these species habitats, and direct impacts are not likely to occur. Potential project-related impacts to these species are not anticipated to be significant on a local or regional scale, and will not likely adversely jeopardize the sustainability and recovery of the greater population of these species.

Suitable habitat also exists for LBVI, SWFL, and western YBCU within the southern willow scrub habitat. There are recent recorded occurrences of SWFL and LBVI within the vicinity of the project area, and LBVI were observed during the focused surveys. Therefore, the southern willow scrub habitat is considered occupied for both species.

Coastal Sage Scrub Habitat Species

The project area provides moderately suitable habitat for coastal California gnatcatcher, Southern rufous-crowned sparrow, orange-throated whiptail, and California mountain kingsnake. The suitable habitat for these species has been subject to a number of previous disturbances that have significantly reduced the overall quality and suitability of the habitat on-site. No known occurrences of these animal species have been recorded within the immediate vicinity (three miles) of the

coastal sage scrub habitat within the project area. Therefore, installation of the Proposed Action is not anticipated to result in significant impacts to these species or associated habitats.

Nesting Birds

The project area contains suitable nesting habitat for a number of common and sensitive, tree- and ground-nesting avian species. The southern cottonwood willow riparian forests and coastal sage scrub communities within the project area provide suitable habitat for sensitive avian species including, LBVI and coastal California gnatcatcher. The eucalyptus/ornamental woodlands, bridges and overpasses also provide suitable nesting and foraging habitat for a number of common migratory species. These include the following species observed during the habitat assessment: California towhee, Bewick's wren, white-throated swift, and Nuttall's woodpecker.

Raptors

The project area contains suitable nesting and foraging habitat for raptor species known to occur in the area. Activities associated with trail construction and maintenance could result in "take" of nests if conducted during the breeding season (February 15–August 31). Trail construction is expected to take place outside of the raptor nesting season. Therefore, no impacts to nesting raptors are anticipated to occur as a result of trail construction.

5.2.5 - Vegetation

Because of a number of previous and ongoing disturbances in the local vicinity, the project area consists of an abundant mix of native and non-native vegetation, as well as many areas of development with little vegetation. The project area and the local vicinity have been subject to previous disturbances including, but not limited to, the original construction of Prado Dam, SR-91, SR-71, the BNSF railroad, the Prado Dam Construction Office Complex, commercial and residential developments, and associated roads in the local area. Ongoing disturbances located within or in the vicinity of the project area include the Prado Dam and associated dikes, and Santa Ana River spillway improvements.

The vegetation communities existing on MSHCP and non-MSHCP federal lands within the project area are quantified and discussed below. Each vegetation community in the project area is listed as described by Holland (1986). Vegetation impacts are described in this section using the areas of temporary and permanent impacts from the Proposed Action's 95% drawings. A summary of vegetation community acreage data is provided using the MSHCP land data in Section 7, Vegetation Community Impacts.

Southern Willow Scrub

Southern Willow Scrub is characterized by dense, broad-leafed, winter-deciduous riparian thickets dominated by *Salix* species, with scattered emergent Fremont's cottonwood and California sycamore (*Platanus racemosa*). Most stands are too dense to allow for sufficient understory development. This vegetation community is found along stream channels with repeated flooding, which possess loose, sandy, or gravelly alluvium soils. Repeated flooding is required to prevent succession to southern cottonwood-sycamore riparian or southern arroyo willow riparian forest.

The survey area contains southern willow scrub. These areas with southern willow scrub are immediately adjacent to the Santa Ana River channel and contain dense canopies of willow and mule fat. This plant community occurs along the perimeter of the southern cottonwood-willow riparian forest occurring within the Prado Flood Control Basin and is somewhat of a transition plant community between the southern cottonwood-willow riparian forest and adjacent non-native plant communities. There is very little understory vegetation within the southern willow scrub habitat, and it is considered marginally suitable for San Miguel savory but not suitable for San Diego ambrosia and Brand's phacelia.

There are 8.86 acres of southern willow scrub on non-federal land within the project area, and 7.08 acres on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to southern willow scrub are discussed in detail in Section 7.1.3, Impacts/Results Riparian/Riverine Resources.

Mule Fat Scrub

Mulefat scrub is characterized as an early seral riparian scrub community maintained by frequent flooding. The scrub is dominated by mulefat and other riparian scrub species. The larger riparian tree species are lacking within this vegetation community; however, if frequent flooding is not maintained, this community typically succeeds to cottonwood- or sycamore-dominated riparian forest. This community is found along intermittent stream channels associated with river systems, which possess coarse substrate and moderate depth to the water table.

There is 0.95 acre of mule fat scrub on federal land within the project area. This acreage does not represent the area of temporary or permanent impact for the project. Permanent impacts to mule fat scrub are discussed in detail in Section 7.1.3, Impacts/Results Riparian/Riverine Resources.

Freshwater Drainage/Stream/Ponded Areas

Freshwater areas are characterized by year-round bodies of water with extremely low salinity in the form of lakes, streams, ponds, or rivers. This includes portions of water bodies that are usually open and contain less than 10 percent vegetative cover.

Moving the trail as determined by the October 2016 wildlife agency site visit reduced the acreage impacts from 0.4 acre to 0.16 acre.

There is 0.09 acre of freshwater areas on non-federal land within the project area, and 0.07 acre on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to freshwater drainage/stream/ponded areas are discussed in detail in Section 7.1.3, Impacts/Results Riparian/Riverine Resources.

Arundo Scrub

Arundo-dominated riparian scrub is characterized by densely-vegetated riparian thickets dominated almost exclusively by arundo; this community designation is only appropriate when arundo accounts for greater than 50 percent of the total vegetative cover. This community is found along stream channels with repeated flooding, which possess loose, sandy, or gravelly alluvium soils.

There is 0.28 acre of arundo scrub on non-federal land within the project area, and 0.08 acre on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to arundo scrub are discussed in Section 7.3.1, Impacts/Results—PQP Lands.

Eucalyptus Woodland

Areas mapped as eucalyptus woodland contain large blue gum eucalyptus (*Eucalyptus globulus*) trees with little to no herbaceous layer. Eucalyptus trees are the sole or dominant trees in the canopy in this habitat type, with few other species present. Trees tend to have a continuous canopy and shrubs are infrequent. There is a thick leaf layer, which inhibits most of the ground cover vegetation from sprouting. This area is not considered suitable habitat for sensitive plants or any sensitive wildlife species.

There is 0.70 acre of eucalyptus woodland on non-federal land within the project area, and no acres of eucalyptus woodland on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to eucalyptus woodland are discussed in Section 7.3.1, Impacts/Results—PQP Lands.

Non-Native Grassland

Holland (1986) describes non-native grassland as a dense to sparse cover of annual grasses associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of abundant rainfall. Germination and growth of the annual grass and forbs species occurs with the onset of the late fall rains, with flowering and seed-set occurring from winter through spring. With a few exceptions, the plants are dead through the summer through the fall dry season, persisting as seeds. Soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), and barley (*Hordeum* sp.) are the dominant grasses in this association with scattered mustard (*Brassica* sp.), sweet fennel (*Foeniculum vulgare*), California sagebrush, and California buckwheat (*Eriogonum fasciculatum*) among others may be present.

A majority of the project area is characterized by extensive stands of non-native grasslands. Vegetation within this plant community varies based on the type and frequency of disturbance. The dominant plant species observed within the non-native grasslands in the project area includes yellow star thistle (*Centaurea solstitialis*), barely, telegraph weed (*Heterotheca grandiflora*), and tumble pigweed (*Amaranthus albus*). The less disturbed non-native grassland areas within the project area have dense stands of herbaceous vegetation that are greatly reducing the adjacent riparian areas. These areas contains dense stands of perennial pepperweed, black mustard (*Brassica nigra*), and prickly sow-thistle (*Sonchus asper*). This habitat provides marginally suitable habitat for San Diego ambrosia and San Miguel savory and is not likely to support Brand's phacelia.

There are 2.39 acres of non-native grassland on non-federal land within the project area, and 22.21 acres on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to non-native grassland are discussed in Section 7.3.1, Impacts/Results—PQP Lands.

Urban/Developed

The urban/developed vegetation community includes land that has been constructed upon or otherwise covered with a permanent man-made surface. Areas where no natural land is evident, or because large amounts of debris or other materials have been placed upon it, may also be considered.

The urban/developed land observed within the project area consists of areas containing commercial and residential development, associated parking lots and roads, SR-91 and SR-71, and the Prado Dam and associated spillways. Vegetation within the urban/developed land consists only of ornamental landscape vegetation with little to no native species observed.

There are 1.54 acres of urban/developed vegetation type on non-federal land within the project area, and 3.36 acres on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to urban/developed land are discussed in Section 7.3.1, Impacts/Results—PQP Lands.

Disturbed

Disturbed habitat includes areas in which the vegetative cover comprises less than 10 percent of the surface area (disregarding natural rock outcrops) and where there is evidence of soil surface disturbance and compaction from previous and current legal human activity. Areas mapped as disturbed include areas of existing dirt roads, parking areas, and construction work areas. Habitat quality for sensitive plants is considered extremely low.

There are 5.49 acres of disturbed vegetation within the project area on non-federal land, and 5.16 acres on federal land. These acreages do not represent the areas of temporary or permanent impact for the project. Permanent impacts to disturbed vegetation are discussed in Section 7.3.1, Impacts/Results—PQP Lands.

5.2.6 - Sensitive Plant Communities

The five sensitive plant communities known to occur in the region are:

- California walnut woodland
- Southern California arroyo chub/Santa Ana sucker stream
- Southern cottonwood willow riparian forest
- Southern sycamore alder riparian woodland
- Southern willow scrub

The sensitive plant community that occurs within the project area includes southern cottonwood willow riparian forest. This plant community observed on-site provides suitable habitat for a number of sensitive riparian wildlife species. The Proposed Action avoids southern cottonwood willow riparian forest.

5.2.7 - Narrow Endemic Plant Species

Since there are no observed or recorded occurrences of narrow endemic or other sensitive plant species within the project area, no additional surveys or mitigation measures will be required prior to project construction.

5.2.8 - Non-native and Invasive Vegetation

Significant acreage within the Santa Ana River Watershed, including Prado Basin is infested with non-native and invasive vegetation. This includes arundo, tree-of-heaven (*Ailanthus altissima*), white bladder flower (*Araujia sericofera*), perennial pepperweed (*Lepidium latifolium*), castor bean (*Ricinus communis*), and Mediterranean tamarisk (=salt cedar) (*Tamarix ramosissima*) (Appendix C). The most prolific, problematic, and abundant of these species for Prado Basin is arundo. Arundo grows rapidly, contributing to fuels loading in the basin, and has low resistance to fire, meaning it burns rapidly. Arundo has very little habitat value for wildlife species in the basin, and often outcompetes the native, riparian species contributing to wildlife habitat (Appendix C). Additionally, arundo is a prolific reproducer and its canes can wash downstream, root and infest new areas or re-infest areas previously treated for arundo in Prado Basin.

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SECTION 6: MSHCP SECTION 7.4.2 AND APPENDIX C OF MSHCP COMPLIANCE

As described above, the proposed SART project is considered a Conditionally Compatible Use under Section 7.4.2 of the MSHCP. As such, the project is required to demonstrate consistency with the biological goals and guidelines of Section 7.4.2 of the MSHCP. The conditions described in Section 6.1.1 below shall be applied to the Proposed Action so impacts to species are avoided as construction occurs. Compliance with these conditions is required of the District as a Permittee pursuant to the Implementing Agreement Section 13.7 (A). Table 8: Guidelines for Public Access and Recreation in the MSHCP Conservation Area lists each provision of Section 7.4.2, then addresses the Proposed Action's features designed to meet the provision to avoid and minimize impacts from the placement of the trail on the MSHCP Conservation Area's natural resources.

The Proposed Action will also implement all of the Standard Best Management Practices of MSHCP Appendix C, described below in Section 5.2.3. Project design features were developed to incorporate the provisions of Appendix C in order to avoid impacts to MSHCP lands.

6.1.1 - Section 7.4.2 Provisions (Conditionally Compatible Uses—Public Access and Recreation)

Table 8: Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for the Siting and Design of Trails and Facilities **The construction of trails and facilities will impact biological resources within the MSHCP Conservation Area. Therefore, the following guidelines address ways to avoid and minimize impacts from the placement and design of these trails and facilities on the MSHCP Conservation Area's natural resources.**
Trails and facilities will be sited and designed to be compatible with resource protection and in a manner that minimizes impacts to sensitive resources and Habitat types covered by the MSHCP. All decisions relating to public access will be made in a manner that is most protective of biological resources.
Trails and facilities will be located in the least sensitive areas of the MSHCP Conservation Area so that they avoid Habitat occupied by species covered by the MSHCP.
The Proposed Action has been designed to avoid sensitive resources by routing around them, or reducing trail width, thereby reducing impact in sensitive areas. The trail alignment has been redesigned numerous times since the Master Planning process to further avoid impacts to sensitive areas. The vast majority of the trail is now placed at the margins of sensitive habitat to avoid impacts to species. The Proposed Action now entirely avoids coastal sage scrub habitat.
Prior to design and construction of public access facilities, biological surveys will be conducted within the study area for the facility including vegetation mapping and species surveys and/or wetland delineations based on field conditions as recommended by the project biologists. The results of the biological resources investigation will be mapped and documented. The documentation will include preliminary conclusions and recommendations regarding potential effects of facility construction on MSHCP Conservation Area resources and methods to avoid and minimize impacts to MSHCP Conservation Area resources in conjunction with project siting, design, construction, and operation. The project biologist will work with facility designers during the design and construction phase to ensure implementation of feasible recommendations.
This DBESP report and appendices represent the culmination of biological surveys prepared for the project, including updated focused surveys and analysis at the request of the USFWS and CDFW. Early field visits and maps were prepared with sensitive resources mapped. These maps have been updated as additional surveys have been conducted and were used to refine the trail locations are reflected in this analysis.

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for the Siting and Design of Trails and Facilities **The construction of trails and facilities will impact biological resources within the MSHCP Conservation Area. Therefore, the following guidelines address ways to avoid and minimize impacts from the placement and design of these trails and facilities on the MSHCP Conservation Area's natural resources.**
Trails and facilities will be sited and designed to be compatible with resource protection and in a manner that minimizes impacts to sensitive resources and Habitat types covered by the MSHCP. All decisions relating to public access will be made in a manner that is most protective of biological resources.
Recreational activities and the construction of trails and facilities on highly erosive soils will be avoided.
Erosive soils were avoided as part of the project's design. The trail alignment is on lands with relatively flat grade to comply with trail design grade requirements and Americans with Disability Act (ADA) requirements. The soil analysis for the Proposed Action is available in the MSHCP Consistency Analysis in Appendix A.
Trails and facilities will be designed to discourage and prevent intrusion into adjacent environmentally sensitive areas.
Temporary impacts for the project (areas adjacent to the permanent trail alignment) will be revegetated with native vegetation, which will act as a barrier to intrusion. Additionally, dog-proof fencing will be installed in environmentally sensitive areas at the request of the USFWS and CDFW, to the extent that the fencing does not create a flood hazard in these areas. Wildlife-friendly trail fencing at key points throughout the project and prohibitive signage are also project design features intended to keep persons and pets from leaving the designated trail. The trail alignment has been placed along the margins of environmentally sensitive areas wherever possible to avoid the segmentation of habitat.
New trails and facilities will avoid using wildlife crossing points.
No sensitive crossing locations were identified during the biological surveys for the project, beyond those already impacted by other existing construction activities in the project area, e.g., the Prado Dam. The trail has been designed at grade to avoid acting as a wildlife barrier.
New trails and facilities will be accessible from existing and planned public roads.
Access to this 12.8-mile segment of the SART trail will occur through five entry points (Exhibit 12: Trail System Entry Points). From north to south, the trail entry points are located at Dearborn Road, Archibald Road, the intersection of Bluff Road and River Road, Butterfield Park in the City of Corona, and at the staging area at Auto Center Drive. These are all existing public roads. The staging area at Auto Center Drive, which is accessible from existing roads.
New facilities will minimize impacts from lighting.
Lighting will not be present throughout the trail corridor. New lighting will be provided only at the Auto Center Drive staging area, but this is in a relatively disturbed area with existing light pollution. Lighting at the staging area will be downward facing solar lighting in an effort to reduce light pollution and impacts to wildlife.
Environmentally sensitive grading techniques, drainage management and vegetation buffers will be used for trail and facility runoff absorption and filtration.
The project has been designed so trail construction is set to occur with minimal impact in general, and with particular emphasis to environmentally sensitive areas. Areas of temporary impacts will be revegetated with native species in an effort to restore the impacted area, minimize the potential for soil erosion, and to enable runoff absorption and filtration. The trail substrate is pervious to allow water infiltration.

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for the Siting and Design of Trails and Facilities **The construction of trails and facilities will impact biological resources within the MSHCP Conservation Area. Therefore, the following guidelines address ways to avoid and minimize impacts from the placement and design of these trails and facilities on the MSHCP Conservation Area's natural resources.**
Trails and facilities will be sited and designed to be compatible with resource protection and in a manner that minimizes impacts to sensitive resources and Habitat types covered by the MSHCP. All decisions relating to public access will be made in a manner that is most protective of biological resources.
When landscaping is required, only native species will be used. The use of nonnative invasive plant species will be prohibited.
Areas of temporary impacts will be revegetated with native species in an effort to restore the impacted area, minimize the potential for soil erosion, and to enable runoff absorption and filtration. The use of native plant species only is emphasized throughout every aspect of the project's design. Native species will also be used to revegetate areas of temporary impact that currently have disturbed, non-native grass, and other non-native vegetation communities to promote native species restoration in the Prado Basin.
Trails
Whenever possible, trail alignments in the MSHCP Conservation Area will use existing dirt roads.
The trail alignment in Conservation Areas generally follows existing disturbances. The trail will follow proposed dikes on USACE lands and will follow the existing disturbance along Rincon Road. As part of project mitigation requested by USFWS and CDFW, the District will prepare a study and monitor spur trails in the area as part of the effort to assess the Proposed Action's trail alignment effectiveness in functioning as the main trail in the area, thereby negating the need for spur trails.
Trails will be kept along the edges of large sensitive areas of habitat such as meadows and riparian areas.
The trail has been designed in all locations to minimally impact riparian areas. The trail was rerouted in several areas in late 2016 to further avoid areas of native vegetation and riparian areas. Where impacts could not be avoided, trail widths have been reduced and the trails were placed at the margins of the riparian areas, or in previously disturbed areas.
The type, width, and intensity of trail uses will be consistent with protection of the resources being traversed.
Trail widths were limited within sensitive areas and in some instances the dual-track trail was combined to a single multi-use trail to minimize impacts to environmentally sensitive areas.
When determined to be appropriate, trails will be constructed to any prominent features or viewpoints that are likely to attract hikers in order to prevent off-trail access and extensive trampling of adjacent Habitat by hikers.
This consideration to prevent off-trail access has been incorporated into the project's design. Prohibitive signage and selective fencing will be installed to further prevent recreational users from venturing off-trail. Regular patrols of the area would serve to avoid off-trail use.
Water breaks will be installed on steep trails to prevent accelerated runoff and erosion.
While the vast majority of the trail is at grade, in areas where water breaks are warranted, they are incorporated.
Dog-friendly trails will be located in areas of relatively low habitat value or edges.
While the trail alignment is dog-friendly throughout, the trail alignment is leash only in accordance with this section of the MSHCP, and by local ordinance. Selective dog-proof fencing will be installed in areas of sensitive habitat. Regular patrols of the area would serve to avoid off-trail and off-leash use.

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for the Siting and Design of Trails and Facilities **The construction of trails and facilities will impact biological resources within the MSHCP Conservation Area. Therefore, the following guidelines address ways to avoid and minimize impacts from the placement and design of these trails and facilities on the MSHCP Conservation Area's natural resources.**
Trails and facilities will be sited and designed to be compatible with resource protection and in a manner that minimizes impacts to sensitive resources and Habitat types covered by the MSHCP. All decisions relating to public access will be made in a manner that is most protective of biological resources.
Trailheads
Trail access points to the MSHCP Conservation Area (e.g., parking lots and staging areas) that are consistent with resource protection goals will be identified.
Access to this 12.8-mile segment of the SART trail will occur through five entry points (Exhibit 12: Trail System Entry Points). From north to south, the trail entry points are located at Dearborn Road, Archibald Road, the intersection of Bluff Road and River Road, Butterfield Park in the City of Corona, and at the staging area at Auto Center Drive. These are all existing public roads. The proposed staging area at Auto Center Drive is accessible from existing roads. The trail access points have been designed to be consistent with this section of the MSHCP.
In most cases, trailheads will be sited at the edge of the resource area.
The project' primary trailhead, located at Auto Center Drive was selected because it is in a relatively disturbed area with existing light pollution and disturbed vegetation. The Proposed Action's other entry points are located at the edge of the resource area within established residential neighborhoods.
Entry controls and signage at trailhead sites will be used to convey proper resource usage.
Signage prohibiting off-trail use, the harassment of wildlife, pets off leash, motorized vehicle travel and other restrictions will be posted at trail entry points and throughout the trail alignment. Signage will be consistent with this section of the MSHCP, and the prohibitions set by local ordinance. These prohibitions will be enforced with regular patrols and posted to the District's webpage (http://www.rivcoparks.org/) for the trail.
Guidelines for Operations and Maintenance **Passive uses can generate noise and litter, trails are vulnerable to erosion and gullying, and vegetation off trails may be trampled by hikers, mountain bikers and equestrian users. To protect the MSHCP Conservation Area's resources during operations and maintenance activities, the following guidelines have been developed:**
Effects of passive recreational uses shall be addressed in Reserve Management Plans described in Section 5.2.2.
Not applicable.
Motorized vehicular access by the public to the MSHCP Conservation Area will be prohibited except as necessary by emergency personnel or for operations and maintenance activities.
Motorized vehicular access by the public is prohibited by project design, and local ordinance. Unauthorized motorized vehicular access will be strictly enforced.
Appropriate daily and seasonal limits on trail use will be established. When necessary, trails will be closed on a temporary basis to minimize disruption of nesting and other wildlife functions for species covered by the MSHCP, or if public access has resulted in, or is expected to result in, significant negative impacts to sensitive species. Passive recreational uses will be limited or restricted in critical wildlife areas during breeding season, as determined appropriate.

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for Operations and Maintenance **Passive uses can generate noise and litter, trails are vulnerable to erosion and gullying, and vegetation off trails may be trampled by hikers, mountain bikers and equestrian users. To protect the MSHCP Conservation Area's resources during operations and maintenance activities, the following guidelines have been developed:**
The trail, or portions of the trail, will be closed as necessary to avoid conflict with wildlife, to avoid impacts to sensitive species, and to avoid damage to the project vicinity in general during times of flooding. Construction activities shall be avoided along all reaches of the SART during the nesting bird season between February 15 and September 1. A qualified biologist shall conduct surveys prior to construction to determine the presence/absence of nesting birds. If active nests are identified, consultation with CDFW and/or USFWS shall occur to determine appropriate procedures and implementing mitigation if construction activities have a direct or indirect impact on LBVI nesting. If ground-disturbing activities must be conducted during this time, a nesting bird survey should be conducted for the site prior to any ground disturbing activity. The nesting bird survey should occur as close to the disturbance date as possible and must be conducted no earlier than 7 days prior to ground-disturbing activities. In addition, a biological monitor shall be present during all ground-disturbing activities. Should a nest be observed, ground-disturbing work shall not occur within a 250-foot buffer area for nesting passerine birds, or a 500-foot buffer area for nesting raptors.
Public access may be restricted within and adjacent to wetlands, vernal pools, restoration areas, and sensitive wildlife Habitat (e.g., during the breeding season) at the discretion of the Reserve Manager.
Public access may be restricted as needed to avoid impact to any resource in the project vicinity.
In the event that public access policies and other policies conflict, the conflict will be resolved in a manner that's most protective of the biological resources within the MSHCP Conservation Area.
The policies regarding the protection of biological resources in the Conservation Area will take precedence to other policies governing the project area on MSHCP lands. These policies will also be considered on non-MSHCP lands in federal ownership.
Access to the MSHCP Conservation Area will be controlled through properly maintained fencing and signs.
Educational as well as prohibitive signage and selective fencing will be installed at access points to educate trail users about trail use regulations, and about the value of the natural resources in the project vicinity.
Fencing or other barriers will be used to restrict access to basically sensitive areas when protection of biologically sensitive resources is required.
In compliance with MSHCP Section 7.4.2, fencing and barriers will be selectively placed to protect biologically sensitive areas.
Public access information packets and guides will be developed for users of the MSHCP Conservation Area.
The District's webpage (http://www.rivcoparks.org/) maintains an active recreation map with up-to-date conditions and regulations for recreation facilities under their management. These details will be maintained for the Santa Ana River Trail on this site.
Education and outreach will be used to increase public awareness and appreciation for Habitat and wildlife values.
The District's webpage (http://www.rivcoparks.org/) will include education and outreach about the trail and its surrounding areas. The Proposed Action will have interpretive panels for public education and outreach, as appropriate, throughout the 12.8-mile trail corridor.

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for Operations and Maintenance **Passive uses can generate noise and litter, trails are vulnerable to erosion and gullying, and vegetation off trails may be trampled by hikers, mountain bikers and equestrian users. To protect the MSHCP Conservation Area's resources during operations and maintenance activities, the following guidelines have been developed:**
The MSHCP Conservation Area will be patrolled on a regular basis in order to ensure that visitors to the MSHCP Conservation Area stay on trails and observe all other rules and guidelines established to protect the natural resources on-site.
The District has one full time positon funded for inspection and maintenance of the trail. The District will use a combination of Rangers and Operations staff to patrol. The trail will be patrolled no less than one time per day utilizing round trip route (County lie to County Line). The role will be to check condition of the trail and provide routine maintenance on the trail. In addition neighboring Cities as well the various federal, State and County agencies will utilize the trail as controlled access into the river corridor for various studies and maintain their facilities (such Flood Control devices). These agencies will be given the appropriate contact information to District should they determine any violations of the rules and regulations. In addition the District Rangers are not authorized with law enforcement powers. Nor are they authorized to carry weapons. They role with be to advise patrons of the rules and advise of the need to comply. Should there determine the violation is beyond their abilities to address, the can detain violators and request assistance for the local police jurisdiction. Violations issued to persons with pets off leash, or recreating off of the established trail will be according to the fine schedule for the municipal and county code.
Feeding of all wildlife will be prohibited.
The feeding of wildlife will be prohibited. Signage prohibiting interference with wildlife will be posted at trail entry points and throughout the trail alignment. Patrols of the trail will enforce prohibitions with regard to wildlife interaction. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Firearms will be prohibited from patrol and maintenance sites, except for those used by authorized law enforcement and security personnel.
The prohibition of fire arm use in the project area will be posted as signage, and enforced through regular patrol. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Maintenance
The trails and other facilities within the MSHCP Conservation Area require proper maintenance to ensure the protection of biological resources. Trails, facilities, signs and barriers will be maintained to appropriate conditions to discourage and prevent intrusion into adjacent environmentally sensitive areas.
All Maintenance work will follow or exceed the Minimum Maintenance Guidelines for the Santa Ana River Parkway April 2008 and adopted by the Technical Advisory Committee and Political Action Group. Signage will be places at all Trailheads and Staging Areas asking all participants to pack out all trash and debris. Signage to follow the requirements Santa Ana River Parkway Minimum Trail Signage Guidelines February 2012. The District is committed to fund the patrol of the Santa Ana River Trail. The District has one full time positon funded for inspection and maintenance of the trail. The District will use a combination of Rangers and Operations staff to patrol. The trail will be patrolled no less than one time day utilizing round trip route (County lie to County Line). The role will be to check condition of the trail and provide routine maintenance on the trail. In addition neighboring Cities as well the various federal, State and County agencies will utilize the trail as controlled access into the river corridor for various studies and maintain their facilities (such Flood Control devices). These agencies will be given the appropriate contact information to District should they determine any violations of the rules and regulations. In addition the District Rangers are not authorized with law enforcement powers. Nor are they authorized to carry weapons. They role with be to advise patrons of the rules and advise of the need to comply. Should there

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for Operations and Maintenance **Passive uses can generate noise and litter, trails are vulnerable to erosion and gullying, and vegetation off trails may be trampled by hikers, mountain bikers and equestrian users. To protect the MSHCP Conservation Area's resources during operations and maintenance activities, the following guidelines have been developed:**
determine the violation is beyond their abilities to address, the can detain violators and request assistance for the local police jurisdiction. The District's Adopt-A-Trail program will also be utilized to use volunteer groups to provide supervised trail maintenance operations. These groups are trail through on-site programs in appropriate and correct methods of trail maintenance. Their work is limited to trash removal, weed removal, sign repair and installation and removal. All work is restricted to within the established trail corridor and equipment is limited to hand tools. Adopt-A-Trail maintenance is performed on a minimum of 4-6 times a year.
Hiking
Hikers must always stay on designated trails and must not stray into adjacent areas to prevent trampling of vegetation and erosion.
Hiking use off-trail will be strictly prohibited. Camping is strictly prohibited. Prohibitions for off-trail use will be posted and regular patrol of the trail alignment will enforce off-trail violations. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Equestrian Use
Equestrian use will be limited to designated trails.
Equestrian use off-trail will be strictly prohibited. Prohibitions for off-trail use will be posted and regular patrol of the trail alignment will enforce off-trail violations. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Following heavy rains, the use of equestrian trails will be prohibited for appropriate periods to avoid trail damage and impacts to adjacent Habitat.
The trail alignment will be closed at any time needed to avoid damage to the project area caused by recreation use on saturated areas. Patrols of the area will close the trail, if needed, to avoid impacts.
Mountain Biking
Mountain bike trails will be limited to areas with low susceptibility to erosion and out of wetlands and other sensitive areas.
Erosive soils were avoided as part of the project's design. The trail alignment is on lands with relatively flat grade to comply with trail design grade requirements and ADA requirements. The soil analysis for the Proposed Action is available in the MSHCP Consistency Analysis in Appendix A.
Mountain bike trails will be constructed wider than foot trails to prevent trail edge disturbance and on grades no greater than 25 percent.
Project design is consistent with this requirement.
Litter and Trash Control Measures
Litter control measures will be implemented within the MSHCP Conservation Area.
Litter will be reduced in the MSHCP areas through the installation of intermittent trash receptacles, prohibitive signage throughout the project area, regular patrol for litter violations, and litter clean up as part of the project's ongoing operations and maintenance.
Closed garbage cans and recycling bins will be provided at trailheads and access points.

Table 8 (cont.): Guidelines for Public Access and Recreation in the MSHCP Conservation Area

Guidelines for Operations and Maintenance **Passive uses can generate noise and litter, trails are vulnerable to erosion and gullying, and vegetation off trails may be trampled by hikers, mountain bikers and equestrian users. To protect the MSHCP Conservation Area's resources during operations and maintenance activities, the following guidelines have been developed:**
Animal-proof trash receptacles are located at trailheads and access points to prevent littering in the project area. Animal-proof containers will serve to further avoid the possibility of negative human/wildlife interactions.
Litter and trash will be collected and removed on a regular basis. Garbage cans and recycling bins will be maintained appropriately.
The project commits to the installation of animal-proof trash and recycling receptacles at key locations in the project area. References to this commitment are included throughout the document. The District does not propose the install receptacles along the trail. Trash receptacles will be installed at Trail Heads and Staging Areas only. The maintenance of the receptacles to follow the Minimum Maintenance Guidelines for the Santa Ana River Parkway April 2008 and adopted by the Technical Advisory Committee and Political Action Group. Signage will be places at all Trailheads and Staging Areas asking all participants to pack out all trash and debris. Signage to follow the requirements Santa Ana River Parkway Minimum Trail Signage Guidelines, February 2012.
Penalties will be imposed for littering and dumping within the MSHCP Conservation Area.
Regular patrols of the trail alignment will enforce local ordinances prohibiting littering and dumping.
Permanent storage of materials (e.g., hazardous and toxic materials) outside of maintenance facilities within the MSHCP Conservation Area will be prohibited.
Hazardous material storage will be prohibited outside of maintenance facilities
Wildlife Corridor under crossings will be kept free of all debris, trash, and other obstructions.
The trail has been designed as not to impact or impede wildlife movement. The trail has been designed at grade with selective fencing in areas of sensitive habitat to protect those areas of sensitive habitat.
Signs will be posted to prevent and report littering.
Prohibitive signage for littering will be posted throughout the project area.
Pets
Pets will be restrained by leashes at all times.
While the trail alignment is dog-friendly throughout, the trail alignment is leash only in accordance with this section of the MSHCP, and by local ordinance. Selective dog-proof fencing will be installed in areas of sensitive habitat. Local leash-laws will be enforced by regular patrol.
Signage
An adequate number of signs will be provided at appropriate locations to clearly identify public access to and within the MSHCP Conservation Area.
Signage indicating public access to the trail alignment will be posted throughout the project area. Signage along the trail in sensitive habitats would be placed at appropriate line of sight intervals warning the trail users to stay on the trail.
Interpretive signs will be provided to explain the value of the MSHCP Conservation Area's natural resources.
Interpretive signs will be provided at trail access points, the staging area, and throughout the trail alignment.
Source: MSHCP Section 7.4.2.

6.1.2 - MSHCP Appendix C: Standard Best Management Practices

The Proposed Action will implement all of the Standard Best Management Practices of MSHCP Appendix C, described herein. Project design features were developed to incorporate the provisions of Appendix C in order to avoid impacts to MSHCP lands.

Appendix C Provisions:

1. A qualified biologist shall conduct a training session for project personnel prior to grading. The training shall include a description of the species of concern and its habitats, the general provisions of the Endangered Species Act (Act) and the MSHCP, the need to adhere to the provisions of the Act and the MSHCP, the penalties associated with violating the provisions of the Act, the general measures are being implemented to conserve the species of concern as they relate to the project, and the access routes to and project site boundaries within which the project activities must be accomplished.

2. Water pollution and erosion control plans shall be developed and implemented in accordance with Regional Water Quality Control Board (RWQCB) requirements.

3. The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall be via preexisting access routes to the greatest extent possible.

4. The upstream and downstream limits of projects disturbance plus lateral limits of disturbance on either side of the stream shall be clearly defined and marked in the field and reviewed by the biologist prior to initiation of work.

5. Projects should be designed to avoid the placement of equipment and personnel within the stream channel or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.

6. Projects that cannot be conducted without placing equipment or personnel in sensitive habitats should be timed to avoid the breeding season of riparian bird species identified in MSHCP Global Species Objective No. 7.

7. When stream flows must be diverted, the diversions shall be conducted using sandbags or other methods requiring minimal instream impacts. Silt fencing or other sediment trapping materials shall be installed at the downstream end of construction activity to minimize the transport of sediments off site. Settling ponds where sediment is collected shall be cleaned out in a manner which prevents the sediment from reentering the stream. Care shall be exercised when removing silt fences, as feasible, to prevent debris or sediment from returning to the stream.

8. Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project related spills of hazardous materials shall be reported to appropriate entities including but not limited to applicable jurisdictional city,

USFWS, CDFW, and RWQCB and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.

9. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.
10. The qualified project biologist shall monitor construction activities for the duration of the project to ensure that practical measures are being employed to avoid incidental disturbance of habitat and species of concern outside the project footprint.
11. The removal of native vegetation shall be avoided and minimized to the maximum extent practical. Temporary impacts shall be returned to preexisting contours and revegetated with appropriate native species.
12. Exotic species that prey upon or displace target species of concern should be permanently removed from the site to the extent feasible.
13. To avoid attracting predators of the species of concern, the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s).
14. Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the Proposed Action footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the project and shall be specified in the construction plans. Construction limits will be fenced with orange snow screen. Exclusion fencing should be maintained until the completion of all construction activities. Employees shall be instructed to consolidate activities to construction areas only.
15. RCTC shall have the right to access and inspect any sites of approved projects including any restoration/enhancement area for compliance with project approval conditions including these BMPs.

SECTION 7: IMPACT ANALYSIS AND DBESP ANALYSIS

The project was evaluated previously to determine consistency with the MSHCP (Appendix A). The MSHCP Consistency Analysis included a habitat assessment. The assessment focused on the Proposed Action routes which included the project footprint and all areas where permanent or temporary impacts could occur. The analysis also identified the potential opportunities and constraints to determine the final routes for the SART Project.

The MSHCP Consistency Analysis assessed the reaches (1–13) of the Previously Approved Action, thereby evaluating a larger project area (313.8 acres). Since that time, the Proposed Action has been reduced to a 12.8-mile section and relocated in several areas to move the trail away from the Santa Ana River (184.88 acres), reaches 1-10 of the Previously Approved Action.

The MSHCP requires focused surveys for certain plant and animal species for project sites located within designated plant and animal survey areas when potential suitable habitat is present. The project area is located within a designated survey area for BUOW—an MSHCP Criteria Area species. Suitable breeding and foraging habitat for the BUOW was determined to exist within limited portions of the project area. Consistent with the MSHCP, focused BUOWs surveys were required and conducted in 2010 and 2016 (Appendix A and Appendix B). The surveys determined that the project area does not support BUOWs, and this species is not expected. No direct impacts on BUOW are anticipated as a result of project implementation; therefore, mitigation for this species is not required.

The project area is also located within a survey area for three Narrow Endemic Plant species: San Diego ambrosia, Brand's phacelia, and San Miguel savory. The habitat assessment determined the project area lacks suitable habitats, soils, and/or other factors to support these species. No direct impacts on San Diego ambrosia, Brand's phacelia or San Miguel savory are anticipated as a result of project implementation; therefore, mitigation for this species is not required. Since no direct impacts on Narrow Endemic Plants are expected, a DBESP is not required for these species.

The project area was assessed for areas meeting the MSHCP's definition of vernal pools and fairy shrimp habitat during the habitat assessment and other field surveys. It was determined that the project area does not have vernal pools or wetlands that could support fairy shrimp species and none are expected; therefore, listed fairy shrimp are not expected to be present within the project area. No vernal pools, vernal pool soil conditions, or associated vernal pool vegetation were observed within the project area. Consistent with the MSHCP, focused fairy shrimp surveys were not conducted or required. No direct impacts on vernal pools and fairy shrimp are anticipated as a result of project implementation; therefore, mitigation is not required. Since no direct impacts on vernal pools are expected, a DBESP is not required for these species.

The project area was assessed for areas meeting the MSHCP's definition of riparian/riverine areas during the biological surveys. It was determined that the project contains MSHCP riparian/riverine areas along the Santa Ana River and its tributaries. These areas support southern willow scrub and mule fat scrub plant communities which provide suitable habitat for species associated with

riparian/riverine areas as defined in Section 6.1.2 of the MSHCP, including the Santa Ana sucker, LBVI, and SWFL. Additionally, portions of the project area that include the Santa Ana River have been designated by the USFWS as Critical Habitat for Santa Ana sucker and LBVI. Since direct impacts on MSHCP riparian/riverine areas are expected from project implementation, a DBESP is required for the project. Avoidance and minimization measures are required during the preconstruction and construction phases of the project to avoid potential impacts to riparian/riverine areas, and species associated with these areas.

MSHCP Section 6.1.4, *Guidelines Pertaining to the Urban/Wildlands Interface*, discusses guidelines to address indirect effects associated with locating development in proximity to MSHCP Conservation Areas. MSHCP Conservation Areas, as defined in the MSHCP, is the approximately 500,000 acres comprised of approximately 347,000 acres of Public/Quasi-Public Lands and approximately 153,000 acres of Additional Reserves Lands within western Riverside County. The MSHCP guidelines require consideration of indirect affects Urban/Wildlands Interface including drainage, toxics, lighting, noise, invasive, barriers, and grading/land development. The Urban/Wildland Interface is defined as a zone (less than 100 feet) between project site and the MSHCP Conservation Area. If a project is located adjacent to a Conservation Area, avoidance measures must be implemented. Project routes could result in potential indirect impacts on MSHCP Conservation Areas during project construction and operation; therefore, the project will follow the Urban/Wildland Interface guidelines to avoid, prevent, and reduce edge effects on biological resources located adjacent to the MSHCP Conservation Area.

The project area contains suitable habitat for a number of special-status species not covered under the MSHCP. In addition, portions of the project area contain suitable nesting habitat for bird species protected under the MBTA and California Fish and Game Code Section 3503 and 3511 (CFG Code). Breeding season avoidance and pre-construction survey recommendations are provided within the consistency document to avoid potential impacts to nesting birds in violation of the MBTA and CFG Code (Appendix A).

7.1 - Riparian/Riverine Areas and Vernal Pools

A total of 6.22 acres of MSHCP riparian/riverine areas will be permanently impacted by the Proposed Action and 10.98 acres will be temporarily impacted. This section describes the results and DBESP analysis, if applicable, for riparian/riverine areas and vernal pool as required in MSHCP Section 6.1.2. Impacts to endangered riparian species are described in this section for non-federal lands only. Impacts to endangered riparian species on federal lands will be evaluated under separate cover as part of the Endangered Species Act Section 7 compliance for the project.

7.1.1 - Results/Impacts—Wildlife and Aquatic Habitat/Riparian Species

Wildlife Habitat

USFWS designated critical habitat for LBVI and SWFL and proposed critical habitat for YBCU are located within the project trail alignment. Table 9: Impacts within Designated and Proposed Critical Habitat for LBVI, SWFL, and YBCU shows the acreage of permanent and temporary impact within areas of designated and proposed critical habitat.

Table 9: Impacts within Designated and Proposed Critical Habitat for LBVI, SWFL, and YBCU

Species	Impacts on Non-Federal Land			Impacts on Federal Land		
	Permanent (acres)	Temporary (acres)	Total Acreage*	Permanent (acres)	Temporary (acres)	Total Acreage
Designated critical habitat for SWFL	<0.01	0.19	0.19	2.80	4.28	7.08
Proposed critical habitat for YBCU	0.37	4.71	5.08	2.21	3.80	6.01
Designated critical habitat for LBVI	0.36	5.06	5.42	7.44	10.02	17.46
TOTAL (acres)**	**0.37**	**5.25**	**5.61**	**10.24**	**14.30**	**24.54**

Notes:
* Rounding error
** Sum acreage of critical habitat for all four species: LBVI, SWFL, and YBCU.
Source: USFWS 2016

While proposed critical habitat for YBCU falls within the project area, none of the project impact areas intersecting with the proposed critical YBCU habitat contain the necessary riparian woodland described as one of the Primary Constituent Elements (PCEs) for YBCU Critical Habitat. The USFWS identifies riparian woodlands as mixed willow-cottonwood vegetation, mesquite-thorn forest vegetation, or a combination of these that contains habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 feet in width and 200 acres or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above-average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats (USFWS 2014). Because the areas proposed as critical habitat for YBCU within the project area do not have the requisite PCEs, the project is considered to have no impacts on proposed critical habitat for YBCU, as indicated in Table 9: Impacts within Designated and Proposed Critical Habitat for LBVI, SWFL, and YBCU. Based on this finding, it was determined that suitable habitat for the YBCU would not be impacted by the trail project, and, therefore, no critical habitat of the species would be destroyed or adversely modified by the trail project.

Aquatic Habitat

UFSWS designated critical habitat for Santa Ana sucker is located within the project area. Table 10: Impacts within Santa Ana Sucker Critical Habitat shows the acreage of permanent and temporary impact area within areas of designated critical habitat.

Table 10: Impacts within Santa Ana Sucker Critical Habitat

Species	Impacts on Non-Federal Land			Impacts on Federal Land		
	Permanent (acres)	Temporary (acres)	Total Acreage*	Permanent (acres)	Temporary (acres)	Total Acreage
Designated critical habitat for Santa Ana sucker	0.21	5.17	**5.38**	0.88	1.40	**2.28**
TOTAL (acres)**	**0.94**	**15.13**	**16.07**	**13.33**	**19.50**	**32.83**

Notes:
* Rounding error
** Sum acreage of critical habitat for all four species: LBVI, SWFL, YBCU, and Santa Ana Sucker
Source: USFWS 2016

Impacts on aquatic biological resources in the vicinity of or downstream from the trail alignment, such as Santa Ana sucker, could occur as a result of changes in water quality. During construction and trail use, runoff carrying excessive silt or fine sediment could potentially impact water quality and, in turn, affect plant and wildlife species using the habitats adjacent to the trail. An increase in fine sediment can result in a substrate that does not support breeding and foraging habitat for many wildlife species. Increases in turbidity due to runoff could decrease food sources by limiting the light available for photosynthetic production of algae.

The PCEs of Santa Ana sucker critical habitat include the following:

- A functioning hydrological system that experiences peaks and ebbs in the water column reflecting seasonal variation in precipitation throughout the year.
- A mosaic of loose sand, gravel, cobble and boulder substrates in a series of riffles, runs, pools and shallow sandy margins, water depths greater than 1.2 inches, non-turbid water or only seasonally turbid water, water temperatures less than 86 degree and stream habitat that includes algae, aquatic emergent vegetation, macroinvertebrates, and riparian vegetation.

Direct and indirect impacts on Santa Ana sucker critical habitat are anticipated as a result of the project; however, the PCEs necessary for Santa Ana sucker do not occur on within the project impact site. The majority of the project impact areas intersecting with the areas defined as Santa Ana sucker critical habitat do not contain aquatic habitat, and none contain the PCEs that are defined as being essential for critical habitat for Santa Ana sucker. Therefore, the project is unlikely to directly affect the PCEs of Santa Ana sucker critical habitat.

Riparian Species

In 2016, seven migrant SWFL were detected within the Santa Ana Watershed and one male SWFL was detected within the Prado Basin along Chino Creek, just south of Prado Regional Park (Pike et al. 2016). No SWFL breeding pairs or home ranges were detected within the project area during the 2015 or 2016 surveys (ECORP 2016b; Pike et al. 2016; SAWA 2016).

One YBCU was detected in the Prado Basin in 2011; however, none were detected during 2012–2016 surveys (Pike et al. 2016).

Direct Impacts

Trail construction activities will result in the permanent loss of 6.03 acres of southern willow scrub habitat, and the temporary loss of 10.06 acres within the project area. Native habitat removal would be minimized whenever possible; however, if conducted during the nesting season, construction would directly affect LBVI nesting in suitable habitat. With the implementation of project design features and mitigation measures, direct impacts to LBVI from trail construction activities will be avoided.

Direct impacts on LBVI nestlings could potentially occur from dog predation when trail users are accompanied by domestic dogs. Impacts are only expected to occur if off-leash dogs were permitted to venture off the designated trail into sensitive nesting habitat. To keep dogs on the designated trail, all trail users with dogs would be required to keep their dogs leashed at all times. Signage notifying trail users of the on-leash requirement would be posted throughout the trail alignment and trail patrols would be implemented. Additional trail warnings regarding off-trail hazards to both dogs and humans; including ticks, venomous snakes, poison oak (*Toxicodendron diversilobum*) and nettle; would be posted to further deter off-leash and off-trail pet activity. However, because LBVI nests are, on average, about one meter off the ground, most dog breeds would not be able to easily locate a nest at this height and would not likely be allowed to spend a significant amount of search time in one area. Many domestic dogs do not possess the motivation to seek out nesting birds, such as a need for food or high prey drive, and, therefore, direct impacts to LBVI from dog predation are anticipated to be less than significant.

Indirect Impacts

Indirect impacts to LBVI may result from the presence of humans using the trail segments that cross or abut suitable riparian habitat during the breeding season. There are a total of approximately 16 impacted acres (combined permanent and temporary) of southern willow scrub within the project area. These impacts to southern willow scrub are described in detail in Section 7.1.3, Impacts/Results Riparian/Riverine Resources. It is possible that nest abandonment due to flushing mother birds would be high for LBVI within territories overlapping these areas. However, the highest risk of nest abandonment would result from trail users who choose to go off of the designated trail. Signs prohibiting off-trail trekking would be posted throughout the trail alignment to prevent users from entering areas where LBVI may be nesting. Barriers such as railings would also be installed where the trail crosses sensitive riparian areas to discourage off-trail use. Therefore, trail users would not be expected to venture close enough to LBVI nests to induce nest flushing or abandonment.

Noise generated by trail users may also startle nesting LBVI adults causing them to temporarily leave or abandon nests. Loss of LBVI nestlings as a result of noise during trail use during the nesting season would stem primarily from noise generated by loud trail users. The A-weighted decibel [dB(A)] level is standard for “raised voice conversation” is 78 dB(A) (EPA 1974). Table 11: Decrease in Sound Intensity over Distance for Loud Trail Users was generated using the inverse square law for sound intensity to display the decrease in loud trail user noise dB(A) with distance from the trail.

Table 11: Decrease in Sound Intensity over Distance for Loud Trail Users

Distance (feet)	dB(A)
1.64	78
6.56	66
13.12	60
19.68	56.4

Data from 2014 LBVI detections were not provided in the form of territories. The Recovery Plan for LBVI states the average territory size in the Santa Ana River region for LBVI is 2-acres (Kus 2002). Therefore, a 2-acre buffer was applied to each point for the purposes of analysis of impacts to LBVI territories. Only LBVI territories that fell into lands subject to the MSHCP were considered for this analysis. LBVI territories that were determined to fall entirely into federal land are not quantified in this report. The standard upper noise level threshold for LBVI and SWFL is 60 dB(A). Therefore, based on the zone of noise impact calculations, any LBVI with territories that fall within 13.12 feet of the trail's edge could potentially experience noise impacts from the louder group of trail users. Based on the data recorded by ECORP in 2016 and OCWD in 2014, 35 individual LBVI documented within 2 acres of the noise impact zones for loud trail users on non-federal land. Since there is an overlap in survey efforts along River Road, four of the 35 individuals were recorded within very close proximity (30 feet or less) to the location of a previously documented LBVI and were considered to be duplicate observations of a previously identified LBVI. Duplicate LBVI observations were not included in this analysis resulting in a total of 31 LBVI that potentially have territories on non-federal land that at least partially fall into the noise impact zones for loud trail users (Exhibit 19: LBVI Territories Within the Trail User Noise Zone). All 31 of these territories are located along a section of the proposed trail just northwest of River Road, within the eastern portion of Reach VIII.

Although LBVI have high territory and nesting site fidelity, previously documented territories may or may not persist or be located in the same location post construction. Assuming that all of the 31 LBVI with territories falling within the noise impact zones for loud trail users during the first year post-construction, these nests would be susceptible to flushing and the birds may temporarily leave or abandon their nests as a result. The average LBVI clutch size is three to four eggs, and most breeding pairs will raise a single brood per season (Kus 2002). Assuming the worst-case scenario, with all affected LBVI territories having a clutch of four is lost because of nest abandonment resulting from flushing by trail users, it could be anticipated that up to 124 LBVI nestlings could be lost in Year 1, post-construction. If each year half as many LBVI build their nests close enough to the trail to be disturbed by trail users, then impacts to LBVI nestlings would likely be reduced to nearly zero within 10 years post-construction.

Indirect impacts to riparian birds could also occur during trail repair and maintenance activities if conducted during the breeding season. Noise, vibration, and fugitive dust associated with operating the construction equipment in areas adjacent to nest locations may disrupt foraging or breeding birds and could cause temporary or permanent nest abandonment, resulting in nest failure. Noise generated by the operation of construction equipment during trail repair or maintenance would

generally require minimal equipment and would be short in duration. The loudest piece of construction equipment expected to be used (small excavator) produces a noise level of 81 dB(A) (SART ISMND [MBA 2011]). Table 12: Decrease in Sound Intensity over Distance for Construction was generated to display the decrease in construction noise dB(A) with distance from the trail.

Table 12: Decrease in Sound Intensity over Distance for Construction

Distance (feet)	dB(A)
1.64	81
6.56	69
13.12	63
19.68	59.4
29.53	56

Based on the zone of impact calculations for construction noise, any LBVI with territories located within 19.28 feet of the trail's edge may experience indirect noise impacts from repair and maintenance activities. Based on the LBVI data recorded by ECORP in 2016 and OCWD in 2014, 36 individual LBVI were documented within 2 acres of the construction noise impact zones for trail repair and maintenance activities on non-federal land. Since there is an overlap in survey efforts along River Road, four of the 36 individuals were recorded within very close proximity (30 feet or less) to the location of a previously documented LBVI and were considered to be duplicate observations of a previously identified LBVI. Duplicate LBVI observations were not included in this analysis resulting in a total of 32 LBVI that potentially have territories on non-federal land that at least partially fall into the construction noise impact zones for trail repair and maintenance activities (Exhibit 20: LBVI Territories Within the Construction Noise Zone). All 32 of these territories are located along a section of the proposed trail just northwest of River Road, within the eastern portion of Reach VIII.

Indirect effects to riparian birds can be caused by the creation of edge zones resulting in a potential for parasitism by brown-headed cowbirds. Edge zone effects are considered to occur in areas within 328 feet of habitat edges (Stumpf et al. 2011). The majority of the proposed trail alignment follows existing habitat edges and no new habitat edge zones would be created by its construction. However, there are three segments of the proposed trail alignment just southwest of River Road where the trail cuts through existing riparian habitat and necessary removal of vegetation will enhance or create edge zones in these areas (Exhibit 21: Edge Zones). This portion of the trail is located at the eastern end of Reach VIII. Two of these segments are within non-federal land that falls under the jurisdiction of the MSHCP and the third segment is within federal land.

Based on the LBVI data recorded by ECORP in 2016 and OCWD in 2014, 37 individual LBVI were documented within 2 acres of the edge zone affected areas. Since there is an overlap in survey efforts along River Road, four of the 37 individuals were recorded within very close proximity (30 feet or less) to the location of a previously documented LBVI and were considered to be duplicate

observations of a previously identified LBVI. Duplicate LBVI observations were not included in this analysis resulting in a total of 33 LBVI that potentially have territories at least partially fall into the edge zone affected areas created by the trail construction in MSHCP land (Exhibit 22: LBVI Territories Within Edge Zones). Assuming the worst-case scenario, with all LBVI territories that fall into the edge zones having a maximum clutch of four lost to cowbird parasitism, it could be anticipated that 132 LBVI nestlings could be lost in one year.

While it is possible that cowbird parasitism could increase in these edge zones, a southern California study analyzed the effects of habitat edge, nest site characteristics, nest predation, and adjacent land uses and found the distance from the riparian edge, as well as gaps within the riparian zone, did not affect nest predation in LBVI (Kus et al. 2008). Additionally, the Santa Ana Watershed Association (SAWA) has been conducting a cowbird trapping management program along the Santa Ana River within the Prado Basin since 2000. In 2016, no cowbirds were detected in the habitat near the project site and no nest parasitism was documented (SAWA 2016). Therefore, the small sections of new edge areas that could be created through trail construction are not expected to create a significant increase in edge-related impacts to LBVI from brown-headed cowbird nest parasitism.

No nesting SWFL or home territories were found in the project area during 2015 and 2016 surveys. Because surveys for the species were negative, no direct or indirect impacts resulting from trail construction and use are currently anticipated.

If SWFL begin nesting near the trail alignment in the future, indirect effects resulting from trail use, repair and maintenance activities, and cowbird parasitism would need to be considered. SWFL with territories with nests falling within 13.12 feet of the trail's edge may be indirectly impacted by noise generated by louder groups of trail users, territories with nests within 19.68 feet of the trail's edge may be impacted by noise during repair and maintenance construction, and territories with nests within the edge zone impact areas (shown in Exhibit 22: LBVI Territories Within Edge Zones) may be impacted by increased cowbird parasitism.

Table 13: Maximum Possible SWFL Territories within Impact Areas depicts the maximum number of future SWFL territories theoretically occurring within impact areas. Information in this table was generated based on a 0.085-acre average territory size for SFWL (USFWS 2002), and presumes that all of the surrounding southern willow scrub habitat within the impact areas contains suitable habitat for SWFL.

Table 13: Maximum Possible SWFL Territories within Impact Areas

Impact Zone	Acres of Habitat	Maximum Possible Number of SWFL Territories Affected
Noise—Loud Trail Users	14.83	17
Noise—Repair and Maintenance Construction	29.1	24
Edge Effects Zone	64.01	54

Source: ECORP Consulting

FIRSTCARBON SOLUTIONS™

0 300 600

Exhibit 19
LBVI Territories Within the Trail User Noise Zone

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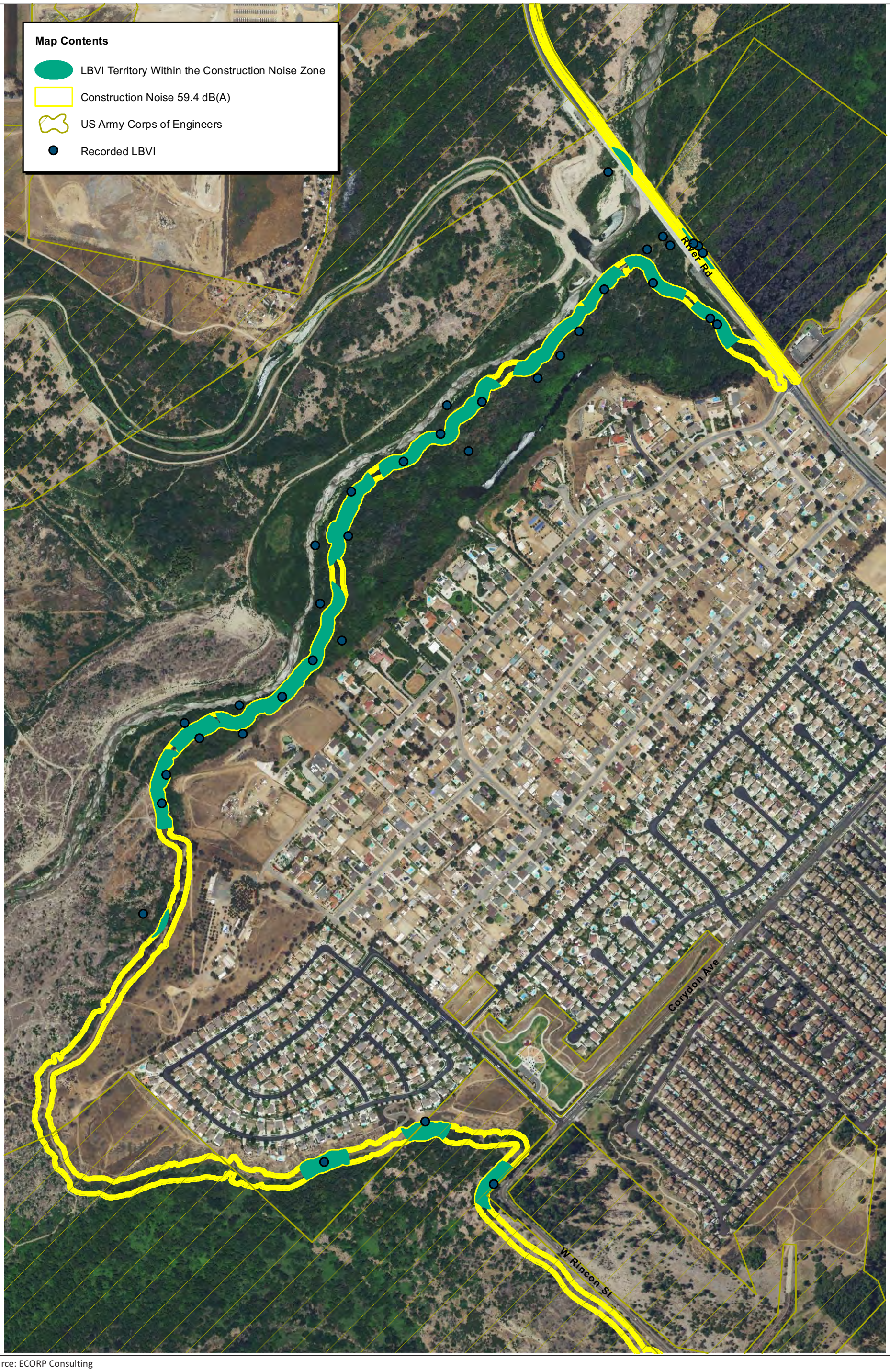

Source: ECORP Consulting

FIRSTCARBON SOLUTIONS™

0 300 600

Exhibit 20
LBVI Territories Within the Construction Noise Zone

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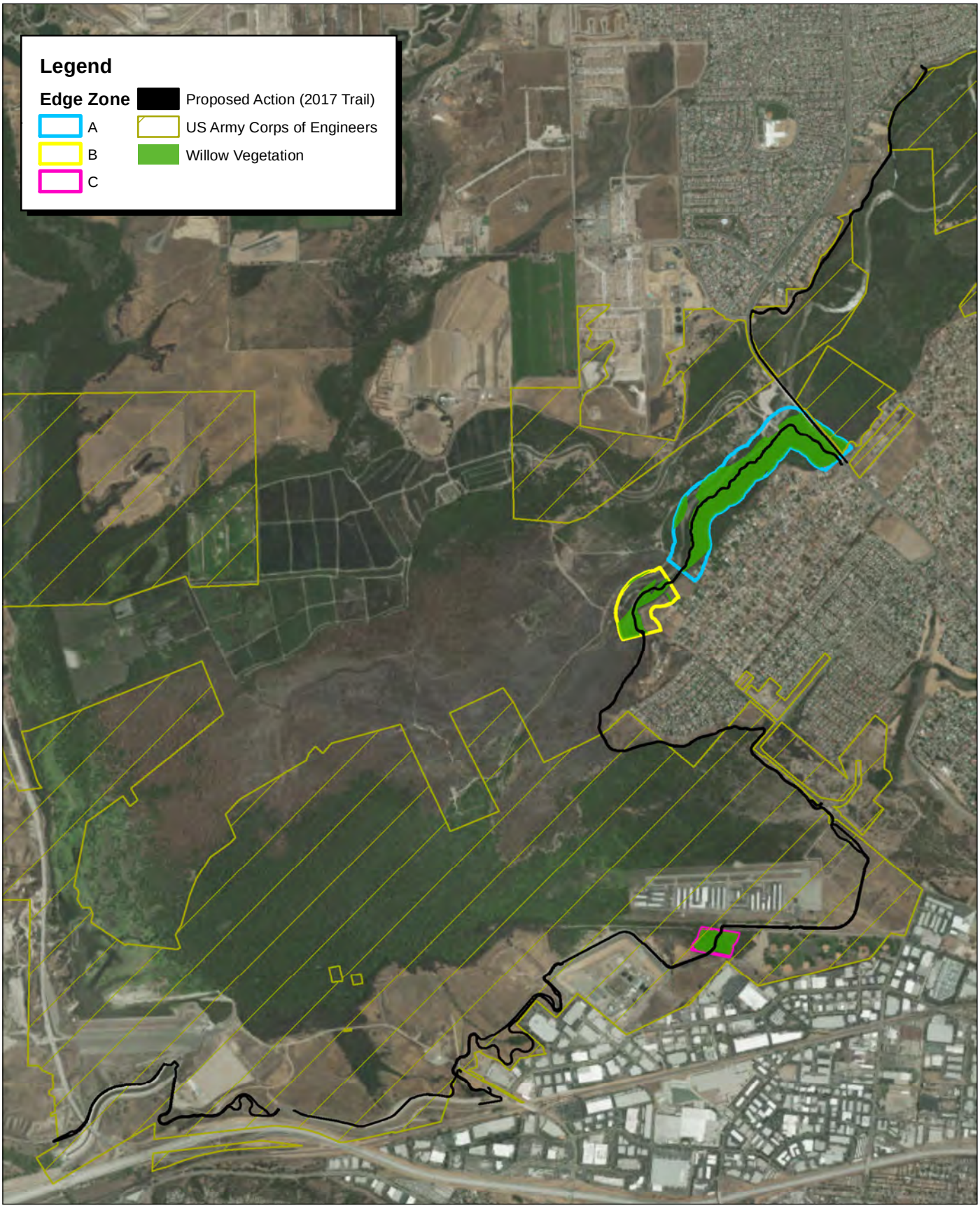

Source: ECORP Consulting; ESRI Imagery

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0.5 0.25 0 0.5 Miles

Exhibit 21
Edge Zones

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Source: ECORP Consulting

FIRSTCARBON SOLUTIONS™

0 250 500

Exhibit 22
LBVI Territories Within Edge Zones

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No YBCU were found during protocol surveys or through incidental detection during other species surveys. Because YBCU has not been detected since 2011, the species is not currently expected to occur in the vicinity of the project area and no direct or indirect impacts resulting from trail construction or use are anticipated.

If YBCU were to occupy habitat within the area in the future, indirect effects resulting from human presence and noise from loud trail user and repair and maintenance activities would need to be considered. The conservation plan for the YBCU states, "human disturbance is rarely a factor affecting cuckoos in California" (Laymon 1998). The conservation plan goes on to state that nesting cuckoos may temporarily abandon nests upon being flushed if the human is within direct line of site of the nest within 164 feet. Because of the tendency of YBCU to nest in very dense riparian foliage, future potential nesting location would not be expected to occur in locations with a direct line of sight to human activity. Additionally, off-trail hiking would be prohibited which would avoid the potential for nest disturbance. Therefore, it is not anticipated that human presence along the trail would have a significant impact on nesting YBCU should they begin nesting near the trail alignment in the future.

The upper noise level threshold for western YBCU is generally not well documented. In fact, the only published peer-review study evaluating noise impacts on YBCU evaluated the effects of traffic noise on the eastern YBCU (Goodwin and Shriver 2010). The study found the average upper noise threshold at which the YBCU was affected by traffic noise was 56.9 dB(A), and YBCU were less likely to occupy areas where traffic noise was loud, presumably due to the acoustic masking effect on the YBCU songs. YBCU territories with nests located within 19.68 feet of the trail's edge may be affected by noise generated by louder group of trail users and territories with nests located within 29.53 feet of the trail's edge may be affected by noise from repair and maintenance construction. Table 14: Maximum Possible YBCU Territories Within Impact Areas depicts the maximum number of future YBCU territories theoretically occurring within areas subject to noise impacts. YBCU territories range from 20 to 100 acres in size (Laymon 1998). Information in this table was generated using an average territory size of 60 acres and presumes all of the surrounding southern willow scrub habitat within the impact areas contains suitable habitat for YBCU.

Table 14: Maximum Possible YBCU Territories Within Impact Areas

Impact	Acres of Habitat	Maximum Number of YBCU Territories
Noise—Loud Trail Users	29.1	1
Noise—Repair and Maintenance Construction	36.9	1

7.1.2 - DBESP Analysis—Wildlife and Aquatic Habitat/Riparian Species

Project design and mitigation measures, including water quality best management practices (BMPs), would reduce impacts to wildlife and aquatic habitat to a less than significant level. Further, mitigation for temporary impacts, as discussed in Section 4.2.11, Restoration for Temporary Vegetation Impacts, would contribute to wildlife habitat by restoring areas of disturbed, non-native grassland, and eucalyptus woodland within the project area. Mitigation for permanent riparian vegetation impacts, discussed below in Section 7.1.4, Determination of Biologically Equivalent or

Superior Preservation for Riparian Vegetation, would create additional wildlife and aquatic habitat within Prado Basin.

For unavoidable impacts to riparian species, the MSHCP requires the project to demonstrate that, the project would be a biologically equivalent or superior to the project's existing conditions in order to achieve a complete avoidance of impacts to MSHCP Conservation Areas with the Proposed Action design and mitigation measures.

No vernal pools or fairy shrimp habitat occurs within the project area; therefore, no further surveys or mitigation is recommended regarding vernal pools or fairy shrimp habitat.

As discussed above, no direct impacts to LBVI are anticipated; however, 31 potential LBVI territories are subject to indirect impacts from loud trail users, 32 potential LBVI territories are subject to indirect impacts from maintenance and repair construction activities, and 33 potential LBVI territories are within edge zone areas subject to indirect impacts from cowbird parasitism. It is expected that noise emitted by trail users would likely rarely reach 78 dB (A), and instances of noise at that level in any given area would be short in duration, as trail users would be expected to be moving along the trail relatively quickly. Further, the distance values provided in Table 11: Decrease in Sound Intensity over Distance for Loud Trail Users and Table 12: Decrease in Sound Intensity over Distance for Construction are for noise in unobstructed space and do not take into account the vegetation along the trail would further dampen any sound emitted from the trail. It is likely the noise from loud trail users would not result in nest abandonment and those birds nesting closest to the trail would either become habituated to the noise or relocate their nest sites. Recreation activities, including hiking and mountain biking, are conducted off established trails are more likely to startle nesting birds or damage habitat (USFWS 2002). Implementation of project design features, including prohibitive signage and patrols for off-trail use will help to eliminate unofficial trails and off-trail activities within riparian habitat. Additionally, as mitigation for the Proposed Action, the District would conduct a base line GIS survey of existing spur trails in the project area. Using the data from the base line survey, the District would formally close known spur trails with signage and other means of closure, then systematically restore spur trail areas using the methodology described in Section 4.2.11, Mitigation for Temporary Vegetation Impacts. A subsequent survey would be conducted following the opening of the Proposed Action to analyze whether new spur trails have been created, if known spur trail use was reduced, and if the development of the formalized SART reduces spur trails in the project area.

It is presumed that any loss of LBVI nestlings from trail usage would be highest during the first breeding season post-trail construction and would decrease over time as individuals avoid or become tolerant of trail use and noise. Territories and nesting locations will vary between years as individual birds that are more sensitive to trail users would likely nest further from the trail in subsequent post-construction years. As a result, indirect impacts caused by trail usage would be significantly reduced.

In addition to the Project Design Features and Mitigation Measures discussed in Section 6.2, indirect effects to LBVI will be avoided and/or minimized by incorporating the following measures:

Post-construction protocol surveys for LBVI, SWFL, and YBCU should be conducted a minimum of once every three years to monitor the use and nest success of LBVI within conserved habitat, and to identify any potentially new use of the site by SWFL and YBCU.

If LBVI habitat use or nesting success does not meet the MSCHP Species Objective 4 criteria or shows significant decline within the conserved habitat, then the Regional Conservation Authority (RCA) and wildlife agencies would be notified and seasonal trail closures and/or restrictions in high-priority areas during the breeding season may be implemented.

Wherever possible, trail maintenance and repair activities should avoid nesting bird season (March 15 through August 31). If maintenance or repair is necessary and must be conducted during the nesting season:

- Pre-construction nesting bird surveys should be conducted prior to ground-disturbing activities.
  - One week prior to activities, a minimum of three surveys will be conducted on separate days to determine LBVI nesting status within 300 feet of work area: one survey conducted one day prior.
  - If no nesting activities, work may commence.
  - If LBVI nesting is observed, nest monitoring will be initiated and no work will occur within 300 feet of nest until nest succeeds or fails, as determined by a qualified biologist.
- Periodic nesting bird surveys should be conducted in adjacent habitat during trail reconstruction or repair activities occurring during the breeding bird season. Active nests will receive a minimum 300-foot no work buffer until nest succeeds or fails.
- Noise levels will be monitored during trail repair activities.
  - Trail repair noise levels will be restricted to below 60 dBA L_{eq} hourly at 100 feet from areas occupied by LBVI.
  - Twice weekly surveys for the LBVI will be conducted by the biological monitor in areas of suitable habitat within 500 feet of proposed activities to determine the presence of LBVI nest building activities, egg incubation activities, or brood rearing activities.
  - If LBVI are present, noise monitoring will be conducted weekly and must demonstrate noise levels less than 60 dB(A) L_{eq} hourly at specified monitoring locations, no less than 100 feet from the active nest(s) as determined by the biological monitor.
  - Weekly survey reports will be prepared during the nesting season and sent electronically to RCA and the wildlife agencies each week that LBVI are detected. The weekly reports will identify the location of LBVI nest sites and territories within 500 feet of the project.

Additionally, the mitigation proposed for temporary vegetation impacts (Section 4.2.12), pre-mitigation (Section 4.2.13), and for permanent impacts to riparian vegetation communities in Section 7.1.4, Determination of Biologically Equivalent or Superior Preservation for Riparian Vegetation, below, would strive to extend existing habitat for, and create new riparian and wetland habitat for LBVI and SWWF adjacent to the project area within Prado Basin.

7.1.3 - Results/Impacts—Riparian/Riverine Resources

Direct impacts to riparian/riverine vegetation communities include the removal of habitat as a result of implementation of the Proposed Action. The impacts have been minimized whenever possible in

the project design and permanent impacts would be restricted and vary in width from 16 to 31 feet, depending on location. The average trail width in riparian vegetation community types on non-federal land is 17.4 feet. Impacts to vegetation, particularly riparian/riverine vegetation, would be limited to minimum native vegetation removal through judicious route selection and trimming of willows and sycamores, rather than removal. Vegetation impacts for all vegetation communities present in the project area are summarized in Section 8, Vegetation Community Impacts. Vegetation community maps are also located in Section 8. This section analyzes impacts to riparian vegetation communities and provides a DBESP analysis to avoid impacts to these communities.

Southern Willow Scrub

Southern willow scrub occurs on portions of Reaches II, V, VI, VII, VIII, and IX, totaling 16.10 acres. As currently designed, there would be a maximum of 6.03 acres of permanent impacts to this habitat within the project area. The permanent impacts would occur in Reaches V, VI, VII, VIII, and IX. Permanent impacts to southern willow scrub on Reaches VII and VIII will be reduced by removal of overhanging limbs and trimming to a height that would allow passage of users on horseback, rather than clearing all scrub and trees. An abandoned access road formerly used by OCWD would be used for the trail foundation in these reaches. Table 15: Permanent and Temporary Impacts to Southern Willow Scrub within Project Area describes the permanent and temporary impacts to southern willow scrub according to land ownership.

Table 15: Permanent and Temporary Impacts to Southern Willow Scrub within Project Area

Southern Willow Scrub	Permanent Impacts (acres)	Temporary Impacts (acres)
Total	6.03	10.06
Source: FCS 2016		

Mule Fat Scrub

Small patches of mule fat scrub occur in Reaches II, III, IV, V, VI, and IX, totaling 0.95 acre of mule fat scrub, of which 0.13 acre on federal land would be permanently lost because of construction and operation of the trail. There are no impacts to mule fat scrub on non-federal lands in the project area. Mule fat scrub is generally associated with small drainages, although some mule fat scrub is adjacent to southern willow scrub. Table 16: Permanent and Temporary Impacts to Mule Fat Scrub within Project Area describes the permanent and temporary impacts to mule fat scrub according to land ownership.

Table 16: Permanent and Temporary Impacts to Mule Fat Scrub within Project Area

Mule Fat Scrub	Permanent Impacts (acres)	Temporary Impacts (acres)
Total	0.13	0.82
Source: FCS 2016		

Freshwater Drainage/Stream/Ponded Areas

Freshwater drainage/stream/ponded areas occur in Reaches VII and IX, of which 0.06 acre within the project area would be permanently impacted. This impact would occur where the proposed alignment for the trails would require construction of a new low-water crossing at Temescal Creek in Reach VII located downstream (southwest) of the existing vehicular bridge. Table 17: Permanent and Temporary Impacts to Fresh Water Drainage/Stream/Ponded Areas within the Project Area describes the permanent and temporary impacts to fresh water drainage/stream/ponded areas according to land ownership.

Table 17: Permanent and Temporary Impacts to Fresh Water Drainage/Stream/Ponded Areas within the Project Area

Freshwater Drainage/Stream/Ponded Areas	Permanent Impacts (acres)	Temporary Impacts (acres)
Total	0.06	0.10
Source: FCS 2016		

Arundo Scrub

Arundo scrub occurs in portions of Reach IX. The Proposed Action would permanently remove 0.17 acre of arundo scrub. Table 18: Permanent and Temporary Impacts to Arundo Scrub within the Project Area describes the permanent and temporary impacts to arundo scrub according to land ownership.

Table 18: Permanent and Temporary Impacts to Arundo Scrub within the Project Area

Arundo Scrub	Permanent Impacts (acres)	Temporary Impacts (acres)
Total	0.17	0.19
Source: FCS 2016		

Coastal Sage Scrub

The revised route avoids all coastal sage scrub by routing the line on the southern end of the USACE borrow area. Temporary disturbances of the non-native grasslands and other disturbed areas on Reach IV would be reseeded with native species representative of the coastal sage scrub vegetation community. Since the revised route does not impact coastal sage scrub, temporary and permanent impacts are not represented here.

Riparian Vegetation Data Summary for MSHCP Lands

The Proposed Action would permanently impact a total of 6.2 acres and temporarily impact 10.81 acres of riparian vegetation within the project area (Table 19: Total Impacts Riparian Vegetation Communities (Permanent and Temporary)). Arundo scrub is not included in these calculations.

Table 19: Total Impacts Riparian Vegetation Communities (Permanent and Temporary)

Category	Permanent Impacts	Temporary Impacts	Project Area Grand Total
Drainage/Stream/Pond Total	0.06	0.10	0.16
Mule Fat Scrub Total	0.13	0.82	0.95
Southern Willow Scrub Total	6.03	10.06	16.09
Impacts Grand Total	**6.22**	**10.98**	**17.20**
Source: FCS 2016.			

Wetlands and Waters Functions and Values

Wetlands provide numerous services, functions, and values because they help to clean water and improve water quality, recharge water supplies, store floodwaters and reduce flood risks, and provide fish and wildlife habitat (EPA, 2002). In addition, wetlands provide public use and recreational opportunities, aesthetic benefits, and biological productivity (EPA, 2002). There are several factors that determine how well a wetland will perform these functions and provide these values. These factors include hydrology, soils, water chemistry, topography, climate, vegetation, human disturbance, etc. Not all wetlands and waters perform the same or provide the same or equal amount of benefits (EPA, 2002).

The project area is within the Prado Basin portion of the Lower Santa Ana River watershed. Hydrology in the basin is subject to flood control activities as part of USACE's operation of Prado Dam and reservoir. Prado Dam is an earth-fill dam across the upper end of the lower Santa Ana River, with the resulting impounded water creating Prado Flood Control Basin reservoir (forming Prado Basin). The reservoir has a capacity of 362,000 acre feet. Prado Reservoir is not a storage reservoir, so water is released as quickly as possible while still allowing for groundwater recharge. That said, the reservoir is normally dry, but received higher-than-normal rains in the winter of 2016. Prado Dam and reservoir serve as the principal regulating structure on the Santa Ana River, which is comprised of more than 11,500 acres. The primary authorized purpose of the dam and reservoir project is flood risk management, followed by authorization for recreation and water conservation. The District is the primary recreation lease holder in the basin, the District/USACE recreation lease documents are provided as Appendix D to this report.

Due to low regional rainfall, the Santa Ana River carries only a small flow except during the brief winter season, when it is prone to massive flash floods. The river has over 50 named tributaries, most of which are intermittent streams. A preliminary jurisdictional survey determined that there are 14 potentially jurisdictional features within the basin. Both Mill Creek (one of the main headwater tributaries of the Santa Ana River) and Temescal Creek (shown on federal maps as Temescal Wash) are located in the basin. Mill Creek, is one of the major tributaries to the Santa Ana River. Mill Creek is considered intermittent because it is completely dewatered in some places, including within the basin. Temescal Creek connects Lake Elsinore with the Santa Ana River and is the largest tributary to the river. The creek flows through the arid rain shadow of the Santa Ana

Mountains, and with diversion of ground water for human use, the creek today is ephemeral for most of its length, except for runoff from housing developments and agricultural return flows.

The drainages observed within the project area include year-round streams (perennial), seasonal streams (intermittent), rain-dependent streams (ephemeral), and artificial channels. The stream features, when functioning properly are capable of providing ecological and hydrological functions such as: moving water, nutrients, and sediment throughout a watershed; providing landscape hydrologic connections; stream energy dissipation during high-water flows to reduce erosion and improve water quality; surface and subsurface water storage and exchange; ground-water recharge and discharge; sediment transport, storage, and deposition to aid in floodplain maintenance and development; nutrient storage and cycling; wildlife habitat and migration corridors; support for vegetation communities to help stabilize stream banks and provide wildlife services; and water supply and water-quality filtering (Levick et al., 2008). They also provide a wide array of ecological functions including forage, cover, nesting, and movement corridors for wildlife (Levick et al., 2008).

The main hydrologic function and values of the on-site drainages are to transport stormwater, provide flora and fauna habitat, and provide pathways for wildlife movement. The secondary functions of the on-site drainages are flood storage, sediment transport, and nutrient transport.

Hydrologic Regime

Hydrologic regime (water table variation), is defined as the sum total of water that occurs in an area on average during a given period (Environmental Laboratory, 1987). The drainages observed on-site are perennial, intermittent, and ephemeral. Ephemeral drainages are typically dry and flow only during and for a short time following precipitation events. The drainages on-site would be characterized as “Non-Relatively Permanent Water” which means water does not flow continuously for a least one season.

The perennial, intermittent, and ephemeral stream features in Prado Basin are subject to flood control operations conducted by USACE. Ephemeral streams are unique in that they lack permanent flow except in response to rainfall events. Intermittent streams flow continuously only in places where it receives water from a ground-water source or from seasonal runoff. Nevertheless, they perform the same critical hydrologic functions as perennial streams: they move water, sediment, nutrients, and debris through the stream network and provide connectivity within the watershed.

The soils observed in the project area have varying levels of water holding capacity, have a very low water holding capacity and are excessively drained. Generally, the soils throughout the BSA were observed to be coarse and very porous, with few observations of hydrophytic wetland vegetation or ponding areas. The loose soils did produce areas of definable bed and bank features creating typical ephemeral drainages throughout the site. Surface water was observed sporadically in very shallow pools, only during or immediately after rainfall events, within the drainages during the biological surveys. Soils maps of the project area are provided in Appendix A.

A Hydric Soil is formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils are an indicator of wetland areas. The USACE uses three characteristics of wetlands when making wetland

determinations: vegetation, soil, and hydrology. Unless an area has been altered or is a rare natural situation, wetland indicators of all three characteristics must be present during some portion of the growing season for an area to be a wetland. Soils that are well drained are unlikely to be hydric since their saturated hydraulic conductivity is higher and thus water is removed from the soil readily. The soils observed in the project area are mostly moderately well drained, well drained, or somewhat excessively drained. The project area is mapped as supporting 29 soil mapping units belonging to 20 separate soil series, as well as four land features. A soil series is a group of soils with similar profiles. These profiles include major horizons with similar thickness, arrangement, and other important characteristics. The soils series mapped on-site are Anza, Arbuckle, Bonsall, Buchenau, Cieneba, Delhi, Dello, Fallbrook, Garretson, Gaviota, Grangeville, Greenfield, Handford, Metz, Pachappa, Perkins, Placentia, Ramona, San Emigdio, and Vista (USDA 1971). Only two series of soils, Dello and Grangeville, are poorly drained, meaning they are potentially hydric. Grangeville fine sandy loam (GvB) is located in the mid and end portion of Reach IV, Reach V, the beginning of Reach VI, the end of Reach VII, Reach VIII. Dello loamy sand (DmA) is found in mid Reach VIII. Soil maps for the project area are located in Appendix A.

Hydrologic regime is an important factor for wetland creation. Many of the drainages and hydrologic features found within the project property do not qualify as a wetland because the associated hydrologic regime is not sufficiently wet to elicit development of vegetation, soils, and/or hydrologic characteristics associated with wetlands. Whereas other features in the basin offer a more consistent hydrology to support riparian corridors and wetland areas. A formal jurisdictional delineation survey will occur in conjunction with permitting. Wetland areas occurring within the project area will be formally identified at this time.

Flood Storage and Flood Flow Modification

Wetlands recharge groundwater supplies, store floodwaters, and reduce flood risks. Wetlands function like natural tubs or sponges, storing water and slowly releasing it (EPA, 2002). This process slows the water's momentum and erosive potential, reduces flood heights, and allows for groundwater recharge which contributes to base flow to surface water systems during dry periods (EPA, 2002). Trees, root mats and other wetland vegetation also slow the speed of flood waters and distribute them more slowly over the floodplain. This combined water storage and braking action lowers flood heights and reduces erosion. The ability of wetlands to store floodwaters reduces the risk of costly property damage and loss of life (EPA 2002).

Prado Reservoir is not a storage reservoir, but is used to control flood flows in the area. Water is released from as quickly as possible while still allowing for groundwater recharge. Flood flows within the basin are modified as needed by USACE. A jurisdictional assessment of drainage features within the project area confirmed the presence of fourteen areas within the study area that may support waters, wetlands, and/or streambed, which may be considered jurisdictional by the USACE, Regional Water Quality Control Board (RWQCB), and CDFW. The wetland areas located within the basin likely provide some of the benefits described above, but are situated in a controlled flood basin area. Wetland benefits in the basin are variable given water availability and water storage. The project area drainages are expected to provide low to moderate flood storage and flood flow modification functions.

Nutrient Retention and Transformation

Wetlands improve water quality by helping to filter and remove nutrients from wastewater. Nutrients from fertilizer application, manure, leaking septic tanks, and municipal sewage that are dissolved in the wetland water are often absorbed by plant roots and microorganisms in the wetland soil (EPA, 2002). In many cases, this filtration process removes much of the water's nutrient load by the time it leaves a wetland (EPA, 2002).

The wetland areas located within the basin likely provide some of the benefits described above, but are situated in a controlled flood basin area. Wetland benefits in the basin are variable given water availability and water storage. The project area drainages are expected to provide low to moderate nutrient retention and transport downstream during and after a rainfall event, subject to reservoir storage and groundwater infiltration rates.

Sediment/Toxicant Trapping and Transport

Wetlands improve water quality by filtering the water that enters, is stored in, or leaves the wetlands. After being slowed by a wetland, water moves around plants, allowing suspended sediments to drop out and settle to the wetland floor (EPA, 2002). Sediment can be coarse (i.e. gravel or larger) or fine (i.e. clay, silt, sand) (CWMW, 2013). Other pollutants/toxics, such as herbicides, pesticides, oil, fuel, and other hazardous substances, stick to soil particles and are trapped by the wetlands (EPA, 2002). In many cases, this filtration process removes much of the water's sediment and pollutant load by the time it leaves a wetland (EPA, 2002).

The project area drainage features are expected to provide moderate to high sediment transport downstream and sediment/toxicant trapping during and after a rainfall event. Due to the controlled nature of the landscape, flat topography of the project area, majority well drained soils, and moderate to heavily vegetated conditions, the project area drainages are expected to provide limited sediment transport downstream with good sediment/toxicant trapping during and after a rainfall event. Otherwise the drainages are dry and provide none of these wetland functions.

Public Use

The wetlands and jurisdictional drainage features of Prado Basin provide public use and recreational opportunities, such as hiking, biking, fishing, birdwatching, horseback riding, and hunting. The Proposed Action is intended to provide formalized public use of the area, thereby reducing public use of the spur trails dotting the basin. It is anticipated that the establishment of the trail will reduce soil erosion in the basin by pulling use away from unpaved spur trails onto the paved SART trail. Public access to the Mill Creek mitigation concept area is allowed on a fee basis for duck hunting, and will be ongoing after the establishment of the riparian and floodplain restoration efforts proposed for the site.

Wildlife and Aquatic Habitats

Wetlands provide aquatic and wildlife habitats and are some of the most biologically productive natural ecosystems in the world (EPA, 2002). They provide food, water, and shelter for fish, shellfish, birds, and mammals, and they serve as a breeding ground and nursery for numerous species. Abundant wetland vegetation and shallow water provide diverse habitats for fish and wildlife (EPA 2002). Aquatic plant life flourishes in the nutrient-rich environment, and energy converted by the

plants is passed up the food chain to fish, waterfowl, and other wildlife and to us as well (EPA, 2002). Up to one-half of North American bird species nest or feed in wetlands (EPA, 2002).

Wildlife Habitat

The project area drainages provide a moderate to high value for wetland functions such as providing wildlife habitat. Species found within the project area are described in Section 5.2.4, Wildlife. Trees, such as Freemont's cottonwood and willow, and shrubs found within the drainages provide food and shelter for countless wildlife species. They contain nooks, crannies, perches, and passages where animals live, feed, breed, or rest (Pavlik et al., 1991). Seeds, berries, leaves, wood, roots, pollen, flowers, and sap produced by the vegetation within the drainages are eaten by several insects, birds, and mammals (Pavlik et al., 1991). Some reptiles, amphibians and birds do not consume plant products, but prey heavily on insets that do (Pavlik et al., 1991). Unvegetated drainages provide limited habitat value for wildlife. Drainages with diverse canopy layers, horizontal interspersion, vertical biotic structure, and plant species provide many kinds of shelter to wildlife and the project area drainages are well known for the diverse abundance of species.

First Carbon Solutions, Inc. (formerly Michael Brandman associates) conducted the habitat assessment for the project area and found that the riparian and riverine habitats in the basin provide sufficient suitable habitat to support LBVI and SWFL. USFWS designated critical habitat for LBVI and SWFL and proposed critical habitat for YBCU are located within the project trail alignment. Although the project area is located within a proposed critical habitat area for YBCU, none of the project impact areas intersecting with the proposed critical YBCU habitat contain the necessary riparian woodland described as one of the Primary Constituent Elements (PCEs) for YBCU Critical Habitat. The USFWS identifies riparian woodlands as mixed willow cottonwood vegetation, mesquite-thorn forest vegetation, or a combination of these that contain habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 feet in width and 200 acres or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above-average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats (USFWS 2014).

These findings are described in Section 7.1.1, Results/Impacts—Wildlife and Aquatic Habitat/Riparian Species.

The project area drainages also provide corridors for wildlife travel and are expected to be used by a variety of wildlife species for both regional and local wildlife movement. The on-site drainages facilitate movement of medium and large animals such as coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), feral hog (*Sus scrofa*), and striped skunk (Mephitis mephitis), which use streambeds, existing portions of the trail, and spur trail for movement while taking advantage of the cover provided by tall, adjacent vegetation.

Aquatic Habitat

Prado Basin provides a diversity of aquatic habitat. Aquatic species within the project area are described in Section 7.1.1, Results/Impacts—Wildlife and Aquatic Habitat/Riparian Species. Portions of the project area that include the Santa Ana River have been designated by the USFWS as Critical Habitat for Santa Ana sucker. In addition, soils found within the project area are well drained,

allowing water to quickly seep into the ground. Prado Basin has naturally occurring, permanent and semi-permanent surface water or substantial ponding, aquatic plants (hydrophytes) and animals, such as fish. During and after a rainfall event, the project area drainages provide low aquatic habitat for a limited time; otherwise the drainages are dry and provide no aquatic habitat.

7.1.4 - DBESP Analysis—Riparian/Riverine Resources

As previously stated, the Proposed Action would temporarily impact a total of 10.98 acres and permanently impact a total of 6.22 acres of riparian vegetation within the project area. Mitigation for temporary and permanent impacts to riparian/riverine resources are described below.

Mitigation for Temporary Impacts

Temporary impacts to riparian vegetation communities will be mitigated by incorporating seed, seedlings, and adult plantings into the area of impact according to the appropriate native vegetation type, then maintained with irrigation (until plants are established) and invasive, non-native species removal for a period of 5 years. The Proposed Action would commit to a 5-year monitoring and maintenance period to ensure that native seed and plantings are established in areas of temporary impact, and the development of a Habitat Mitigation and Monitoring Plan (HMMP). Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5. The native seed mixes for these areas will be selected in coordination with OCWD, as well as the USFWS and CDFW, with the following objectives:

- Continue ongoing efforts by OCWD to minimize wood-boring beetle impacts to riparian forest in Prado Basin;
- Replacement of less favorable vegetation types with native species;
- Selection with consideration for species favored by tricolored blackbirds for nesting (*Agelaius tricolor*), which may include cattails, esp. (*Typha latifolia*), and bulrushes (*Scirpus* sp.), or (blackberries (*Rubus* sp.), nettles (*Urtica* sp.), and willows (*Salix* spp.) (Hamilton 2004) in areas adjacent to riparian areas.

The native seed mixes selected will be subject to wildlife agency review and approval. Avoidance measures for areas of temporary impact include leaving any mature riparian species in place, when possible. The management prescriptions for the restoration of temporary impacts will be detailed in a draft Compensatory Habitat Mitigation and Monitoring Plan (HMMP) and submitted along with the Clean Water Act (CWA) section 404 nationwide permit from the USACE, CWA section 401 Water Quality Certification (WQC) from the Regional Water Quality Control Board (RWQCB), and Streambed Alteration Agreement (SAA) with CDFW permitting for the project.

Mitigation for Permanent Impacts

The mitigation for the permanent removal of 6.22 acres of riparian vegetation communities is proposed to occur in the form of riparian vegetation restoration, an extension of existing riparian forest, and the hydrological reconnection of Mill Creek in the Prado Basin to its floodplain, among other features. Mill Creek is a perennial stream and tributary to the Santa Ana River with a highly-

managed flow regime. An overview of the project site is provided in Exhibit 23a, Mill Creek Mitigation Concept Overview. The Mill Creek mitigation concept area, totaling 53.5 acres, consists of four man-made pond areas, each divided from the other by earthen berms. Not all of these 53.5 acres will be mitigated under this proposal. Historically, these pond areas were irrigated with water from Mill Creek by OCWD and a private duck hunting club to create areas of seasonal wetland, irrigated water fowl forage, and wetted duck hunting areas. At present, the pond areas are vegetated with native, non-native, and invasive forb species.

These ponds are located on land that is owned by USACE, and leased to the District. The duck hunting club is a sublessee to the District. As described in Section 1: Introduction, the District owns the master recreational lease to the ponds, and OCWD and Splatter "S" (a for-profit duck hunting club) hold subleases to the area. Appendix D to this report is a copy of the master recreation lease between USACE and the District. A memorandum of understanding (MOU) between these entities for this mitigation concept is underway as the concept was approved at the May 2017 and June 2017 monthly meetings of the RCA.

For the purposes of this discussion, the Mill Creek mitigation concept area is divided into the Upper Mill Creek ponds (representing the two northernmost ponds immediately adjacent to Mill Creek, and Lower Mill Creek ponds (the two ponds to the immediate south of the upper ponds). Exhibit 23b, Photographic Overview of Mill Creek Mitigation Concept Site, contains photos for both the upper and lower ponds. Water for the mitigation concept for the Upper Mill Creek Ponds will be from Mill Creek flows immediately to the north of the pond areas, and the irrigation canal lines located immediately south of the lower ponds. Historically, and even in dry years, the Lower Ponds fill naturally by means of water filling the basin behind Prado Dam. The level of water retained in the ponds is controlled during the duck hunting season with the use of concrete box check-dams. The duck club also has the ability to fill the ponds by drawing off a channel that diverts from the Santa Ana River, as needed, to prevent botulism or to compensate for evaporative loss. The water is owned by OCWD and implementation of the mitigation concept does not represent a change in use.

The focus of this effort is to create habitat attributes for LBVI, SWFL, and, potentially, tricolored blackbird. Within the adjacent riparian forest are known territories for LBVI. SWFL are known to occur in the area, and tricolored blackbird are not known to occur in the area (OCWD 2017: pers. comm.). While tricolored blackbird are not known to occur in the area, representatives reviewing the project from the USFWS and CDFW as well as biologists from the OCWD believe that the area has habitat attributes favorable to the bird, and that these attributes can be increased in the upper and lower ponds through well-informed concept design.

The District has controlled the Upper and Lower Mill Creek parcels for the last 40+ years. There has been no prior mitigation work on the site and there are no existing mitigation obligations on the site.

The District will establish a 5-year monitoring and maintenance period for the proposed Mill Creek mitigation concept, which is set to occur at the Mill Creek parcels in order to ensure the success criteria outlined in the HMMP for the project. This 5-year monitoring and maintenance period will include a provision to extend the duration of this period beyond the 5-year mark if the success criteria are not fully met.

Maintenance and access to the Mill Creek site will mirror the current access to the site, as maintained and managed by OCWD. The District commits to the long-term maintenance of the site as a mitigation area. Engineering level drawings will be included with the trail project's permitting packages.

Upper Mill Creek Ponds (Phase I)

The proposed mitigation in the Upper Mill Creek ponds would serve to both ecologically and hydrologically reconnect the existing duck hunting ponds to the Mill Creek riparian corridor in Prado Basin by extending the existing riparian forest adjacent to the creek and developing habitat features favorable to LBVI, SWFL, and tricolored blackbird. The mitigation concept would hydrologically reconnect the ponds to Mill Creek by creating a sidechannel/oxbow-type feature. Exhibit 23c, Mill Creek Mitigation Site—Upper Ponds Concept, gives an overview of the mitigation concept for the upper ponds. The mitigation area for the upper ponds is 10.8 acres total; 7.5 acres of which are riparian plantings, the sidechannel/oxbow-type feature would be approximately 3 acres, and a habitat island consisting of 0.3 acres. The mitigation acreage of the Upper Mill Creek Area is divided as follows:

Upper Mill Creek Area

- Proposed stream channel: 3.0 acres
- Habitat Island: 0.30 acre
- Riparian planting area: 7.5 acres
- TOTAL UPPER MILL CREEK MITIGATION AREA: 10.8 acres

The mitigation area calculation for the Upper Mill Creek Area does not include areas for any access roads, observation points, or other non-restoration features.

The mitigation concept would hydrologically reconnect the creek with its floodplain (currently the upper ponds) by utilizing a natural diversion created by large storms during the winter of 2016, perforating the existing berm structure that separates the ponds from the creek, and by developing an oxbow-type feature in the ponds. The oxbow feature, to be created with earth-moving activity, will enter and exit the upper ponds and trap water on the floodplain during high flows. Breaks in the berm will allow water to flow into the upper ponds during storm events.

Ecologically reconnecting the upper ponds with Mill Creek would include:

- Planting 7.5 acres of riparian vegetation species as a continuation of the existing riparian forest, including woody species growing to heights preferred by SWFL for nesting
- Development of the approximately 3-acre oxbow-type feature
- Establishment of islands using earthmoving activity for riparian planting, topography diversity, and to increase nesting areas adjacent to water for LBVI, SWFL and tricolored blackbird
- Irrigation of the area for the establishment of riparian species
- Ongoing removal of invasive and non-native plant species

This restoration effort as mitigation for the project would seek to increase nesting habitat within these acres of Prado Basin for LBVI and SWFL, and to create foraging habitat by design. Habitat attributes

that could be increased in the area would include the creation of edge zones for LBVI by extending the riparian forest areas occurring perpendicular to the creek, and creating new edge zones by establishing riparian species on the berms separating the individual ponds. Other habitat attributes include tree, shrub, and forb selection and distribution on the site that is favorable for forage and nesting habitat for LBVI and SWFL, as well as tricolored blackbird where feasible. The upper ponds are surrounded to the north, east and west by mature riparian forest. The creation of an island feature in the oxbow would create a habitat feature for SWFL (see Exhibit 23c, Mill Creek Mitigation Site—Upper Ponds Concept). Water can be diverted at particular times of year to sustain the riparian plantings in the upper ponds.

Lower Mill Creek Ponds (Phase II)

The proposed mitigation in the lower ponds would be to extend the riparian forest that surrounds the ponds to the east and the west, to create new areas of riparian habitat while preserving the existing duck hunting use, and to discover if the lower ponds could be used for compensatory mitigation for tricolored blackbird, or another species, at some time in the future. To extend the riparian forest, the berms on the east, center, and west of the long, the existing linear berms will be planted with riparian tree, shrub, and forb species, as described for the upper ponds. By extending the existing, established riparian forest, the existing edge habitat for LBVI will also be extended. The total mitigation acreage in the lower ponds for this mitigation proposal is 10.8 acres and does not include the open pond areas at this time. Exhibit 23d, Mill Creek Mitigation Site—Lower Ponds Concept provides an overview of the lower pond mitigation concept.

In an effort to sustain the riparian plantings, the District proposes to maintain water in the Lower Ponds will only be necessary through June 1 of each year for the first 5 years to achieve the objective of maintaining the newly established riparian forest. This proposal would guarantee water in the Lower Ponds from the start of the duck hunting season (late October) through June. Please note, and as described in the introduction to this section, that the ponds fill naturally during the rainy season, but the water level is proactively managed by the duck club during the regular duck hunting season through the use of concrete check-dams. The 2017/2018 Southern California Zone waterfowl hunting season for ducks lasts from October 21 to January 28. These dates represent the general year-to-year date range. The District is proposing to prolong the inundation in the Lower Ponds after the January 28 closing date through June of each year and pay the cost of mosquito abatement. The District has agreed to use BTI (*Bacillus thuringiensis israelensis*) for mosquito abatement at the request of the wildlife agency, during this extended watering period. BTI is a natural biological enemy of mosquito larvae, fungus gnats, black flies, and a few very closely related insects. It is the preferred, most biologically safe mosquito abatement of the wildlife agencies for use in the basin.

At present, water fills the Lower Ponds during the rainy season every year—but there is both natural and manmade natural variability within the Prado Basin hydrologic system year to year. Given this hydrologic variability, it is currently unknown whether the lower ponds could be viable as compensatory mitigation for tricolored blackbird, or other species, within the basin. As part of the mitigation proposal, the District has agreed to determine whether the 33-acres of pond area can sustain habitat for a special-status species. A survey and engineering firm will be hired and the parameters of the survey would be to determine the water-holding capacity of the lower ponds, and the soil composition—to better describe the mechanisms for water collection and release.

Source: Bing Imagery

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Exhibit 23a
Mill Creek Mitigation Concept Overview

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Photograph 1: Mill Creek Riparian Corridor.

Photograph 2: Open Pond Area with Mill Creek riparian forest to the North.

Photograph 3: Facing North from Northwest Pond.

Photograph 4: Riparian Forest to West and North .

Source: FirstCarbon Solutions, 2016.

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Exhibit 23b
Photographic Overview of Mill Creek Mitigation Concept Site

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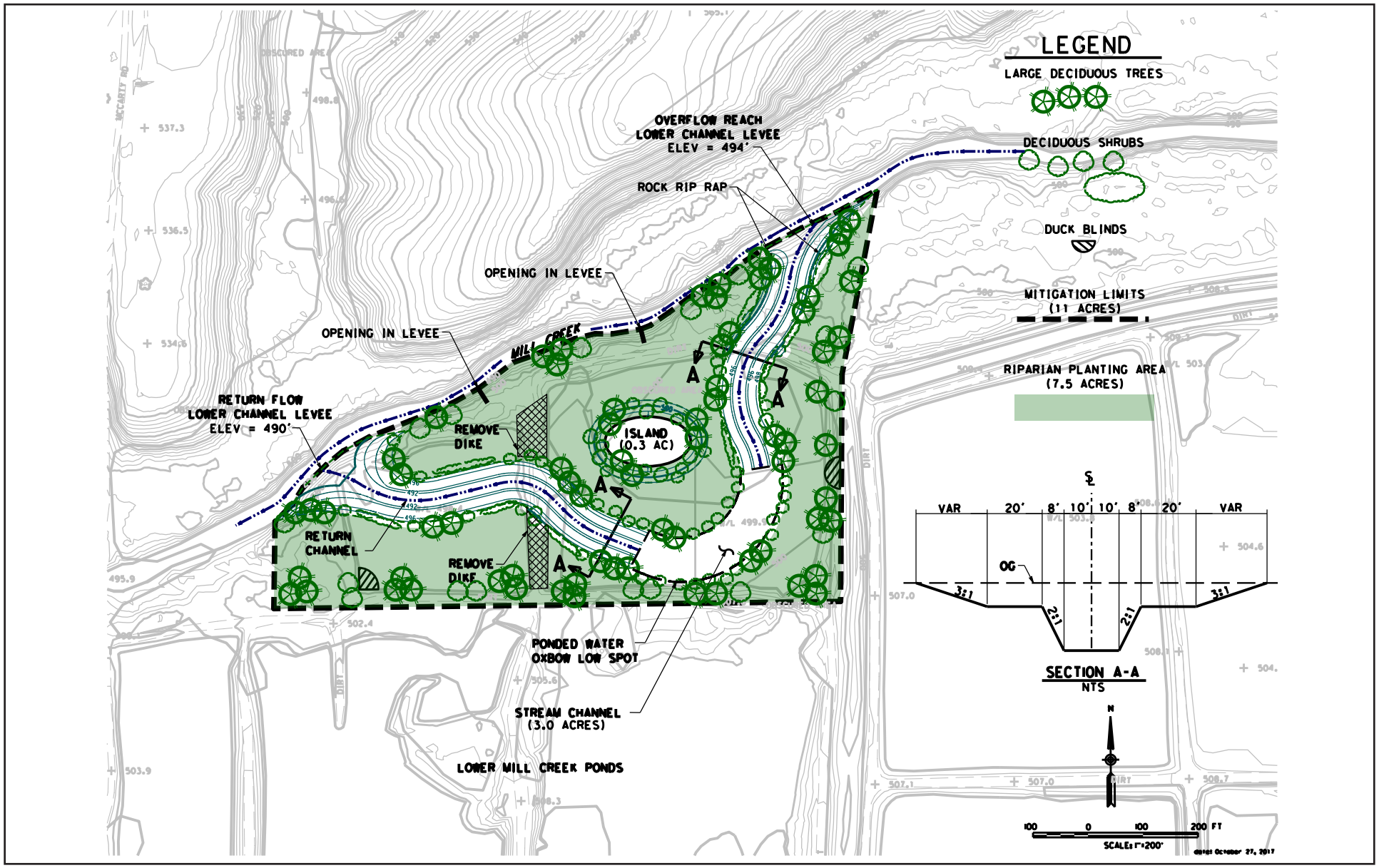

Source: Michael Baker International, June 2018.

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Exhibit 23c
Upper Mill Creek Mitigation

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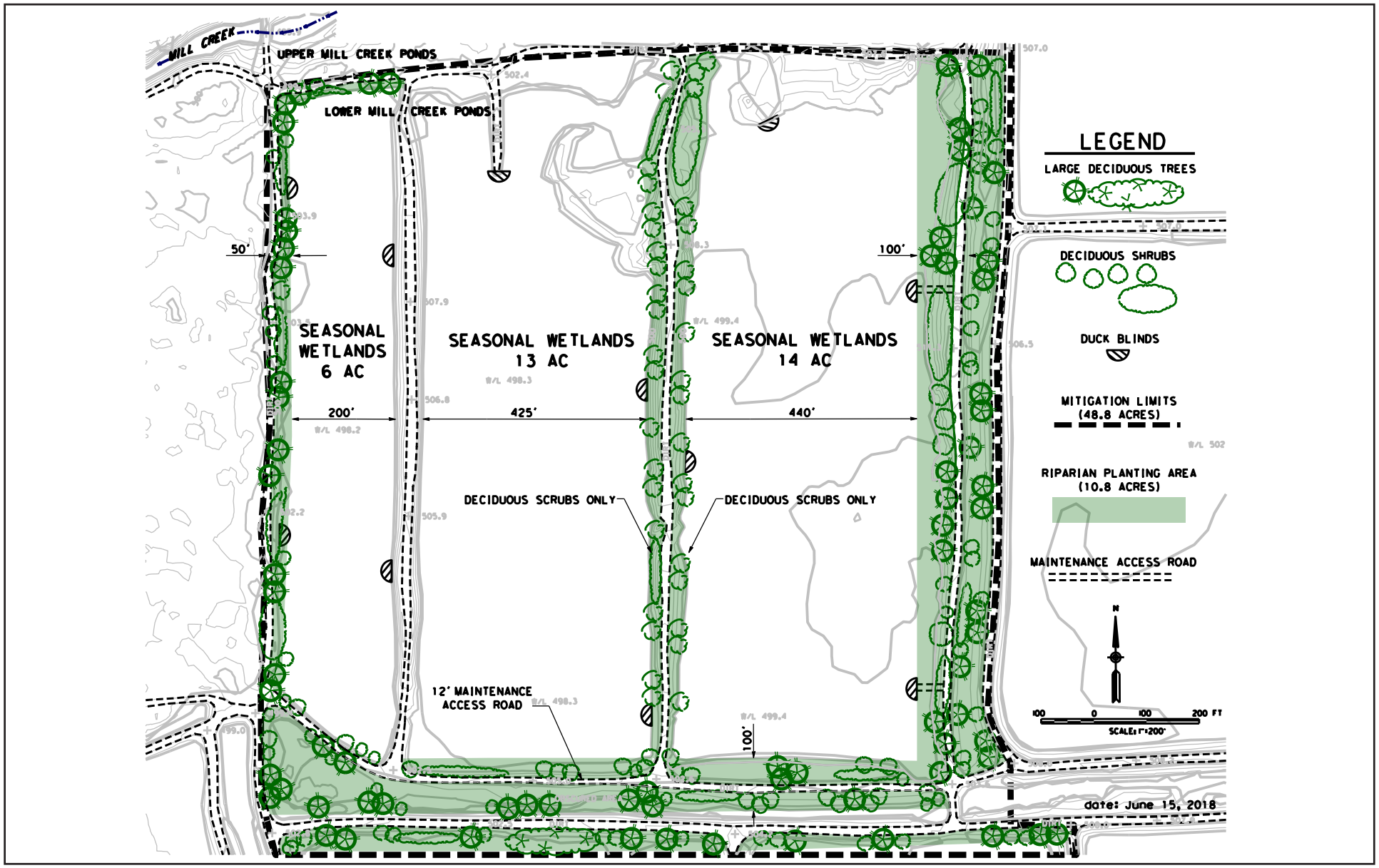

Source: Michael Baker International, June 2018.

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Exhibit 23d
Lower Mill Creek Ponds

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Wetting the ponds for this extended period would also have benefit for LBVI and MSHCP covered species including: western spadefoot (*Scaphiopus hammondii*), western pond turtle (*Clemmys marmorata pallida*), double-crested cormorant (*Phalacrocorax auritus*), American bittern (*Botaurus lentiginosus*), great blue heron (*Ardea Herodias*), black-crowned night heron (*Nycticorax nycticorax*), and white-faced ibis (*Plegadius chihi*). The extended surface water time will also benefit all local bat species which are not adequately covered by the MSHCP.

The project does not foresee a conflict (direct or indirect) in either species management or recreational hunting activities in this lower pond area. All of the current open water hunting areas within the lower ponds will remain open to duck hunting during the regular season.

In summary, the mitigation area for the Lower Mill Creek Area is divided as follows:

Lower Mill Creek Area

- Perimeter riparian planting area: 10.8 acres
- Interior pond area: 33.0 acres (this area will be wetted as part of this mitigation proposal, but this area is not included in this mitigation proposal by agreement with the wildlife agencies because the area will not be used for compensatory mitigation under this proposal)
- TOTAL LOWER MILL CREEK MITIGAITON AREA: 10.8 acres

The mitigation area calculation for the Upper Mill Creek Area does not include area for any access roads, observation points, or other non-restoration features.

The Proposed Action would commit to a 5-year monitoring and maintenance period for the implementation and maintenance of the Mill Creek Mitigation Concept, and the development of a Habitat Mitigation and Monitoring Plan (HMMP) for the concept. Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5. The management prescriptions for the restoration of permanent impacts will be detailed in a draft HMMP with more detailed construction drawings and submitted along with the CWA Section 404 nationwide permit from the USACE, CWA section 401 WQC from the RWQCB, and SAA with CDFW permitting for the project.

The District is committed to developing and implementing permanent sustainable habitat at the Mill Creek mitigation site. As with other ecosystem services, time brings change that must be constantly surveyed or inspected to determine relevance within the context of the specific point in time, which is always a key component of the adaptive management process. The adaptive management process includes, at minimum, quarterly inspections documenting condition and implementation of management treatment methodologies which give the native plant populations the best chance for survival and establishment. Management treatment methodologies include chemical, light to heavy mechanical treatment and active plant restoration, where feasible and as needed. The District's core mission in part is to ". . . protect, develop, and manage . . ." conservation lands, which will always place wildlife habitat above other competing interests. If mitigated for correctly, and barring any stochastic events, any habitat created for mitigation at the Mill Creek site would require only basic

monitoring and management activities after the initial 5-year establishment phase of the mitigation project. If the project is documented correctly by the local resource agencies, any potential negative effects by subsequent or future projects will help ensure long-term success to the mitigation site. The District intends to renew its existing lease with the USACE and maintain the habitat created at the Mill Creek mitigation site for the project into the foreseeable future.

The District will ensure that the long-term maintenance of the habitat improvements at the Mill Creek mitigation site includes annual surveys, site inspections, and correct adaptive management techniques as may be required to sustain the improvements indefinitely. Special survey and management consideration will be focused upon habitat parameters for LBVI, SWFL, and tricolored blackbird. The District will provided upkeep and regular maintenance of the site by the implementation of management treatment methodologies that give the native plant populations the best chance for survival and establishment. Management treatment methodologies include chemical, light to heavy mechanical treatment and active plant restoration, where feasible and as needed. Continued removal of non-native invasive plant species, surveys for plant health and plant disease, and conducting brown-headed cowbird trapping to limit nest parasitism will give the best chances of retaining habitat improvements and encourage native species diversity.

7.2 - Narrow Endemic Plant Species

7.2.1 - Results/Impacts—Narrow Endemic Plant Species

The following three Narrow Endemic Plant Species were assessed for their potential to occur within the project area: San Diego ambrosia, Brand's phacelia, and San Miguel savory. The results of the focused surveys for these species is included in Section 5.2.2 of the MSHCP Consistency Analysis, Appendix A. San Diego ambrosia, Brand's phacelia, and San Miguel savory were not observed in the project area, nor were any other sensitive plant species within the project area during any of the focused surveys. Based on the known recorded occurrence and existing habitat on-site, the three Narrow Endemic plant species listed above have a low to moderate potential to occur within the project area. Focused sensitive plant surveys were conducted in four areas potentially containing suitable habitat. No sensitive plant species were observed during the focused plant survey. Therefore, the project site is considered absent of all potentially occurring sensitive plant species. The plant species observed within the project site during the focused survey are common and known to occur throughout the region.

7.2.2 - DBESP Analysis—Narrow Endemic Plant Species

No DBESP is required for narrow endemic plant species.

7.3 - PQP Lands

7.3.1 - Results/Impacts PQP Lands

The Proposed Action will permanently affect 21.78 acres of PQP land in Prado Basin. 6.2 of these acres are riparian/riverine habitat. These lands are currently in semi-recreational use as large portions of the trail alignment are located on existing portions of trail and maintenance roads. The Proposed Action will transition the use of these PQP lands from traditional passive recreation use to a more formalized

passive recreation use. Table 20: Vegetation Community Impacts for PQP Lands demonstrates the permanent vegetation impacts that would occur as a result of Proposed Action on PQP lands.

Table 20: Vegetation Community Impacts for PQP Lands

Category	Permanent Impacts	Temporary Impacts	Grand Total
Arundo Scrub*	**0.17**	**0.19**	**0.36**
Private	—	0.00	0.00
Riverside County Regional Parks & Open Space District	0.12	0.16	0.28
U.S. Army Corps of Engineers	0.05	0.03	0.08
Developed	2.90	2.00	4.90
City of Norco	0.63	—	0.63
Corona	0.01	0.01	0.02
Orange County Flood Control Division	—	0.70	0.70
Private	0.01	0.11	0.12
Riverside County Regional Parks & Open Space District	0.06	0.02	0.09
U.S. Army Corps of Engineers	2.19	1.17	3.36
Disturbed	**3.54**	**7.11**	**10.65**
City of Norco	—	0.00	0.00
Orange County Flood Control Division	0.63	3.57	4.21
Orange County Water District	0.56	0.23	0.79
Private	0.17	0.31	0.48
Riverside County	0.01	0.01	0.01
U.S. Army Corps of Engineers	2.17	2.99	5.16
Drainage/stream/pond*	**0.06**	**0.10**	**0.16**
Corona	0.04	0.05	0.09
U.S. Army Corps of Engineers	0.02	0.04	0.07
Eucalyptus Woodland	**0.06**	**0.64**	**0.70**
Orange County Flood Control Division	0.06	0.64	0.70
Mule Fat Scrub	**0.13**	**0.82**	**0.95**
Corona	—	0.00	0.00
U.S. Army Corps of Engineers	0.13	0.82	0.95
Non-Native Grassland	**8.91**	**15.69**	**24.60**
City of Norco	0.01	0.01	0.02
Corona	0.02	0.04	0.05

Table 20 (cont.): Vegetation Community Impacts for PQP Lands

Category	Permanent Impacts	Temporary Impacts	Grand Total
Orange County Flood Control Division	0.00	0.01	0.01
Orange County Water District	0.17	0.22	0.39
Private	0.10	0.15	0.26
Riverside County	0.04	0.01	0.05
Riverside County Regional Parks & Open Space District	0.29	0.44	0.73
U.S. Army Corps of Engineers	7.89	14.32	22.21
Weyerhaeuser Mortgage Co.	0.39	0.48	0.88
Southern Willow Scrub	**6.01**	**9.91**	**15.93**
Corona	0.15	0.15	0.30
Orange County Water District	1.98	3.10	5.09
Private	0.85	1.42	2.27
Riverside County Regional Parks & Open Space District	0.24	0.23	0.47
U.S. Army Corps of Engineers	2.59	4.49	7.08
Weyerhaeuser Mortgage Co.	0.21	0.52	0.73
Grand Total	**21.78**	**36.49**	**58.26**

Source: FCS 2016

7.3.2 - DBESP Analysis—PQP Lands

The District, as a participating entity of the MSHSP, proposes the replacement strategies described herein, which includes findings of equivalence as they relate to the replacement of permanently impacted PQP lands and the determination of the Proposed Action's consistency with the MSHCP.

The District proposes to contribute parcel APN 153-240-032 (19.9 acres) of the Hidden Valley Wildlife Area and 5.6 acres of the 10.5-acre parcel APN 121-120-023, known as the Weyerhaeuser Parcel, to the conservation goal for Core A. This would constitute a total of 25.4 acres of land transferred to PQP land for the MSHCP. These transfers of land to PQP for the MSHCP were approved by the RCA and wildlife agencies at the May and June 2017 monthly agency meetings of the RCA.

Attempting to compensate for impacts to sensitive biological and jurisdictional resources, the District was unable to locate one single property that would provide an equivalent diversity of all biological resources that require mitigation. Therefore, the District also proposes the mitigations at the Mill Creek parcels (described in Section 7.1.4, Determination of Biologically Equivalent or Superior Preservation for Riparian/Riverine Resources) to contribute to the findings of equivalence for riparian/riverine habitat value as they relate to replacement of permanently impacted PQP lands. PQP equivalency is discussed below in Section 7.3.3, Public/Quasi-Public Land Equivalency Determination.

Hidden Valley Wildlife Area

The 19.9-acre parcel proposed for conservation within the Hidden Valley Wildlife Area (1,500 acres total) is not currently PQP land for the MSHCP. The Hidden Valley Wildlife Area is located adjacent to the Santa Ana River and provides continuous habitat and forage for upland species. The wildlife area has ongoing management for BUOW and LBVI is present in riparian habitat within the wildlife area adjacent to the Santa Ana River. Exhibit 24: Hidden Valley Wildlife Area Overview provides an aerial overview of the Hidden Valley Wildlife Area and Exhibit 25: Hidden Valley Wildlife Parcels for PQP Replacement, shows the parcel to be added PQP land for the MSHCP.

The 19.90-acre parcel proposed for PQP replacement has been historically farmed with alfalfa (*Medicago* spp.), sorghum (*Sorghum* spp.), wheat (*Triticum* spp.), wild oat (*Avena sativa*) and corn (*Zea* spp.). The parcel has not been farmed in the last 6 years, due to the lack of any permanent water source to irrigate crops. Dry farming has been unsuccessful as well because of on-going drought in the region. Currently, the field is in fallow and contains such non-native plant species as London rocket (*Sisymbrium irio*), black mustard (*Brassica nigra*), and wild oat (*Avena sativa*). The field did contain a small colony of red-winged blackbirds (*Agelaius phoeniceus*), which foraged and nested in the parcel over the winter/spring season of 2016/2017. No BUOWs (*Athene cunicularia*) exist on or near the parcel because of lack of suitable habitat, but ground squirrels are found along the perimeter of the parcel utilizing the eastern and western fence line (McLain, personal observation 2017). No focused or protocol based surveys have been conducted on the parcel for BUOW because of the lack of suitable habitat. The site can be managed for BUOW, if needed, but it is not currently being managed for any specific wildlife species.

Hidden Valley Wildlife Area is a majority CDFW/State-owned and Park District-managed wildlife area, encompassing approximately 1,500 acres. Management activities within the wildlife area include agriculture for migratory water fowl, trail work for recreation activity, vegetation management for BUOW, vegetation management for riparian bird species (listed and non-listed species) and access controls for aquatic species (listed and non-listed species).

Weyerhaeuser Parcel

The Weyerhaeuser Parcel in Reach VII was recently acquired by the District and is approximately 10.5 acres total (APN 121-120-023). The Proposed Action utilizes 1.6 acres of the parcel for the trail, which will be subject to project construction and operation. Of these 1.6 acres, 1.0 acre is the area of temporary impact that will be subject to restoration efforts for temporary vegetation impacts. The other 0.6 acre will be used for permanent impacts. 3.3 acres of the parcel are located on a hillslope with residences located on top of the hill. This hillslope is subject to Riverside County fuel modification requirements and will not be included in the acres added to PQP lands for the MSHCP. Therefore, the portion of the parcel available for project contribution to PQP for the MSHCP is 5.6 acres.

The vegetation within the Weyerhaeuser Parcel is predominantly mature riparian vegetation community types, including black willow and Fremont's cottonwood. The parcel has a longstanding history of invasive-species management by the USACE. This management has included the ongoing removal of eucalyptus (*Eucalyptus* sp.), palm and other invasive species on-site. Ongoing management of the parcel by the District includes restoration for temporary vegetation impacts

from the implementation of the Proposed Action, as well as a continuation of the ongoing invasive species management prescriptions previously utilized by USACE. Exhibit 26: Weyerhaeuser Parcel Overview, provides an aerial overview of the Weyerhaeuser Parcel with the trail corridor identified.

Compensation for permanent impacts on PQP lands in the project area would typically be achieved through the dedication of non-PQP acres of riparian/riverine habitats similar to those removed from PQP in order to obtain conditions biologically equivalent or superior to the existing vegetation as replacement. The Weyerhaeuser Parcel has riparian habitat on-site, and its transfer to PQP lands for the MSHCP would obtain conditions biologically equivalent or superior for a portion of the riparian vegetation communities impacted by the Proposed Action. The Hidden Valley Parcel has upland habitat, some of which is used for wildlife forage, this habitat type would obtain conditions biologically equivalent to the upland vegetation impacted by the project and superior to the disturbed/developed and non-native grassland impacted by the project. This transfer of non-PQP land to PQP for the MSHCP was agreed upon by the RCA and wildlife agencies at the May 2017 and June 2017 monthly meetings of the RCA.

7.3.3 - Public/Quasi-Public Land Equivalency Determination

Per MSHCP requirements, any projects or portions of projects that may impact PQP Lands require replacement of equivalent conservation lands and their habitat values. The replacement land must be biologically equivalent or superior to the land that would be affected. The PQP Equivalency Determination compares and contrasts the value of impacted and replacement lands and describes the biologically equivalent value of the replacement lands. The analysis describing the equivalent conservation must be approved by the wildlife agencies.

In an effort to find mitigation that met the requirements of the MSHCP and were acceptable to CDFW and USFWS, the District met with the RCA and the wildlife agencies in May, June, and July of 2017. It was determined, in conjunction with the RCA and wildlife agencies, that the Mill Creek site is the most suitable and available riparian habitat with restoration potential and would fulfill all the requirements of the MSHCP for riparian value replacement. Preliminary site visits and a review of existing LBVI and SWFL data provided by the OCWD showed that the Mill Creek site has high restoration potential and would fulfill the acreage number requirements for replacement riparian habitat mitigation. The Mill Creek site itself is located within Core A and is not proposed as a contribution to PQP for the MSHCP.

This section reviews the biological resource functions and values of land proposed for contribution to PQP lands for the MSHCP (Hidden Valley Wildlife Area and Weyerhaeuser Parcel) and land proposed for biological enhancement and restoration (Mill Creek site) by the District in exchange for lands permanently impacted by the implementation of the Proposed Action. This section provides an evaluation of equivalency for the replacement of 26.36 acres of permanent impacts to PQP lands due to implementation of the proposed project.

Source: Bing Maps

FIRSTCARBON SOLUTIONS™

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Exhibit 24
Hidden Valley Wildlife Area Overview

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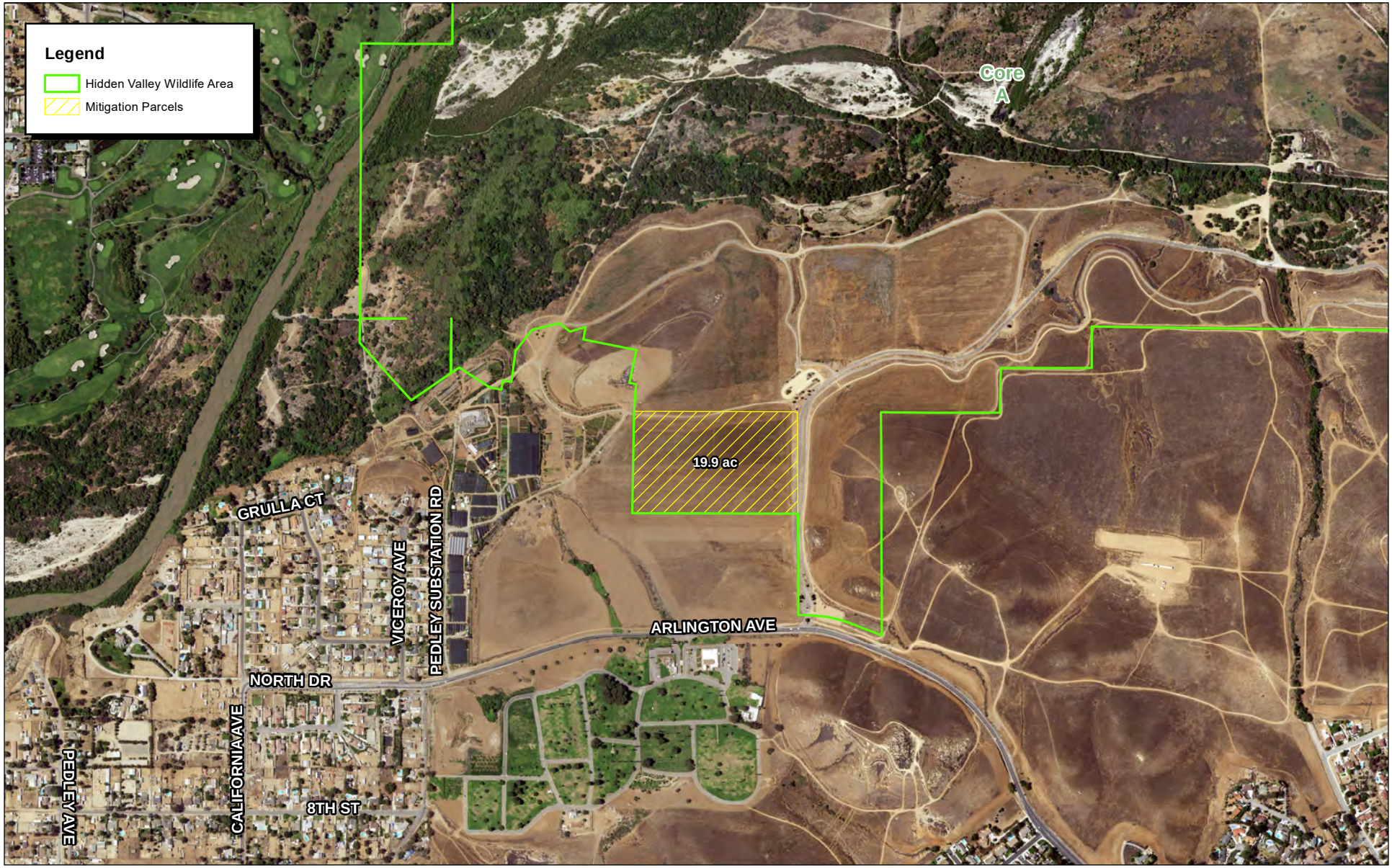

Source: NAIP Aerial Imagery, 2016.

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Exhibit 25
Hidden Valley Wildlife Parcels for PQP Replacement

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Source:

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Exhibit 26
Weyerhaeuser Parcel Overview

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DANGERMOND GROUP/RIVERSIDE COUNTY PARKS • SANTA ANA RIVER TRAIL
DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

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Land Replacement

A total of 21.78 acres of PQP lands will be permanently impacted by implementation of the Proposed Action. The total amount of PQP land lost to the MSHCP will be replaced by the contribution of a 19.9 acre parcel of land at the Hidden Valley Wildlife Area, and 5.6 acres of the Weyerhaeuser Parcel (for a total of 25.4 acres) to PQP lands for the MSHCP. Biological value replacements are described below, and include both the biological values present at the Hidden Valley and Weyerhaeuser Parcels, as well as the riparian values present at the Mill Creek site. All temporary impacts to PQP lands will be restored on-site with native vegetation. The Hidden Valley Wildlife Area, with the exception of the 19.9-acre parcel, are located within MSHCP Core A, has immediate adjacency to the Santa Ana River and is located upstream of the project area. The Weyerhaeuser Parcel is located in close proximity to the project area, as 0.6 acre area of the 10.5-acre parcel will be used for permanent trail impacts. The Weyerhaeuser Parcel is located near the Santa Ana River and has mature riparian vegetation on-site. The Weyerhaeuser Parcel was recently acquired by the District.

Replacement of Biological/Habitat Value

In addition to the replacement of PQP lands, biological and habitat value on PQP lands will also be compensated. Of the 21.78 acres of PQP lands permanently impacted by the Proposed Action, 6.2 acres of the impact will be on lands with riparian/riverine habitat. The District proposes mitigations at the Mill Creek site for the replacement of biological and habitat value on PQP lands, discussed below.

Mill Creek Parcels

The Mill Creek site supports an appropriate setting for natural channel design, the establishment of an active floodplain, and the creation/restoration of riparian habitat. The goal of the mitigation efforts at the Mill Creek site is to remove barriers that currently separate flows in Mill Creek from its floodplain, provide natural sinuosity for the creek, and to facilitate the creation/restoration of riparian/riverine habitat particularly for LBVI and SWFL. Initial studies have been conducted to establish baseline conditions, assess the suitability of the Mill Creek site to support additional riparian habitat, and provide information to support a conceptual design. This mitigation concept is described in full in Section 7.1.4, DBESP Analysis—Riparian/Riverine Resources.

The proposed conceptual design within the Mill Creek site is focused on reconnecting the creek to its floodplain and extending the existing riparian habitat for LBVI, SWFL, and potentially to tricolored blackbird. The design of this mitigation concept is focused on the channel geometry to inundate its floodplain at more frequent flow events to establish the physical processes necessary to create self-sustaining riparian habitat.

The MSHCP defines ecotones as areas of adjoining vegetation communities that exhibit greater biological diversities. The Mill Creek site aids in the effort to assemble a contiguous preserve by establishing additional of riparian habitat, consistent with the conservation study conducted for the MSHCP. The Mill Creek site will restore and enhance riparian habitat that will consist of southern willow woodland, southern willow scrub, mule fat scrub, and potentially wet meadow. These habitats will create a large and complex ecotone that is connected to neighboring habitats, supports wildlife movement, and is superior to that found on the site currently. The Mill Creek site is also

situated within a larger riparian complex of the Prado Basin, suffers less from the edge effect, and will be capable of supporting a higher diversity of biological resources.

Access and Long-term Management

Access to all MSHCP Conservation Areas is required for long-term management of the reserve lands. Access to the Mill Creek parcels for maintenance by the OCWD will be maintained, and public access will be preserved as the existing duck hunting use will remain unchanged. No additional easements will be required. Long-term management of the Mill Creek mitigation concept will be designated to OCWD and formalized through an MOU with the District. OCWD will be responsible for the 5-year post-restoration maintenance and monitoring of the site. The Hidden Valley Wildlife Area is open to the public and this status will remain unchanged. The long-term management of the Hidden Valley Wildlife area and the Weyerhaeuser Parcel will be designated to the District.

7.4 - Urban/Wildlands Interface Guidelines

MSHCP Section 6.1.4, *Guidelines Pertaining to the Urban/Wildlands Interface*, discusses guidelines to address indirect effects associated with locating development in proximity to MSHCP Conservation Areas. MSHCP Conservation Areas, as defined in the MSHCP, is the approximately 500,000 acres comprised of approximately 347,000 acres of Public/Quasi-Public Lands and approximately 153,000 acres of Additional Reserves Lands within western Riverside County. The Urban/Wildland Interface is defined as a zone (less than 100 feet) between project site and the MSHCP Conservation Area. If a project is located adjacent to a Conservation Area, avoidance measures must be implemented. The Proposed Action could result in conflicts with the Urban/Wildlands Interface Guidelines during project construction and operation. The guidelines are intended to address indirect effects associated with locating development on or in proximity to any MSHCP Conservation Area. The Urban/Wildlands Interface Guidelines, as discussed below, shall be followed to avoid, prevent, and reduce edge effects on biological resources located adjacent to the MSHCP Conservation Area. Guidelines for Wildland-Urban Interface are described below.

7.4.1 - DBESP Analysis—Urban/Wildlands Interface Guidelines

Project construction has the potential to impact storm water runoff. The Proposed Action includes features to improve on-site drainage throughout the trail corridor (Section 4.2.8, Culvert Design and Waterbody Crossing). Areas of temporary construction impacts will be revegetated with native species to further reduce the possibility of storm water runoff transferring soil off site. Additionally, the updated 2017 NEPA/CEQA documents for the project include mitigation measures to reduce impacts to storm water runoff, which include the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and other requirements for contract specifications.

Drainage

MSHCP Section 6.1.4 states:

> Proposed Developments in proximity to the MSHCP Conservation Area shall incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and

> quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. Regular maintenance shall occur to ensure effective operations of runoff control systems.

Appropriate sediment, erosion, and siltation control measures would be used and maintained to minimize land disturbance during construction. In addition, erosion control measures, such as timely re-vegetation of the disturbed areas, would be implemented to control erosion during trail construction.

The Proposed Action would be subject to the Riverside County Water Quality Management Plan (WQMP) for Urban Runoff, Santa Ana Region, adopted September 17, 2004, and the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality Order 99-08-DWQ. The project will incorporate BMPs as required through the NPDES. The District will be required to obtain a statewide general NPDES construction permit for all construction activities associated with the Proposed Action. Additionally, all development within the project area will be subject to any potential future requirements adopted by the County of Riverside to implement the NPDES program. The project will also implement a SWPPP. As a result, the quantity and quality of runoff discharged to the MSHCP Conservation Area will not be adversely altered.

Toxics

MSHCP Section 6.1.4 states:

> Land uses proposed in proximity to the MSHCP Conservation Area that use chemicals or generate bio products such as manure that are potentially toxic or may adversely affect wildlife species, Habitat or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge to the MSHCP Conservation Area. Measures such as those employed to address drainage issues shall be implemented.

During the construction of the project, construction activities have the potential to cause release of toxics that could impact the MSHCP Conservation Area. To address these potential short-term impacts, the project is required to stage construction operations to the maximum extent feasible from the MSHCP Conservation Area. In addition, any chemicals used during construction of the trail will be managed as required by the SWPPP and potentially adverse impacts to the Conservation Area will therefore, be avoided and minimized.

Contractors, subcontractors, and employees would comply with pollution and litter laws. All materials generated from construction activities associated with this project will be managed appropriately.

Equestrian use throughout the Prado Basin and in areas adjacent to the basin is pervasive, ongoing, and is a longstanding tradition in the local vicinity. The development of the Proposed Action would likely add incrementally to equestrian use in the area, although it is anticipated that the formalized trail with equestrian amenities would consolidate equestrian use away from the informal spur trails dotted throughout the basin. The trail corridor would therefore serve to consolidate the otherwise dispersed horse waste on informal spur trails throughout the basin into one manageable area.

The trail alignment as proposed is never less than 35 feet from the Santa Ana River and is typically more than 100 feet away from the river. The alignment is proposed in areas within and adjacent to existing vegetation, which would help to buffer any impacts to riparian and riverine habitats that could occur if manure was left on the trail. Areas of temporary vegetation removal adjacent to the trail corridor would be immediately reseeded and replanted with native plant species to further reduce the potential for manure spread away from the trail (refer to Section 4.2.12). Maintenance of the trail corridor includes monitoring and management for invasive and non-native plant species.

This would include any invasive species potentially spread from manure from horses fed hay that is not certified as weed free.

Certain site conditions, such as steep and unprotected slopes, lack of vegetative cover, and proximity to receiving waters increases the likelihood of manure and contaminants associated with manure entering surface water resources. The trail has been designed as to avoid these impacts and mitigation for temporary impacts further reduces this risk of runoff from the trail. In addition, vegetation provides a filter of nutrients and studies indicate that plants can provide a buffering capacity when even as little as 10 feet of vegetation is available at the side of a trail (Sumner 1980). Therefore, deposits of horse manure along the trail are not expected to have a significant impact on water resources or riparian and riverine resources.

While pedestrian use still vastly outnumbers equestrian use in the basin, equestrian use could result in the deposit of manure along the trail, which could negatively impact water resources. There are very few opportunities for horse manure to be directly deposited into the Santa Ana River. This is because of trail design, the trail's distance from the river, and the reduced likelihood that horses will defecate on the trail. Horses spend most of their time in pastures or paddocks where the majority of their waste is deposited, collected, and managed (Quinn 2001). It is acknowledged, however, that when manure is deposited in water bodies, either directly or by runoff, it can negatively impact water resources. The nutrients contained in manure, phosphorus and nitrogen, can be carried by runoff to the nearest water body, such as a pond, stream or lake. The nutrients then fertilize aquatic weeds and accelerate weed growth in lakes and ponds. The aquatic plants deplete oxygen levels, reducing the amount of oxygen available for other aquatic species such as fish. When the weeds die, additional oxygen is required for decomposition, further stressing oxygen stores and aquatic life. Direct manure entry into the water resource can also cause oxygen starvation because of increased biological oxygen demand, and result in fish kills. Algae blooms are another result of excess nutrients in the lake or pond. Algae blooms further lower oxygen in the water body, can turn the

water an unsightly murky green, and generate an unpleasant odor. Eutrophication (accelerated weed growth) and algae blooms can kill fish and tadpoles. The aforementioned circumstances are not anticipated to occur as a result of implementation of the Proposed Action.

The Proposed Action would be subject to the Riverside County Water Quality Management Plan (WQMP) for Urban Runoff, Santa Ana Region, adopted September 17, 2004, and the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality Order 99-08-DWQ. Implementation of both the WQMP and the general permit would avoid potential impacts of toxics to the MSHCP Conservation Area to a level of less than significant.

Compliance with regulations, standards, and guidelines established by the United States Environmental Protection Agency, state, county, and local agencies relating to the storage, use, and disposal of hazardous waste will avoid the potential risk of hazardous materials exposure to a level that is less than significant.

Lighting

MSHCP Section 6.1.4 states:

> Night lighting shall be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. Shielding shall be incorporated in project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased.

The project would not create a new source of light or glare within the project area or the MSHCP Conservation Area. Lighting would be restricted to lighting used during construction activities. Night lighting will be minimal and used only for security at the staging area located at Auto Center Drive only. This lighting will be directed away from the MSHCP Conservation Area to ensure ambient lighting is not increased.

Noise

MSHCP Section 6.1.4 states:

> Proposed noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards.

The Proposed Action is a public use trail system for pedestrian, equestrian, and cyclist use and project-related noise impacts to the MSHCP Conservation Area are anticipated to be less than significant, due the absence of any mechanical devices. The existing level of noise produced by the adjacent freeways, streets, residential and commercial developments is expected to be greater than noise generated from

trail usage. Development within the project area will also incorporate landscape elements such as trees, shrubs, and groundcover, which would assist in noise reduction on-site.

Construction of the project would involve the temporary use of heavy equipment for ground clearing, grading, and construction. These noise levels are expected to exceed the ambient baseline levels. Measures would be employed to minimize the noise levels to comply with local and state standards and/or shall not exceed 86 dBA within 50 feet of a sensitive receptor.

Construction shall be done during daytime hours between 7 a.m. and 3:30 p.m. Construction-related noise shall be mitigated by limiting construction activities to daytime hours and requiring construction equipment to be tuned and equipped with mufflers. If construction occurs during the nesting season, particularly in the riparian zones associated with LBVI habitat, appropriate measures to reduce noise must be implemented. Consultation with the resource agencies will be required prior to such construction activities.

Invasives

MSHCP Section 6.1.4 states:

> When approving landscape plans for Development that is proposed adjacent to the MSHCP Conservation Area, Permittees shall consider the invasive, non-native plant species listed in Table 6-2 and shall require revisions to landscape plans (subject to the limitations of their jurisdiction) to avoid the use of invasive species for the portions of Development that are adjacent to the MSHCP Conservation Area. Considerations in reviewing the applicability of this list shall include proximity of planting areas to the MSHCP Conservation Areas, species considered in the planting plans, resources being protected within the MSHCP Conservation Area and their relative sensitivity to invasion, and barriers to plant and seed dispersal, such as walls, topography and other features.

Restoration and landscaping planning efforts adjacent to the Conservation Area will avoid the use of invasive species list identified on MSHCP Table 6-2. The final landscape plans will be reviewed and verified by the County for consistency with the plant species list in Table 6.2 of the MSHCP.

The project will incorporate robust edge treatments designed to separate trail areas from areas of native vegetation in an effort to reduce or prevent any post-development invasive species encroachment into disturbed areas. Landscape buffers will be implemented immediately after the trail construction work is completed as part of the project designs and then monitored on a monthly basis for any intrusion of non-native plant species into natural areas and to monitor the success of the newly establish native plantings. This ongoing monitoring for invasive species will be a part of the ongoing operations and maintenance of the trail project.

This proactive maintenance of installed native plant species in areas impacted by project construction, paired with regular invasive weed species maintenance of the project area will serve to avoid impacts to MSHCP riparian/riverine areas caused by the spread of invasive non-native plant species.

Maintenance and monitoring activities would also help to avoid impacts potentially caused by the spread of invasive species by horse manure deposited along the trail. The majority of impacts potentially caused by horse manure deposited on the trail alignment of the Proposed Action are expected to occur within one mile of the staging area. While Riverside County does not require the use of weed-free hay in open space areas, MSHCP Section 7.4.2 requires the production and distribution of educational materials for the project as a Conditionally Compatible Use. A portion of the educational materials could provide information with regard to the potential spread of invasive weeds caused by horse manure and advocate for the use of weed-free hay on the SART.

Invasive and non-native weeds management for the Proposed Action includes the removal of arundo as pre-mitigation for the project, the immediate replanting of areas of temporary impact with appropriate native vegetation types, and ongoing invasive species monitoring and control. This management would be achieved as part of the ongoing trail operations by the District through contract with OCWD and as a key part of the restoration efforts as mitigation for the project.

Recently, OCWD biological specialists discovered one of two possible invasive wood-boring beetles attacking tree species found on their lands within the project area. These wood-boring beetles are the polyphagous shot hole borer (PSHB) and the Kuroshio shot hole borer (KSHB). They spread a disease called Fusarium dieback caused by pathogenic fungi. Infected trees can show signs of branch dieback, canopy loss, and eventual tree mortality.

Early symptoms of infestation are seen externally on the bark of the tree. The visual signs include sugary exudate (sugar volcano), staining, gumming, and frass. The symptoms can be noticeable before the tiny beetles are found. The visible response varies among trees species. As a result regular visual tree and large shrub surveys are required to keep the disease in check and to keep from spreading.

As part of the Proposed Action's ongoing operations and maintenance, an OCWD biological specialist or certified arborist will conduct inspections on foot quarterly to survey trees and large shrubs in the project area to look for symptoms of a host's visible response to a shot hole borer infestation. A written report will be provided noting the findings and remediation activities, if needed. If trees or branches of trees show signs of infestation, the BMPs for disposal of infected vegetation will be followed. BMPs are described below. The goal of the quarterly inspections is to prevent spread of the beetles into the MSHCP Conservation Area through early detection of infestation. Removal of the infested branches will help reduce vector populations and the spread of this pest-disease complex and save the life of the tree (UC Agriculture 2016).

BMPs for disposal of wood-boring beetles infected vegetation during construction or maintenance include:

- The removal of heavily infested reproductive hosts will help to reduce vector populations and the spread of the pest-disease complex.
- Chip infested wood on-site to a size of one inch or smaller. If branches are too large to chip, solarize them under a clear tarp.

- July–August: cover chips/logs with sturdy plastic for at least 6 weeks. Temperatures during these months should preferably be above 95°F.
- September–June: cover chips/logs with sturdy plastic for at least 6 months.
- Have wood chips composted at a professional composting facility that has earned the U.S. Composting Council's Seal of Testing Assurance Sterilize pruning tools with either 5% household bleach, Lysol cleaning solution, or 70% ethyl alcohol to prevent the spread of pathogens through pruning tools.
- Avoid moving infested wood and chipping material out of infested areas unless the material is covered or contained during transport.
- Transport wood or chips to a biogeneration facility (biogeneration facilities burn green waste and convert it into energy).
- Transport wood or wood chips to a landfill where it will be used as Alternative Daily Cover.

Barriers

MSHCP Section 6.1.4 states:

> Proposed land uses adjacent to the MSHCP Conservation Area shall incorporate barriers, where appropriate in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the MSHCP Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage and/or other appropriate mechanisms.

The project will incorporate special edge treatments designed to separate newly developed trail areas from MSHCP Conservation Areas. In order to prevent and minimize public access, domestic animal predation, and illegal trespass and dumping in the MSHCP Conservation Areas, barriers will be installed. Barriers include the use of rocks, boulders, and native landscaping. As mitigation for temporary impacts, the project will immediately revegetate areas of temporary vegetation impacts with appropriate native vegetation, and then incorporate ongoing maintenance to prevent/control invasive, non-native vegetation from establishing in the areas of disturbance.

Grading/Land Development

MSHCP Section 6.1.4 states:

> Manufactured slopes associated with proposed site development shall not extend into the MSHCP Conservation Area.

All grading and trail construction, including manufactured slopes, is restricted to the project development footprint and would not extend into the MSHCP Conservation Area. All slopes will be constructed within the proposed right-of-way and will not extend into the MSHCP Conservation Area.

Conclusion

The project design features described above provides for project construction and operations consistent with the MSHCP Urban/Wildland Interface Guidelines. The project is consistent with Section 6.1.4 of the MSHCP.

7.5 - Mitigation Concept Summary

Table 21: Mitigation Summary Table: Mitigation for Permanent Impacts summarizes the mitigation concepts proposed for permanent impacts resulting from implementation of the Proposed Action. Table 22: Mitigation Summary Table: Mitigation for Temporary Impacts summarizes the mitigation concepts proposed for temporary impacts resulting from implementation of the Proposed Action.

Table 21: Mitigation Summary Table: Mitigation for Permanent Impacts

Permanent Impact	Proposed Mitigation	Mitigation Acreage	Ratio
Loss of PQP Land—Land Replacement—Permanent vegetation impacts: 21.78 acres	Addition of non-PQP parcel (19.9 acres of grassland and upland habitat) at Hidden Valley Wildlife Refuge, Addition of non-PQP parcel (5.6 acres) at Weyerhaeuser Parcel with mature riparian forest on-site.	25.4 acres	1.17:1
Loss of PQP Land—Replacement of Biological/Habitat Value: 21.65 acres	Creation of 3.0-acre oxbow feature on Mill Creek, extension of riparian forest at upper and lower Mill Creek Parcels, extension of wetted period in lower ponds.	49.8 acres	2.3:1
Riparian Vegetation Communities—Permanent Impacts: 6.2 acres	Creation of 3.0-acre oxbow feature on Mill Creek, extension of riparian forest at upper and lower Mill Creek Parcels, extension of wetted period in lower ponds.	21.6 acres	3.48: 1
Source: FCS 2017			

Table 22: Mitigation Summary Table: Mitigation for Temporary Impacts

Temporary Impact	Proposed Mitigation	Mitigation Acreage	Ratio
Loss of PQP Land—Temporary vegetation impacts: 36.49 acres	Restoration of all areas of temporary impact with native species, 5-year maintenance period. Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5.	36.49 acres	1:1

Table 22 (cont.): Mitigation Summary Table: Mitigation for Temporary Impacts

Impact Type	Proposed Mitigation	Mitigation Acreage	Ratio
Riparian Vegetation Communities—Temporary Impacts: 4.64 acres	Native revegetation in areas of impact, Creation of 3.0 acre oxbow feature on Mill Creek, extension of riparian forest at Mill Creek Parcels, extension of seasonal wetland wetting in lower ponds, and research to determine habitat feasibility in lower ponds.	—	—
Source: FCS 2017			

SECTION 8: VEGETATION COMMUNITY IMPACTS

Exhibits 27 to 28t depict the aerial photography of the Proposed Action's permanent and temporary impacts on vegetation communities. For reference, Exhibit 27: Trail Alignment and Land Ownership depicts land ownership throughout the trail alignment. Exhibit 28a through 28t, Plant Communities Maps, are the plant community impact maps shown reach-by-reach.

Impacts resulting from the implementation of the Proposed Action are also summarized in Table 20: Vegetation Community Impacts for PQP Lands in Section 7.3, Impacts to PQP Lands. The information herein is provided using the acreages calculated for permanent and temporary impacts using the project's 95% construction drawings.

Table 23: Temporary and Permanent Vegetation Community Impacts by Reach, summarizes the vegetation community impacts for each vegetation community mapped in the project area.

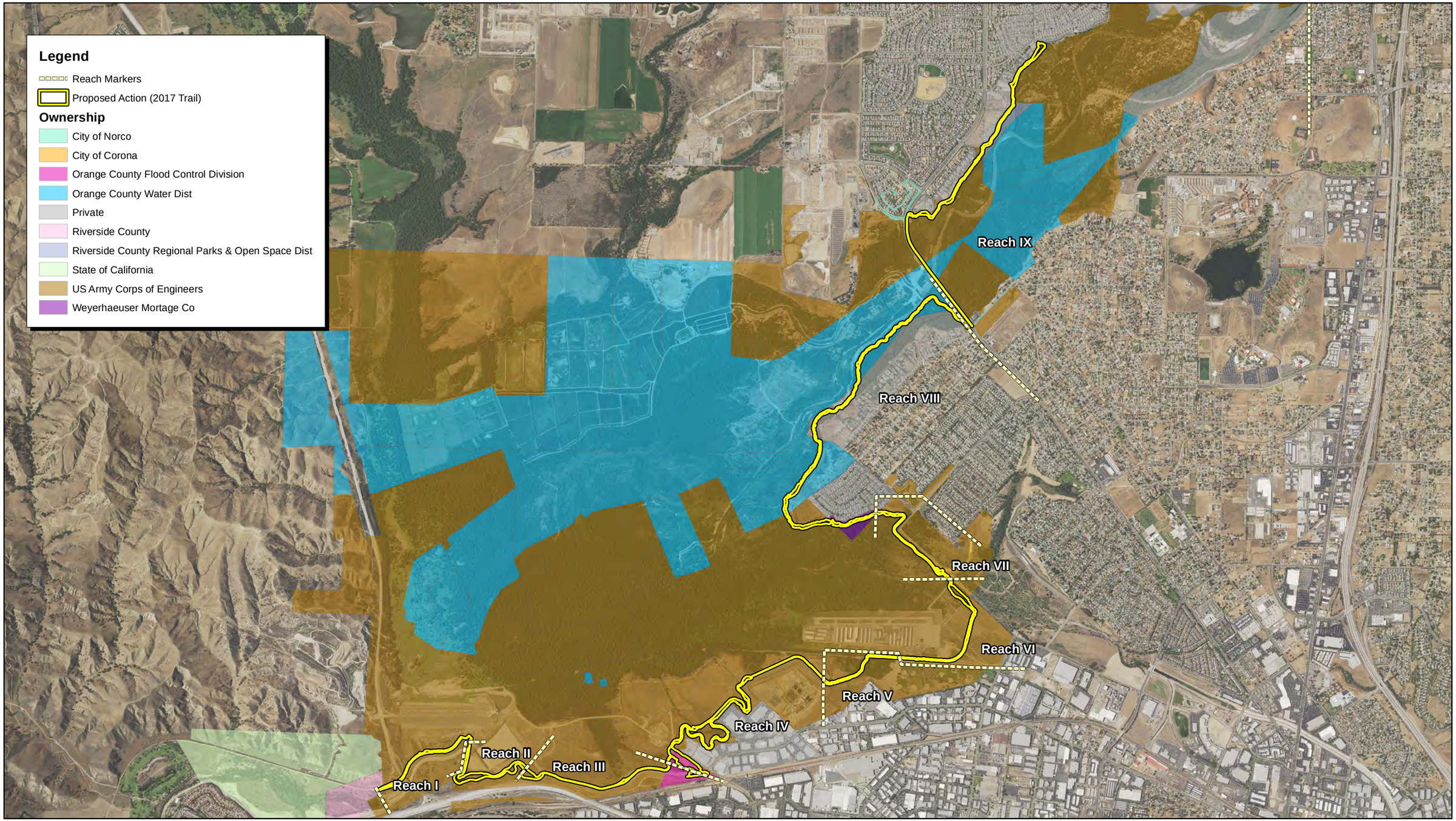
Table 23: Temporary and Permanent Vegetation Community Impacts by Reach

Reach/Type of Impact	Arundo Scrub	Developed	Disturbed	Drainage/ Stream/ Pond	Eucalyptus Woodland	Mule Fat Scrub	Non-Native Grassland	Southern Willow Scrub	Grand Total by Reach
Vegetation Community Types									
Reach I	0.00	1.34	0.40	0.00	0.00	0.00	0.72	0.00	2.46
Permanent	0.00	0.66	0.04	0.00	0.00	0.00	0.44	0.00	**1.14**
Temporary	0.00	0.68	0.36	0.00	0.00	0.00	0.28	0.00	**1.32**
Reach II	0.00	0.40	1.05	0.00	0.00	0.30	4.71	0.21	6.67
Permanent	0.00	0.25	0.42	0.00	0.00	0.02	0.99	0.00	**1.68**
Temporary	0.00	0.15	0.64	0.00	0.00	0.28	3.73	0.20	**4.99**
Reach III	0.00	0.00	0.77	0.00	0.24	0.13	2.69	0.00	3.84
Permanent	0.00	0.00	0.22	0.00	0.04	0.04	0.98	0.00	**1.27**
Temporary	0.00	0.00	0.55	0.00	0.21	0.10	1.72	0.00	**2.57**
Reach IV	0.00	1.41	5.70	0.00	0.46	0.24	5.51	0.00	13.32
Permanent	0.00	0.65	1.22	0.00	0.02	0.05	2.06	0.00	**4.00**
Temporary	0.00	0.76	4.48	0.00	0.44	0.20	3.45	0.00	**9.32**
Reach V	0.00	0.00	0.97	0.00	0.00	0.22	0.89	0.25	2.34
Permanent	0.00	0.00	0.66	0.00	0.00	0.02	0.46	0.12	**1.25**
Temporary	0.00	0.00	0.32	0.00	0.00	0.20	0.43	0.13	**1.09**
Reach VI	0.00	0.02	0.00	0.00	0.00	0.01	5.55	0.07	5.65
Permanent	0.00	0.01	0.00	0.00	0.00	0.00	2.03	0.04	**2.08**
Temporary	0.00	0.02	0.00	0.00	0.00	0.01	3.52	0.03	**3.57**

Table 23 (cont.): Temporary and Permanent Vegetation Community Impacts by Reach

Reach/Type of Impact	Arundo Scrub	Developed	Disturbed	Drainage/ Stream/ Pond	Eucalyptus Woodland	Mule Fat Scrub	Non-Native Grassland	Southern Willow Scrub	Grand Total by Reach
Reach VII	0.00	0.02	0.00	0.14	0.00	0.00	0.52	2.63	3.30
Permanent	0.00	0.01	0.00	0.04	0.00	0.00	0.26	1.36	**1.67**
Temporary	0.00	0.01	0.00	0.10	0.00	0.00	0.26	1.26	**1.63**
Reach VIII	0.00	0.00	1.17	0.00	0.00	0.00	1.85	10.07	13.09
Permanent	0.00	0.00	0.72	0.00	0.00	0.00	0.81	3.54	**5.08**
Temporary	0.00	0.00	0.45	0.00	0.00	0.00	1.04	6.53	**8.01**
Reach IX	0.36	1.71	0.76	0.02	0.00	0.05	2.15	2.86	7.91
Permanent	0.17	1.31	0.30	0.02	0.00	0.01	0.88	0.96	**3.66**
Temporary	0.19	0.39	0.46	0.00	0.00	0.04	1.26	1.90	**4.25**
Grand Total Permanent and Temporary Impacts	**0.36**	**4.90**	**10.81**	**0.16**	**0.70**	**0.95**	**24.60**	**16.10**	**58.59**
Grand Total Permanent Impacts	**0.17**	**2.90**	**3.57**	**0.06**	**0.06**	**0.13**	**8.91**	**6.03**	**21.82**
Grand Total Temporary Impacts	**0.19**	**2.00**	**7.25**	**0.10**	**0.64**	**0.82**	**15.69**	**10.06**	**36.76**

Source: FCS 2018



Source: NAIP Aerial Imagery.

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Exhibit 27
Trail Alignment and Land Ownership

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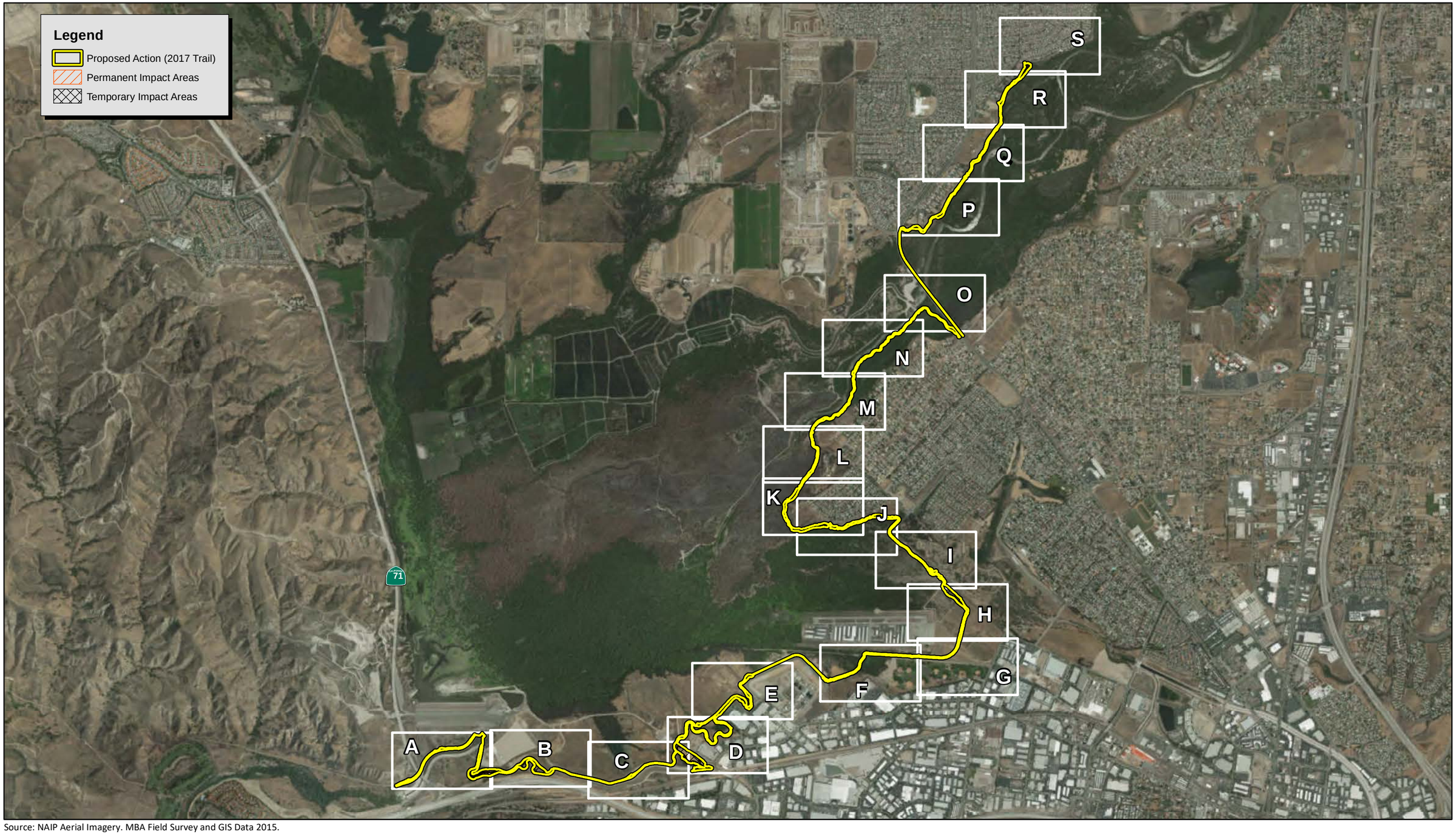

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28a
Plant Communities Index Map

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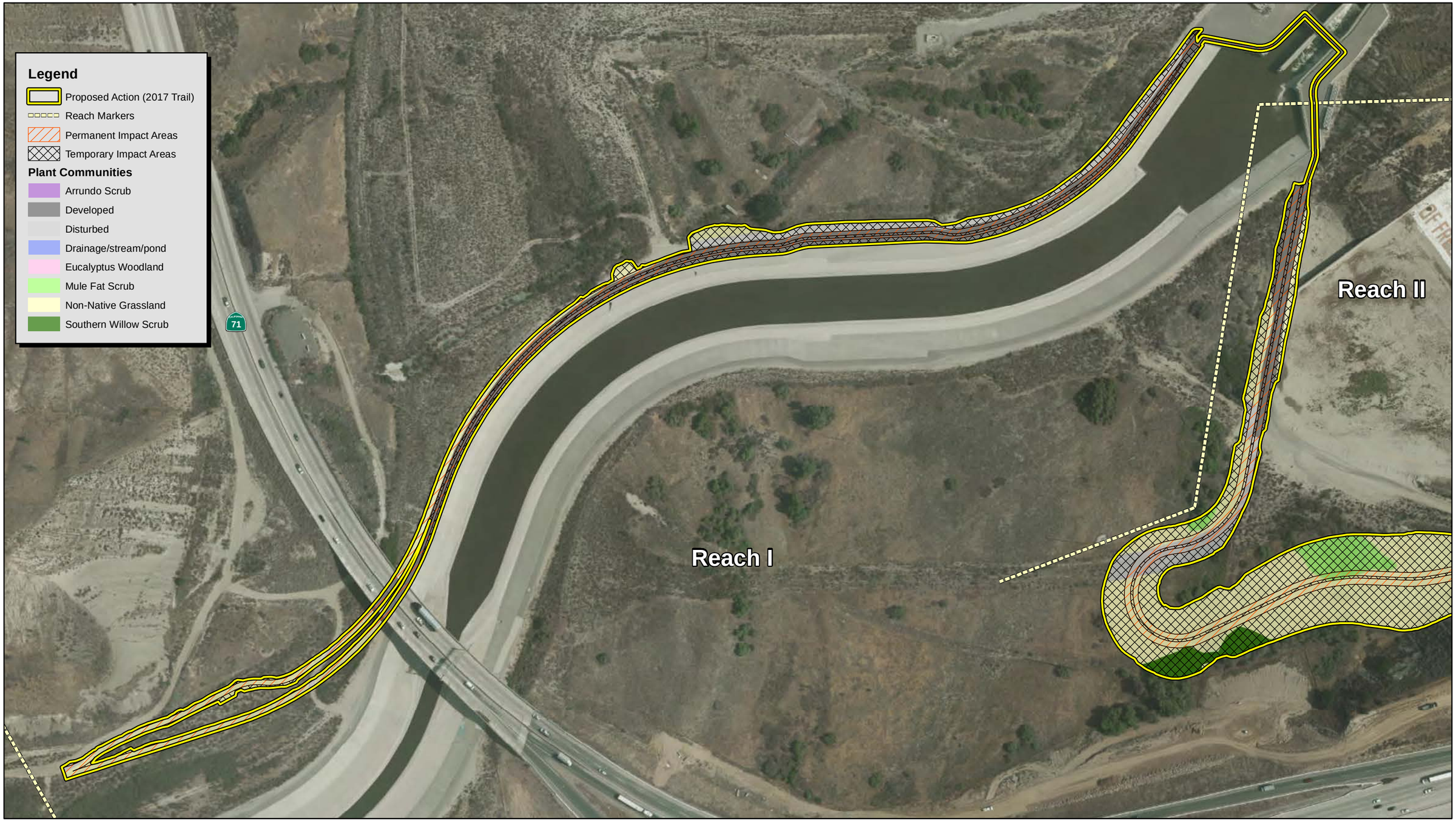

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28b
Plant Communities Map for Reaches I and II

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28c
Plant Communities Map for Reaches II and III

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28d
Plant Communities Map for Reaches III and IV

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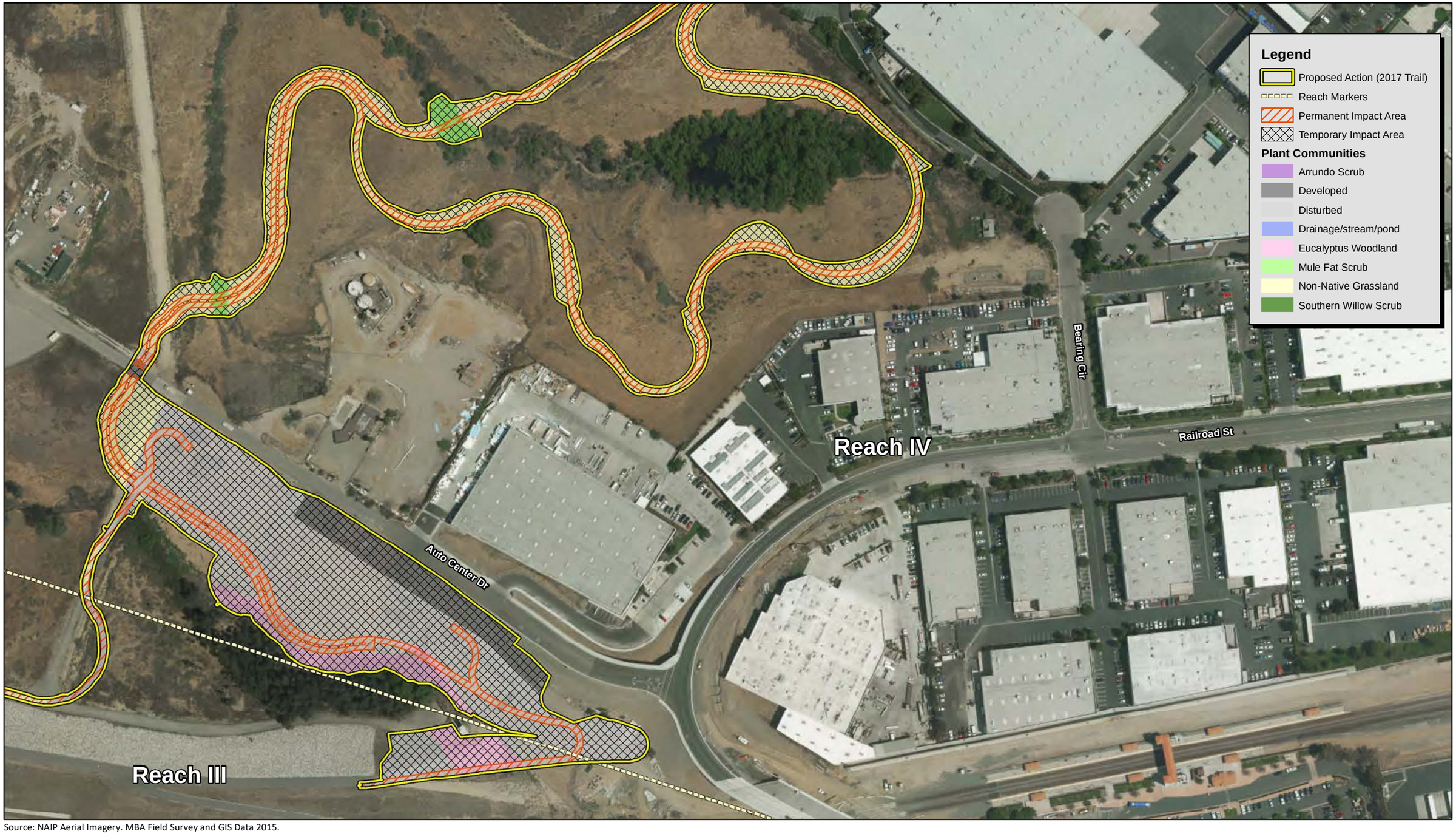

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28e
Plant Communities Map for Reaches III and IV

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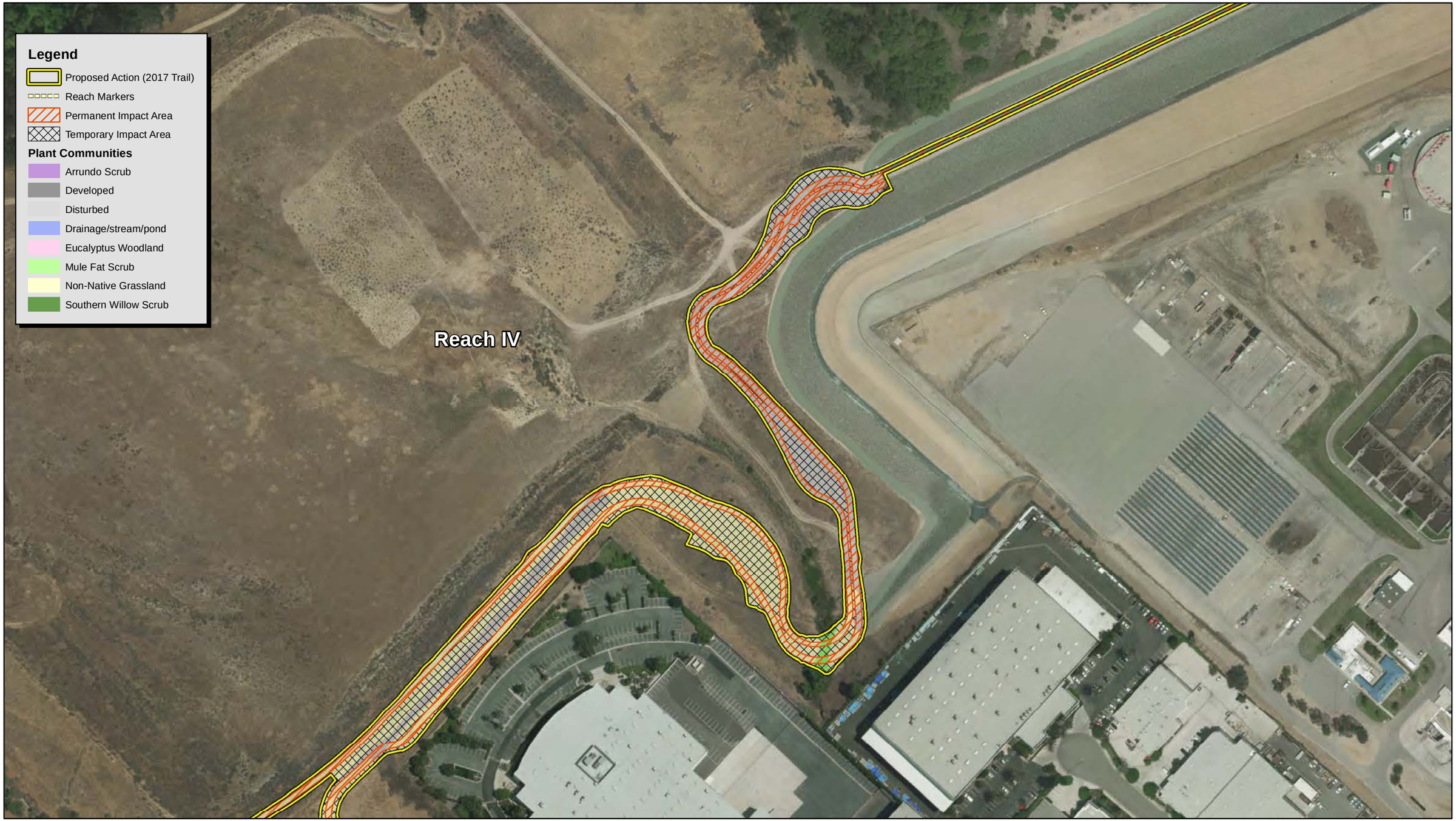

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28f
Plant Communities Map for Reach IV

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Source: ESRI Aerial Imagery. MBA Field and GIS Data 2015.

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Exhibit 28g
Plant Communities Map for Reaches V and VI

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28h
Plant Communities Map for Reaches V and VI

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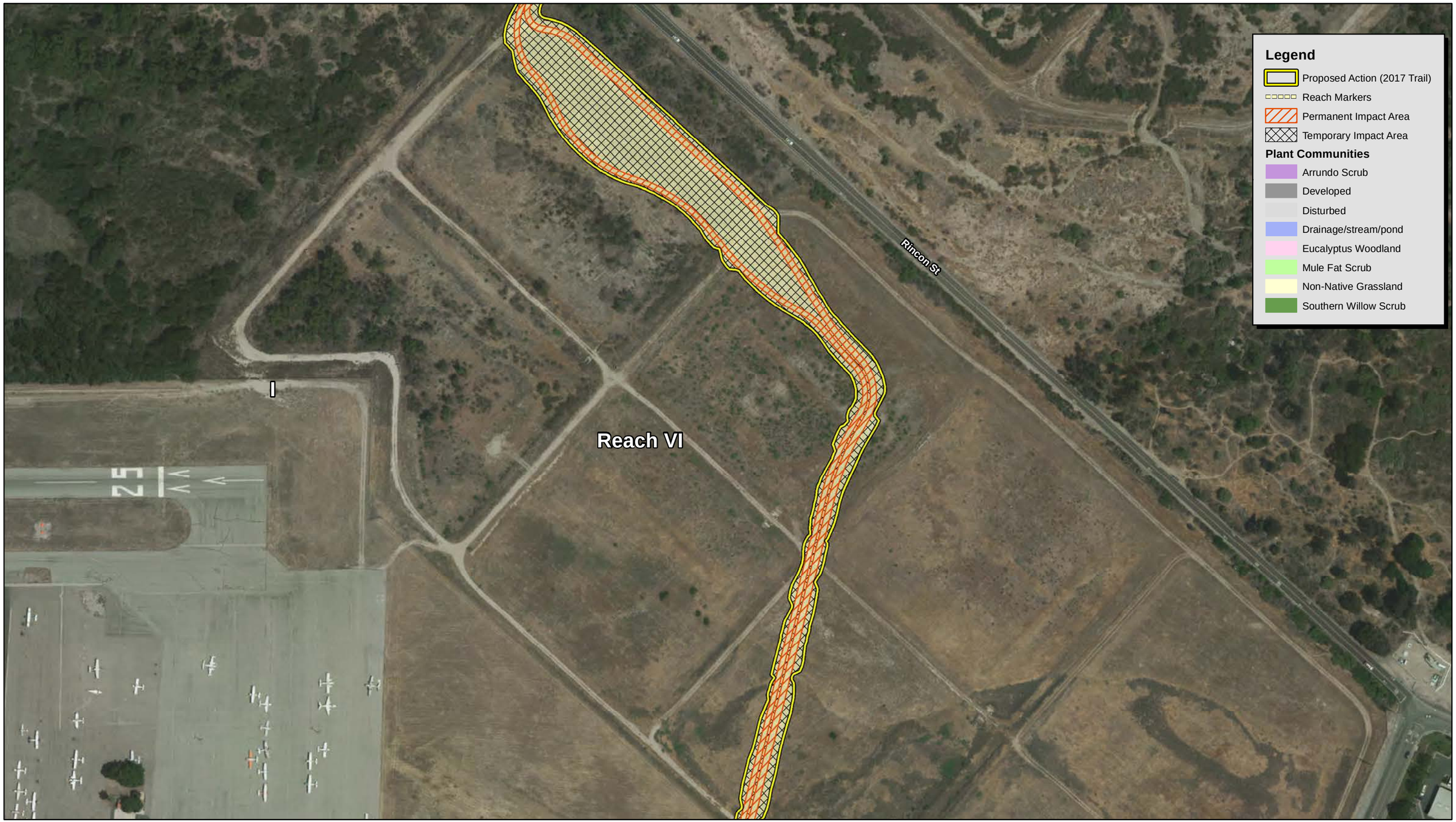

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28i
Plant Communities Map for Reach VI

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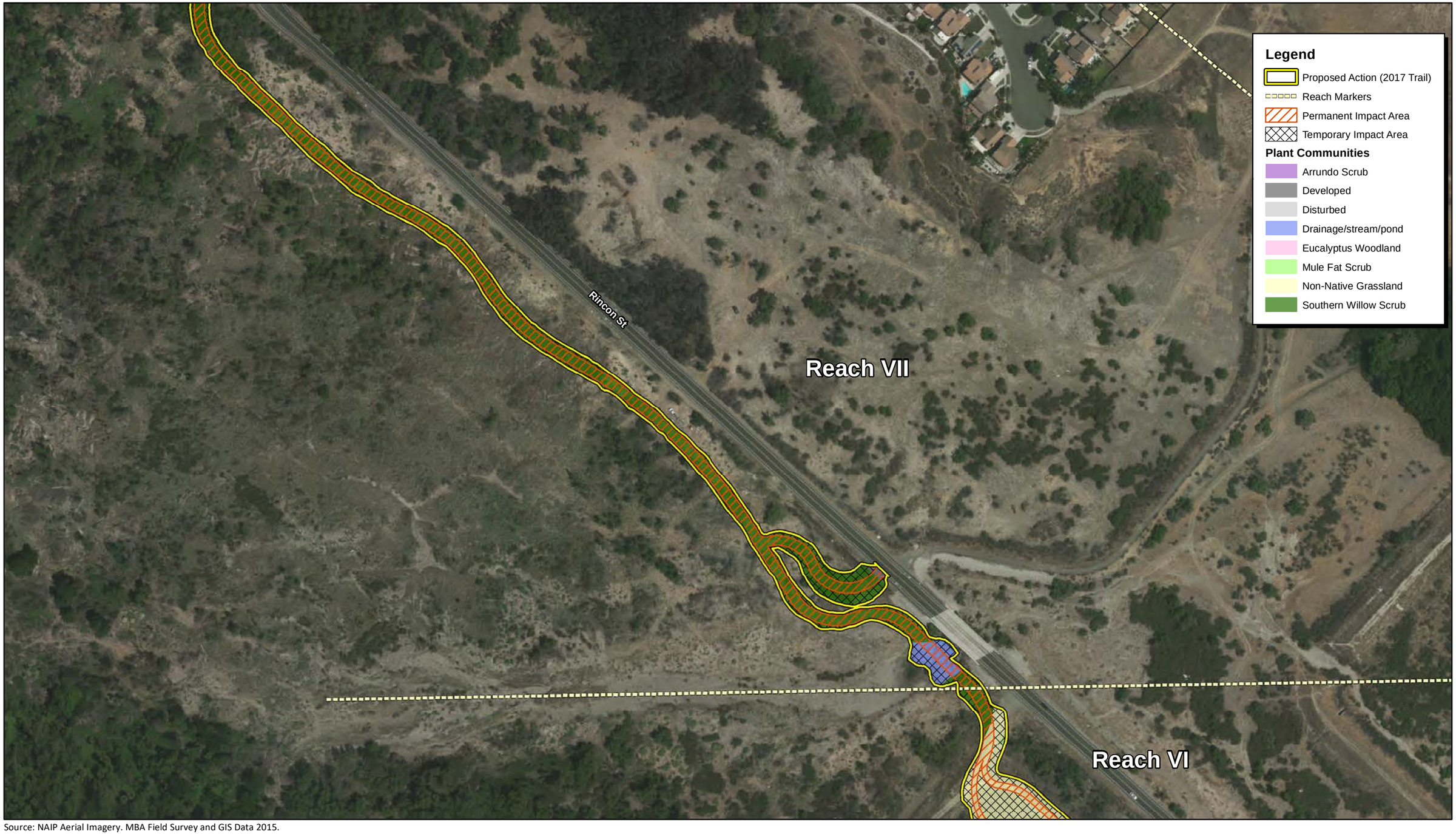

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28j
Plant Communities Map for Reaches VI and VII

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

FIRSTCARBON SOLUTIONS™

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Exhibit 28k
Plant Communities Map for Reaches VII and VIII

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28l
Plant Communities Map for Reach VIII

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28m
Plant Communities Map for Reach VIII

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28n
Plant Communities Map for Reach VIII

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28o
Plant Communities Map for Reach VIII

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Feet

Exhibit 28p
Plant Communities Map for Reaches VIII and IX

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28q
Plant Communities Map for Reach IX

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Feet

Exhibit 28r
Plant Communities Map for Reach IX

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Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28s
Plant Communities Map for Reach IX

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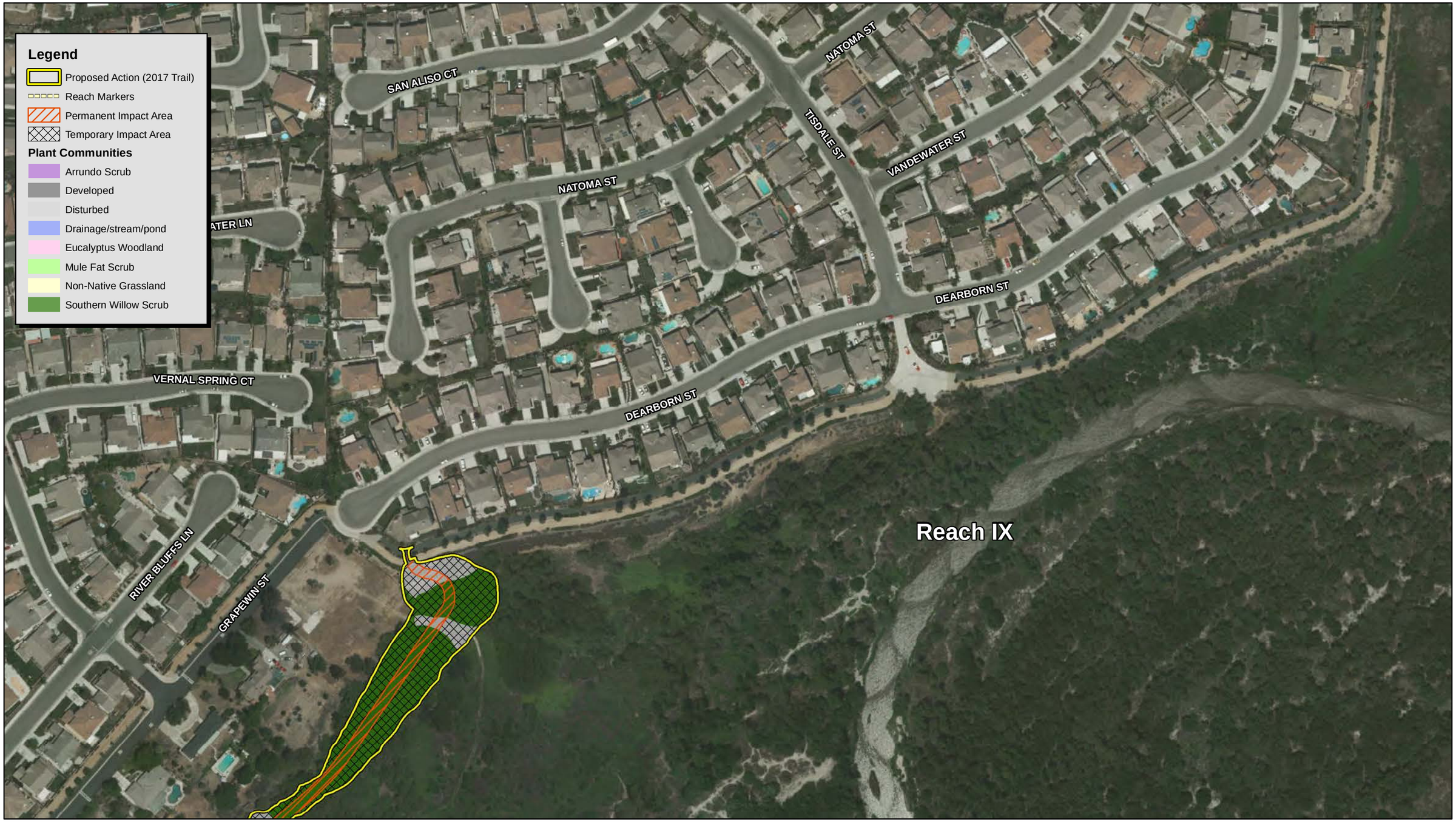

Source: NAIP Aerial Imagery. MBA Field Survey and GIS Data 2015.

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Exhibit 28t
Plant Communities Map for Reach IX

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SECTION 9: ALTERNATIVES

Alternatives for this analysis of the Proposed Action are the cumulative result of both the evaluation of alternatives for the trail project in the SART Master Plan, those of the approved 2012 NEPA/CEQA documents for the project, and those of the Supplemental EA and Addendum IS/MND (FCS 2018) for the project. During the development of the SART Master Plan, extensive screening was utilized to find routes to connect existing portions of the overall SART. The Master Plan screening process identified alternative proposed routes and assisted in the elimination of unsuitable routes based on environmental impacts and the objectives of the project. Feasibility field investigations were conducted to thoroughly explore all aspects of the trails in order to examine potential habitat impacts along the portions of the trail interfacing with natural habitat, and to create connectivity with existing up- and downstream portions of the SART system.

The evaluation of alternatives for the 2012 EA further refined and explored the feasibility of the SART Master Plan's analysis of alternatives that explored alternatives for the 12 reaches relevant to the Previously Approved Action. Since the SART Master Plan did not evaluate alternatives to entire routes but, rather, alternate opportunities within most of the project's 12 reaches, the 2012 EA explored a No Action alternative, a Preferred Alternative (which was approved in 2012), and two other alternatives represented feasible attributes for the trail could exist within the 12 reaches.

The analysis of alternatives for the 2017 Supplemental EA considers a No Action alternative, the Preferred Alternative from the 2012 EA (Previously Approved Action), and the current Proposed Action. The intent of the analysis is to evaluate a range of alternatives that have been determined to be feasible for the project through a comprehensive and iterative planning and scoping process, which includes improvements to the trail alignment since the 2012 EA in response to input from the USFWS and CDFW, in order to avoid areas with habitat for sensitive-status species, areas of intact native vegetation, and improvements to the overall operation and maintenance of the trail project.

9.1.1 - Proposed Action

Proposed Action (Alternative 2 of 2017 Supplemental EA): Construction and operation of Reaches I through IX of the Previously Approved Action (a 12.8-mile segment of trail), between approximately SR-71 and Dearborne Street in Eastvale, with modifications to the project resulting from input on the trail project from the USFWS, CDFW, USACE, and OCWD since the approval of the 2012 NEPA/CEQA documents. The Proposed Action includes modifications made to the Preferred Alternative in late 2016 resulting from input from the USFWS, the CDFW, the USACE, and the OCWD since the approval of the 2012 EA and CEQA, as previously discussed in Section 2, Project Background.

9.1.2 - Other Alternatives Considered

Previously Approved Action (Alternative 1 of 2017 Supplemental EA): Construction and operation of the Corona-Norco-Eastvale segment (a 25-mile-long segment of trail) of the SART Master Plan, beginning at Prado Dam and continuing upstream to the City of Eastvale, encompassing Reaches I–XII of the SART Master Plan.

No Action Alternative (Alternative 3 of 2017 Supplemental EA): Under the No Action Alternative, construction and operation of a recreational trail and staging area on a portion of the SART would not occur, and there would be no extension and connection of the SART through Orange, Riverside, and San Bernardino Counties. Bicyclists and pedestrians would use existing local Class II and Class III bike routes on existing local roads to connect to existing SART trails in Riverside and San Bernardino County.

9.2 - Avoidance Feasibility

This section discusses the feasibility of implementing the alternatives outlined above in Section 3.2, and their potential impacts on riparian/riverine, vernal pool, and fairy shrimp resources within the MSHCP plan area. Avoidance of MSHCP riparian/riverine areas, vernal pools and fairy shrimp on the project site is also discussed in this section.

The No Project Alternative, described above in Section 9.1.2, would not meet the Proposed Action's goals of a trail system paralleling the Santa Ana River where feasible and connecting with the upstream and downstream portions of the existing trail system.

The Previously Approved Action Alternative would be feasible and it improves upon the trail as proposed in the MSHCP Master Plan with additional opportunities to place the trail closer to the River in Reaches VIII and IX were explored. Through cooperation with OCWD and the results of geotechnical investigations along the bluff in Reach IX, a final design for the Previously Approved Action accomplished more of the goals of having a trail near the River. Impacts within PQP lands remained similar, except along Reach IX where the alignment was moved to below the west bluff of the river, north of River Road. Other substantive changes between the Master Plan and the Previously Approved Action were associated with USACE lands at the "borrow site." Ongoing development at the Prado Basin will keep the borrow site in operation for an unknown number of years into the future. The new design moved the permanent trail to the southern boundary of the borrow site rather than the northern edge, to allow construction across the borrow site and avoid future conflict. This accomplished the following important objectives:

1. The trail would avoid conflict with ongoing construction activities and would allow a single construction event.
2. The trail would avoid impacts to previously restored areas of the borrow pit and avoid impacts on at least 13 LBVI territories that were known at the time.
3. Since the SART is a covered activity under the MSCHP and the impacts associated with the trail were accounted for in the mitigation, the following guidelines from Section 6.1.6 of the MSHCP would be implemented:
   The District commits to adopt and maintain resolutions as necessary to implement the requirements and to fulfill the purposes of the Permits, the MSHCP, and the Implementing Agreement for its Covered Activities.
   a) Such requirements include (1) compliance with the policies for the protection of species associated with MSHCP riparian/riverine areas and vernal pools as set forth in Section 6.1.2 of the MSHCP; (2) compliance with the policies for the protection of Narrow Endemic Plant Species as set forth in Section 6.1.3 of the MSHCP; (3) conduct surveys as

set forth in Section 6.3.2 of the MSHCFP; (4) compliance with the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP; and (5) compliance with the BMPs (Appendix A of the MSHCP), and all other requirements of Section 7.0, Vegetation Community Impacts of the MSHCP.

4. Contribute to Plan implementation and Reserve Assembly as determined appropriate by the District for its Covered Activities, including but not limited to any one or any combination of the following: (1) acquisition of replacement Habitat at a 1:1 ratio that is Biologically Equivalent or Superior to the property being disturbed; or (2) payment of Local Development Mitigation Fees as established by the County for commercial and industrial Development. Such contribution shall occur prior to impacts to Covered Species and their Habitats.

The Previously Approved Action's route avoids impacts in many areas to southern willow scrub by placing the trail along existing disturbances such as abandoned roads and in areas with extensive past disturbance. The trail in Reaches III and IV was moved away from any southern willow scrub (a reduction of 0.36 acre) and Reach V was specifically placed along existing maintenance roads and the shoulders the roads. There is southern willow scrub habitat and LBVI present, but the trail design was placed in the disturbances rather than in native habitat, where possible.

Further, the trail alignment along Reach VII for the Previously Approved Action was specifically chosen to avoid impacts to existing southern willow scrub and will ultimately be placed in areas of disturbance with Washington fan palm (*Washingtonia filifera*) and eucalyptus rather than southern willow scrub. This portion of the trail was surveyed in detail in 2016 in conjunction with the updated design drawings to provide a route with the least impact to southern willow scrub/mulefat scrub habitat and resultant impacts to LBVI. Reach VIII was moved to follow the river more closely rather than use existing streets, in accordance with the original trail design concepts.

The Proposed Action builds on the progress made for the project while developing the Previously Approved Action by moving the trail further outside of sensitive habitats and improves on the ongoing operation and maintenance for the project.

The trail is an anticipated feature to provide public access to PQP areas and thus is consistent with the plan. The project would not affect reserve assemblage and function. Any PQP dedication would further contribute to reserve assemblage and function. Compensation for the loss of PQP lands is discussed in Section 7.3.3, Public/Quasi-Public Land Equivalency Determination, of this report. Additional avoidance of impacts according to MSHCP Section 7 and Appendix C are discussed in Section 6 of this document. Temporary and permanent vegetation impacts are discussed in detail in Section 7, Impact Analysis and DBESP, of this document.

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SECTION 10: DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

The Riverside County Parks and Open Space District (District) as the MSHCP permittee, finds that the proposed Santa Ana River Trail, located generally located adjacent to the Santa Ana River floodplain within the Prado Basin and along the north bank of the Santa Ana River, as proposed, will impact wildlife and aquatic habitat, riparian species, riverine resources, and PQP lands within multiple areas of the project area. These impacts include indirect impacts to LBVI, SWFL, and Santa Ana sucker. The District proposes that project incorporates adequate avoidance, minimization, and/or mitigation measures to offset and reduce these impacts to a level equal to complete avoidance of these resources as follows:

Wildlife and Aquatic Habitat/Riparian Species and Riparian/Riverine Resources

Compensatory mitigation for the permanent removal of 6.2 acres of riparian vegetation communities is proposed to occur in the form of riparian vegetation restoration, the extension of existing riparian forest, the addition of habitat attributes, and the hydrological reconnection of Mill Creek in the Prado Basin to its floodplain at the upper and lower Mill Creek ponds. The focus of this effort is to create habitat attributes for LBVI, SWFL, and, potentially, tricolored blackbird in an area that is currently in recreational use. This restoration effort as mitigation for the project would seek to increase nesting habitat within these acres of Prado Basin for LBVI and SWFL, and to create foraging habitat by design. Habitat attributes that could be increased in the area would include the creation of edge zones for LBVI by extending the riparian forest areas occurring perpendicular to the creek, and creating new edge zones by establishing riparian species on the berms separating the individual ponds. Other habitat attributes include tree, shrub, and forb selection and distribution on the site that is favorable for forage and nesting habitat for LBVI and SWFL, as well as tricolored blackbird, where feasible. Mitigation in the upper and lower Mill Creek ponds proposes to replace the 6.2 acres of permanently removed riparian vegetation with 21.6 acres of compensatory mitigation, as well as the studies necessary to discover the habitat potential feasibility of the lower Mill Creek ponds (33 acres) for compensatory mitigation for riparian species in the future.

The project will create a total of 36.76 acres of temporary vegetation impacts. Of these temporary impacts, 10.98 acres are composed of riparian vegetation communities (southern willow scrub, mule fat scrub, and fresh water drainage/stream/ponded area). Mitigation for temporary impacts to 10.98 acres of riparian vegetation includes the full restoration of riparian vegetation with provisions for formal monitoring and maintenance of the restored vegetation. Temporary impacts to riparian vegetation communities will be mitigated by incorporating seed, seedlings, and adult plantings into the area of impact according to the appropriate native vegetation type, then maintained with irrigation (until plants are established) and invasive, monitoring with the use and implementation of a Habitat Mitigation and Monitoring Plan (HMMP), as well as non-native species removal, and for a period of 5 years. The native species selection for the restoration of areas temporarily impacted will include species that help to minimize wood-boring beetle impacts to the riparian forests of Prado Basin, and a consideration for species favored by tricolored blackbirds for nesting.

The project includes the restoration of areas of temporary vegetation impacts (non-riparian) with native species and pre-mitigation for future trail washout in the form of arundo removal as means to promote wildlife habitat in Prado Basin. The project will remove 25.78 acres of non-riparian, typically non-native, invasive vegetation in the project area due to temporary construction impacts, including the non-native grassland, eucalyptus woodland, developed, and disturbed vegetation communities. The project would replace these vegetation communities with the native vegetation community that would naturally occur in each area, as described for the restoration of temporary impacts to riparian vegetation communities. While the revised route does not impact coastal sage scrub, it will revegetate areas of temporary impact with coastal sage scrub where it would have naturally occurred. The pre-mitigation component of the project will remove 150 acres of arundo in an area where riparian forest was burned and subsequently replaced by arundo. In total, 175.78 acres of low-quality vegetation communities will be removed from Prado Basin to allow for wildlife habitat potential as mitigation for the project.

No direct impacts to LBVI are anticipated with the construction and implementation of the project; however, existing LBVI territories in proximity to the trail project are potentially subject to indirect impacts from loud trail users, maintenance and repair construction activities, and from cowbird parasitism. Planned mitigation for the project also includes the installation of prohibitive signage and patrols for off-trail use to help to eliminate the development/use of unofficial trails and off-trail activities within riparian habitat. The District commits to conducting a base line GIS survey of existing unofficial trails in the project area. Using the data from the base line survey, the District would formally close known spur trails with signage and other means of closure, then systematically restore spur trail areas using the methodology described in this DBESP for the mitigation of temporary vegetation impacts.

Post-construction protocol surveys for LBVI, SWFL, and YBCU will be conducted a minimum of once every three years to monitor the use and nest success of LBVI within conserved habitat, and to identify any potentially new use of the site by SWFL and YBCU. If LBVI habitat use or nesting success does not meet the MSCHP Species Objective 4 criteria or shows significant decline within the conserved habitat, then the Regional Conservation Authority (RCA) and wildlife agencies would be notified and seasonal trail closures and/or restrictions in high-priority areas during the breeding season may be implemented.

For these unavoidable impacts to riparian habitat and wildlife species, the District finds the project would present a biologically equivalent condition to the existing conditions on site, and that the riparian/riverine habitat conditions, quantities, and species abundances will be equal to the conditions that would exist if the trail were to completely avoid all impacts to riparian riverine habitats and species within the project's vicinity.

PQP Lands

The Project will create permanent impacts on 21.78 acres of PQP land in Prado Basin. The District proposes to contribute parcel APN 153-240-032 (19.9 acres) of the Hidden Valley Wildlife Area and 5.6 acres of the 10.5-acre parcel APN 121-120-023, known as the Weyerhaeuser Parcel, to the conservation goal for Core A. This would constitute a total of 25.4 acres of land transferred to PQP

land for the MSHCP that was not previously in PQP. The District also proposes the mitigations at the Mill Creek parcels to contribute to the findings of equivalence for riparian/riverine habitat value as they relate to replacement of permanently impacted PQP lands.

For these unavoidable impacts to PQP lands, the District finds that this land replacement strategy, as well as the incorporation of adequate avoidance, minimization, and/or mitigation measures proposed for the project would contribute high value land to Core A, and would restore the riparian/riverine habitat conditions, quantities, and species abundances in the project vicinity to a condition equal to the conditions that would exist if the trail were to completely avoid all impacts to PQP lands.

Signed:

Scott Bangle, General Manager
Riverside County Regional Park and Open-Space District

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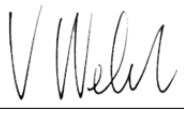
SECTION 11: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this DBESP Analysis, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: July 17, 2018 Signed: 

Vanessa Welsh, Project Manager
FirstCarbon Solutions, Inc.
San Bernardino, California

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SECTION 12: REFERENCES

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Determination of Biologically Equivalent or Superior Preservation Addendum

Santa Ana River Trail Phases 2, 2A, and 3A

June 2, 2023

Prepared for:

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Table of Contents

Contents

LIST OF TABLES

Contents

LIST OF APPENDICES

APPENDIX A

Exhibits

APPENDIX B

Acronyms and Abbreviations

BMP	best management practice
BRTR	Biological Resources Technical Report
BUOW	burrowing owl
CAGN	California gnatcatcher
CDFW	California Department of Fish & Wildlife
CEQA	California Environmental Quality Act
CFG Code	California Fish and Game Code
CWA	Clean Water Act
DBESP	Determination of Biologically Equivalent or Superior Preservation
DG	decomposed granite
HMMP	Habitat Mitigation and Monitoring Plan
LBVI	least Bell's vireo
MBTA	Migratory Bird Treaty Act
MCVII	Manual of California Vegetation, 2nd Edition
MOU	Memorandum of Understanding
MSHCP	Multiple Species Habitat Conservation Plan
NEPA	National Environmental Policy Act
OCWD	Orange County Water District
OHWM	ordinary high water mark
PQP	Public/Quasi-Public
RCA	Regional Conservation Authority
RCRPOSD	Riverside County Regional Park and Open Space District
RCTC	Riverside County Transportation Commission
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SART	Santa Ana River Trail
SOP	Standard Operating Procedures
SR	State Route
SWFL	Southwestern willow flycatcher
SWRCB	State Water Resources Control Board
TMP	Traffic Management Plan
USACE	United States Army Corps of Engineers
USFWS	United State Fish & Wildlife Service
YBCU	yellow-billed cuckoo

1.0 Introduction

In 2018, a Determination of Biologically Equivalent or Superior Preservation (DBESP) was prepared for the Santa Ana River Trail (SART) Reaches I through IX, which included a 12.8-mile section of the SART located within the cities of Corona, Eastvale, Norco, and unincorporated Riverside County, California. This 2023 DBESP Addendum evaluates Phases 2, 2A, and 3A (Proposed Project), which include a 2.79-mile section of the SART (previously Reaches II through VII) located in unincorporated Riverside County, California. This Addendum is intended to document the biological resources associated with the Proposed Project due to modifications in the trail design previously evaluated in the 2018 DBESP for these SART phases.

The Riverside County Transportation Commission (RCTC) in conjunction with the Riverside County Parks and Open Space District (District), in cooperation with the U.S. Army Corps of Engineers (USACE) proposes to construct the Proposed Project, a 2.79-mile section of the SART (see Section 4.0 for a detailed explanation of the Proposed Project). This 2.79-mile segment of the overall 110-mile SART system is located within unincorporated Riverside County, California. Once constructed, the Proposed Project area would encompass approximately 65.55 acres within the Prado Basin (see Exhibit 1: Regional Location Map). When complete, the SART will provide the only direct trail connection through San Bernardino, Riverside, and Orange counties to the Pacific Ocean. The Proposed Project would facilitate pedestrian, equestrian, and bicycling trail use with nature viewing opportunities within Prado Basin and would provide a non-motorized transit route that does not otherwise exist in the area.

Based upon extensive coordination with the USACE, the Proposed Project is largely limited to existing roads and pathways and is designed to reduce impacts to natural habitats (e.g., coastal sage scrub, riparian). Exhibit 2: Comparison of Proposed Project and Previously Approved Project shows a comparison of the 2018 DBESP trail alignment and the current proposal in the 2023 DBESP Addendum. Excavation and grading will be required to construct the trail. Depth of excavation may be as deep as 26 feet below ground surface at the crossings (for most of the trail the grading will be minimal) and soils will either be exported off-site to an approved disposal facility or utilized in other areas of the proposed trail (see Section 4.0). It should be noted that the depth of excavation does not include the trail over excavation; the trail over excavation consists of further excavation and re-compaction under the trail's footprint and will be per the geotechnical recommendation. Access points to the trail are also discussed in Section 4.0.

The Proposed Project area is located in western Riverside County and within areas covered by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and is considered a Conditionally Compatible Use under Section 7.4.2 of the MSHCP. Within the boundaries of the MSHCP, the Proposed Project area falls within Core A, Subunit 2—Prado Basin, but is not located within any Criteria Cells (see Exhibit 2: Comparison of Proposed Project and Previously Approved Project). Core A does include a wildlife corridor linkage extending from the Peninsular Ranges (Cleveland National Forest) to the Prado Basin (see Exhibit 3: MSHCP Criteria Areas Map). MSHCP riparian/riverine habitats occur within multiple areas of the Proposed Project area including Public/Quasi-Public (PQP) Lands. The riparian/riverine areas are generally adjacent to the Santa Ana River floodplain within the Prado Basin.

DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION ADDENDUM

1.0 INTRODUCTION

The Proposed Project is anticipated to impact MSHCP Riverine/Riparian resources; therefore, the MSHCP requires this Addendum to the approved 2018 DBESP analysis previously approved by the United State Fish and Wildlife Service (USFWS) and California Department of Fish & Wildlife (CDFW) in August 2018 (USFWS and CDFW 2018). The impact analysis is contained within Section 7.0 of this Addendum.

This Addendum also presents the results of a comparison of the existing 2023 SART alignment to the 2018 SART alignment DBESP analysis as required under Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools of the MSHCP.

This Addendum analysis includes a detailed discussion of the on-site riparian/riverine habitat that are proposed to be impacted compared to the riparian/riverine habitat that was analyzed in the 2018 SART DBESP, and incorporates the 2018 SART DBESP avoidance, minimization, and/or mitigation measures. It should be noted that these avoidance measures are consistent with the measures in the 2018 SART DBESP and would include the use and/or improvement of existing culvert and water crossing infrastructure, trail narrowing in areas of sensitive habitat, and informational signage and public outreach, among others. The Proposed Project will result in less permanent impacts than previously approved; therefore, the mitigation contemplated by the 2018 DBESP will fulfill the mitigation requirements for the Proposed Project. Temporary impacts are higher than previously approved, and include laydown yards, placement of rock riprap, and anticipated equipment turn-around areas. In addition, based upon coordination with the USACE, some slope areas would be revegetated with native plant species. These areas would need to be determined during final design and would be based upon USACE coordination, since portions of the trail alignment have vegetation restrictions, due to flood control considerations.

The District is the lead agency under the California Environmental Quality Act (CEQA) and the USACE is the lead agency under the National Environmental Policy Act (NEPA). A joint Environmental Assessment/Finding of No Significant Impact/Initial Study/Mitigated Negative Declaration will be prepared for the Proposed Project by the USACE and the District in compliance with CEQA and NEPA, including required technical analysis and reports.

The District's Master Lease Agreement with USACE, which has a 25-year lease term, and expires on August 19, 2025, is not proposed to be changed with the Proposed Project.

2.0 Santa Ana River Trail History

In 1976, the SART was established as a national recreational trail by the then Secretary of Interior, Thomas Kleppe. On June 27, 2006, the counties of Orange, Riverside, and San Bernardino; Santa Ana Watershed Project Authority; and the Wildlands Conservancy signed a Memorandum of Understanding (MOU) (and subsequent addendum on August 16, 2011) to coordinate parkway planning along the Santa Ana River. In the 2006 MOU and 2011 addendum, these agencies identified a common desire to create a recreational parkway primarily adjacent to the Santa Ana River. The parkway would include a dual-track Class I multi-use path/natural surface trail (RCRPOSD 2021).

The SART is a multi-use trail complex that runs alongside the Santa Ana River. When completed, it will be the longest multi-use trail in Southern California, spanning 100 miles between San Bernardino and Orange counties. As envisioned, the trail connecting San Bernardino, Riverside, and Orange counties would be a dual-track trail consisting of 1) paved Class I and Class II Bikeways for bicyclists and pedestrians and 2) decomposed granite (DG) surfaced riding and hiking trail for equestrians, mountain bicyclists, and hikers and would be non-motorized. The SART is currently 60 percent complete and has been subject to redesign based on sensitive habitat, protected mitigation lands and ongoing coordination with USACE and local stakeholders. For the Proposed Project, these redesign changes reflect required modifications identified by the USACE and stakeholders and are based upon over four years of close coordination, including bi-monthly meetings. The overall intent of these trail modifications was to reduce impacts to sensitive resources, while providing a high-quality trail for users. When finished it will run 110 miles – from the San Bernardino County National Forest to the Pacific Ocean at Huntington Beach where the trail ends. There are currently two gaps in the trail: from Green River in Orange County to Hidden Valley Wildlife area in Riverside County; and from Waterman Avenue in San Bernardino to the National Forest boundary line near unincorporated Mentone (RCRPOSD 2021).

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3.0 Proposed Project Multiple Species Habitat Conservation Plan Overview

The MSHCP is a comprehensive, multijurisdictional habitat conservation plan and Natural Communities Conservation Plan. The MSHCP focuses on the conservation of species and their associated habitats in western Riverside County. The MSHCP allows Permittees to obtain "take" of plant and animal species identified by the MSHCP. Regulation of "take" of threatened, endangered, and rare species is authorized by the wildlife agencies (USFWS and CDFW). The wildlife agencies allow "take" authorization for otherwise lawful actions (e.g., public and private projects) in exchange for the assembly and management of a coordinated Reserve.

The MSHCP plan area encompasses approximately 1.26 million acres and includes all unincorporated land in Riverside County west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Eastvale, Jurupa Valley, Wildomar, Menifee, San Jacinto, Hemet, Perris, Calimesa, Beaumont, Banning, Moreno Valley, Riverside, Corona, Norco, Canyon Lake, Lake Elsinore, Murrieta, and Temecula. The Conservation Area, or Reserve, will be assembled from the area referred to as the Criteria Area, which consists of one-quarter-section cells of approximately 160 acres, each with specific descriptions, or criteria, identifying the conservation requirements. The Conservation Area will total 500,000 acres when complete, which is projected to occur by 2028.

Of those 500,000 acres, 347,000 acres were already conserved at the time the MSHCP was adopted in 2003. The 347,000 acres are referred to as PQP Lands, as they are under a type of government ownership where development is not likely. The cities and the County of Riverside, as the Local Permittees, have the responsibility to build out the remaining acreage of the Reserve, which equates to 153,000 acres by 2028. It is through the development and entitlement process that the majority of the 153,000 acres will be assembled for Conservation.

RCTC and the District are Permittees to the MSHCP adopted by the County of Riverside in June 2003. As a Permittee, the District has the responsibility to implement and adhere to the provisions of the MSHCP as well as the Implementing Agreement issued by the USFWS and CDFW. A summary of the obligations specific to implementation is as follows:

- Adopt and maintain resolutions as necessary to implement the requirements and fulfill the purposes of the Permits, the Multiple Species Habitat Conservation Plan (MSHCP), and the Implementing Agreement for covered activities. Such requirements include compliance with: (1) the policies for the protection of species associated with riparian/riverine areas and vernal pools as set forth in Section 6.1.2 of the MSHCP, (2) the policies for the protection of Narrow Endemic plant species as set forth in Section 6.1.3 of the MSHCP, (3) the urban/wildlands interface guidelines as set forth in Section 6.1.4 of the MSHCP, and (4) the best management practices and all other requirements of Section 7.0 and Appendix C of the MSHCP. The requirements also include conducting surveys as set forth in Section 6.3.2 of the MSHCP.

- Contribute to MSHCP implementation and the Reserve Assembly as determined by the District for covered activities, including one or both of the following: (1) acquisition of replacement habitat at least a 1:1 ratio that is biologically equivalent or superior to the property being disturbed or (2) payment of Local Development Mitigation Fees as established by the County of Riverside for commercial and industrial development. Such contribution shall occur prior to impacts to covered species and their habitats.
- Manage and monitor land owned or leased within the MSHCP Conservation Area that has been set aside for conservation purposes pursuant to Section 5.0 of the MSHCP; funding for such management and monitoring shall be provided pursuant to Section 8.0 of the MSHCP.

3.1 Proposed Project Relationship to the Multiple Species Habitat Conservation Plan

The establishment of a trail along the margins of the Prado and Santa Ana River is a Conditionally Compatible Use under Section 7.4.2 of the MSHCP and would satisfy a primary MSHCP objective of "provid[ing] recreational and educational opportunities within the MSHCP Conservation Area, while providing adequate protection for the biological resources" (RICP 2003).

The SART was included in the MSHCP Master Plan as a planned trail with impacts associated with the trail development included in the assessment. MSHCP Exhibit 7.4, Planned Trails within Criteria Area, shows a trail paralleling the Santa Ana River throughout Riverside County. The SART Master Plan trail alignment avoided following the river in several areas, due to construction constraints and to avoid impacts to sensitive habitat including areas that are utilized as mitigation lands.

3.2 Proposed Project Multiple Species Habitat Conservation Plan Lands

The Prado Basin covers approximately 4,000 acres, and is within the MSHCP Conservation Area, residing on PQP Lands maintained and operated by USACE, Riverside County, and Orange County Water District (OCWD). More specifically, the Prado Basin and Santa Ana River are located within MSHCP Core A, and sections of the Santa Ana River act as a Riparian Linkage: connecting Orange County, to the west, with San Bernardino County, to the north.

The Proposed Project is not located within a Criteria Cell or Cell Group. The Proposed Project is however, located within Core A (Table 1: Proposed Project Area MSHCP Lands) (see Exhibit 3: MSHCP Criteria Areas Map). In total, the Proposed Project area would be located on 9.43 acres of non-federal land within Core A, subject to MSHCP compliance, and 1.63 acres of non-federal land outside of Core A. In total, of the Proposed Project area would be located on 44.33 acres owned and managed by the USACE (30.38 acres within Core A on lands, and 13.95 acres outside Core A), which is not a participating entity in the Western Riverside MSHCP.

Table 1. Proposed Project Area Multiple Species Habitat Conservation Plan Lands

Jurisdiction	MSHCP Core A (acres)	MSHCP outside Core A (acres)	Total
Federal	30.38	13.95	**44.33**
Non-federal	9.43	1.63	**11.05**
Total	**39.81**	**15.57**	**55.38**

Key:
MSHCP = Multiple Species Habitat Conservation Plan

3.2.1 Existing Core A

As shown in Exhibit 3: MSHCP Criteria Areas Map, existing Core A consists of Prado Basin and the Santa Ana River, located in the northwest region of the Plan Area. This southwest-to-northeast trending swath of land is composed largely of PQP Lands owned by a variety of entities, but it also contains a small number of privately-owned lands. Core A also functions as a linkage, connecting Orange County to the west with San Bernardino County to the north.

Core A is constrained on all sides by existing urban development and agricultural use, and planned land uses surrounding Core A consist largely of high-impact land uses such as city and community development. Therefore, high quality riparian habitat within Core A and along the edges must be maintained for species including the Southwestern willow flycatcher (SWFL) (*Empidonax traillii extimus*), yellow warbler (*Setophaga petechia*), yellow-breasted chat (*Icteria virens*), Western yellow-billed cuckoo (YBCU) (*Coccyzus americanus occidentalis*). Similarly, maintenance of existing floodplain processes and water quality along the Santa Ana River is also important to Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) and arroyo chub (*Gila orcuttii*). Management entities in existing Core A include the County of Riverside Parks and Open Space District, USACE, OCWD, and California Department of Parks and Recreation.

3.2.2 Proposed Project Area Lands in Federal Ownership

In total, 39.55 acres of the Proposed Project area are in Federal ownership within Core A on lands owned and managed by the USACE, and 15.60 acres are located outside of Core A.

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4.0 Proposed Project Description

4.1 Definition of Proposed Project Site

The Proposed Project (SART Phases 2, 2A, and 3A) is located within the Prado Dam Flood Control Basin[1] area of the Santa Ana River in unincorporated Riverside County. The Prado Dam Flood Control Basin area is located approximately 26 miles east of the Pacific Ocean and 35 miles southeast of downtown Los Angeles. The Proposed Project site is located within the northwestern portion of Riverside County at the juncture of the administrative boundaries of Riverside, San Bernardino, and Orange counties and south and southeast of the City of Corona's jurisdictional boundaries (see Exhibit 1: Regional Location Map).

The east and west improvement limits of the Proposed Project extend from approximately Rincon Street to the east to Auto Center Drive to the west and are shown in Exhibit 4: Proposed Action. As shown in Exhibit 4, the Proposed Project intersects with the following roadways, including Rincon Street, Butterfield Drive, and Auto Center Drive. The Proposed Project limits are the Prado Dam Flood Control Basin area to the north, State Route (SR)-91 to the south, Rincon Street to the east, and SR-71 to the west. Access to the Proposed Project site is via regional freeways (SR-91 and SR-71) and local roads (Rincon Street, Butterfield Drive, Auto Center Drive, and Corydon Street). The following Assessor Parcel Numbers are associated with the Proposed Project:

- 101110002
- 101170001
- 102020002
- 102020005
- 102020031
- 119200009
- 121120024
- 121130002

4.2 Proposed Project

The Proposed Project consists of trail improvements that would complete a portion of the larger 110-mile regional SART system. Specifically, the Proposed Project includes a 2.79-mile dual-track multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. It would entail construction of three (3) new trail segments: Phases 2, 2A, and 3A (previously Reaches III-VII). These trail segments include the following lengths and are shown in Exhibit 4: Proposed Action:

- Phase 2 (previously Reach VI-VII): 3,450 feet
- Phase 2A (previously Reach IV-V): 7,231 feet
- Phase 3A (previously Reach III): 4,046 feet

[1] The Prado Dam is a flood risk management project constructed, owned, and operated by the USACE, Los Angeles District.

Currently, only portions of the trail have been completed or are being constructed. Once constructed, the trail would be Americans with Disabilities Act compliant and follow the California Department of Transportation Highway Design Manual guidance for bicycle paths.

The following construction items are included in the Proposed Project:

- Class I bicycle path with pedestrian and equestrian path separated by a split rail fence with a general design, as follows:
  - Eight- to ten-foot bicycle path travel way with two-foot shoulders
  - Five percent max slope
  - Two percent max crossfall path and shoulder slopes
  - Minimum 2 to 1 foot slope ratio for cut / fill slopes
- Signage and striping along the trail
- Implementation of drainage improvements
- Application of native hydroseed mix along slope areas of the new trail phases

At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 11 feet wide on the bridges and would be approximately 20 feet wide at the Temescal Wash crossing. A combined paved trail will also be required for a portion of the trail along West Rincon Street and Corydon Street within Phase 2 (previously Reach VI-VII) due to right-of-way constraints and existing Southern California Edison overhead powerlines.

Exhibit 4: Proposed Action shows the proposed trail alignment and preliminary slope, embankment, construction vehicle access points and roads, and potential construction and staging/laydown areas.

4.2.1 Drainage Crossings/Bridge Types

Exhibit 5: Culverts and Waterbody Crossings shows the location of the proposed drainage crossings along the trail phases. In Phase 2 (previously Reaches VI-VII), a partially buried box culvert extending approximately 100 feet across Temescal Wash is proposed. Clear-span bridges ranging in length from about 100-feet to 180-feet would be used to cross two un-named drainages located in Phase 2A (previously Reach IV-V).[2] Exhibit 6: Typical Trail and Bridge Sections shows the typical trail and bridge sections.

[2] Note: The actual lengths of the bridges will be determined based upon a detailed bridge type analysis and selected accordingly.

To protect the trail as it crosses drainages, riprap[3] would be installed in various locations along the alignment and is shown in Exhibit 5: Culverts and Water Crossings. Table 2: Preliminary Riprap Quantities shows the estimated quantities by trail phase.

Table 2. Preliminary Riprap Quantities

Phase	DBESP 2018 Reach	Riprap Location	Riprap Quantity (square feet)	Riprap Quantity (cubic yards)
3A	III	1	7,670	1,050
		2	12,560	1,540
2A (west)	IV	3	7,640	1,010
		4	380	45
		5	4,165	440
		6	8,485	1,170
2A (east)	V	7	5,445	610
		8	3,350	340
		9	265	30
2	VI and VII	10	2,410	100
Total			**52,370**	**6,335**

Source: Stantec Consulting Services Inc. 2023
Key: DBESP = Determination of Biologically Equivalent or Superior Preservation

4.2.2 Trail Access

Trail access to each of the Phases would be achieved as follows:

- Phase 2 (previously Reaches VI-VII): Stagecoach Road/Corydon Street (Stagecoach Park area) and Rincon Street/Smith Avenue (Corona Airport area)
- Phase 2A (previously Reaches IV-V): Auto Center Drive (western portion of trail) and Butterfield Drive (eastern portion of trail)
- Phase 3A (previously Reaches III): Auto Center Drive/Railroad Street (U.S. Army Corps of Engineers office)

4.3 Construction

The construction phasing and activities are expected to take 12 months to complete for each individual trail phase. Each trail phase will include site preparation, clear and grub, grading, over excavation and re-compaction, drainage improvements, and construction of an asphalt-concrete bicycle trail and DG pedestrian trail. Two prefabricated bridges are proposed within Phase 2A (Reach IV-V) to avoid impacts to existing natural drainages. Low flow crossings with culverts are proposed within Phases 2, 2A, and 3A

[3] Note: Riprap is a permanent layer of large, angular stone, cobbles, or boulders typically used to armor, stabilize, and protect the soil surface against erosion and scour in areas of concentrated flow or wave energy crossing.

(Reaches III-VII). A box culvert crossing is proposed in Phase 2 (Reach VI-VII) for the Temescal Wash At grade dip crossings without culverts are also proposed within Phases 2 and 2A (Reach IV-VII).

Although preliminary engineering is still underway, current earthwork calculations are presented in Table 3: Preliminary Grading Quantities. As noted below, a total of approximately 61,250 cubic yards (raw earthwork cut of 50,408 cubic yards and net removal of 10,842 cubic yards of pavement sections) of cut would result and a total of approximately 37,388 cubic yards of fill are proposed, resulting in a total of approximately 23,911 cubic yards of remaining soil that would be exported off site to a landfill or other permitted location. Therefore, assuming a typical tandem-axle dump truck with an average payload capacity of 14 cubic yards, export would be expected to generate approximately 1,708 truck trips to remove the remaining 23,911 cubic yards of soil.

Table 3. Preliminary Grading Quantities

Trail Phase	Raw Earthwork (cubic yards)			Pavement Sections (cubic yards)		
	Cut	Fill	Net	Multi-use Path	Natural Surface Trail	Net
3A	44,744	12,082	-32,662	-2,411	-1,291	-3,702
2A	5,180	18,543	13,363	-3,474	-2,171	-5,645
2	484	12,082	6,229	-1,333	-161	-1,495
Total*	**50,408**	**37,338**	**-13,070**	**-7,218**	**-3,623**	**-10,842**

Source: Stantec Consulting Services Inc. 2023

Construction activities would be undertaken during permitted time periods, per the Riverside County Municipal Code.

4.3.1 Construction Vehicle Access

Construction vehicle access would be achieved via SR-91 and then via local roads, depending on the trail phase being constructed. In addition, and in order ensure continuous and safe operation of the local roadways and intersections and worker safety during Proposed Project construction, a Traffic Management Plan (TMP) would be prepared and implemented. The TMP would assist to minimize delays by ensuring proper signage is posted to advise motorist and pedestrian of activities in the construction zone. In addition, it is also intended to ensure that safe traffic and work zones areas are in place during roadside construction activities. The TMP provides worker and public safety from vehicles and equipment both outside and within roadside worksites.

4.3.2 Construction Vehicle and Material Laydown

Construction vehicle and materials staging/laydown would be identified pending finalization of design and construction documents and would largely be determined by the contractor. However, it is anticipated that these areas would include only public property and no private property would be required. Exhibit 4: Proposed Action shows the preliminary location of proposed staging/laydown areas.

4.3.3 Utilities

Table 4: Existing Utilities Which May Require Relocation and/or Modifications includes the existing utilities located within the Proposed Project area and which may require relocation and/or modifications.

Table 4. Existing Utilities Which May Require Relocation and/or Modifications

Owner	Utility	Location	Adjustment Required?	Relocation Required?	Description
Southern California Edison	Overhead power lines	Phase 2	Potential guy wire / guy anchor	No	Guy wires may need to be adjusted to accommodate trail
SoCalGas	Phases 2A and 3A	Phases 2A and 3A	No	No	—
City of Corona Department of Water & Power	Recycled Water	Phase 2	Yes	Yes	Waterline appurtenances will be relocated/adjusted
Santa Ana Watershed Project Authority	Inland Empire Brine Line	Phase 2A	No	No	—

Source: Stantec Consulting Services Inc. 2023

4.3.4 Outgrant

The construction of the Proposed Project within the Prado Dam Flood Control Basin area will require the acquisition of an Outgrant by the USACE, Los Angeles District. An Outgrant refers to grant of interest or right to one to use government real property by a lease, easement, license, or permit. It is an agreement whereby a private party may, depending on the type of real estate instrument issued, enjoy an interest in or use real property.

4.4 Operations & Maintenance

The District has established Standard Operating Procedures (SOP) for managing and maintaining the trails. Those SOPs are intended to define and establish public safety and natural resource protection during routine patrol and maintenance. The Proposed Project will be patrolled by District Rangers three to five days per week, based on active use periods. Rangers will monitor the area for disturbance, damage, or safety issues, which may include illegal off highway vehicle use, homeless encampments, and trail hazards with a focus on environmentally sensitive areas. The Homeless SOP and Homeless Eviction SOP has been developed to address illegal encampments along the SART and within Open Space areas.

In addition, the 2009 Santa Ana River Parkway Minimum Maintenance Guidelines provide minimum maintenance requirements that would be followed. The District Trails Management Team would conduct maintenance inspections of the Proposed Project weekly as well as after high winds and heavy rain events to remove hazards such as downed or hazard limbs and erosion. Weekly maintenance may include soil and debris removal, tree trimming, and fence repair. The District Maintenance Team would be responsible for conducting annual weed abatement. To reduce invasive and non-native plant species along the trail corridor, and to reduce potential water quality impacts, routine scheduled maintenance will

include horse manure removal by the District at least once a month. Environmentally sensitive areas will be posted with signage at all access points to discourage entry (RCRPOSD 2021).

No lighting along the trail is proposed. Interpretive signage to notify and educate the public as to trail regulations and points of interest will be posted at the staging area and trail heads. The purpose of the interpretive signage is to help improve the likelihood that trail regulations are followed, including but not limited to regulations prohibiting off-leash dog use, off-trail hiking, littering, and camping. Interpretative signage will also serve to educate the public about the ecology of Prado Basin. The existing District website, http://www.rivcoparks.org/, will be utilized to reinforce regulations and inform the public about the trail—including any trail closures, construction, and safety information.

4.5 Project Schedule

The Proposed Project is anticipated to be initiated in 2024 and be completed by 2025 with construction expected to last 12 months for each trail phase.

- Phase 2: Construction to begin in September 2024 and end in September 2025
- Phase 2A: Construction to begin in September 2024 and end in January 2025[4]
- Phase 3A: Construction to begin in September 2024 and end in January 2025[5]

5.0 Environmental Setting

5.1 Project Biological Data Summary

Of the 146 species covered by the MSHCP, no surveys are required for 106 of the Covered Species of plants and wildlife within the MSHCP boundaries. MSHCP-designated survey areas are identified for 34 of the Covered Species for which surveys (i.e., habitat assessments and focused surveys, if needed) are required within areas of suitable habitat. The remaining six Covered Species are associated with riparian/riverine areas and vernal pools which are surveyed for when suitable habitat is present. The Proposed Project area occurs within MSHCP-designated survey areas for the for the burrowing owl (BUOW) (*Athene cunicularia*) - a MSHCP Criteria Area species —in addition to three MSHCP narrow endemic plant species: San Diego ambrosia (*Ambrosia pumilla*), Brand's phacelia (*Phacelia stellaris*), and San Miguel savory (*Satureja chandleri*). These species are not expected to occur within the Proposed Project area. Based on the known recorded occurrences and existing habitat on site, the three narrow endemic plant species listed above have a low potential to occur within the Proposed Project area. Focused sensitive plant surveys were conducted in all vegetated areas in the Proposed Project area. No narrow endemic plant species were observed during the focused plant surveys. Therefore, the Proposed Project area is considered absent of all potentially occurring narrow endemic plant species.

[4] Note: The westerly portion of Phase 2A is dependent upon USACE spillway construction project scheduling and therefore, its timing is subject to change.
[5] Note: This phase is dependent upon USACE spillway construction project scheduling and therefore, its timing is subject to change.

The MSHCP has specific conservation objectives for riparian/riverine areas, vernal pools, and fairy shrimp as defined in Section 6.1.2 of the MSHCP. No vernal pools or suitable habitat for vernal pool plant or wildlife species were determined to exist within any portions of the Proposed Project area. The Proposed Project area was determined to contain riparian/riverine areas associated with the encompassing reach of the Santa Ana River and its tributaries. These riverine features support arroyo willow thickets (described as southern willow scrub in the 2018 DBESP) and mule fat thicket habitats (described as mule fat scrub in the 2018 DBESP), which provide suitable habitat for species associated with riparian/riverine areas as defined in Section 6.1.2 of the MSHCP, including the least Bell's vireo (LBVI) (*Vireo bellii pusillus*), and SWFL. Additionally, portions of the Proposed Project area that include riparian habitat have been designated by the USFWS as Critical Habitat for LBVI and SWFL.

The process to determine potential impacts to habitat and species resulting from the development of the Proposed Project included site visits. Site visits were conducted to discuss the various Proposed Project routes, during which time the existing environmental conditions and biological resources that were observed or otherwise detected were recorded. These visits were in addition to the habitat assessment, aquatic resources delineation, and focused surveys. Special attention was directed to the environmental setting of the proposed route, including those areas potentially supporting sensitive plant and wildlife species, specifically BUOW and narrow endemic plants, and to assess the possible presence of vernal pools, jurisdictional features, and riparian/riverine habitat.

Parameters assessed regarding the habitat requirements for sensitive species included plant communities, soil conditions, presence of indicator species, slope, aspect, and hydrology. Focused surveys were conducted for BUOW, LBVI, SWFL, YBCU, and narrow endemic plant species according to protocols.

Species observed during the site visits and protocol surveys are included in Section 4.3 of Appendix B (Biological Resources Technical Report [BRTR]). Suitable breeding and foraging habitat for the BUOW was determined to exist within limited portions of the Proposed Project area. Focused surveys were conducted for BUOW in 2021, the results of those surveys are provided in Appendix F of the BRTR (Appendix B of this 2023 DBESP Addendum). No BUOW were observed during the 2021 focused surveys for BUOW.

In addition to the MSHCP requirements, other biological resources constraints associated with the Proposed Project area were identified. Additionally, portions of the Proposed Project area contain suitable nesting habitat for bird species protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503 and 3511 (CFG Code).

A formal aquatic resources delineation was conducted in 2021. The delineation documented aquatic resources in Phases 2, 2A, and 3A of the Proposed Project area that support waters, wetlands, and/or streambeds, which may be considered jurisdictional by USACE, Regional Water Quality Control Board (RWQCB), and CDFW. Any impacts to jurisdictional features would require permitting with the appropriate regulatory agencies pursuant to Sections 404 and 401 of the federal Clean Water Act (CWA), the State Porter-Cologne Water Quality Act, and Section 1600 of the CFG Code. Mitigation to offset impacts to jurisdictional features would be identified during the regulatory permitting process. When final design drawings are prepared, a mitigation plan will be developed to avoid any impacts or permanent losses.

5.1.1 Documentation of Biological Data

The following biological surveys and reports by Stantec were utilized for the preparation of this 2023 DBESP Addendum:

- 2022 Biological Resources Technical Report, Santa Ana River Trail Phases 2, 2A, and 3A, Riverside County, California
- 2022 Aquatic Resources Survey Report and Preliminary Jurisdictional Assessment Santa Ana River Trail Phases 2, 2A, and 3A, Riverside County, California
- 2021 Santa Ana River Trail Project Phase 2, 2A, and 3A Burrowing Owl Habitat Assessment and Focused Surveys Memo, Riverside County, California
- 2021 Results of Focused Surveys for the Western Yellow-billed Cuckoo, Southwestern Willow Flycatcher, and Least Bell's Vireo for the Santa Ana River Trail Project, Riverside County, California (Permit No. TE824793)

5.1.2 Field Reconnaissance Surveys

The habitat assessment and reconnaissance-level surveys were conducted on May 6, 2021, to identify and assess habitat that may be capable of supporting special-status plant or wildlife species and determine the potential need for additional focused surveys for special-status resources within the Proposed Project area is included in Appendix B. Focused surveys conducted for riparian bird species and BUOW in 2021 are included in Appendices B. The 2021 BUOW surveys were conducted in in accordance with the Burrowing Owl Survey Instructions for the MSHCP (RCA 2006). The riparian bird surveys included focused surveys for SWFL and LBVI, both federally and state-listed as endangered, and YBCU; federally listed as threatened and state-listed as endangered and followed USFWS accepted protocols.

5.2 Existing Conditions

5.2.1 Physical Conditions

The Proposed Project is located adjacent to the Santa Ana River, the Prado Basin, and the Corona Municipal Airport within the Jurupa Valley area of Riverside County. Elevations within the Proposed Project range from approximately 500 to 600 feet (152 to 183 meters) above mean sea level as you move west to east.

5.2.2 Topography, Hydrology, and Soils

The Santa Ana River flows east-west and is the largest river in Southern California—spanning 96 miles—originating from the San Bernardino Mountains in the east and draining into the Pacific Ocean in the City of Huntington Beach. The SART is located entirely within the Santa Ana River watershed, which spans 2,650 square miles across four counties (Santa Ana RWQCB 2018). The SART is located within the Santa Ana River Canyon, in the western portion of Riverside County, with Chino Hills to the north and the Santa Ana Mountains to the south. The Proposed Project area is adjacent to Prado Basin in its western section, and then follows the Santa Ana River north through the cities of Corona, Eastvale, and Norco.

The Proposed Project area contains soils with well-drained fine- sandy to gravelly sand and loam profiles originating from granitic sources that are found in alluvial fans and floodplains. Soils are discussed in further detail in the BRTR, provided as Appendix B to this 2023 DBESP Addendum.

5.2.3 Riparian Habitat

The Proposed Project area contains riparian/riverine areas occurring in all three phases of the Proposed Project, SART Phases 2, 2A, and 3A. All drainage features and associated vegetation within the Proposed Project routes are considered riparian/riverine areas under the MSHCP. Aquatic resources within 100 feet of the Proposed Project area (Aquatic Resources Survey Area) were delineated on May 6 and December 8, 2021, and June 9 and 16, 2022. Details of the results are included in Appendix D - Aquatic Resources Survey Report and Preliminary Jurisdictional Assessment of the BRTR (Appendix B of this 2023 DBESP Addendum). Drainages with an ordinary high-water mark (OHWM), three-parameter wetlands, and sensitive riparian vegetation were mapped in the Aquatic Resources Survey Area. The mapped waters and wetlands are under the jurisdiction of USACE, State Water Resources Control Board (SWRCB)/Santa Ana RWQCB, and/or CDFW.

Several of the drainage features are soft-bottomed ephemeral drainages that provide beneficial functions and values as they flow into the Prado Basin and maintaining these functions and values of riparian areas are to be maintained per the MSHCP. These functions and values of these riparian areas and potential wetland areas are assessed by both self-sustaining properties of drainage features as well as the benefits to the system based on these properties. Riparian and wetland functions generally include the ability for groundwater recharge, the ability to reduce flood damage, providing fish and shellfish habitat, preventing water quality degradation, preventing excess nutrients from entering aquifers and produce food, sediment stabilization, and wildlife habitat. Riparian and wetland values include the use of the area for recreation, educational or scientific value, whether the area has unique species or archaeological sites, visual and aesthetic qualities, and the ability to support threatened or endangered species. The riparian vegetation provides suitable habitat for the federally listed LBVI and SWFL. These species, and further discussion of the riparian and wetland functions and values, are discussed in detail in Section 7 (Impact Analysis and 2023 DBESP Analysis).

Determinations of jurisdictional waters, wetlands, and riparian habitat in this report were based on current conditions, (i.e., normal circumstances) and were made in accordance with relevant USACE, SWRCB and CDFW guidance. Determinations are subject to verification by the USACE, Santa Ana RWQCB, and CDFW. Stantec advises all interested parties to treat the information contained herein as preliminary pending verification of jurisdictional boundaries by the regulatory agencies.

5.2.4 Wildlife

5.2.4.1 Common Wildlife

The Proposed Project area provides habitat for wildlife species commonly occurring in riparian, scrub, and disturbed and developed communities.

Commonly found species observed within the Proposed Project area include, but are not limited to:

- Baja California treefrog (*Pseudacris hypochondriaca*)
- common side-blotched lizard (*Uta stansburiana*)
- western fence lizard (*Sceloporus occidentalis*)
- Anna's hummingbird (*Calypte anna*)
- black phoebe (*Sayornis nigricans*)
- California towhee (*Melozone crissalis*)
- house finch (*Haemorhous mexicanus*)
- mourning dove (*Zenaida macroura*)
- California ground squirrel (*Ostospermophilus beecheyi*)
- desert cottontail (*Sylvilagus audubonii*)

A complete list of wildlife species observed during the habitat assessment survey is included in Appendix B of this 2023 DBESP Addendum.

5.2.4.2 Special-Status Wildlife

Seven special-status bird species, coastal California gnatcatcher (CAGN) (*Polioptila californica californica*), California horned lark (*Eremophila alpestris actia*), LBVI, Lawrence's goldfinch (*Spinus lawrencei*), turkey vulture (Cathartes aura), yellow-breasted chat (*Icteria virens*), and yellow warbler (Setophaga petechia) were observed in the survey area during 2021 surveys (see Appendix B of this 2023 DBESP Addendum). Suitable habitat occurs within the Proposed Project area for an additional 13 sensitive wildlife species.

These include:

- Blainville's horned lizard (=coast horned lizard) (*Phrynosoma blainvillii*)
- Orange-throated whiptail (*Aspidoscelis hyperythra*)
- coast mountain kingsnake (San Bernardino population) (*Lampropeltis multifasciata*) (=*Lampropeltis zonata parvirubra*)
- two-striped garter snake (*Thamnophis hammondii*)
- Western yellow-billed cuckoo
- burrowing owl
- long-eared owl (*Asio otus*)
- SWFL
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
- western mastiff bat (*Eumops perotis californicus*)
- pocketed free-tailed bat (*Nyctinomops femorosaccus*)
- western yellow bat (*Lasiurus xanthinus*)
- pallid bat (*Antrozous pallidus*)

A list of the 29 sensitive wildlife species known to occur in the region is included in Appendix B of this 2023 DBESP Addendum.

5.2.4.3 Riparian Habitat Species

The arroyo willow thickets occurring within the Proposed Project area and adjacent to the Santa Ana River provides suitable habitat for several special status species. Suitable habitat occurs for long-eared owl and two-striped garter snake along the Santa Ana River stream course dominated by willows (Salix sp.) and Fremont cottonwood (*Populus fremontii*) trees. No known occurrences of these species have been recorded within the immediate vicinity (3 miles) of the Proposed Project area.

Suitable habitat also occurs for yellow warbler, yellow-breasted chat, pallid bat, pocketed free-tailed bat, western mastiff bat, and western yellow bat within the riparian habitat located adjacent to the Santa Ana River. Additionally, suitable day and night roosting sites occur within the Proposed Project area, along existing SR-91, SR-71, and I-15 underpasses and large culverts.

Suitable habitat also exists for LBVI, SWFL, and YBCU within the arroyo willow thicket habitat.

Protocol surveys were conducted for LBVI, SWFL, and YBCU by Brian Leatherman (USFWS permit No. TE827493-9) of Leatherman BioConsulting, Inc. Survey methods followed the guidelines endorsed by the USFWS for each species as described below. In general, surveys were conducted in riparian habitat by walking slowly and methodically within and along the margins of all suitable riparian habitat for each species. The focus of the surveys was on the detection and identification of the target species. Nest surveys were not conducted.

The presence/absence surveys for the LBVI followed the 2001 survey guidelines developed by the USFWS, which requires that eight surveys be conducted 10 days apart between April 10 and July 31 (USFWS 2001).

The surveys for the SWFL followed the 2010 protocol. Five surveys at least five days apart were conducted between May 15 and July 17 from dawn to 1030 under suitable weather conditions (Sogge et al. 2010). Recorded vocalizations were played as described in the survey protocol in an attempt to elicit a response from individuals potentially present. The recording was played for roughly 15 seconds, stopped for one or two minutes to listen for a response, and then played again. The surveys for the YBCU followed the protocol developed by Halterman et al. (2015). The protocol requires that four surveys be conducted within three certain periods between June 15 and August 15. Halterman et al. (2015) recommend that surveys be conducted from 12 to 15 days apart between dawn and 1100 under suitable weather conditions. Recorded vocalizations were played as described in the survey protocol in an attempt to elicit a response from individuals potentially present. The prescribed 6-minute broadcast with five vocalizations spaced one minute apart was played every 100 meters (328 feet).

There are recent recorded occurrences of SWFL and LBVI within the vicinity of the Proposed Project area, and LBVI were observed during the focused surveys (refer to Appendix E of the BRTR Appendix B of this 2023 DBESP Addendum). Therefore, the arroyo willow thickets habitat is considered occupied for both species.

5.2.4.4 Nesting Birds

The Proposed Project area contains suitable nesting habitat for several common and sensitive, tree- and ground-nesting avian species. The southern cottonwood willow riparian forests and coastal sage scrub communities within the Proposed Project area provide suitable habitat for sensitive avian species including, LBVI and coastal CAGN. The eucalyptus/ornamental woodlands, bridges and overpasses also provide suitable nesting and foraging habitat for several common migratory species. These include the following species observed during the habitat assessment: California towhee, Bewick's wren (*Thryomanes bewickii*), white-throated swift (*Aeronautes saxatalis*), and Nuttall's woodpecker (*Dryobats nuttallii*).

5.2.4.5 Raptors

The Proposed Project area contains suitable nesting and foraging habitat for raptor species known to occur in the area. Activities associated with trail construction and maintenance could result in "take" of nests if conducted during the breeding season (February 15–August 31).

5.2.5 Vegetation

Because of several previous and ongoing disturbances in the local vicinity, the Proposed Project area consists of an abundant mix of native and non-native vegetation, as well as many areas of development with little vegetation. The Proposed Project area and the local vicinity have been subject to previous disturbances including, but not limited to, the original construction of Prado Dam, SR-91, SR-71, the Burlington Northern Santa Fe railroad, the Prado Dam Construction Office Complex, commercial and residential developments, and associated roads in the local area. Ongoing disturbances located within or in the vicinity of the Proposed Project area include the Prado Dam and associated dikes, and Santa Ana River spillway improvements.

As defined in the Manual of California Vegetation, 2nd Edition (MCVII) (Sawyer et al. 2009), a vegetation alliance is "a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors." Generally, Stantec's mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, (generally disturbed) habitat occurs within the Proposed Project area that is not defined in MCVII. Therefore, land cover types assigned to these types of habitats are descriptive in nature and are not specifically referenced in the MCVII. The Proposed Project area temporary and permanent impact acreages are included in Table 10: Vegetation Community Impacts in Section 8. The botanical nomenclature within this report follows the Jepson Herbarium online database, eFlora (Jepson Flora Project 2022). Plant species documented during the reconnaissance survey are provided in Appendix B.

5.2.5.1 Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)

This vegetation classification generally consists of arroyo willow (*Salix lasiolepis*) as the dominant in the tall shrub or low tree canopy with bigleaf maple (*Acer macrophyllum*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood (*Cornus sericea*), California wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), Fremont cottonwood, black cottonwood (*Populus trichocarpa*), other willows, and black elderberry (*Sambucus nigra*) as co-dominants. Emergent trees may be present at a low cover. The plants are usually less than 10 meters in height, canopy is open to continuous, and the herbaceous layer is variable.

Within the Proposed Project area, this vegetation community is dominated by arroyo willow with smaller amounts of mulefat shrubs and scattered black willows. Most of the arroyo willow thickets occur in the Proposed Project area surrounding Phase 2. Approximately 30 acres of this community occurs in the Proposed Project area and surrounding buffer.

5.2.5.2 California Buckwheat Scrub (*Eriogonum fasciculatum* Shrubland Alliance)

This vegetation classification generally consists of California buckwheat (*Eriogonum fasciculatum*) as a dominant in the shrub canopy in cismontane stands with California sagebrush (*Artemisia californica*), coyote brush, sticky monkeyflower (*Diplacus aurantiacus*), bush sunflower (*Encelia californica*), brittlebush (*E. farinosa*), Menzies' goldenbush (*Isocoma menziesii*), common deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), white sage (*Salvia apiana*), or black sage (*S. mellifera*) as co-dominant species. Emergent trees may be present at low cover. Shrubs are usually less than two meters in height, canopy is continuous or intermittent, and the herbaceous layer is variable and may be grassy.

Within the Proposed Project area, this vegetation is dominated by California buckwheat with smaller amounts of California sagebrush, deerweed, and California brittlebush. California buckwheat scrub occurs in small patches in the Proposed Project area in Phases 2Aand 3A. Approximately 12.5 acres of this community occur in the Proposed Project area and surrounding buffer.

5.2.5.3 Coastal Sagebrush Scrub (*Artemisia californica* Shrubland Alliance)

This vegetation classification generally consists of California sagebrush as the dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod (*Cleome isomeris*), sticky monkeyflower, bush sunflower, brittlebush, desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal buckwheat (*Eriogonum cinereum*), California buckwheat, yellow yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), Menzie's goldenbush, heart leaved keckella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina*), chaparral prickly pear (*Opuntia littoralis*), evergreen buckthorn (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*R. ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including southern California black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), or black elderberry. Shrubs are less than two meters in height or in two tiers with a second less than five meters tall. The canopy is intermittent to continuous, and the herbaceous layer is variable.

Within the Proposed Project area, this vegetation occurs on federal land and is dominated by California sagebrush with smaller amounts of California buckwheat and coyote brush. California sagebrush scrub occurs in large patches in Phases 2A, 3, and 3A. Approximately 38 acres of this community occur in the Proposed Project area and surrounding buffer. Impacts and mitigation to this habitat are not included in this document, as it is not covered by the MSHCP on federal land and will be covered in the Biological Assessment.

5.2.5.4 Coyote Brush Scrub (*Baccharis pilularis* Shrubland Alliance)

This vegetation classification generally consists of coyote brush, California coffeeberry (*Frangula californica*) and/or coast silk tassel (*Garrya elliptica*) is dominant to co-dominant in the shrub canopy with coastal sagebrush, sticky monkeyflower, California buckwheat, deerweed, California blackberry (*Rubus ursinus*), white sage, purple sage (*Salvia leucophylla*) and poison oak. Emergent trees may be present at low cover.

Within the Proposed Project area, this vegetation occurs on federal land and is dominated by coyote brush with smaller amounts of deerweed, bush sunflower, mulefat, and Menzie's goldenbush. Coyote brush scrub occurs in small patches in the Phase 2A and in the survey buffer west of Phase 3A. Approximately two acres of this community occurs in the Proposed Project area and surrounding buffer. Impacts and mitigation to this habitat are not included in this document as it is not covered by the MSHCP on federal land and will be covered in the Biological Assessment.

5.2.5.5 Eucalyptus Groves (*Eucalyptus* spp. Woodland Semi-Natural Alliance)

This non MCVII vegetation classification generally consists of eucalyptus species/gum trees (*Eucalyptus* Isp.) as the dominant in the tree canopy. The trees are less than 60 meters in height, canopy is open to continuous, shrub layer is generally sparse, and the herbaceous layer is sparse to intermittent.

Within the Proposed Project area, this vegetation is dominated by large eucalyptus trees with bare ground along low drainage areas. Eucalyptus groves occur in the Proposed Project area in Phases 2A and 3A. Approximately six acres of this community occurs in the Proposed Project area and surrounding buffer.

5.2.5.6 Menzie's Goldenbush Scrub (*Isocoma menziesii* Shrubland Alliance)

This vegetation classification generally consists of Menzie's goldenbush as dominant or co-dominant in the shrub canopy with coastal sagebrush, coyote brush, broom baccharis (*Baccharis sarothroides*), giant coreopsis (*Coreopsis gigantea*), matchweed (*Gutierrezia californica*), island broom (*Acmispon dendroideus*), silver bush lupine (*Lupinus albifrons*), and Virginia glasswort (*Salicornia depressa*). Herbs commonly present include San Miguel Island milkvetch (*Astragalus miguelensis*), California orach (*Etriplex californica*), ripgut brome (*Bromus diandrus*), coast morning glory (*Calystegia macrostegia*), saltgrass (*Distichlis spicata*), and purple needlegrass (*Stipa pulchra*).

Within the Proposed Project area, this vegetation is dominated by Menzie's goldenbush with smaller amounts of coyote brush. California buckwheat, and quailbush (*Atriplex lentiformis*). This community occurs in one patch in the survey buffer north of Phase 2A. Approximately an acre of this community occurs in the Proposed Project area and surrounding buffer.

5.2.5.7 Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance)

This vegetation classification generally consists of mulefat (*Baccharis salicifolia*) as the dominant in the shrub canopy with coastal sagebrush, willow baccharis (*Baccharis emoryi*), coyote brush, laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry species (*Rubus* sp.), narrow leaved willow (*Salix exigua*), arroyo willow, black elderberry, and tamarisk species (*Tamarix* sp.) as co-dominants. Emergent trees may be present at low cover, including grey pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oak species (*Quercus* sp.), or willow species (*Salix* sp.). Shrubs are less than five meters in height, the canopy is continuous with tie tiers at less than two meters and at less than five meters, and the herbaceous layer is sparse.

Within the Proposed Project area, this vegetation is dominated by mulefat with smaller amounts of arroyo willow and coyote brush. This community occurs in all three phases of the Proposed Project area and most of this vegetation in the Phase 2. Approximately 32 acres of this community occurs in the Proposed Project area and surrounding buffer.

5.2.5.8 Perennial Pepperweed Patches (*Lepidium latifolium* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by perennial pepperweed (*Lepidium latifolium*). Emergent trees and shrubs may be present at low cover.

Within the buffer surrounding the Proposed Project area, this vegetation is dominated by perennial pepperweed. This community occurs in one patch in the survey buffer at the edge of Phases 2A and 3A. Approximately 0.6 acre of this community occurs in the Proposed Project area and surrounding survey buffer.

5.2.5.9 Poison Hemlock or Fennel Patches (*Conium maculatum- Foeniculum vulgare* Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of thoroughwort (*Ageratina adenophora*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), Indian teasel (*D. sativus*) and/or sweet fennel (*Foeniculum vulgare*), or another non-native invasive plant of the Apiaceae family is dominant or co-dominant with other non-native plants in the herbaceous layer. Emergent trees and shrubs may be present at low cover, including oak trees and coyote brush.

Within the buffer surrounding the Proposed Project area, this vegetation is dominated by poison hemlock. This community occurs in one patch in the buffer at the edge of Phases 2A and 3A. Approximately 0.1 acre of this community occurs in the survey buffer surrounding the Proposed Project area.

5.2.5.10 Shining Willow Groves (*Salix lucida* ssp. *Lasiandra* Forest and Woodland Alliance)

This vegetation classification generally consists of shining willow (*Salix lucida*) as dominant or co-dominant in the tree canopy with bigleaf maple, white alder (*Alnus rhombifolia*), American dogwood, California sycamore, Fremont cottonwood, black cottonwood, coast live oak, willows, and blue elderberry.

Within the Proposed Project area, this vegetation is dominated by shining willow with smaller amounts of mulefat, other willow species, and castor bean (*Ricinus communis*). This community occurs in one large patch in the in Phase 2A west of Butterfield Park. Approximately 9 acres of this community occurs in the Proposed Project area and surrounding survey buffer.

5.2.5.11 Smartweed-Cocklebur Patches (*Polygonum lapathifolium – Xanthium strumarium* Herbaceous Alliance)

This vegetation classification generally consists of sunflower (*Helianthus annuus*), curlytop knotweed (*Polygonum lapathifolium*) and/or cocklebur (*Xanthium strumarium*) or other knotweed or smartweed species as dominant or co-dominant in the herbaceous layer with fiveangled dodder (*Cuscuta pentagona*), tall flatsedge (*Cyperus eragrostis*), barnyard grass (*Echinochloa* spp.), pale spikerush (*Eleocharis macrostachya*), western goldentop (*Euthamia occidentalis*), rushes (*Juncus* spp.) and docks (*Rumex* spp.).

Within the Proposed Project area, this vegetation consists of cocklebur, sunflower, and perennial pepperweed. One 0.02-acre patch occurs in Temescal Wash in Phase 2.

5.2.5.12 Upland Mustards or Star-Thistle Fields (*Brassica nigra* – Centaurea [*solstitialis, melitensis*] Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of black mustard (*Brassica nigra*), common mustard (*B. rapa*), Italian thistle (*Carduus pycnocephalus*), Maltese star thistle (*Centaurea melitensis*), yellow starthistle (*C. solstitialis*), cardoon artichoke thistle (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), short-pod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*),

or similar ruderal forb is dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover.

Within the Proposed Project area, this vegetation is dominated by short-pod mustard and Maltese star-thistle with smaller amounts of other non-native annual grasses, mostly bromes, and non-native annual herbs. This community occurs along West Rincon Street in Phase 2 and in the eastern portion of Phase 3A. Approximately 8.6 acres of this community occurs in the Proposed Project area and surrounding survey buffer.

5.2.5.13 Wild Oats and Annual Brome Grasslands (*Avena* spp.-*Bromus* spp. Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of slim oat (*Avena barbata*), wildoats (*A. fatua*), purple false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima*), ripgut brome, soft chess, and foxtail barley (*Hordeum murinum*) as dominant or co-dominant in the herbaceous layer with other non-natives such as Australian saltbush (*Atriplex semibaccata*) and barley species (*Hordeum* sp.). Emergent trees and shrubs may be present at low cover. Herbs are less than four feet in height and cover is open to continuous.

Within the Proposed Project area, this vegetation is dominated by bromes and other non-native annual grasses. Wild oats and annual brome grasslands occur in large patches within and surrounding Phases 2A and 3A. Approximately 56 acres of this community occur in the Proposed Project area and surrounding survey buffer.

5.2.5.14 Disturbed/Developed

This land cover type includes areas that have been graded or paved and are developed with urban infrastructure. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil such as along disturbed areas or roadsides. The Phase 2 Proposed Project and survey areas includes Corydon Street, West Rincon Street, and disturbed areas between West Rincon Street and the Corona Airport. The Phase 2A Proposed Project and survey areas includes dirt access roads, a large borrow pit, portions of the Corona Airport and Butterfield Park, and buildings south and west of Phase 2A. The Phase 3A survey buffer includes portions of SR-91. Approximately 141 acres of this land cover type occurs in the Proposed Project area and surrounding survey buffer.

5.2.5.15 Non-Vegetated Channel

Non-vegetated channel is not a MCVII classification. In this land cover type, the area is unvegetated on a relatively permanent basis. The areas are usually dominated by sand, gravel, or rock and usually exhibits an OHWM. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Holland 1986).

A drainage ditch occurs along the south side of Butterfield Drive in the Phase 2A. Approximately 0.3 acre of this land cover type occurs within the Proposed Project area and surrounding survey buffer.

5.2.5.16 Partially Vegetated Channel

This land cover type is a non-vegetated channel but has more than 10 percent vegetative cover. Partially vegetated channel is not a MCVII classification. The lack of vegetation is due to flowing water during the rainy season. The areas are usually dominated by sand, gravel, or rock and usually exhibits an OHWM. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel.

This land cover type includes Temescal wash east and west of West Rincon Street in Phase 2. Some large willow trees have been established on the edges of the wash. Approximately two acres of this land cover type occur within the Proposed Project area and surrounding survey buffer.

5.2.5.17 Restoration Areas

Areas mapped as restoration were either observed to be undergoing active habitat restoration activities or were areas that have been previously restored and are being monitored or have been completed.

Two restoration areas occur within Phase 2A, and two restoration areas occur in the western portion of the survey buffer west of Phase 3A. Approximately 10.5 acres of this land cover type occur within the Proposed Project area and surrounding survey buffer.

5.2.5.18 Ruderal Areas

Ruderal vegetation is not a MCVII classification. This land cover type is usually sparsely vegetated with pioneer plant species that readily colonize open disturbed soil. In the Proposed Project area these include non-native annual grasses, bromes, redstem filaree, and Maltese star-thistle.

Ruderal patches occur in the Phase 2A area near Auto Center Drive and the western portion of the Proposed Project area west of Phase 3A. Approximately 5.5 acres of this land cover type occur within the Proposed Project area and surrounding survey buffer.

5.2.5.19 Special-Status Natural Communities

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Shining willow grove occurs within the Proposed Project area; and is a CDFW natural community with a sensitivity ranking of S3 (vulnerable).

The Proposed Project area also occurs within the region covered by the MSHCP. Three riparian communities (mulefat thickets, arroyo willow thickets, and shining willow groves) and five native upland scrub habitats (California buckwheat scrub, California sagebrush scrub, coyote brush scrub, elderberry

stands, and Menzie's goldenbush scrub) occur within the Proposed Project area and surrounding survey buffer and are Wester Riverside County sensitive vegetation communities.

5.2.5.20 Narrow Endemic Plant Species

Since there are no observed or recorded occurrences of narrow endemic or other sensitive plant species within the Proposed Project area, no additional surveys or mitigation measures will be required prior to construction.

5.2.5.21 Non-native and Invasive Vegetation

No large infestations of non-native invasive vegetation occur in the Proposed Project area. The Proposed Project area and surrounding survey buffer includes small patches of arundo (*Arundo donax*), tree-of-heaven (*Ailanthus altissima*), perennial pepperweed, castor bean, and Mediterranean tamarisk (=salt cedar) (*Tamarix ramosissima*) (Appendix B).

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6.0 Multiple Species Habitat Conservation Plan (MSHCP) Section 7.4.2 and Appendix C MSHCP Compliance

As described above, the Proposed Project (SART Phases 2, 2A, and 3A) is considered a Conditionally Compatible Use under Section 7.4.2 of the MSHCP. As such, the Proposed Project is required to demonstrate consistency with the biological goals and guidelines of Section 7.4.2 of the MSHCP. The conditions described in Section 6.1.1 below shall be applied to the Proposed Project so impacts to species are avoided as construction occurs. Compliance with these conditions is required of the District as a Permittee pursuant to the Implementing Agreement Section 13.7 (A). Table 5: Guidelines for Public Access and Recreation in the MSHCP Conservation Area lists each provision of Section 7.4.2, then addresses the Proposed Project's features designed to meet the provision to avoid and minimize impacts from the placement of the trail on the MSHCP Conservation Area's natural resources.

The Proposed Project will also implement all the Standard Best Management Practices of MSHCP.

6.1 Section 7.4.2 Provisions (Conditionally Compatible Uses—Public Access and Recreation)

Table 5. Guidelines for Public Access and Recreation in the Multiple Species Habitat Conservation Plan Conservation Area

Guidelines for the Siting and Design of Trails and Facilities The construction of trails and facilities will impact biological resources within the MSHCP Conservation Area. Therefore, the following guidelines address ways to avoid and minimize impacts from the placement and design of these trails and facilities on the MSHCP Conservation Area's natural resources.
• Trails and facilities will be sited and designed to be compatible with resource protection and in a manner that minimizes impacts to sensitive resources and habitat types covered by the MSHCP. All decisions relating to public access will be made in a manner that is most protective of biological resources.
Trails and facilities will be in the least sensitive areas of the MSHCP Conservation Area so that they avoid Habitat occupied by species covered by the MSHCP.
• The Proposed Project has been designed to minimize impacts to sensitive resources by routing around them or reducing trail width. The trail alignment has been redesigned and changed numerous times since the Master Planning process to further avoid impacts to sensitive areas. Most of the trail is now placed at the margins of sensitive habitat to avoid impacts to species and their habitat. • Prior to design and construction of public access facilities, biological surveys will be conducted within the study area for the facility including vegetation mapping and species surveys and/or wetland delineations based on field conditions as recommended by the project biologists. The results of the biological resources investigation will be mapped and documented. The documentation will include preliminary conclusions and recommendations regarding potential effects of facility construction on MSHCP Conservation Area resources and methods to avoid and minimize impacts to MSHCP Conservation Area resources in conjunction with project siting, design, construction, and operation. The project biologist will work with facility designers during the design and construction phase to ensure implementation of feasible recommendations. • This DBESP Addendum and appendices represent the culmination of biological surveys prepared for the Proposed Project.

Recreational activities and the construction of trails and facilities on highly erosive soils will be avoided.
• The trail alignment is on lands with relatively flat grade to comply with trail design grade requirements and Americans with Disability Act requirements. The soil analysis for the Proposed Project is available in the BRTR.
Trails and facilities will be designed to discourage and prevent intrusion into adjacent environmentally sensitive areas.
• Temporary impacts for the Proposed Project (areas adjacent to the permanent trail alignment) will be revegetated with native vegetation, which will act as a barrier to intrusion. Prohibitive signage at key points throughout the Proposed Project area are also project design features intended to keep persons and pets from leaving the designated trail. The trail alignment has been placed along the margins of environmentally sensitive areas wherever possible to avoid the segmentation of habitat.
New trails and facilities will avoid using wildlife crossing points.
• No sensitive crossing locations were identified during the biological surveys for the project, beyond those already impacted by other existing construction activities in the Proposed Project area, e.g., the Prado Dam. The trail through Temescal Wash is designed to minimize impacts to wildlife that use it as a wildlife corridor and most of the trail has been designed at grade to avoid acting as a wildlife barrier. In Phase 3A (previously Reach III), the trail has been moved north away from the Auxiliary Dike; therefore, the trail is anticipated to act as an additional wildlife corridor in that area.
New trails and facilities will be accessible from existing and planned public roads.
• Access to this 2.79.-mile segment of the SART trail will occur through two entry points. The trail entry points are located at, Butterfield Park in the City of Corona for Phase 2A East (previously Reach V) and Auto Center Drive for Phase 2A West (previously Reach VI). Trail entry points are accessible from existing public roads.
New facilities will not include lighting.
• Lighting will not be present throughout the trail corridor or the staging area.
Environmentally sensitive grading techniques, drainage management and vegetation buffers will be used for trail and facility runoff absorption and filtration.
• The Proposed Project has been designed so trail construction will result in minimal or no impacts to environmentally sensitive areas. Areas of temporary impacts will be revegetated with native species to restore the impacted area, minimize the potential for soil erosion, and to enable runoff absorption and filtration. The trail substrate is pervious to allow water infiltration. No brush clearance or removal of revegetated areas will be allowed once the trail is operational.
When landscaping is required, only native species will be used. The use of nonnative invasive plant species will be prohibited.
• Areas of temporary impacts will be revegetated with native species to restore the impacted area, minimize the potential for soil erosion, and to enable runoff absorption and filtration. The use of native plant species is emphasized throughout every aspect of the Proposed Project's design. Native species will also be used to revegetate areas of temporary impact that currently have disturbed, non-native grass, and other non-native vegetation communities to promote native species restoration in the Prado Basin.
Trails
Whenever possible, trail alignments in the MSHCP Conservation Area will use existing dirt roads.
• The trail alignment in Conservation Areas generally follows existing disturbances. The trail will follow disturbed areas west of Butterfield Park in Phase 2A East (previously Reach V) and will follow the existing disturbance along W. Rincon Road in Phase 2 (previously Reach VII). Per the request of the USACE, the trail alignment has been modified several times in order to avoid sensitive habitats (e.g., coastal sage

scrub, riparian, wetland) and associated potential impacts to sensitive resources and wildlife corridor areas. These modifications have also been undertaken to reduce the number of crossings to federal and state jurisdictional wetlands and waters with bridge designs focused on clear span systems to minimize impacts to these resources. To this end, the trail alignment has been intentionally focused within existing dirt roadways and/or pathways to reduce overall impacts.
Trails will be kept along the edges of large sensitive areas of habitat such as meadows and riparian areas.
• The trail has been designed in all locations to minimally impact riparian areas. Where impacts could not be avoided, trail widths have been reduced and the trails were placed at the margins of the riparian areas, or in previously disturbed areas. • Trail widths were limited within sensitive areas and in some instances the dual-track trail was combined to a single multi-use trail to minimize impacts to environmentally sensitive areas.
When determined to be appropriate, trails will be constructed to any prominent features or viewpoints that are likely to attract hikers to prevent off-trail access and extensive trampling of adjacent Habitat by hikers.
• This consideration to prevent off-trail access has been incorporated into the Proposed Project's design. Prohibitive signage will be installed to further prevent recreational users from venturing off-trail. Regular patrols of the area would serve to avoid off-trail use.
Water breaks will be installed on steep trails to prevent accelerated runoff and erosion.
• While most of the trail is at grade, in areas where water breaks are warranted, they are incorporated into the design.
Dog-friendly trails will be in areas of relatively low habitat value or edges.
• While the trail alignment is dog-friendly throughout, the trail alignment is leash only in accordance with this section of the MSHCP, and by local ordinance.
Trailheads
Trail access points to the MSHCP Conservation Area (e.g., parking lots and staging areas) that are consistent with resource protection goals will be identified.
• Access to this 2.79-mile segment of the SART trail will occur through three entry points (Exhibit 11: Trail System Entry Points) and include the following: – Phase 2: Stagecoach Road/Corydon Street (Stagecoach Park area) and Rincon Street/Smith Avenue (Corona Airport area) – Phase 2A: Auto Center Drive (western portion of trail) and Butterfield Drive (eastern portion of trail) – Phase 3A: Auto Center Drive/Railroad Street (USACE office) • The trail access points have been designed to be consistent with this section of the MSHCP.
In most cases, trailheads will be sited at the edge of the resource area.
• The Proposed Project's primary trailhead, located at Auto Center Drive was selected because it is in a relatively disturbed area with existing light pollution and disturbed vegetation. The Proposed Project's other entry points are located at the edge of the resource area within established residential neighborhoods.
Entry controls and signage at trailhead sites will be used to convey proper resource usage.
• Signage prohibiting off-trail use, the harassment of wildlife, pets off leash, motorized vehicle travel and other restrictions will be posted at trail entry points and throughout the trail alignment. Signage will be consistent with this section of the MSHCP, and the prohibitions set by local ordinance. These prohibitions will be enforced with regular patrols and posted to the District's webpage (http://www.rivcoparks.org/) for the trail.

Guidelines for Operations and Maintenance Passive uses can generate noise and litter, trails are vulnerable to erosion and gullying, and vegetation off trails may be trampled by hikers, mountain bikers and equestrian users. To protect the MSHCP Conservation Area's resources during operations and maintenance activities, the following guidelines have been developed:
Effects of passive recreational uses shall be addressed in Reserve Management Plans described in Section 5.2.2.
• Not applicable.
Motorized vehicular access by the public to the MSHCP Conservation Area will be prohibited except as necessary by emergency personnel or for operations and maintenance activities.
• Motorized vehicular access by the public is prohibited by project design, and local ordinance. Unauthorized motorized vehicular access will be strictly enforced.
Appropriate daily and seasonal limits on trail use will be established. When necessary, trails will be closed on a temporary basis to minimize disruption of nesting and other wildlife functions for species covered by the MSHCP, or if public access has resulted in, or is expected to result in, significant negative impacts to sensitive species. Passive recreational uses will be limited or restricted in critical wildlife areas during breeding season, as determined appropriate.
• The trail, or portions of the trail, will be closed as necessary to avoid conflict with wildlife, to avoid impacts to sensitive species, and to avoid damage to the Proposed Project vicinity in general during times of flooding. • If construction activities need to occur during the nesting bird season between February 15 and September 1, a qualified biologist shall conduct surveys prior to construction to determine the presence/absence of nesting birds. If active nests are identified, consultation with CDFW and/or USFWS shall occur to determine appropriate procedures and implementing mitigation if construction activities have a direct or indirect impact on CAGN or LBVI nesting. If ground-disturbing activities must be conducted during this time, a nesting bird survey should be conducted for the site prior to any ground disturbing activity. The nesting bird survey should occur as close to the disturbance date as possible and must be conducted no earlier than 7 days prior to ground-disturbing activities. In addition, a biological monitor shall be present during all ground-disturbing activities. Should a nest be observed, ground-disturbing work shall not occur within a 250-foot buffer area for nesting passerine birds, or a 500-foot buffer area for nesting raptors.
Public access may be restricted within and adjacent to wetlands, vernal pools, restoration areas, and sensitive wildlife Habitat (e.g., during the breeding season) at the discretion of the Reserve Manager.
• Public access will be restricted as needed to avoid impact to any resource in the Proposed Project vicinity.
If public access policies and other policies conflict, the conflict will be resolved in a manner that is most protective of the biological resources within the MSHCP Conservation Area.
• The policies regarding the protection of biological resources in the Conservation Area will take precedence to other policies governing the Proposed Project area on MSHCP lands. These policies will also be considered on non- MSHCP lands in federal ownership.
Access to the MSHCP Conservation Area will be controlled through properly maintained fencing and signs.
• Educational as well as prohibitive signage will be installed at access points to educate trail users about trail use regulations, and about the value of the natural resources in the Proposed Project vicinity.
Fencing or other barriers will be used to restrict access to basically sensitive areas when protection of biologically sensitive resources is required.
• In compliance with MSHCP Section 7.4.2, fencing and barriers will be selectively placed to protect biologically sensitive areas.

Public access information packets and guides will be developed for users of the MSHCP Conservation Area.
• The District's webpage (http://www.rivcoparks.org/) maintains an active recreation map with up-to-date conditions and regulations for recreation facilities under their management. These details will be maintained for the Santa Ana River Trail on this site.
Education and outreach will be used to increase public awareness and appreciation for Habitat and wildlife values.
• The District's webpage (http://www.rivcoparks.org/) will include education and outreach about the trail and its surrounding areas. The Proposed Project will have interpretive panels for public education and outreach, as appropriate, throughout the 2.79-mile trail corridor.
The MSHCP Conservation Area will be patrolled on a regular basis to ensure that visitors to the MSHCP Conservation Area stay on trails and observe all other rules and guidelines established to protect the natural resources on-site.
• The District has one full time position funded for inspection and maintenance of the trail. The District will use a combination of Rangers and Operations staff to patrol. The trail will be patrolled no less than one time per day utilizing round trip route (County Line to County Line). The role will be to check condition of the trail and provide routine maintenance on the trail. In addition, neighboring Cities as well the various federal, State and County agencies will utilize the trail as controlled access into the river corridor for various studies and maintain their facilities (such Flood Control devices). These agencies will be given the appropriate contact information to District should they determine any violations of the rules and regulations. In addition, the District Rangers are not authorized with law enforcement powers. Nor are they authorized to carry weapons. They role with be to advise patrons of the rules and advise of the need to comply. Should there determine the violation is beyond their abilities to address, they can detain violators and request assistance for the local police jurisdiction. Violations issued to persons with pets off leash or recreating off the established trail will be according to the fine schedule for the municipal and county code.
Feeding of all wildlife will be prohibited.
• The feeding of wildlife will be prohibited. Signage prohibiting interference with wildlife will be posted at trail entry points and throughout the trail alignment. Patrols of the trail will enforce prohibitions regarding wildlife interaction. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Firearms will be prohibited from patrol and maintenance sites, except for those used by authorized law enforcement and security personnel.
• The prohibition of firearm use in the Proposed Project area will be posted as signage and enforced through regular patrol. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Maintenance
The trails and other facilities within the MSHCP Conservation Area require proper maintenance to ensure the protection of biological resources. Trails, facilities, signs and barriers will be maintained to appropriate conditions to discourage and prevent intrusion into adjacent environmentally sensitive areas.
• All Maintenance work will follow or exceed the Minimum Maintenance Guidelines for the Santa Ana River Parkway April 2008. Signage will be places at all Trailheads and Staging Areas asking all participants to pack out all trash and debris. • Signage to follow the requirements Santa Ana River Parkway Minimum Trail Signage Guidelines February 2012. The District is committed to fund the patrol of the Santa Ana River Trail. • The District has one full time position funded for inspection and maintenance of the trail. The District will use a combination of Rangers and Operations staff to patrol. The trail will be patrolled no less than one time day utilizing round trip route (County line to County Line). The role will be to check condition of the trail and provide routine maintenance on the trail. In addition, neighboring Cities as well the various federal, State and County agencies will utilize the trail as controlled access into the river corridor for various studies and maintain their facilities (such Flood Control devices). These agencies will be given the

appropriate contact information to District should they determine any violations of the rules and regulations. In addition, the District Rangers are not authorized with law enforcement powers. Nor are they authorized to carry weapons. Their role will be to advise patrons of the rules and advise of the need to comply. Should they determine the violation is beyond their abilities to address, they can detain violators and request assistance for the local police jurisdiction. • The District's Adopt-A-Trail program will also be utilized to use volunteer groups to provide supervised trail maintenance operations. These groups are trail through on-site programs in appropriate and correct methods of trail maintenance. Their work is limited to trash removal, weed removal, sign repair and installation and removal. All work is restricted to within the established trail corridor and equipment is limited to hand tools. Adopt-A-Trail maintenance is performed on a minimum of 4-6 times a year.
Hiking
Hikers must always stay on designated trails and must not stray into adjacent areas to prevent trampling of vegetation and erosion.
• Hiking use off-trail will be strictly prohibited. Camping is strictly prohibited. Prohibitions for off-trail use will be posted and regular patrol of the trail alignment will enforce off-trail violations. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Equestrian Use
Equestrian use will be limited to designated trails.
• Equestrian use off-trail will be strictly prohibited. Prohibitions for off-trail use will be posted and regular patrol of the trail alignment will enforce off-trail violations. The District's webpage (http://www.rivcoparks.org/) will post these prohibitions.
Following heavy rains, the use of equestrian trails will be prohibited for appropriate periods to avoid trail damage and impacts to adjacent Habitat.
• The trail alignment will be closed at any time needed to avoid damage to the Proposed Project area caused by recreation use on saturated areas. Patrols of the area will close the trail, if needed, to avoid impacts.
Mountain Biking
Mountain bike trails will be limited to areas with low susceptibility to erosion and out of wetlands and other sensitive areas.
• Erosive soils were avoided as part of the Proposed Project's design. The trail alignment is on lands with relatively flat grade to comply with trail design grade requirements and ADA requirements.
Mountain bike trails will be constructed wider than foot trails to prevent trail edge disturbance and on grades no greater than 25 percent.
• Project design is consistent with this requirement.
Litter and Trash Control Measures
Litter control measures will be implemented within the MSHCP Conservation Area.
• Litter will be reduced in the MSHCP areas through the installation of intermittent trash receptacles, prohibitive signage throughout the Proposed Project area, regular patrol for litter violations, and litter clean up as part of the Proposed Project's ongoing operations and maintenance.
Closed garbage cans and recycling bins will be provided at trailheads and access points.
• Animal-proof trash receptacles are located at trailheads and access points to prevent littering in the Proposed Project area. Animal-proof containers will serve to further avoid the possibility of negative human/wildlife interactions.

Litter and trash will be collected and removed on a regular basis. Garbage cans and recycling bins will be maintained appropriately.
• The Proposed Project commits to the installation of animal-proof trash and recycling receptacles at key locations in the Proposed Project area. References to this commitment are included throughout the document. The District does not propose the install receptacles along the trail. Trash receptacles will be installed at Trail Heads and Staging Areas only. The maintenance of the receptacles to follow the Minimum Maintenance Guidelines for the Santa Ana River Parkway April 2008 and adopted by the Technical Advisory Committee and Political Project Group. Signage will be places at all Trailheads and Staging Areas asking all participants to pack out all trash and debris. Signage to follow the requirements Santa Ana River Parkway Minimum Trail Signage Guidelines, February 2012.
Penalties will be imposed for littering and dumping within the MSHCP Conservation Area.
• Regular patrols of the trail alignment will enforce local ordinances prohibiting littering and dumping.
Permanent storage of materials (e.g., hazardous and toxic materials) outside of maintenance facilities within the MSHCP Conservation Area will be prohibited.
• Hazardous material storage will be prohibited outside of maintenance facilities
Wildlife Corridor under crossings will be kept free of all debris, trash, and other obstructions.
• The trail has been designed as not to impact or impede wildlife movement.
Signs will be posted to prevent and report littering.
• Prohibitive signage for littering will be posted throughout the Proposed Project area.
Pets
Pets will be restrained by leashes at all times.
• While the trail alignment is dog-friendly throughout, the trail alignment is leash only in accordance with this section of the MSHCP, and by local ordinance. Local leash-laws will be enforced by regular patrol.
Signage
An adequate number of signs will be provided at appropriate locations to clearly identify public access to and within the MSHCP Conservation Area.
• Signage indicating public access to the trail alignment will be posted throughout the Proposed Project area. Signage along the trail in sensitive habitats would be placed at appropriate line of sight intervals warning the trail users to stay on the trail.
Interpretive signs will be provided to explain the value of the MSHCP Conservation Area's natural resources.
• Interpretive signs will be provided at trail access points, the staging area, and throughout the trail alignment.

Source: MSHCP Section 7.4.2.

Key:
BRTR = Biological Resources Technical Report
CAGN = California gnatcatcher
CDFW = California Department of Fish & Wildlife
DBESP = Determination of Biologically Equivalent or Superior Preservation
LBVI = least Bell's vireo
MSHCP = Multiple Species Habitat Conservation Plan
SART = Santa Ana River Trail
USACE = U.S. Army Corps of Engineers
USFWS = United State Fish & Wildlife Service

6.1.1 Multiple Species Habitat Conservation Plan Appendix C: Standard Best Management Practices

The Proposed Project will implement all the Standard Best Management Practices of MSHCP Appendix C, described herein. Project design features were developed to incorporate the provisions of Appendix C to avoid impacts to MSHCP lands.

6.1.1.1 Appendix C Provisions

1. A qualified biologist shall conduct a training session for Proposed Project personnel prior to grading. The training shall include a description of the species of concern and its habitats, the general provisions of the Endangered Species Act (Act) and the Multiple Species Habitat Conservation Plan (MSHCP), the need to adhere to the provisions of the Act and the MSHCP, the penalties associated with violating the provisions of the Act, the general measures are being implemented to conserve the species of concern as they relate to the Proposed Project, and the access routes to and Proposed Project area boundaries within which the Proposed Project activities must be accomplished.

2. Water pollution and erosion control plans shall be developed and implemented in accordance with Regional Water Quality Control Board requirements.

3. The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall be via preexisting access routes to the greatest extent possible.

4. The upstream and downstream limits of the Proposed Project's disturbance plus lateral limits of disturbance on either side of the stream shall be clearly defined and marked in the field and reviewed by the biologist prior to initiation of work.

5. Projects should be designed to avoid the placement of equipment and personnel within the stream channel or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.

6. Projects that cannot be conducted without placing equipment or personnel in sensitive habitats should be timed to avoid the breeding season of riparian bird species identified in MSHCP Global Species Objective No. 7.

7. When stream flows must be diverted, the diversions shall be conducted using sandbags or other methods requiring minimal instream impacts. Silt fencing or other sediment trapping materials shall be installed at the downstream end of construction activity to minimize the transport of sediments off site. Settling ponds where sediment is collected shall be cleaned out in a manner which prevents the sediment from reentering the stream. Care shall be exercised when removing silt fences, as feasible, to prevent debris or sediment from returning to the stream.

8. Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary

precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Proposed Project related spills of hazardous materials shall be reported to appropriate entities including but not limited to applicable jurisdictional city and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.

9. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

10. The qualified project biologist shall monitor construction activities for the duration of the Proposed Project to ensure that practical measures are being employed to avoid incidental disturbance of habitat and species of concern outside the Proposed Project footprint.

11. The removal of native vegetation shall be avoided and minimized to the maximum extent practical. Temporary impacts shall be returned to preexisting contours and revegetated with appropriate native species.

12. Exotic species that prey upon or displace target species of concern should be permanently removed from the site to the extent feasible.

13. To avoid attracting predators of the species of concern, the Proposed Project area shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s).

14. Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the Proposed Project footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the Proposed Project and shall be specified in the construction plans. Construction limits will be fenced with orange snow screen. Exclusion fencing should be maintained until the completion of all construction activities. Employees shall be instructed to consolidate activities to construction areas only.

15. The District shall have the right to access and inspect any sites of approved projects including any restoration/enhancement area for compliance with Proposed Project approval conditions including these best management practices.

6.0 MULTIPLE SPECIES HABITAT CONSERVATION PLAN (MSHCP) SECTION 7.4.2 AND APPENDIX C MSHCP COMPLIANCE

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7.0 Impact Analysis and Determination of Biologically Equivalent or Superior Preservation Analysis

The Proposed Project was evaluated to determine consistency with the MSHCP. A previous design was evaluated and included the preparation of a DBESP in 2018. The previous DBESP assessed Reaches I through IX, which included a 12.8-mile section of the SART located within the cities of Corona, Eastvale, Norco, and unincorporated Riverside County, California. This 2023 DBESP Addendum evaluates Phases 2, 2A, and 3A, which includes a 2.79-mile section of the SART (a redesign of Reaches III through VII) located unincorporated Riverside County, California. The previous design (2018) of Reaches III through VII was rejected due to sensitive habitats and protected mitigation lands. The Phases 2, 2A, and 3A alignment (2022) are a result of four years of coordination with the USACE and local stakeholders and reduce impacts to sensitive resources, while still providing a high-quality trail for users.

The MSHCP requires focused surveys for certain plant and animal species for project sites located within designated plant and animal survey areas when potential suitable habitat is present. The Proposed Project area is located within a designated survey area for BUOW—an MSHCP Criteria Area species. Suitable breeding and foraging habitat for the BUOW was determined to exist within limited portions of the Proposed Project area. Focused surveys were conducted for BUOW in 2021, the results of those surveys are provided in Appendix F of the BRTR (Appendix B of this 2023 DBESP Addendum). No BUOW were observed during the 2021 focused surveys for BUOW. No direct impacts on BUOW are anticipated as a result of Proposed Project implementation; therefore, mitigation for this species is not required.

The Proposed Project area is also located within a survey area for three narrow endemic plant species: San Diego ambrosia, Brand's phacelia, and San Miguel savory. These species are not expected to occur within the Proposed Project area. Based on the known recorded occurrences and existing habitat on site, the three narrow endemic plant species listed above have a low potential to occur within the Proposed Project area. Focused sensitive plant surveys were conducted in all vegetated areas in the Proposed Project area. No narrow endemic plant species were observed during the focused plant surveys. No direct impacts on San Diego ambrosia, Brand's phacelia or San Miguel savory are anticipated as a result of Proposed Project implementation; therefore, mitigation for this species is not required. Since no direct impacts on narrow endemic plants are expected, a DBESP is not required for these species.

The Proposed Project area was assessed for areas meeting the MSHCP's definition of vernal pools and fairy shrimp habitat during the habitat assessment and other field surveys. It was determined that the Proposed Project area does not have vernal pools that could support fairy shrimp species, and none are expected; therefore, listed fairy shrimp are not expected to be present within the Proposed Project area. No vernal pools, vernal pool soil conditions, or associated vernal pool vegetation were observed within the Proposed Project area. Consistent with the MSHCP, focused fairy shrimp surveys were not conducted or required. No direct impacts on vernal pools and fairy shrimp are anticipated as a result of Proposed Project implementation; therefore, mitigation is not required. Since no direct impacts on vernal pools are expected, a DBESP is not required for these species.

The Proposed Project area was assessed for areas meeting the MSHCP's definition of riparian/riverine areas during the biological surveys. It was determined that the Proposed Project contains MSHCP riparian/riverine areas along the Santa Ana River and its tributaries, as provided in Appendix D – Aquatic Resources Survey Report and Preliminary Jurisdictional Assessment of the BRTR (Appendix B of this 2023 DBESP Addendum). These riverine features support southern willow scrub/arroyo willow thickets and mule fat scrub /mule fat thicket habitats, which provide suitable habitat for species associated with riparian/riverine areas as defined in Section 6.1.2 of the MSHCP, including the LBVI, and SWFL, as described in Appendix E of the BRTR (Appendix B of this 2023 DBESP Addendum). Additionally, portions of the Proposed Project area that include riparian habitat have been designated by the USFWS as Critical Habitat for LBVI and SWFL. Since direct impacts on MSHCP riparian/riverine areas are expected from Proposed Project implementation, a DBESP is required for the Proposed Project. Avoidance and minimization measures are required during the preconstruction and construction phases of the Proposed Project to avoid potential impacts to riparian/riverine areas, and species associated with these areas.

MSHCP Section 6.1.4, Guidelines Pertaining to the Urban/Wildlands Interface, discusses guidelines to address indirect effects associated with locating development in proximity to MSHCP Conservation Areas. MSHCP Conservation Areas, as defined in the MSHCP, is the approximately 500,000 acres comprised of approximately 347,000 acres of Public/Quasi-Public Lands and approximately 153,000 acres of Additional Reserves Lands within western Riverside County. The MSHCP guidelines require consideration of indirect affects Urban/Wildlands Interface including drainage, toxics, lighting, noise, invasive, barriers, and grading/land development. The Urban/Wildland Interface is defined as a zone (less than 100 feet) between a project site and the MSHCP Conservation Area. If a project is located adjacent to a Conservation Area, avoidance measures must be implemented. Project routes could result in potential indirect impacts on MSHCP Conservation Areas during a project's construction and operation; therefore, the Proposed Project will follow the Urban/Wildland Interface guidelines to avoid, prevent, and reduce edge effects on biological resources located adjacent to the MSHCP Conservation Area.

The Proposed Project area contains suitable habitat for special-status species not covered under the MSHCP. In addition, portions of the Proposed Project area contain suitable nesting habitat for bird species protected under the MBTA and CFG Code Sections 3503 and 3511. Breeding season avoidance and pre-construction survey recommendations are provided within the consistency document to avoid potential impacts to nesting birds in violation of the MBTA and CFG Code (see Appendix B of this 2023 DBESP Addendum).

7.1 Riparian/Riverine Areas and Vernal Pools

The previous DBESP (2018) assessed permanent impacts totaling 6.22 acres and temporary impacts to 10.98 acres of MSHCP riparian/riverine areas within the overall Proposed Project area; approximately 1.67 acres of permanent impacts and 2.03 acres of temporary impacts were located within the Phases 2, 2A, and 3A Proposed Project Area (previously Reaches III through VII). The Proposed Project (2022) will result in a total of 1.21 acres of permanent impacts and 5.70 acres of temporary impacts to MSHCP riparian/riverine areas. This is an approximate reduction of approximately 0.46 acres of permanent impacts. Refer to Exhibit 7: Aquatic Resources Impacts. Table 6: Riparian/Riverine Impacts shows the impacts by trail phase.

Table 6. Riparian/Riverine Impacts

2023 DBESP Phase	DBESP 2018 Reach	2018 Impacts (Acres)		2023 Impacts (Acres)	
		Permanent	Temporary	Permanent	Temporary*
3A	III	0.04	0.10	0.25	0.25
2A & 3A	IV	0.05	0.20	0.09	1.46
2A	V	0.14	0.33	0.14	0.71
2 & 2A	VI	0.04	0.04	0.02	0.95
2	VII	1.40	1.36	0.72	2.33
Total		**1.67**	**2.03**	**1.21**	**5.70***

Source: Stantec Consulting Services Inc. 2023
Key: DBESP = Determination of Biologically Equivalent or Superior Preservation
*Note: Although the temporary acreage impacts between the 2023 DBESP Addendum and 2018 DBESP have increased, this is because potential acreages for lay-down yards, equipment turnaround areas, etc. were not included in the 2018 DBESP. Moreover, as noted in the 2023 DBESP Addendum, permanent impact acreage totals for these areas have decreased overall. As such, Table 6 gives the appearance of having comparatively increased temporary impacts, although this is not actually the case

This section describes the results and DBESP analysis for riparian/riverine areas and vernal pool as required in MSHCP Section 6.1.2. Impacts to endangered riparian species are described in this section for non-federal lands only. Impacts to endangered riparian species on federal lands will be evaluated under separate cover as part of the Endangered Species Act Section 7 compliance for the Proposed Project.

7.1.1 Results/Impacts—Wildlife and Aquatic Habitat/Riparian Species

USFWS designated critical habitat for LBVI, SWFL, and YBCU are located within the Proposed Project alignment. Three riparian communities (mulefat thickets, arroyo willow thickets, and shining willow groves) occurring within the Proposed Project area and adjacent to the Santa Ana River provide suitable habitat for LBVI, SWFL, and YBCU. Focused surveys were conducted in 2021 for the LBVI, SWFL, and YBCU along the Proposed Project alignment within suitable habitat. No SWFL or YBCU were observed during the surveys. Twenty-eight LBVI territories were documented along the Proposed Project alignment. Refer to Exhibit 8: LBVI Territories and Occurrences.

The previous DBESP (2018) assessed the permanent loss of 6.16 acres of suitable LBVI habitat, and the temporary loss of 10.88 acres within the overall Proposed Project area in areas that were mapped as mule fat scrub and southern willow scrub; approximately 1.63 acres of permanent impacts and 1.93 acres of temporary impacts were located within the Phases 2, 2A, and 3A Proposed Project Area (previously Reaches III through VII). The Proposed Project will result in a reduced permanent loss of 1.18 acres of suitable habitat for LBVI, consisting of 0.41 acre of arroyo willow thickets and 0.77 acre of mulefat thickets. Additionally, trail construction activities will result in the temporary loss of 5.67 acres of suitable habitat for LBVI, consisting of 2.11 acres of arroyo willow thickets, 3.46 acres of mulefat thickets, and 0.11 acre of shining willow groves. Table 7: LBVI Habitat Impacts shows the updated impacts by trail phase.

Table 7. Least Bell's Vireo Habitat Impacts

2023 DBESP Phase	DBESP 2018 Reach	2018 Impacts (Acres)		2023 Impacts (Acres)	
		Permanent	Temporary	Permanent	Temporary*
3A	III	0.04	0.10	0.25	0.25
2A & 3A	IV	0.05	0.20	0.07	1.46
2A	V	0.14	0.33	0.13	0.70
2 & 2A	VI	0.04	0.04	0.02	0.95
2	VII	1.36	1.26	0.72	2.33
Total		**1.63**	**1.93**	**1.18**	**5.67***

Source: Stantec Consulting Services Inc. 2023
Key: DBESP = Determination of Biologically Equivalent or Superior Preservation
LBVI = least Bell's vireo
*Note: Although the temporary acreage impacts between the 2023 DBESP Addendum and 2018 DBESP have increased, this is because potential acreages for lay-down yards, equipment turnaround areas, etc. were not included in the 2018 DBESP. Moreover, as noted in the 2023 DBESP Addendum, permanent impact acreage totals for these areas have decreased overall. As such, Table 7 gives the appearance of having comparatively increased temporary impacts, although this is not actually the case

Native habitat removal would be minimized whenever possible; however, if conducted during the nesting season, construction would directly affect LBVI nesting in suitable habitat. The Proposed Project will result in less permanent impacts to suitable LBVI habitat than previously contemplated in the 2018 DBESP. With implementation of the previously approved project design features and mitigation measures, direct impacts to LBVI are anticipated to be minimized.

Indirect impacts to LBVI may result from the presence of humans using the trail segments that cross or abut suitable riparian habitat during the breeding season. The highest risk of nest abandonment would result from trail users who go off designated trails. Signs prohibiting off-trail trekking would be posted throughout the trail alignment to prevent users from entering areas where LBVI may be nesting. Barriers such as railings would also be installed where the trail crosses sensitive riparian areas to discourage off-trail use. Therefore, trail users would not be expected to get close enough to LBVI nests to induce nest flushing or abandonment.

Noise generated by trail users may also startle nesting LBVI adults causing them to temporarily leave or abandon nests. Loss of LBVI nestlings as a result of noise during trail use during the nesting season would stem primarily from noise generated by loud trail users. Indirect impacts to riparian birds could also occur during trail repair and maintenance activities if conducted during the breeding season. Noise, vibration, and fugitive dust associated with operating the construction equipment in areas adjacent to nest locations may disrupt foraging or breeding birds and could cause temporary or permanent nest abandonment, resulting in nest failure. Noise generated by the operation of construction equipment during trail repair or maintenance would generally require minimal equipment and would be short in duration.

The Proposed Project will result in less permanent impacts to suitable LBVI habitat than previously contemplated in the 2018 DBESP. Indirect impacts were previously evaluated in the 2018 DBESP and were anticipated to be minimized with implementation of project design features and mitigation measures. Although the Proposed Project is unable to avoid impacts to suitable LBVI habitat, with implementation of

the previously approved project design features and mitigation measures, indirect impacts to LBVI are anticipated to be minimized and fully mitigated.

7.1.2 Determination of Biologically Equivalent or Superior Preservation Analysis—Wildlife and Aquatic Habitat/Riparian Species

The Proposed Project will result in less permanent impacts to suitable LBVI habitat than previously analyzed in the 2018 DBESP. Although the Proposed Project would result in increased temporary impacts to suitable LBVI habitat, temporarily impacted areas will be returned to preexisting contours and revegetated using seed mixes and plantings of the native riparian vegetation communities, as discussed below in Section 7.1.4.

Project design and mitigation measures, including water quality best management practices (BMPs), would minimize impacts to wildlife and aquatic habitat. Further, the restoration of temporary vegetation impacts would contribute to wildlife habitat by restoring areas of disturbed and non-native vegetation within the Proposed Project Area. Mitigation for permanent riparian vegetation impacts, previously approved in the 2018 DBESP and discussed below in Section 7.1.4, would create additional wildlife and aquatic habitat within Prado Basin.

In addition to the project design features and mitigation measures which will be implemented as part of the CEQA and NEPA, indirect effects to LBVI will be avoided and/or minimized by incorporating the following measures, as identified previously in the 2018 DBESP:

- Post-construction protocol surveys for least Bell's vireo (LBVI), SWFL, and YBCU should be conducted a minimum of once every three years to monitor the use and nest success of LBVI within conserved habitat, and to identify any potentially new use of the site by SWFL and YBCU.
- If LBVI habitat use or nesting success does not meet the MSCHP Species Objective 4 criteria or shows significant decline within the conserved habitat, then the Regional Conservation Authority (RCA) and wildlife agencies would be notified and seasonal trail closures and/or restrictions in high-priority areas during the breeding season may be implemented.
- Wherever possible, trail maintenance and repair activities should avoid nesting bird season (March 15 through August 31). If maintenance or repair is necessary and must be conducted during the nesting season:
- Pre-construction nesting bird surveys should be conducted prior to ground-disturbing activities.
    - One week prior to activities, a minimum of three surveys will be conducted on separate days to determine LBVI nesting status within 300 feet of work area: one survey conducted one day prior.
    - If no nesting activities, work may commence.
    - If LBVI nesting is observed, nest monitoring will be initiated and no work will occur within 300 feet of nest until nest succeeds or fails, as determined by a qualified biologist.

- Periodic nesting bird surveys should be conducted in adjacent habitat during trail reconstruction or repair activities occurring during the breeding bird season. Active nests will receive a minimum 300-foot no work buffer until nest succeeds or fails.

- Noise levels will be monitored during trail repair activities.

    - Trail repair noise levels will be restricted to below 60 dBA Leq hourly at 100 feet from areas occupied by LBVI.

    - Twice weekly surveys for the LBVI will be conducted by the biological monitor in areas of suitable habitat within 500 feet of proposed activities to determine the presence of LBVI nest building activities, egg incubation activities, or brood rearing activities.

    - If LBVI are present, noise monitoring will be conducted weekly and must demonstrate noise levels less than 60 dB(A) Leq hourly at specified monitoring locations, no less than 100 feet from the active nest(s) as determined by the biological monitor.

    - Weekly survey reports will be prepared during the nesting season and sent electronically to RCA and the wildlife agencies each week that LBVI are detected. The weekly reports will identify the location of LBVI nest sites and territories within 500 feet of the Proposed Project.

Additionally, the restoration of temporary vegetation impacts and mitigation proposed for permanent impacts to riparian vegetation communities in Section 7.1.4 DBESP Analysis—Riparian/Riverine Resources, below would strive to extend existing habitat for, and create new riparian and wetland habitat for LBVI adjacent to the Proposed Project area within Prado Basin. Although the Proposed Project is unable to avoid impacts to suitable LBVI habitat, implementation of the previously approved project design features and mitigation measures would represent a biologically equivalent or superior preservation alternative.

7.1.3 Results/Impacts—Riparian/Riverine Resources

The previous DBESP (2018) assessed permanent impacts totaling 6.22 acres and temporary impacts to 10.98 acres of MSHCP riparian/riverine areas within the 2018 Proposed Project area; approximately 1.67 acres of permanent impacts and 2.03 acres of temporary impacts were located within the Phases 2, 2A, and 3A Proposed Project Area (previously Reaches III through VII). The Proposed Project will result in a total of 1.21 acres of permanent impacts, and 5.70 acres of temporary impacts to MSHCP riparian/riverine areas. This is an approximate reduction of approximately 0.56 acre of permanent impacts. Table 8: Riparian/Riverine Vegetation Impacts shows the updated Proposed Project impacts to riparian/riverine vegetation communities.

Direct impacts to riparian/riverine vegetation communities include the removal of habitat as a result of implementation of the Proposed Project. The impacts have been minimized whenever possible in the project design and permanent impacts would be restricted and vary in width from 12 to 39 feet, depending on location. The average trail width in riparian vegetation community types on nonfederal land is 17.4 feet. Impacts to vegetation, particularly riparian/riverine vegetation, would be limited to minimum native vegetation removal through judicious route selection and trimming of willows and sycamores, rather than

removal. Vegetation impacts for all vegetation communities present in the Proposed Project area are summarized in Section 8, Vegetation Community Impacts. Vegetation community maps are also located in Section 8. This section analyzes impacts to riparian vegetation communities and provides a DBESP analysis to avoid impacts to these communities.

Table 8. Riparian/Riverine Vegetation Impacts

Vegetation Type	2018 Impacts Reaches III-VII (Acres)		2023 Impacts (Acres)	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts^
Arroyo Willow Thickets	1.52*	1.42*	0.41	2.11
Mulefat Thickets	0.11*	0.51*	0.77	3.46
Partially Vegetated Channel+	0.04*	0.10*	0.03	0.03
Shining Willow Groves	-	-	-	0.11
Total	**1.67**	**2.03**	**1.21**	**5.70^**

Source: Stantec Consulting Services Inc. 2023

Notes: *2018 Determination of Biologically Equivalent or Superior Preservation (DBESP) vegetation communities were not mapped using Manual of California Vegetation, 2nd Edition

+2022 totals are higher in this table than Table 7, because partially vegetated channel is not included in Table 7.

^ Although the temporary acreage impacts between the 2023 DBESP Addendum and 2018 DBESP have increased, this is because potential acreages for lay-down yards, equipment turnaround areas, etc. were not included in the 2018 DBESP. Moreover, as noted in the 2023 DBESP Addendum, permanent impact acreage totals for these areas have decreased overall. As such, Table 8 gives the appearance of having comparatively increased temporary impacts, although this is not actually the case.

7.1.3.1 Wetlands, Riparian Habitat and Waters Functions and Values

The drainages observed within the Proposed Project Area include ephemeral streams and concrete-lined channels. Associated wetland features and riparian habitat were also documented within the Proposed Project area. Of the ten drainages mapped in the study area, drainages 1, 2, 8, 9, and 10 are soft bottomed with riparian vegetation and direct connectivity to the Santa Ana River and the Prado Basin. These stream features, when functioning properly, are capable of providing ecological and hydrological functions such as: transport of water, nutrients, and sediment throughout a watershed; providing landscape hydrologic connections; stream energy dissipation during high-water flows to reduce erosion and improve water quality; surface and subsurface water storage and exchange; ground-water recharge and discharge; sediment transport, storage, and deposition to aid in floodplain maintenance and development; nutrient storage and cycling; wildlife habitat and migration corridors; support for vegetation communities to help stabilize stream banks and provide wildlife services; and water supply and water-quality filtering (Levick et al. 2008). These drainages also provide a wide array of ecological functions including forage, cover, nesting, and movement corridors for wildlife (Levick et al. 2008). The remaining drainages are either concrete lined, have no connectivity, and/or have no associated riparian vegetation, and provide few ecological and hydrological functions as described by Levick et al. (2008) or by the functions and values as described by the USACE.

7.1.4 Determination of Biologically Equivalent or Superior Preservation Analysis—Riparian/Riverine Resources

As previously stated, the Proposed Project will result in a total of 1.21 acres of permanent impacts and 5.70 acres of temporary impacts to MSHCP riparian/riverine areas.

7.0 IMPACT ANALYSIS AND DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION ANALYSIS

As identified previously in the 2018 DBESP, temporary impacts to riparian vegetation communities will be mitigated by restoring the area to previous conditions or better. Methods to obtain the restoration may include incorporating seed, seedlings, and mature plantings where feasible into the area of impact according to the appropriate native vegetation type, then maintained with irrigation (until plants are established) and invasive, non-native species removal for a period of 5 years. The Proposed Project would commit to a 5-year monitoring and maintenance period to ensure that native seed and plantings are established in areas of temporary impact, and the development of a Habitat Mitigation and Monitoring Plan (HMMP). Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5. The native seed mixes for these areas will be selected in coordination with OCWD, as well as the USFWS and CDFW, with the following objectives:

- Continue ongoing efforts by Orange County Water District to minimize wood-boring beetle impacts to riparian forest in Prado Basin;
- Replacement of less favorable vegetation types with native species;
- Selection with consideration for species favored by tricolored blackbirds (*Agelaius tricolor*) for nesting, which may include broadleaf cattail (*Typha latifolia*) and bulrushes (*Scirpus* spp.), or blackberries (*Rubus* spp.), nettles (*Urtica* spp.), and willows (Hamilton 2004) in areas adjacent to riparian areas.

The native seed mixes selected will be subject to wildlife agency review and approval. Avoidance measures for areas of temporary impact include leaving any mature riparian species in place, when possible. The management prescriptions for the restoration of temporary impacts will be detailed in a draft Compensatory HMMP and submitted along with the CWA section 404 nationwide permit from the USACE, CWA section 401 Water Quality Certification from the RWQCB, and Streambed Alteration Agreement (SAA) with CDFW permitting for the Proposed Project. The HMMP will also be submitted to the USFWS and CDFW MSHCP teams.

The previous DBESP identified mitigation for 6.20 acres of permanent impacts to MSHCP riparian/riverine areas within the overall Proposed Project Area; approximately 1.67 acres of permanent impacts were located within the Phases 2, 2A, and 3A Proposed Project Area (previously Reaches III through VII). The Proposed Project will result in a reduced total of 1.21 acres of permanent impacts to MSHCP riparian/riverine areas. The previous DBESP proposed a total of 21.6 acres of mitigation for the overall Proposed Project Area within the upper and lower Mill Creek mitigation areas, including approximately 18.3 acres of riparian planting and 3.3 acres of establishment. The previous DBESP provided mitigation for impacts to riparian/riverine areas at a ratio of 3.48:1. Given that the Proposed Project has reduced impacts, the proposed mitigation ratio for impacts to riparian/riverine areas will increase from that provided by the previous DBESP. Table 9: Riparian/Riverine Mitigation demonstrates the mitigation for impacts to riparian/riverine areas for the Proposed Project as compared to the mitigation proposed for the same reaches from the 2018 DBESP.

Table 9. Riparian/Riverine Mitigation

	2018 Mitigation			2023 Mitigation		
	Impacts (Acres)	**Mitigation**	**Mitigation Ratio**	**Impacts (Acres)**	**Mitigation**	**Mitigation Ratio**
Permanent Impacts	1.67	5.82 Acres Mill Creek*	3.48:1	1.21	5.82 Acres Mill Creek*	4.81:1
Temporary Impacts	2.03	2.03 Acres Revegetation	1:1	5.70	5.70 Acres Revegetation	1:1

Source: Stantec Consulting Services Inc. 2023
*Notes: *The mitigation acreage for Mill Creek was calculated by dividing the total Mill Creek mitigation acreage (21.6 Acres) by the total riparian/riverine impacts (6.2 acres) proposed by the 2018 DBESP, then multiplying by the permanent impacts for Reaches III-VII.*

The previously approved mitigation for the permanent impacts to riparian vegetation communities consisted of riparian vegetation restoration, an extension of existing riparian forest, and the hydrological reconnection of Mill Creek in the Prado Basin to its floodplain, among other features. Since the Proposed Project will result in less impacts than previously approved, the compensatory mitigation contemplated by the 2018 DBESP will fulfill the mitigation requirements for the Proposed Project and represent a biologically equivalent or superior preservation alternative.

The focus of the mitigation effort would be to create habitat attributes for LBVI, SWFL, and, potentially, tricolored blackbird. As specified in the 2018 DBESP, the Proposed Project would commit to a 5-year monitoring and maintenance period for the implementation and maintenance of the Mitigation Concept, and the development of a HMMP for the mitigation site to off-set permanent impacts in the Proposed Project area. Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5. The management prescriptions for the restoration of permanent impacts will be detailed in a draft HMMP with more detailed construction drawings and submitted along with the CWA Section 404 nationwide permit from the USACE, CWA section 401 WQC from the RWQCB, and SAA with CDFW permitting for the Proposed Project. The HMMP for the mitigation site will also be submitted to the USFWS and CDFW MSHCP teams for review.

The District will ensure that the long-term maintenance of the habitat improvements at the mitigation site includes annual surveys, site inspections, and correct adaptive management techniques as may be required to sustain the improvements indefinitely. Special survey and management consideration will be focused upon habitat parameters for LBVI, SWFL, and tricolored blackbird. The District will provide upkeep and regular maintenance of the site by the implementation of management treatment methodologies that give the native plant populations the best chance for survival and establishment. Management treatment methodologies include chemical, light to heavy mechanical treatment and active plant restoration, where feasible and as needed. Continued removal of non-native invasive plant species, surveys for plant health and plant disease, and conducting brown-headed cowbird trapping to limit nest parasitism will give the best chances of retaining habitat improvements and encourage native species diversity.

7.2 Narrow Endemic Plant Species

7.2.1 Results/Impacts – Narrow Endemic Plant Species

The Proposed Project area is also located within a survey area for three narrow endemic plant species: San Diego ambrosia, Brand's phacelia, and San Miguel savory. These species are not expected to occur within the Proposed Project area. Based on the known recorded occurrences and existing habitat on site, the three narrow endemic plant species listed above have a low potential to occur within the Proposed Project area. Focused sensitive plant surveys were conducted in all vegetated areas in the Proposed Project area, the results of those surveys are provided in the BRTR (Appendix B of this 2023 DBESP Addendum). San Diego ambrosia, Brand's phacelia, and San Miguel savory were not observed in the Proposed Project area during the focused surveys. Based on the known recorded occurrence and existing habitat on-site, the three narrow endemic plant species listed above have a low potential to occur within the Proposed Project area. The Proposed Project area is considered absent of these plant species; therefore, no impacts to narrow endemic plant species are expected to result from the Proposed Project.

7.2.2 Determination of Biologically Equivalent or Superior Preservation Analysis—Narrow Endemic Plant Species

No impacts to narrow endemic plant species are expected to result from Proposed Project implementation; therefore, no mitigation is proposed.

7.3 Burrowing Owl

7.3.1 Results/Impacts – Burrowing Owl

The Proposed Project area is located within a designated survey area for BUOW—an MSHCP Criteria Area species. Based on the results of the habitat assessment conducted on May 6, 2021, it was determined that portions of the Proposed Project Area provide suitable breeding and foraging habitat for BUOW. These areas included disturbed non-vegetated areas in Phase 2A along Butterfield Drive just south of the Corona Airport; mulefat thickets in the Phase 2A along the north side of West Rincon Drive that are partially disturbed and open; non-native grasslands (Wild Oats and Annual Brome Grasslands) in Phases 2, 2A, and 3A; and restoration areas, ruderal habitat, and non-vegetated disturbed areas along the edge the dirt roads in Phases 2, 2A, and 3A. Much of the non-native grassland habitat in the Proposed Project Area consists of dense thatch that is not suitable for BUOW.

Focused surveys were conducted for BUOW on May 6, June 30, August 12, and September 3, 2021. The results of the focused surveys are provided in Appendix F of the BRTR (Appendix B). Signs of California ground squirrels were present, and individuals were observed, only within the eastern extent of the Proposed Project Area in the general vicinity of the Corona Municipal Airport. Three California ground squirrel burrows were observed and mapped within a disturbed/developed area in the eastern portion of Phase 2A. The California ground squirrel burrows ranged in size from 5 to 8 inches wide. No BUOW or sign of BUOW were observed during the 2021 focused surveys.

7.3.2 Determination of Biologically Equivalent or Superior Preservation Analysis – Burrowing Owl

Due to the fact that the Proposed Project Area is located within the Western Riverside County MSHCP BUOW survey area, a 30-day preconstruction survey is required prior to the commencement of Proposed Project activities (e.g., vegetation clearing, clearing and grubbing, tree removal, site watering) to ensure that no owls have colonized the Proposed Project Area in the days or weeks preceding Proposed Project activities. If BUOW are found to have colonized the Proposed Project site prior to the initiation of construction, the District will immediately inform Regional Conservation Authority (RCA) and the Wildlife Agencies and will need to prepare a Burrowing Owl Protection and Relocation Plan for approval by RCA and the Wildlife Agencies prior to initiating ground disturbance. If ground-disturbing activities occur but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure BUOW has not colonized the site since it was last disturbed. If BUOW is found, the same coordination described above will be necessary.

7.4 Coastal California Gnatcatcher

The coastal CAGN is listed as a threatened species by the USFWS (58[59] FR 16742–16757), species of special concern by CDFW (CDFW 2021). The coastal CAGN and suitable habitat is a covered species under the MSHCP, but not on federal lands. Consultation with the USFWS for impacts to this species and suitable habitat will be conducted separately and is therefore not discussed further in this document.

7.5 Public/Quasi-Public Lands

7.5.1 Results/Impacts Public/Quasi-Public Lands

The previous DBESP assessed permanent impacts 12.18 acres and temporary impacts to 17.69 acres of PQP land in the Prado Basin for the 2018 Project area for Reaches III through VIII based on the most recent PQP parcel data. The Proposed Project will result in permanent impacts to approximately 8.3 acres and temporary impacts to 25.5 acre of PQP land in Prado Basin. Refer to Exhibit 9: Public Quasi Public Conserved Lands. Permanent impacts to PQP lands include 0.46 acre of impacts to riparian/riverine habitat located within PQP lands.

The impacted PQP lands are currently located on existing portions of trail and maintenance roads. Table 9: Vegetation Impacts for PQP Lands demonstrates the permanent vegetation impacts on PQP lands that would occur as a result of Proposed Project as compared to the same reaches from the 2018 DBESP.

Table 10. Vegetation Impacts for Public/Quasi-Public Lands

Vegetation Type	2018 DBESP PQP Impacts		2023 DBESP PQP Impacts	
	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Arroyo Willow Thickets	5.54+*	8.83+*	—	1.47*
Arundo Scrub^	0.17*	0.19*	—	—
California Sagebrush Scrub	—	—	2.54	3.28

Vegetation Type	2018 DBESP PQP Impacts		2023 DBESP PQP Impacts	
	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Disturbed/Developed	1.88*	1.24*	1.29	5.88
Eucalyptus Groves	—	—	0.08	0.18
Mulefat Thickets	0.08+*	0.31+*	0.31*	2.01*
Partially Vegetated Channel	0.03+*	0.05+*	0.02*	>0.01*
Perennial Pepper Weed Patches	—	—	—	0.62
Poison Hemlock or Fennel Patches	—	—	—	0.10
Restoration	—	—	0.63	1.56
Ruderal	—	—	0.04	0.71
Upland Mustards or Star-thistle Fields	—	—	0.75	1.52
Wild Oats and Annual Brome Grasslands	4.50*	7.08*	2.66	8.19
Total	**12.18***	**17.69***	**8.32**	**25.53^**

Source: Stantec Consulting Services Inc. 2023

Notes: + Denotes impacts to riparian/riverine habitats

* 2018 Determination of Biologically Equivalent or Superior Preservation (DBESP) vegetation communities were not mapped using Manual of California Vegetation, 2nd Edition

^ Although the temporary acreage impacts between the 2023 DBESP Addendum and 2018 DBESP have increased, this is because potential acreages for lay-down yards, equipment turnaround areas, etc. were not included in the 2018 DBESP. Moreover, as noted in the 2023 DBESP Addendum, permanent impact acreage totals for these areas have decreased overall. As such, Table 9 gives the appearance of having comparatively increased temporary impacts, although this is not actually the case.

7.5.2 Determination of Biologically Equivalent or Superior Preservation Analysis— Public/Quasi-Public Lands

The Proposed Project will result in permanent impacts to PQP lands totaling 8.32 acres, including 0.46 acre of impacts to riparian/riverine habitat within the Phases 2, 2A, and 3A Proposed Project Area (previously Reaches III through VII). Temporary impacts to PQP lands will be mitigated by restoring those areas to previous conditions or better, which may include incorporating seed, seedlings, and adult plantings into the area of impact according to the appropriate native vegetation type, then maintained with irrigation (until plants are established) and invasive, non-native species removal for a period of 5 years. The Proposed Project would commit to a 5-year monitoring and maintenance period to ensure that native seed and plantings are established in areas of temporary impact, and the development of a HMMP. Provisions for monitoring and maintenance beyond the 5-year period will be made if the success criteria identified in the HMMP are not achieved by the end of year 5.

The previously approved mitigation for the permanent impacts to PQP lands consisted of the contribution of parcel APN 153-240-032 (19.9 acres) of the Hidden Valley Wildlife Area and 5.6 acres of the 10.5-acre parcel APN 121-120-023, known as the Weyerhaeuser Parcel, to the conservation goal for Core A. This would constitute a total of 25.5 acres of land transferred to PQP land for the MSHCP. In addition, The Mill Creek mitigation area (described in Section 7.1.4) will provide for the replacement of biological and riparian/riverine habitat value as they relate to replacement of permanently impacted PQP lands. Table

11: Public/Quasi-Public Lands Mitigation demonstrates the mitigation for impacts to PQP lands for the Proposed Project as compared to the mitigation proposed for the same reaches from the 2018 DBESP.

Table 11. Public/Quasi-Public Lands Mitigation

	2018 Mitigation			2023 Mitigation		
	Impacts (Acres)	**Mitigation**	**Mitigation Ratio**	**Impacts (Acres)**	**Mitigation**	**Mitigation Ratio**
Permanent Impacts	12.18	25.5 Acres Hidden Valley and Weyerhaeuser	2.09:1	8.32	25.5 Acres Hidden Valley and Weyerhaeuser	3.07:1
Temporary Impacts	17.69	17.69 Acres Restoration of Impacted Areas	1:1	25.53	25.53 Acres Restoration of Impacted Areas	1:1

Source: Stantec Consulting Services Inc. 2023

The compensatory mitigation contemplated by the 2018 DBESP will fulfill the mitigation requirements for the Proposed Project and represent a biologically equivalent or superior preservation alternative.

7.6 Urban/Wildlands Interface Guidelines

MSHCP Section 6.1.4, Guidelines Pertaining to the Urban/Wildlands Interface, discusses guidelines to address indirect effects associated with locating development in proximity to MSHCP Conservation Areas. The Urban/Wildland Interface is defined as a zone (less than 100 feet) between a project site and the MSHCP Conservation Area. If a project is located adjacent to a Conservation Area, avoidance measures must be implemented. Since the Proposed Project area is located within or adjacent to MSHCP Conservation Areas/PQP Lands and the Proposed Project area is traversed by and adjacent to drainage areas that are considered riparian/riverine resources, Urban/Wildlands Interface Guidelines are required to be applied to the Proposed Project. The following Urban/Wildlands Interface Guidelines, as detailed in the 2018 DBESP, shall be incorporated into the Proposed Project to reduce potential impacts to the MSHCP Conservation Areas/PQP Lands and riparian/riverine resources.

7.6.1 Drainage

Water quality BMPs shall be incorporated, including the National Pollutant Discharge Elimination Systems and erosion control requirements from the RWQCB to ensure that the quantity and quality of surface water runoff discharged into the onsite and offsite drainage areas is not altered in an adverse way when compared with existing conditions. These BMPs will be implemented as part of the Storm Water Pollution Prevention Plan to ensure that water quality is not degraded.

7.6.2 Toxics

Measures such as those employed to address drainage issues will be implemented for toxics. Land uses proposed in proximity to the onsite and offsite drainage areas that use chemicals or generate bioproducts that are potentially toxic or may adversely affect wildlife species, habitat or water quality must incorporate

measures or BMPs to ensure that application of such chemicals does not result in discharge to the drainage areas.

7.6.3 Lighting

Night lighting shall be directed away from the PQP Lands to protect species within the PQP Lands from direct night lighting. Shielding shall be incorporated in Proposed Project designs to ensure ambient lighting in the PQP Lands is not increased.

7.6.4 Noise

Proposed noise generating land uses affecting the PQP Lands shall incorporate setbacks, berms, or walls to minimize the effects of noise on PQP Lands resources pursuant to applicable rules, regulations and guidelines related to land use noise standards. For planning purposes, wildlife within the PQP Lands should not be subject to noise that would exceed residential noise standards.

7.6.5 Invasives

Invasive, non-native plant species must not be used in the Proposed Project area. Table 6-2 of Volume 1 of the MSHCP lists the plants that should be avoided.

7.6.6 Barriers

Proposed land uses adjacent to PQP Lands shall incorporate barriers, where appropriate in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the PQP Lands. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage and/or other appropriate mechanisms.

7.6.7 Grading/Land Development

Manufactured slopes associated with proposed site development shall not extend into the PQP Lands.

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8.0 Vegetation Impacts

Exhibit 10: Vegetation Communities and Land Cover Types Impacts depicts the aerial photography of the Proposed Project's permanent and temporary impacts on vegetation communities. Table 10: Vegetation Community Impacts, summarizes the vegetation community impacts for each vegetation community mapped in the Proposed Project area. The information herein is provided using the acreages calculated for permanent and temporary impacts using the Proposed Project's 60% construction drawings.

Table 12. Vegetation Community Impacts

Vegetation Type	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Arroyo Willow Thickets	0.41	2.11
California Buckwheat Scrub	0.30	0.25
California Sagebrush Scrub	3.17	3.63
Coyote Brush Scrub	0.26	0.43
Disturbed/Developed	6.14	14.63
Eucalyptus Groves	0.08	0.18
Mulefat Thickets	0.77	3.46
Partially Vegetated Channel	0.03	0.03
Perennial Pepper Weed Patches	-	0.62
Poison Hemlock or Fennel Patches	-	0.10
Restoration	0.63	1.56
Ruderal	0.04	0.88
Shining Willow Groves	-	0.11
Upland Mustards or Star-thistle Fields	0.81	1.63
Wild Oats and Annual Brome Grasslands	3.52	9.55
Total	**16.18**	**39.20**

Source: Stantec Consulting Services Inc. 2023

8.1 Impacted Conservation Lands

There are three locations that the Proposed Project will result in permanent and temporary impacts to known conservation sites that have been established in the Prado Basin area for unrelated projects (Exhibit 4). Impacts to the habitat in these areas have been assessed and accounted for in the vegetation impacts addressed in Section 8 above and will be mitigated for as described in Section 7.1.4.

Table 13. Conservation Land Vegetation Community Impacts

Conservation Site	Vegetation Type	Permanent Impacts (Acres)	Temporary Impacts (Acres)
CSS 1	California Buckwheat Scrub	0.18	0.20
	Disturbed/Developed	0.001	-
CSS 3	Coyote Brush Scrub	0.13	0.34
	Disturbed/Developed	0.15	0.05

8.0 VEGETATION IMPACTS

Conservation Site	Vegetation Type	Permanent Impacts (Acres)	Temporary Impacts (Acres)
	Mulefat Thickets	0.01	0.04
	Wild Oats and Annual Brome Grasslands	0.07	0.23
CSS 4	Eucalyptus Groves	0.02	0.01
	Upland Mustards or Start-thistle Fields	0.31	0.35
Total		**0.87**	**1.22**

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9.0 Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date June 2, 2023 Signed 

PROJECT MANAGER
Gilberto Ruiz, Principal Environmental Planner
Stantec Consulting Services, Inc.

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10.0 References

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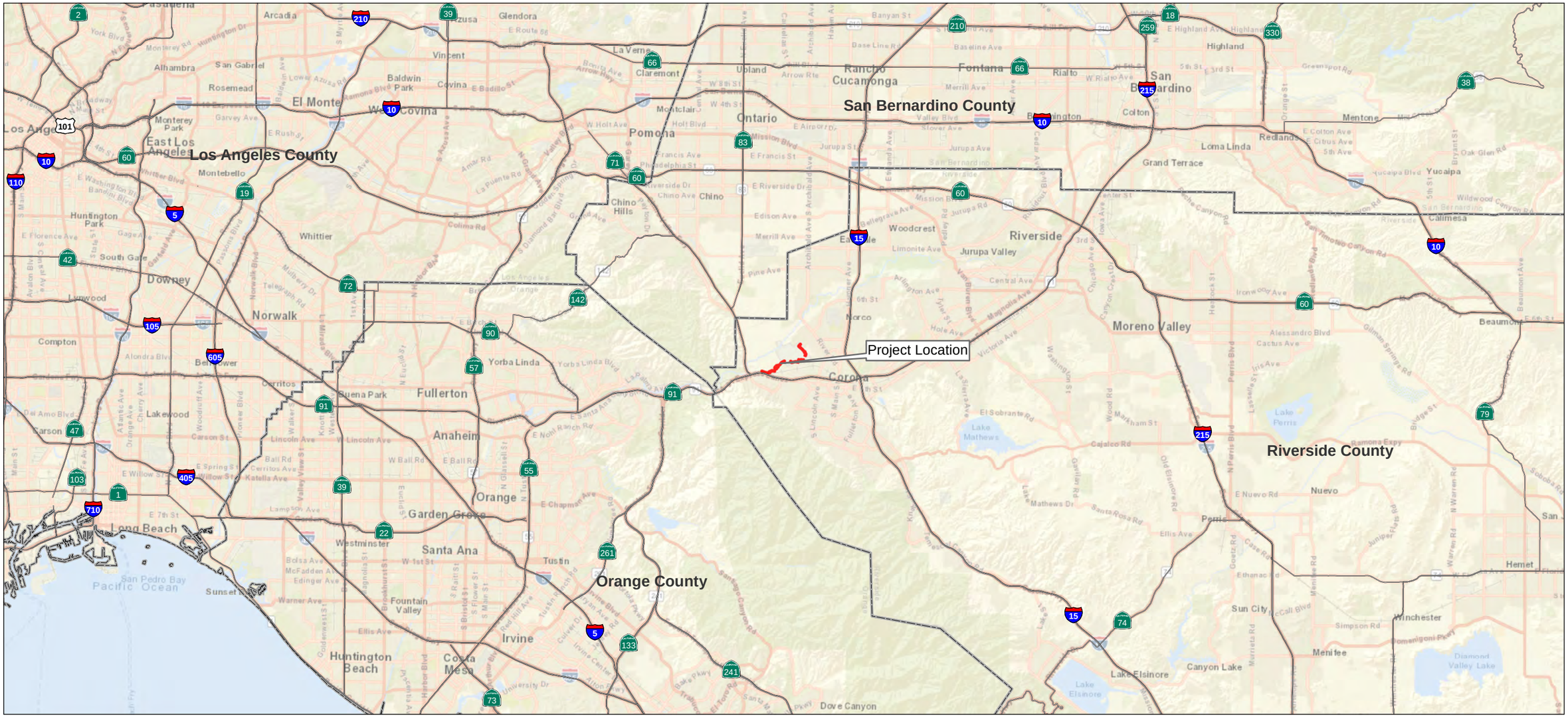
APPENDIX A

Exhibits



Project Footprint (55.38 ac.)

0 5 10 Miles

(At original document size of 11x17)
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N

Stantec

Project Location Near Corona Riverside County, California	Prepared by DL on 2023-04-21 TR by SET on 2023-04-21 IR by MT on 2023-04-21
Client/Project	2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 1

Title
Regional Location Map

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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V:\1858\business_development\Santa_Ana_River_Trail\DBESP_Exhibit1_RegionalLocationMap_20230421_11x17.mxd Revised: 2023-04-25 By: dallaw

Railroad

Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

Temporary Impact

Permanent Impact

Previously Approved Action (2017 Trail)

Temporary Impacts

Permanent Impacts

0 1,200 2,400 Feet

(At original document size of 11x17)
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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 2

Title
Comparison of Proposed Action and Previously Approved Action

Sheet 1 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. Firstcarbon Solutions 2017.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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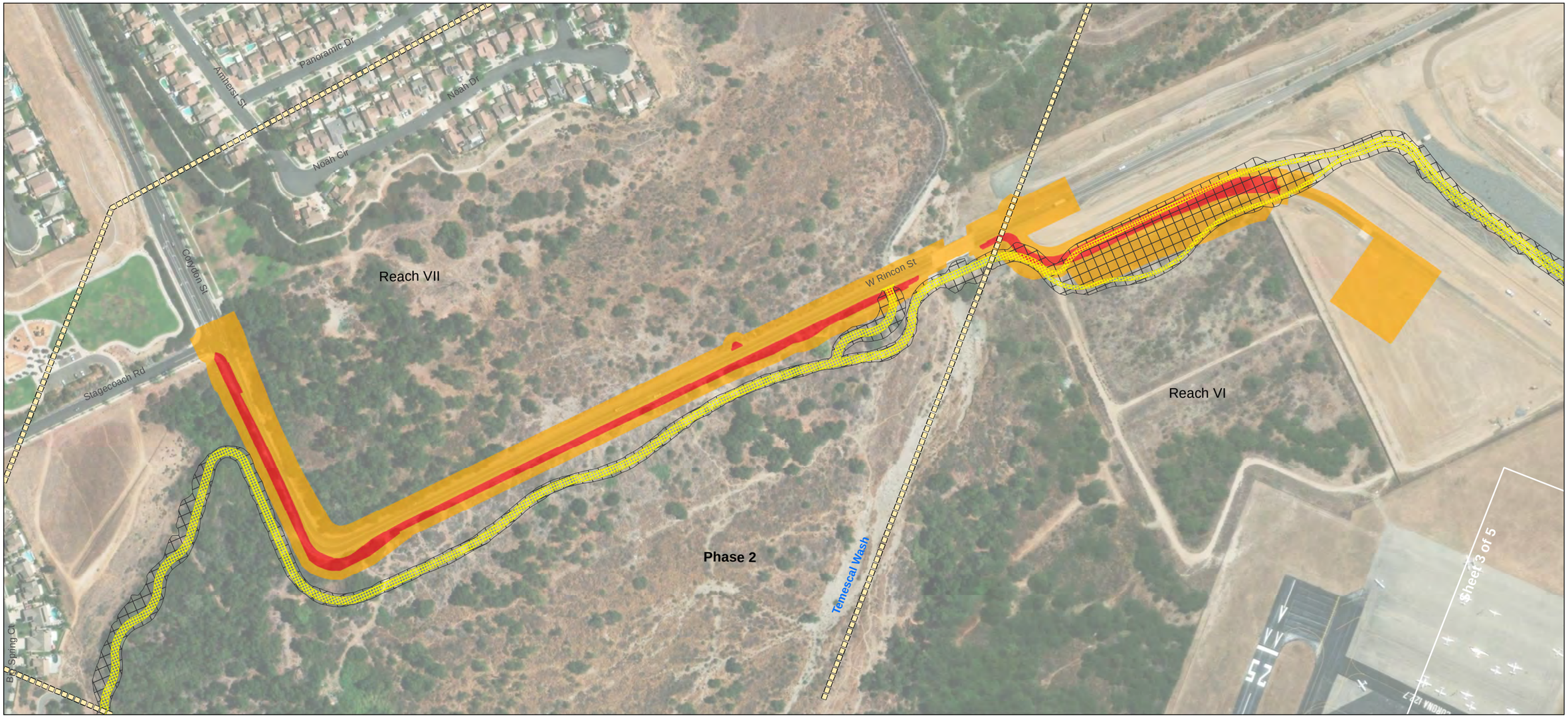

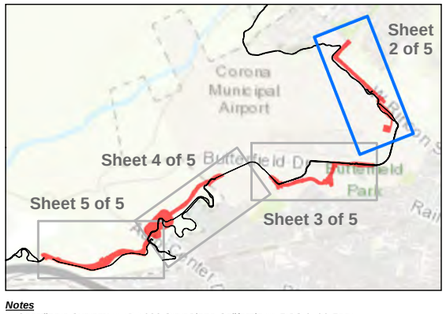

Proposed Action (2023 Trail-60% Design)
- Temporary Impact
- Permanent Impact

Previously Approved Action (2017 Trail)
- Temporary Impact
- Permanent Impact

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1:3,240

N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. Firstcarbon Solutions 2017.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 2

Title
Comparison of Proposed Action and Previously Approved Action

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Aviation Dr

Butterfield Dr

Reach IV

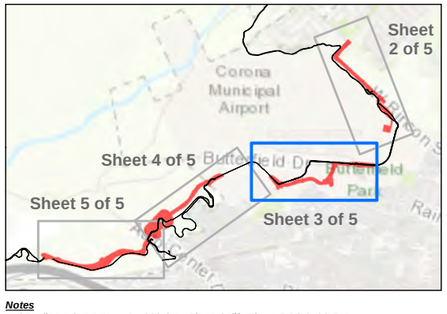
Reach V

Reach VI

Phase 2A

Sheet 2 of 5

Sheet 4 of 5



Proposed Action (2023 Trail-60% Design)

Temporary Impact

Permanent Impact

Previously Approved Action (2017 Trail)

Temporary Impact

Permanent Impact

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N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 2

Title
Comparison of Proposed Action and Previously Approved Action

Sheet 3 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. Firstcarbon Solutions 2017.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Phase 2A

Butterfield Dr

Sheet 5 of 5

Reach IV

Auto Center Dr

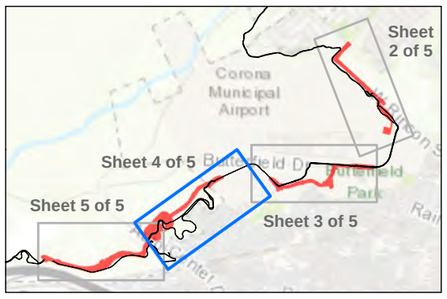
Railroad St

Bearing Cir

King Cir

Sheet 3 of 5

Reach III



Railroad

Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

Temporary Impact

Permanent Impact

Previously Approved Action (2017 Trail)

Temporary Impact

Permanent Impact

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 2

Title
Comparison of Proposed Action and Previously Approved Action

Sheet 4 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. Firstcarbon Solutions 2017.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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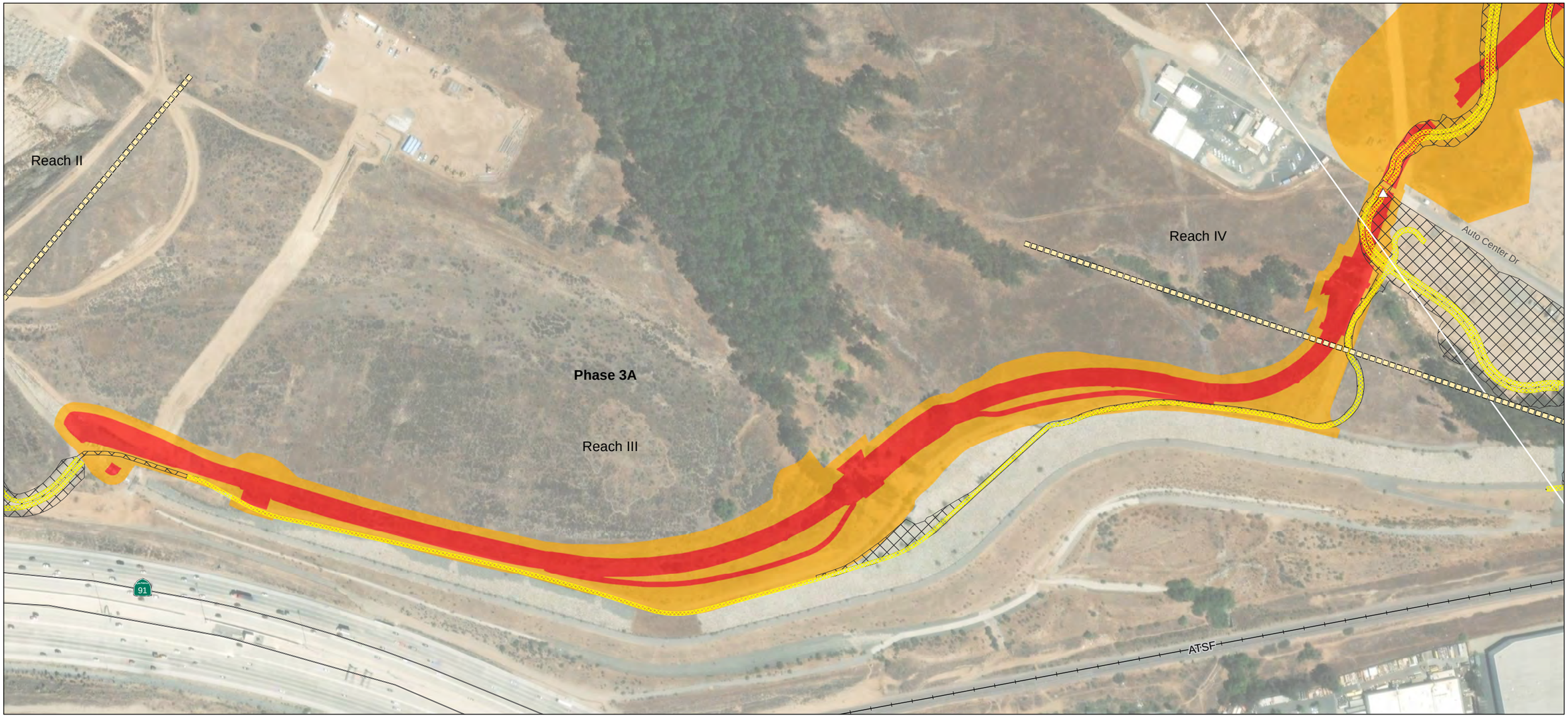

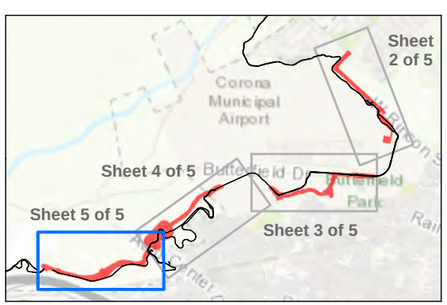

Railroad

Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

Temporary Impact

Permanent Impact

Previously Approved Action (2017 Trail)

Temporary Impact

Permanent Impact

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 2

Title
Comparison of Proposed Action and Previously Approved Action

Sheet 5 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. Firstcarbon Solutions 2017.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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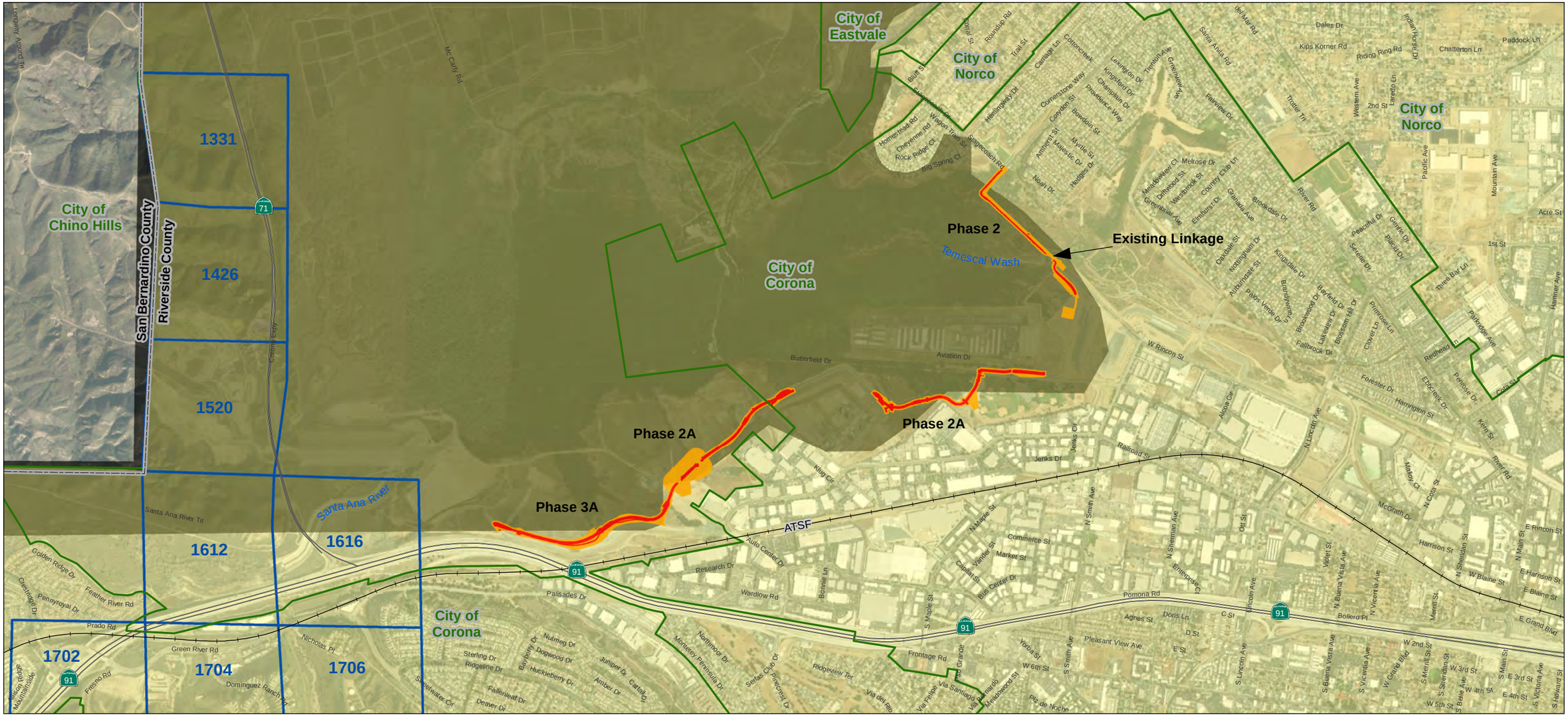

MSHCP Boundary
MSHCP Criteria Cells
Core A
Railroad
County Boundary
City Boundary

Proposed Action (2023 Trail-60% Design)

Temporary Impact
Permanent Impact

0 2,000 4,000 Feet

(At original document size of 11x17)
1:24,000

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 3

Title
MSHCP Criteria Areas Map

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023. Counties and Cities from CAL Fire 2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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V:\1856\business_development\Santa_Ana_River_Trail\DBESP_Exhibit3_MSHCPCriteriaAreasMap_20230421_11x17.mxd Revised: 2023-04-25 By: dallaw

- USACE Mitigation/Restoration Areas
- Railroad
- △ Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-07-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 4

Title
Proposed Action

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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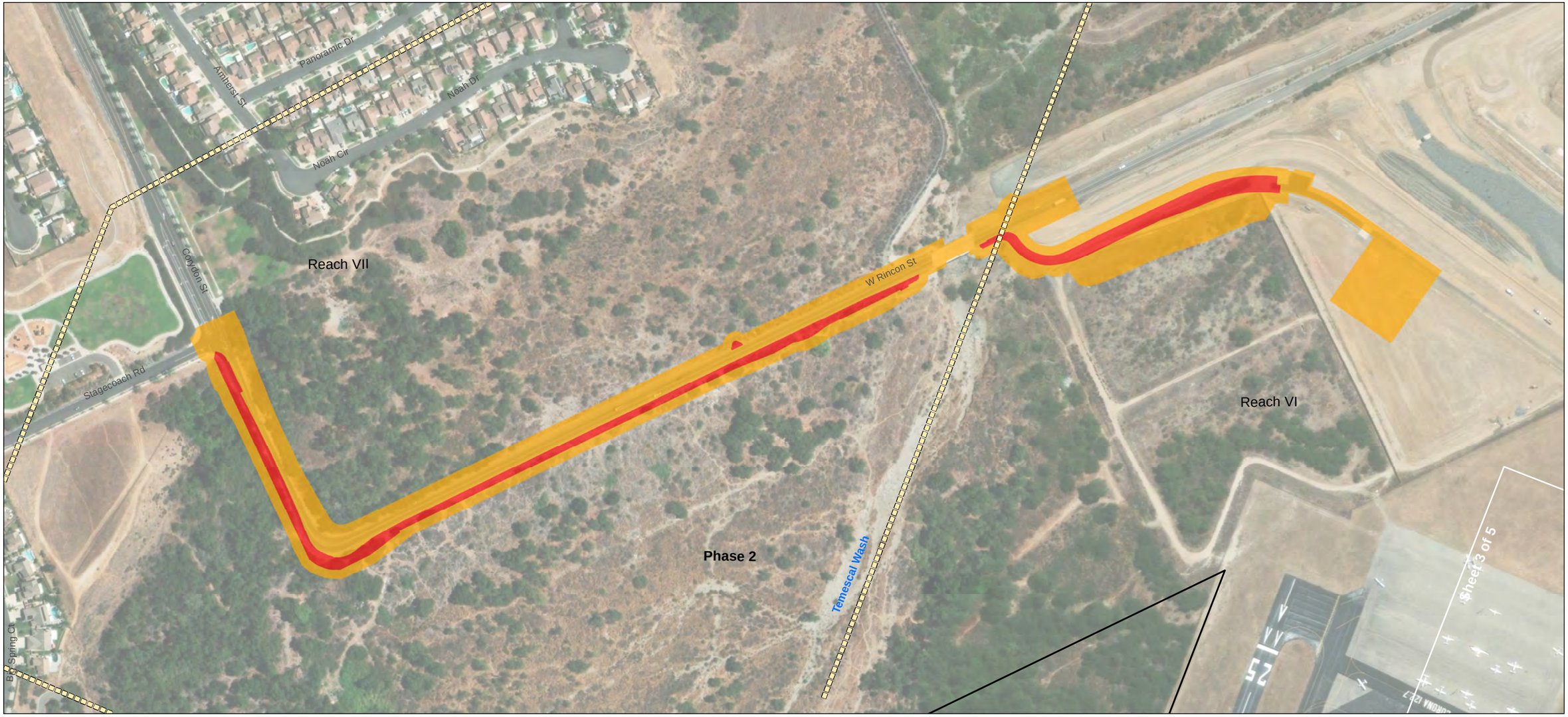

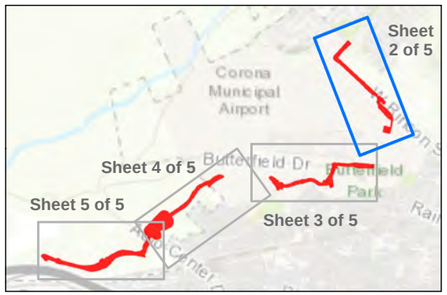

USACE Mitigation/Restoration Areas

Proposed Action (2023 Trail-60% Design)

Temporary Impact (39.20 ac.)

Permanent Impact (16.18 ac.)

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 4

Title
Proposed Action

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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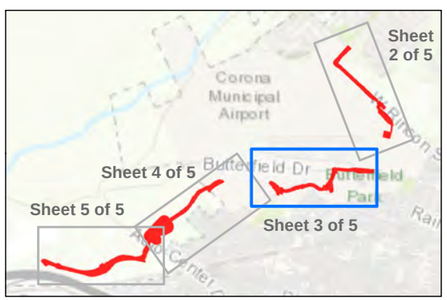

USACE Mitigation/Restoration Areas

Proposed Action (2023 Trail-60% Design)

Temporary Impact (39.20 ac.)

Permanent Impact (16.18 ac.)

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location	Prepared by DL on 2023-04-21
Near Corona	TR by SET on 2023-04-21
Riverside County, California	IR by MT on 2023-04-21
Client/Project	2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.

Exhibit 4

Title

Proposed Action

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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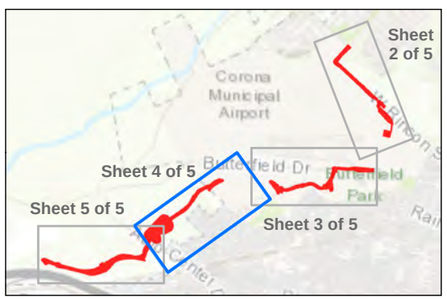

- USACE Mitigation/Restoration Areas
- Railroad
- △ Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

0 270 540 Feet

(At original document size of 11x17)
1:3,240

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 4

Title
Proposed Action

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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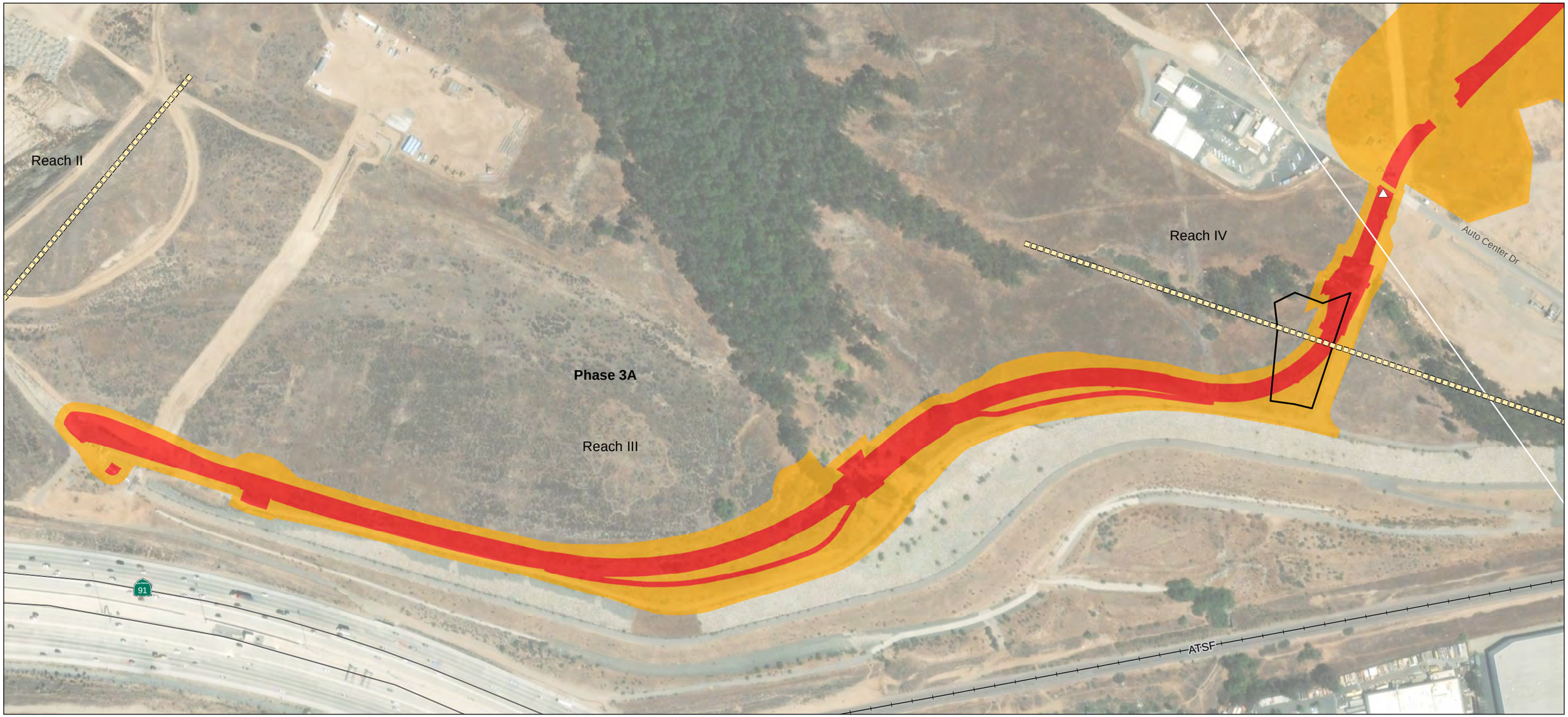

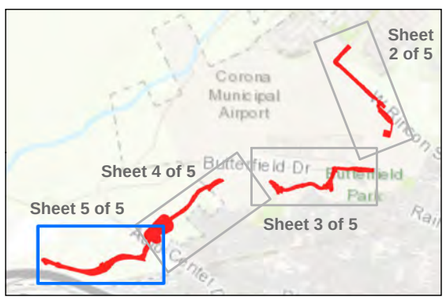

- USACE Mitigation/Restoration Areas
- Railroad
- △ Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 4

Title
Proposed Action

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

V:\1958\business_development\Santa_Ana_River_Trail\DBESP_Exhibit4_ProposedAction_DDP_20230421_11-17.mxd Revised: 2023-05-02 By: dalaw

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- Waterbody Crossing Location
- Railroad
- Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact
- Permanent Impact

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 5

Title
Culverts and Waterbody Crossings

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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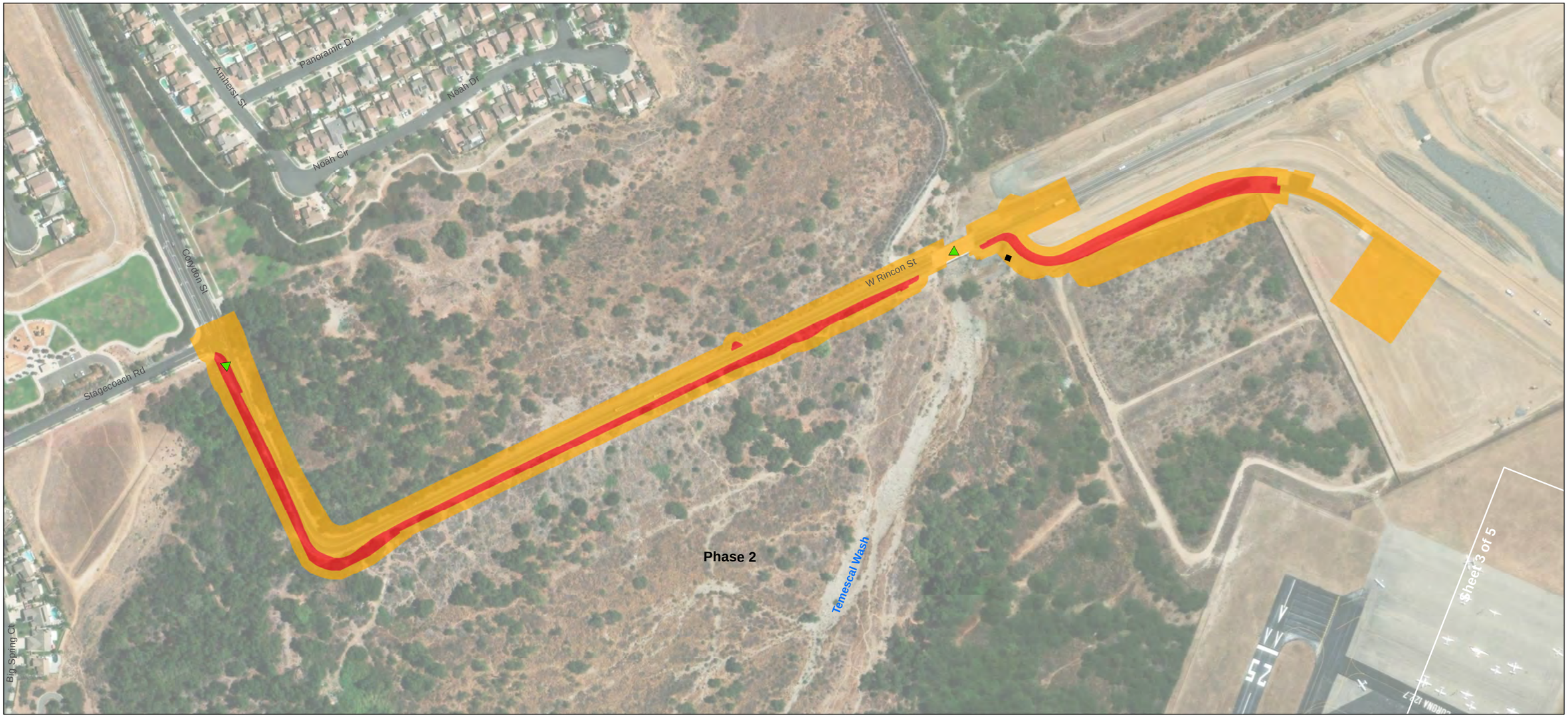
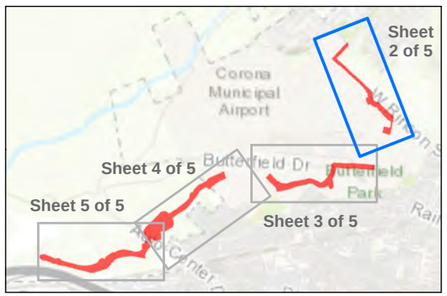
V:\1965\business_development\Santa_Ana_River_Trail\DBESP_Exhibit\6_Culvertsand\WaterBodyCrossing_Overview_20230421_11x17.mxd Revised: 2023-04-25 By: dalaw





- Culvert
- Waterbody Crossing Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact
- Permanent Impact

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 5

Title
Culverts and Waterbody Crossings

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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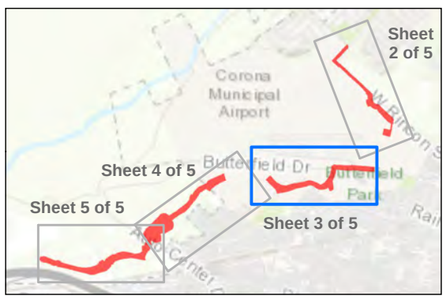

- Culvert
- Waterbody Crossing Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact
- Permanent Impact

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 5

Title
Culverts and Waterbody Crossings

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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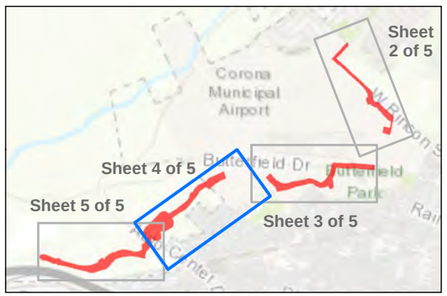

- Waterbody Crossing Location
- Railroad
- Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact
- Permanent Impact

0 270 540 Feet

(At original document size of 11x17)
1:3,240

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 5

Title
Culverts and Waterbody Crossings

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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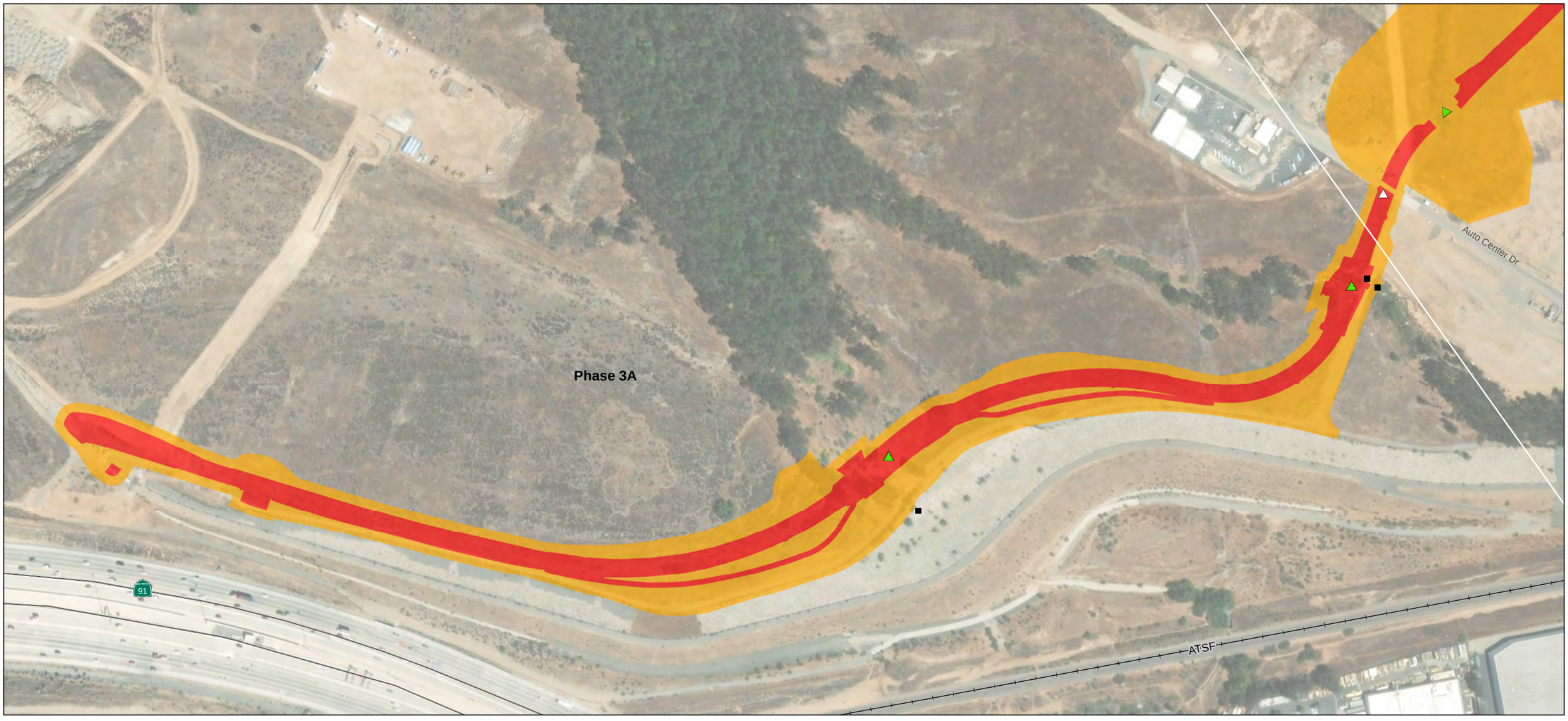

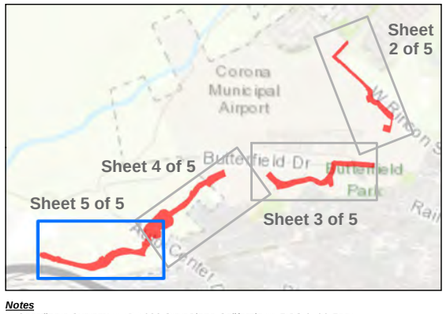

- Culvert
- Waterbody Crossing Location
- Railroad
- Phase 2A End Location / Phase 3A Start Location

Proposed Action (2023 Trail-60% Design)

- Temporary Impact
- Permanent Impact

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by MT on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.

Exhibit 5

Title

Culverts and Waterbody Crossings

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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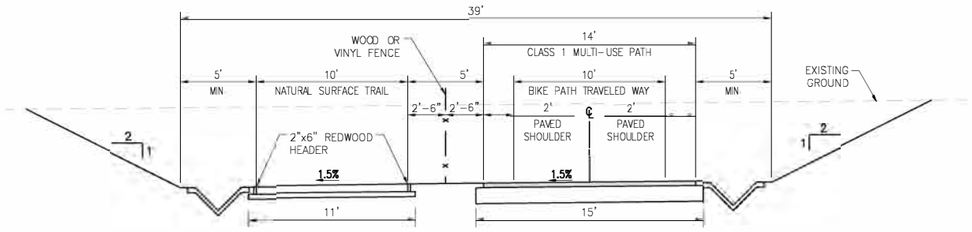
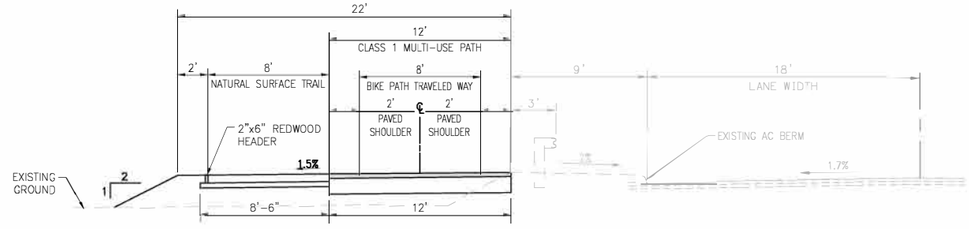
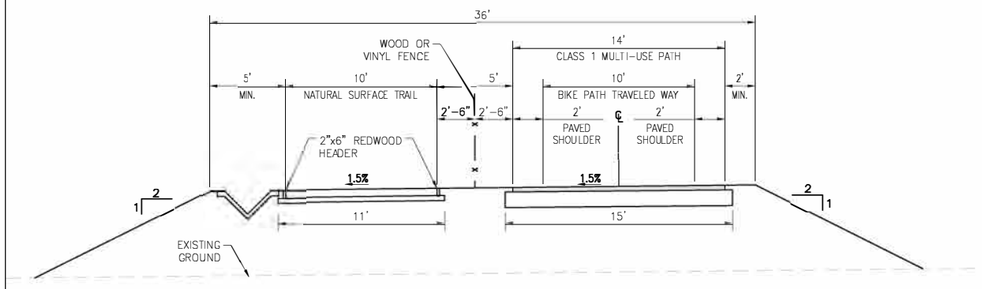


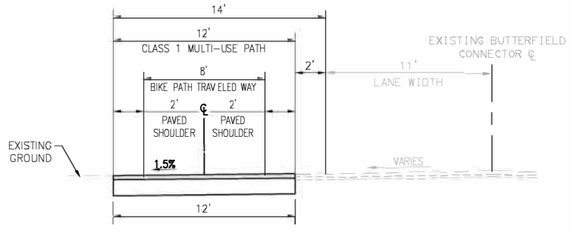
SART TRAIL
TYPICAL CUT SECTION
A
NTS



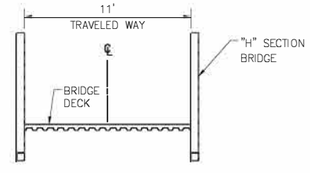
SART TRAIL
MINIMUM TRAIL AND DG SECTION
C
NTS



SART TRAIL
TYPICAL FILL SECTION
B
NTS



SART TRAIL
MINIMUM TRAIL SECTION
D
NTS



SART TRAIL
TYPICAL BRIDGE SECTION
E
NTS

Notes
1. Data Sources:Stantec 2021.
2. Background: STANTEC DEVELOPED SECTIONS 2021.
3. Scale: plotted at 10 scale

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2021-12-13
TR by SET on 2021-12-13
IR by GR on 2021-12-13

Client/Project 2042483140
Riverside County Transportation Commission
Santa Ana River Trail Project
DBESP Addendum

Figure No.
6

Title
Typical Trail and Bridge Sections

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- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad
- Culvert

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
Exhibit 7

Title
Aquatic Resources

Sheet 1 of 5

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021, 2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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V:\195\business_development\Santa_Ana_River_Trail\ARD_Exhibit\G1_SART_WatersMap_Overview_20230421_1147.mxd Revised: 2023-04-27 By: dslaw

30 ft. Buffer

Project Footprint

Potential USACE Jurisdictional Areas

Waters of the U.S.

Impacts to Potential USACE Jurisdictional Areas

Waters of the U.S. Temporary Impact

Reference Point

Culvert

Sample Point

Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
Exhibit 7

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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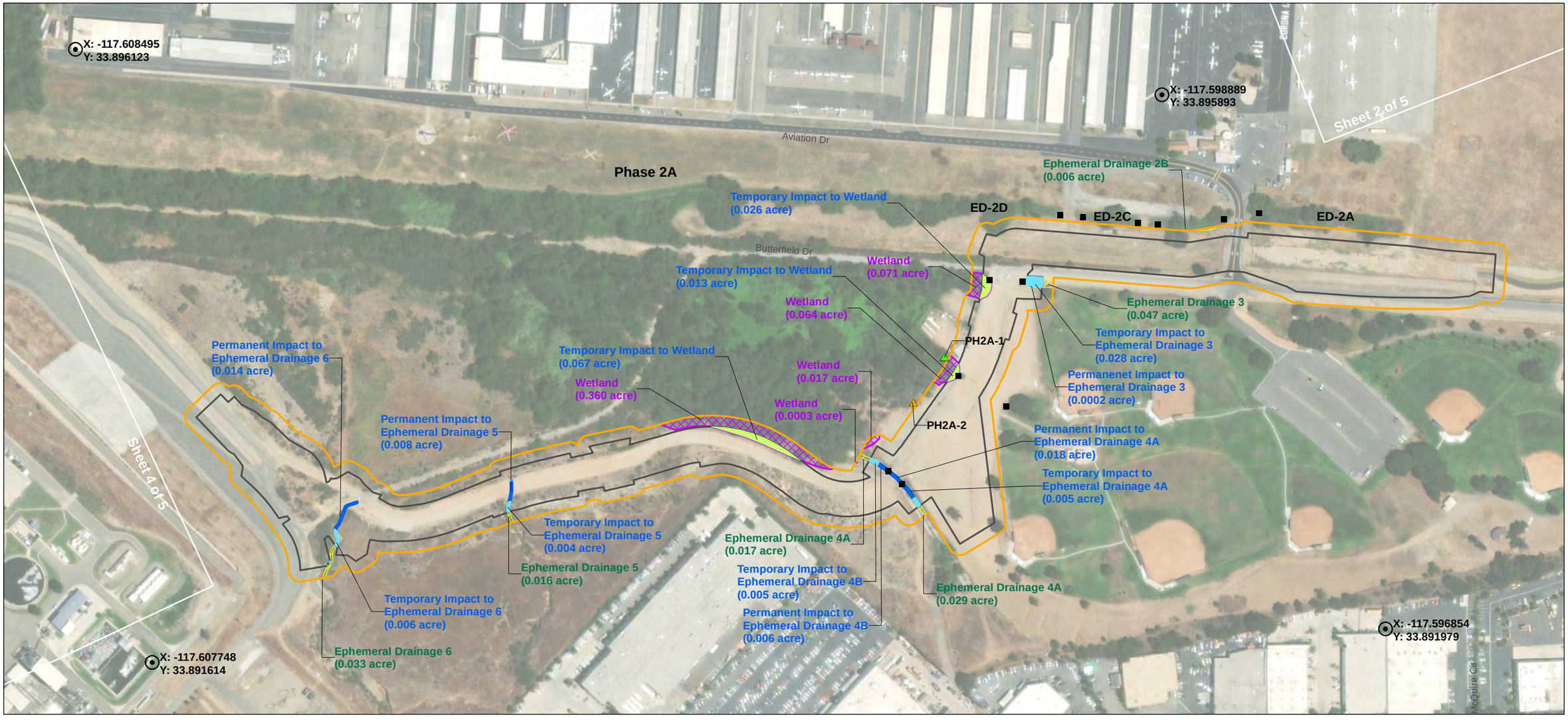

30 ft. Buffer

Project Footprint

Potential USACE Jurisdictional Areas

Waters of the U.S.

Wetlands

Impacts to Potential USACE Jurisdictional Areas

Waters of the U.S. Temporary Impact

Waters of the U.S. Permanent Impact

Wetlands Temporary Impact

Reference Point

Culvert

Sample Point

Non-wetland

Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.

Exhibit 7

Title

Aquatic Resources

Sheet 3 of 5

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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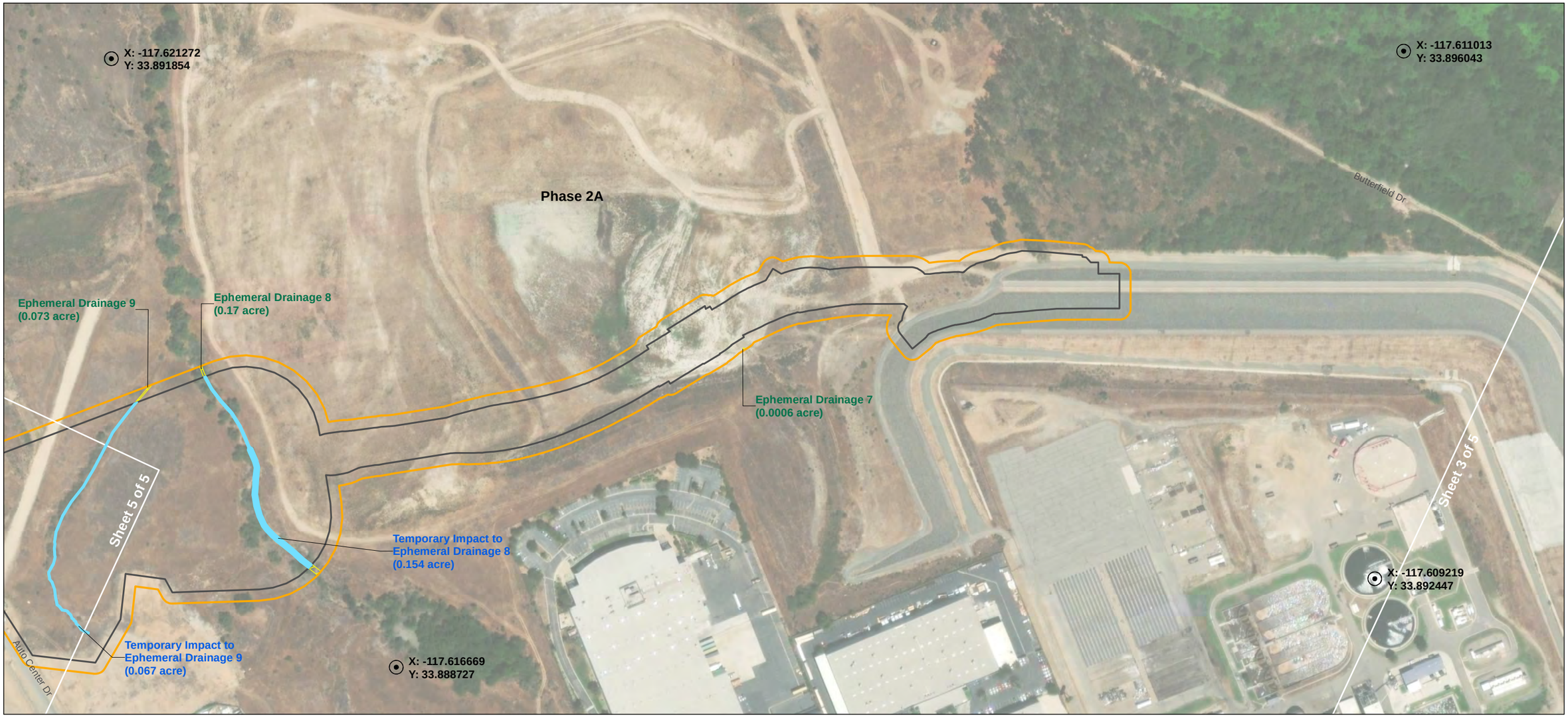

30 ft. Buffer

Project Footprint

Potential USACE Jurisdictional Areas

Waters of the U.S.

Impacts to Potential USACE Jurisdictional Areas

Waters of the U.S. Temporary Impact

Reference Point

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.

Exhibit 7

Title

Aquatic Resources

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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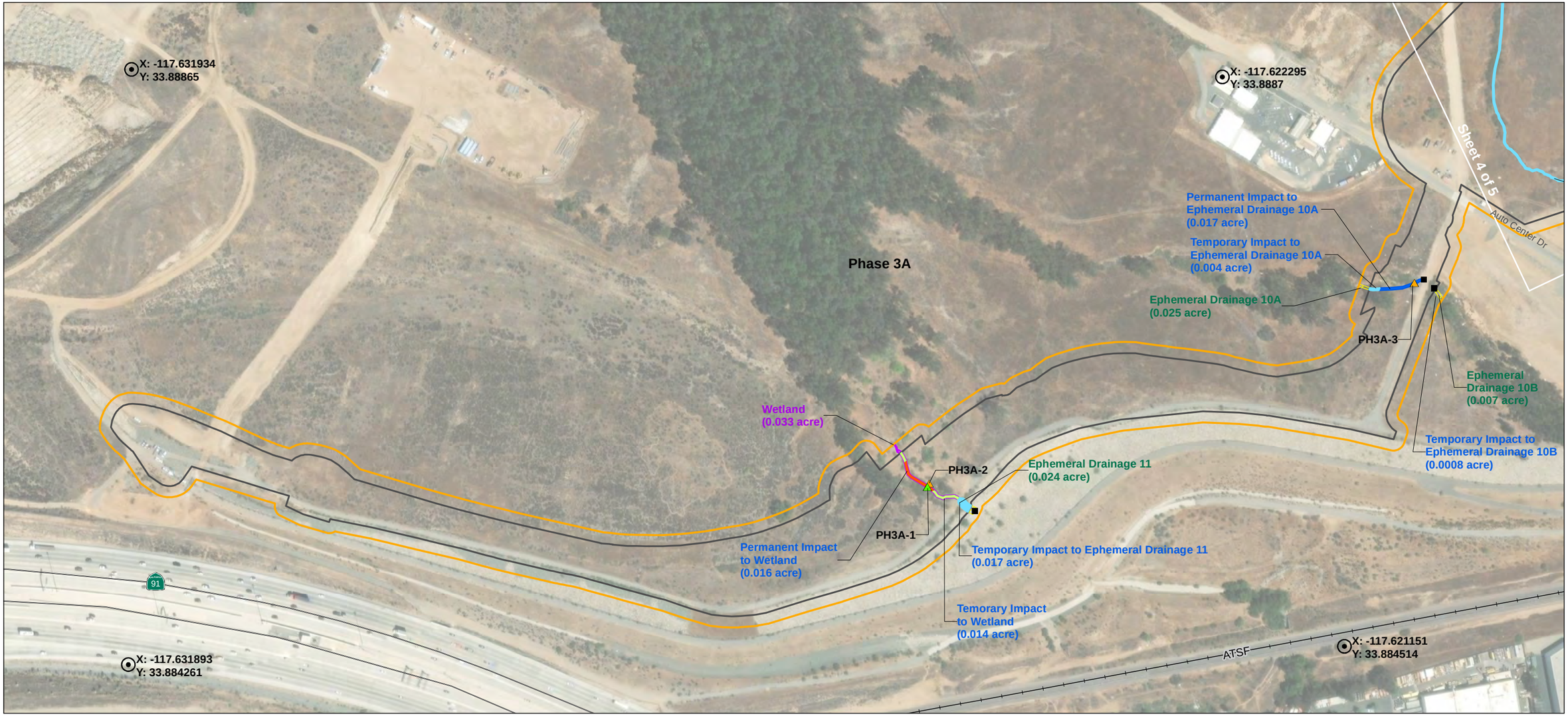

30 ft. Buffer
Project Footprint
Railroad

Potential USACE Jurisdictional Areas
Waters of the U.S.
Wetlands

Impacts to Potential USACE Jurisdictional Areas
Waters of the U.S. Temporary Impact
Waters of the U.S. Permanent Impact
Wetlands Temporary Impact
Wetlands Permanent Impact

Reference Point
Culvert

Sample Point
Non-wetland
Wetland

0 270 540 Feet
(At original document size of 11x17)
1:3,240

N

Stantec

Project Location	Prepared by DL on 2023-04-21 TR by SET on 2023-04-21 IR by JV on 2023-04-21
Near Corona Riverside County, California	
Client/Project	2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Aquatic Resources Survey Report

Figure No.
Exhibit 7

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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- Aquatic Resources Survey Area (100 ft Buffer)
- 2021 Least Bell's vireo (LBVI) Observations
- Project Footprint
- Railroad
- Culvert

Potential RWQCB Jurisdictional Waters
- Waters of the State

Potential CDFW Jurisdictional Waters
- Concrete Channel
- Riparian Wetlands and Waters

Potential USACE Jurisdictional Areas
- Waters of the U.S.
- Wetlands

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023. LBV data from Leatherman 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 8

Title
LBVI Territories and Occurrences

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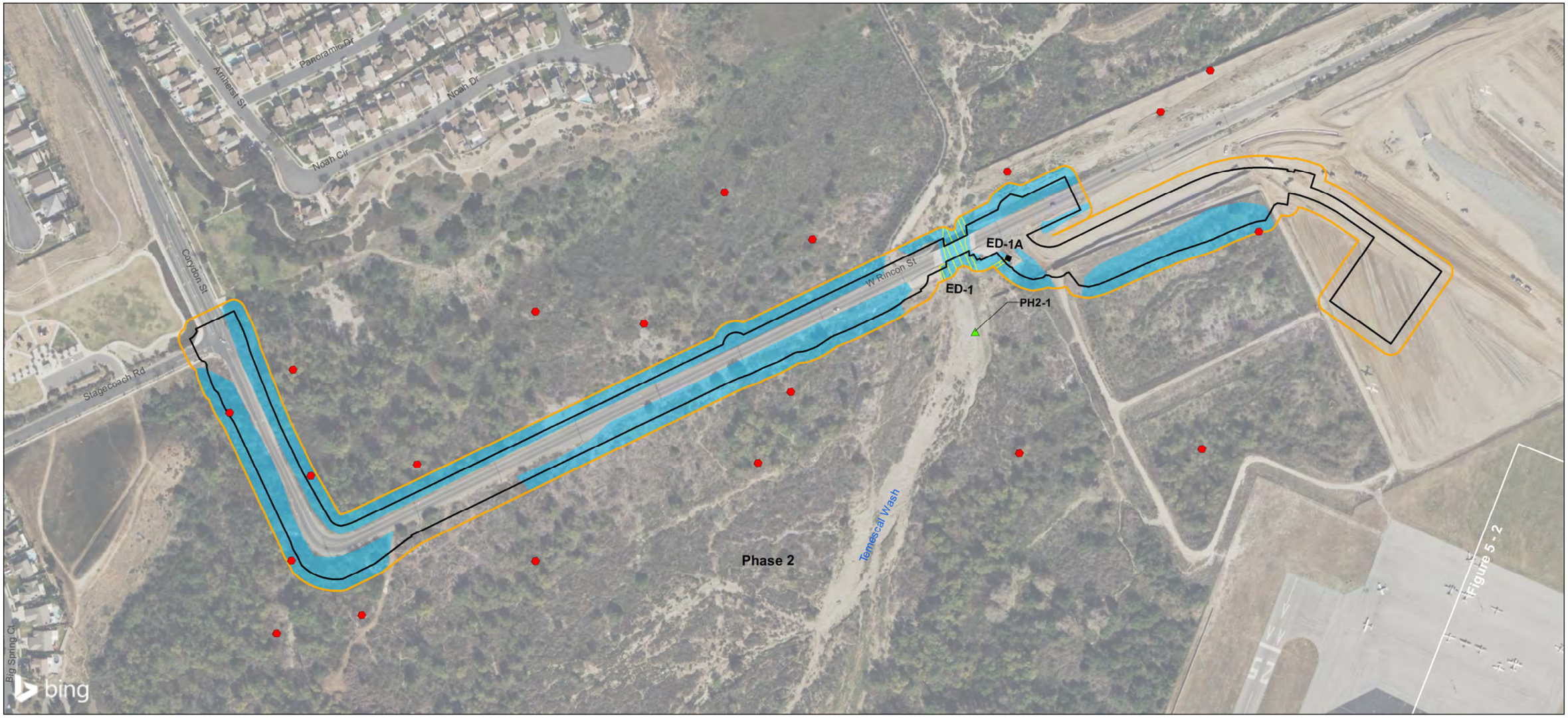

- 30 ft. Buffer
- 2021 Least Bell's vireo (LBVI) Observations
- Project Footprint

CDFW Jurisdictional Waters and MSHCP Riparian/Riverine Areas

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Culvert

Sample Point

- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.

Exhibit 8

Title

LBVI Territories and Occurrences

Sheet 2 of 5

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023. LBV data from Leatherman 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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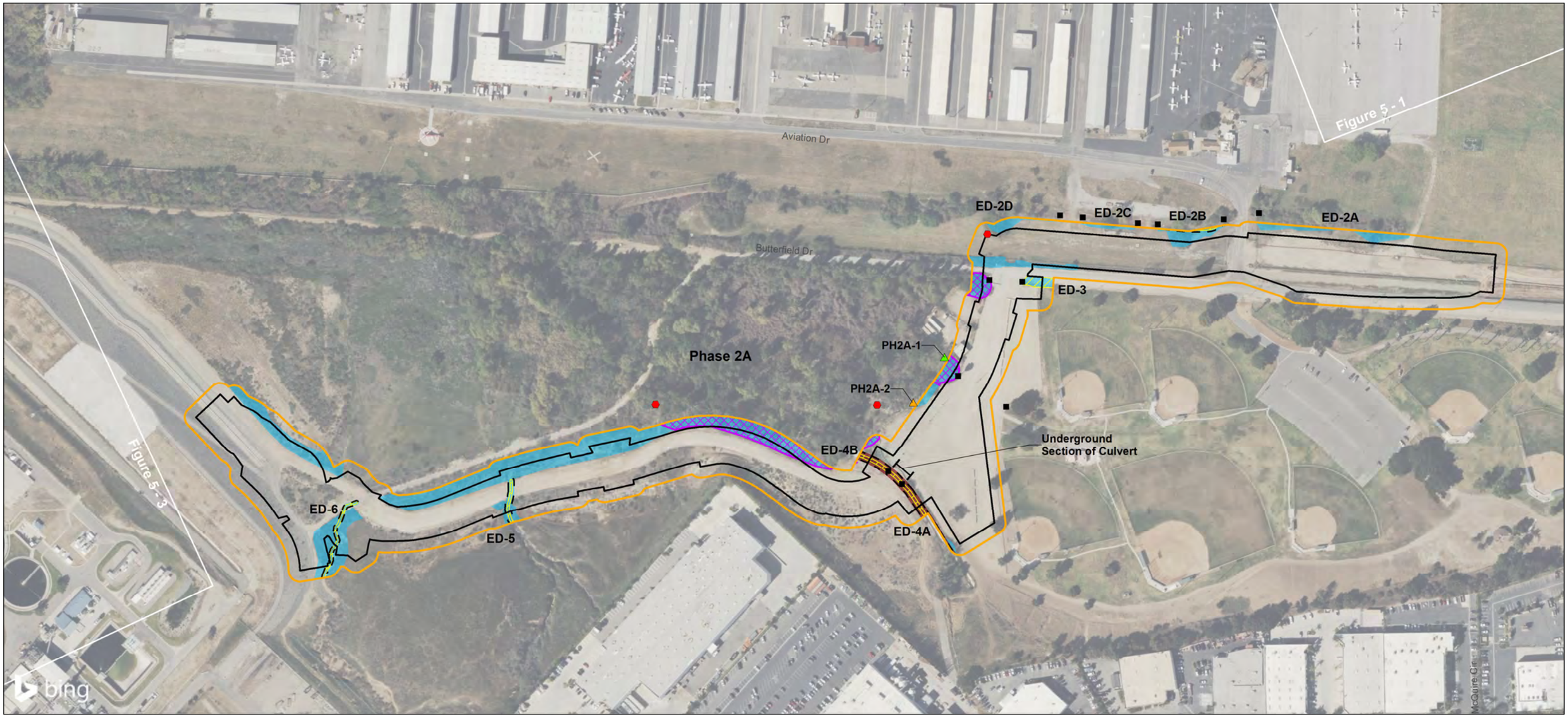

30 ft. Buffer
2021 Least Bell's vireo (LBVI) Observations
Project Footprint

Potential RWQCB Jurisdictional Waters

Waters of the State

CDFW Jurisdictional Waters and MSHCP Riparian/Riverine Areas

Riparian Habitat
Concrete Channel

Potential USACE Jurisdictional Areas

Waters of the U.S.
Wetlands

Culvert

Sample Point

Non-wetland
Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 8

Title
LBVI Territories and Occurrences

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023. LBV data from Leatherman 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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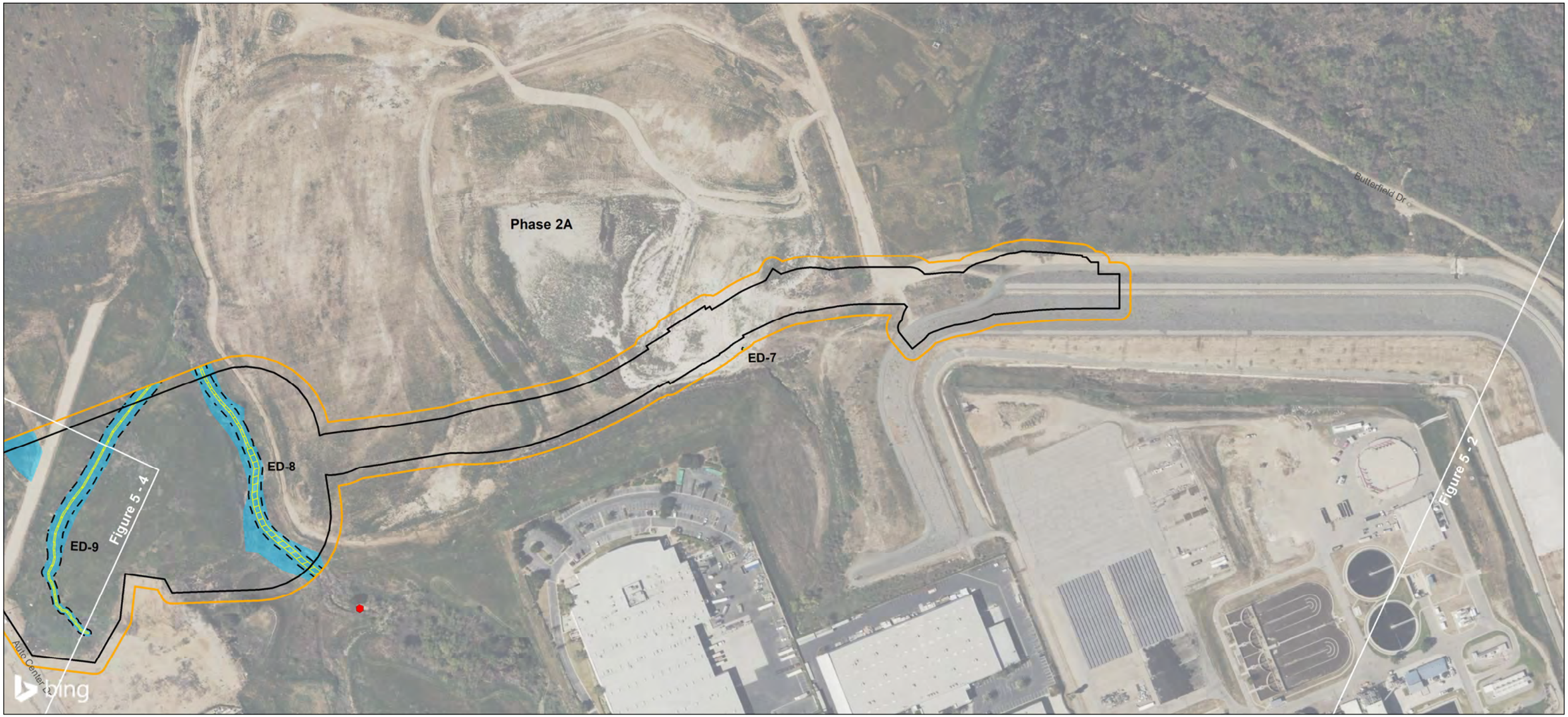

30 ft. Buffer

2021 Least Bell's vireo (LBVI) Observations

Project Footprint

Potential RWQCB Jurisdictional Waters

Waters of the State

CDFW Jurisdictional Waters and MSHCP Riparian/Riverine Areas

Riparian Habitat

Potential USACE Jurisdictional Areas

Waters of the U.S.

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.

Exhibit 8

Title

LBVI Territories and Occurrences

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023. LBV data from Leatherman 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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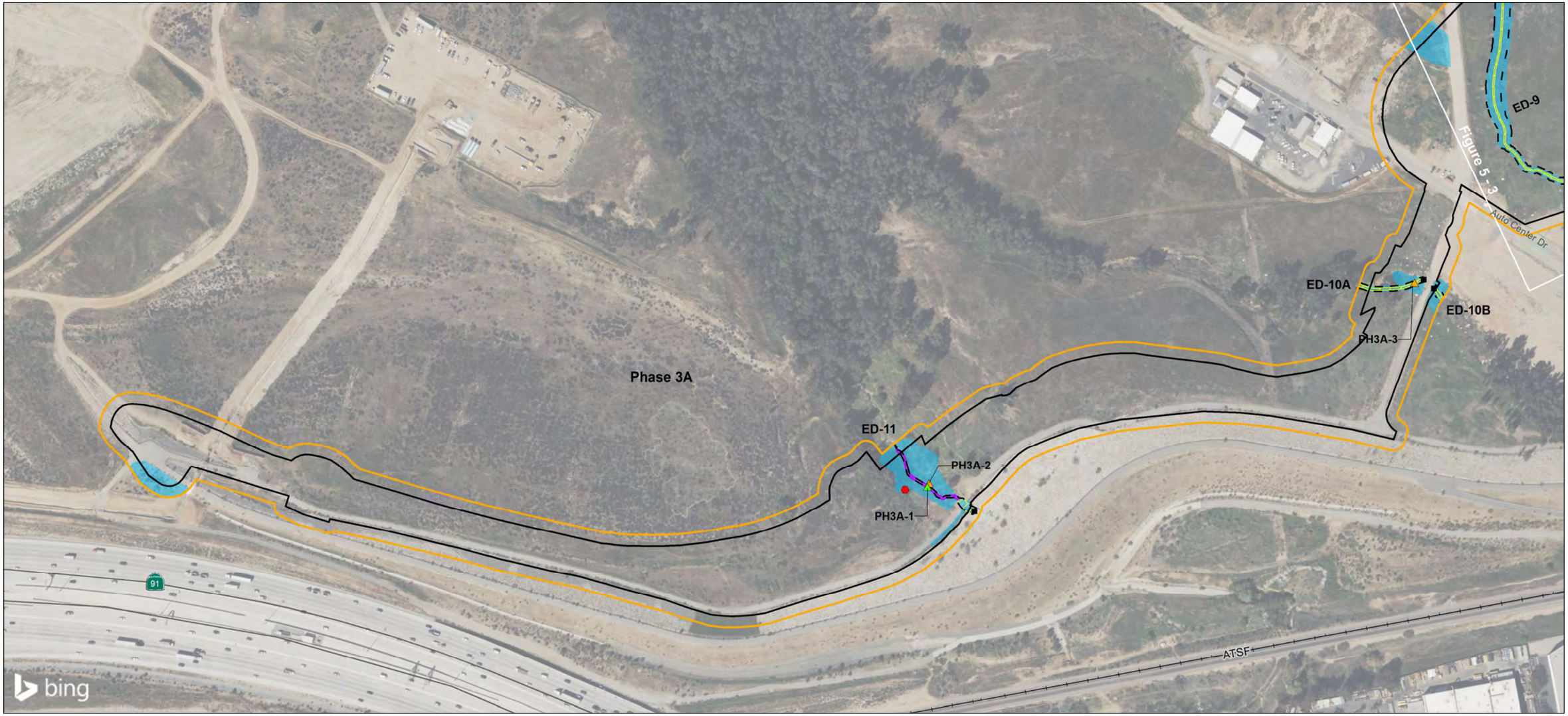

- 30 ft. Buffer
- 2021 Least Bell's vireo (LBVI) Observations
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

CDFW Jurisdictional Waters and MSHCP Riparian/Riverine Areas

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Non-wetland
- Wetland

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022, 2023. LBV data from Leatherman 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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0 270 540 Feet

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1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 8

Title
LBVI Territories and Occurrences

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- Public Quasi Public Lands
- USACE Managed Lands
- Railroad

Project Footprint

- Project Temporary Impact within PQP Lands
- Project Permanent Impact within PQP Lands
- Project Temporary Impact outside PQP Lands
- Project Permanent Impact outside PQP Lands

0 1,100 2,200 Feet

(At original document size of 11x17)
1:13,200

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure
Exhibit 9

Title
Public Quasi Public Conserved Lands

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. USACE Managed Lands from U.S. Army Corps of Engineers 2022.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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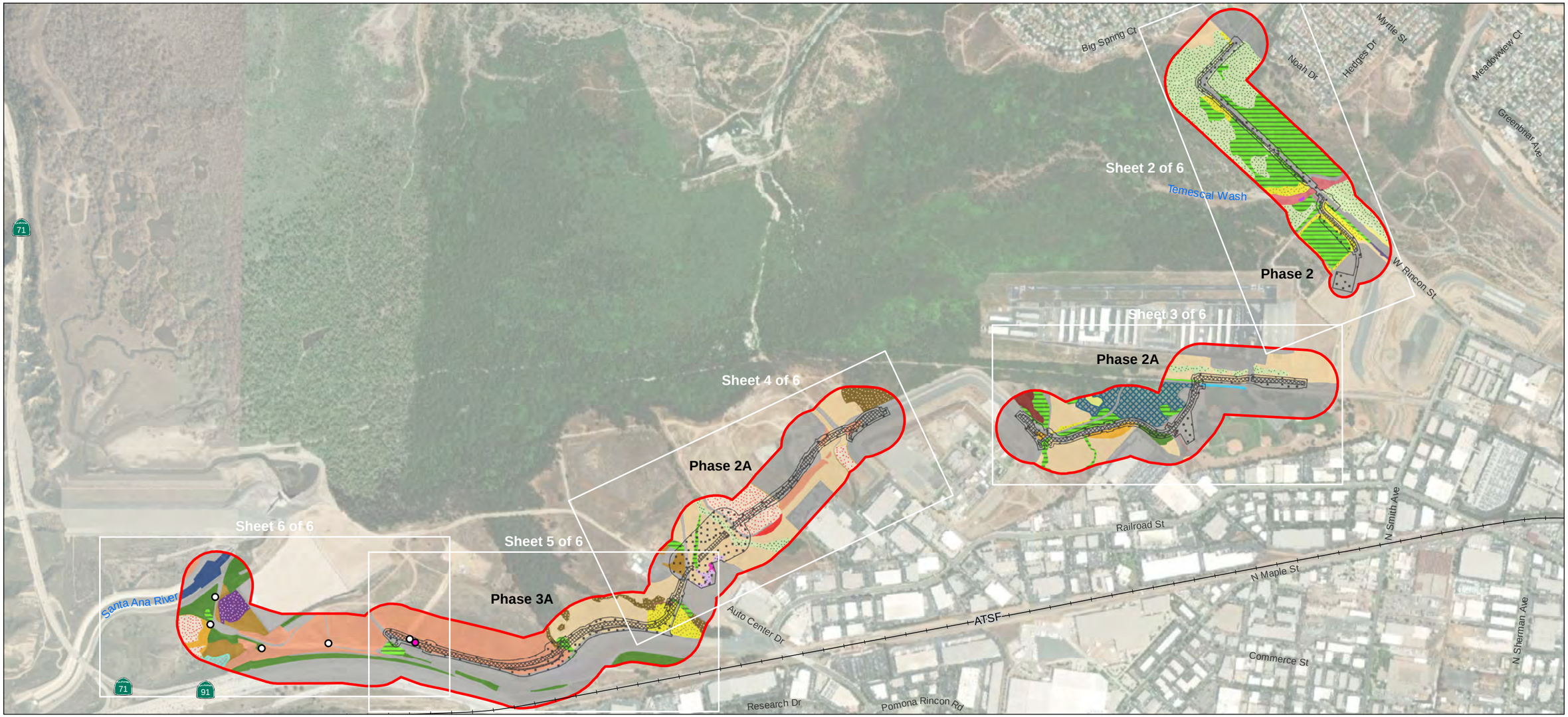

- Biological Survey Area

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
- Cheeseweed flats
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Eucalyptus groves
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Open water
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Shining willow groves
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Western ragweed meadow
- Wild oats and annual brome grasslands

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 10

Title
Vegetation Communities and Land Cover Types Impacts

Sheet 1 of 6

V:\1858\business_development\Santa_Ana_River_Trail\DBESP_Exhibit\10_VegetationImpacts_Overview_20230421_11x17.mxd Revised: 2023-04-25 By: dalaw

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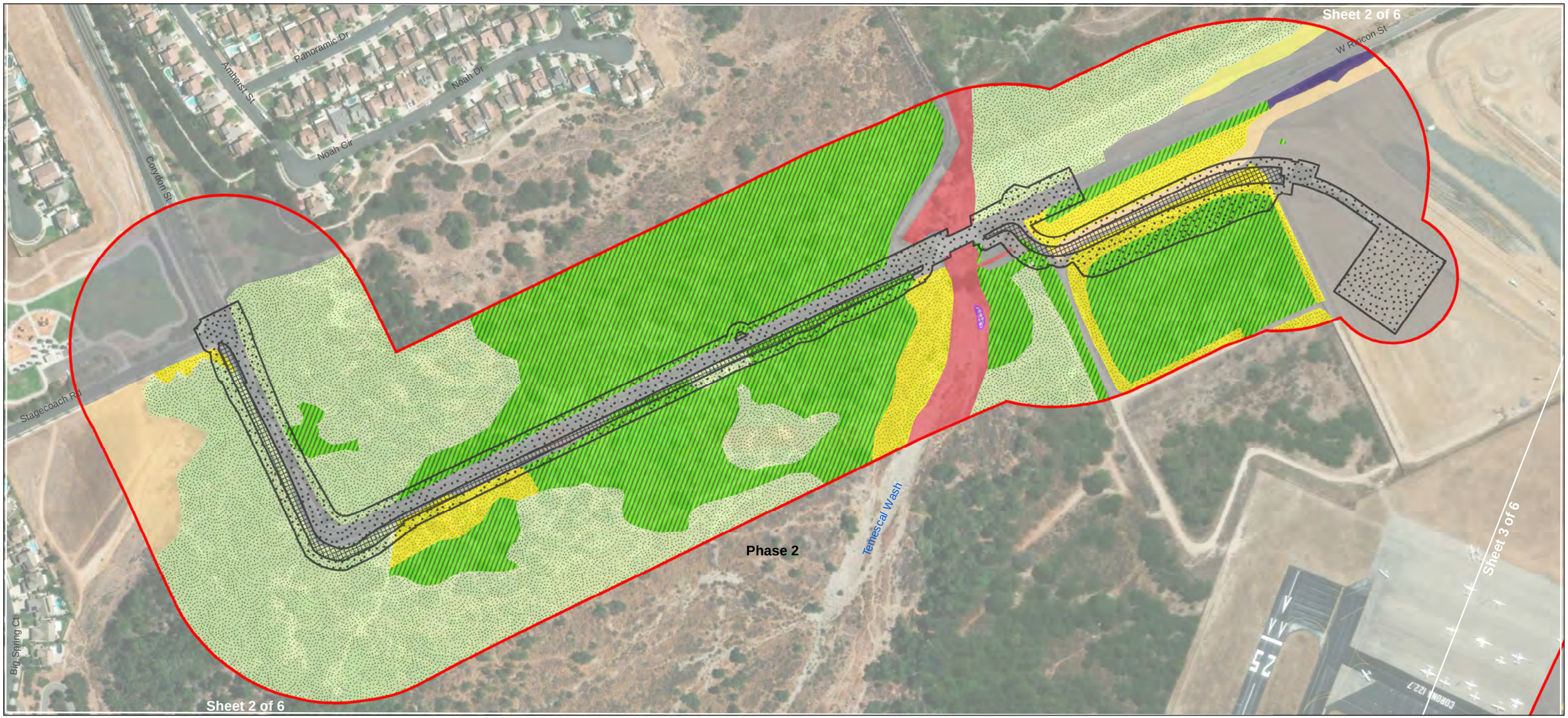

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- Disturbed/Developed
- Giant reed stands
- Mulefat thickets
- Partially vegetated channel
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 10

Title
Vegetation Communities and Land Cover Types Impacts

Sheet 2 of 6

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023.
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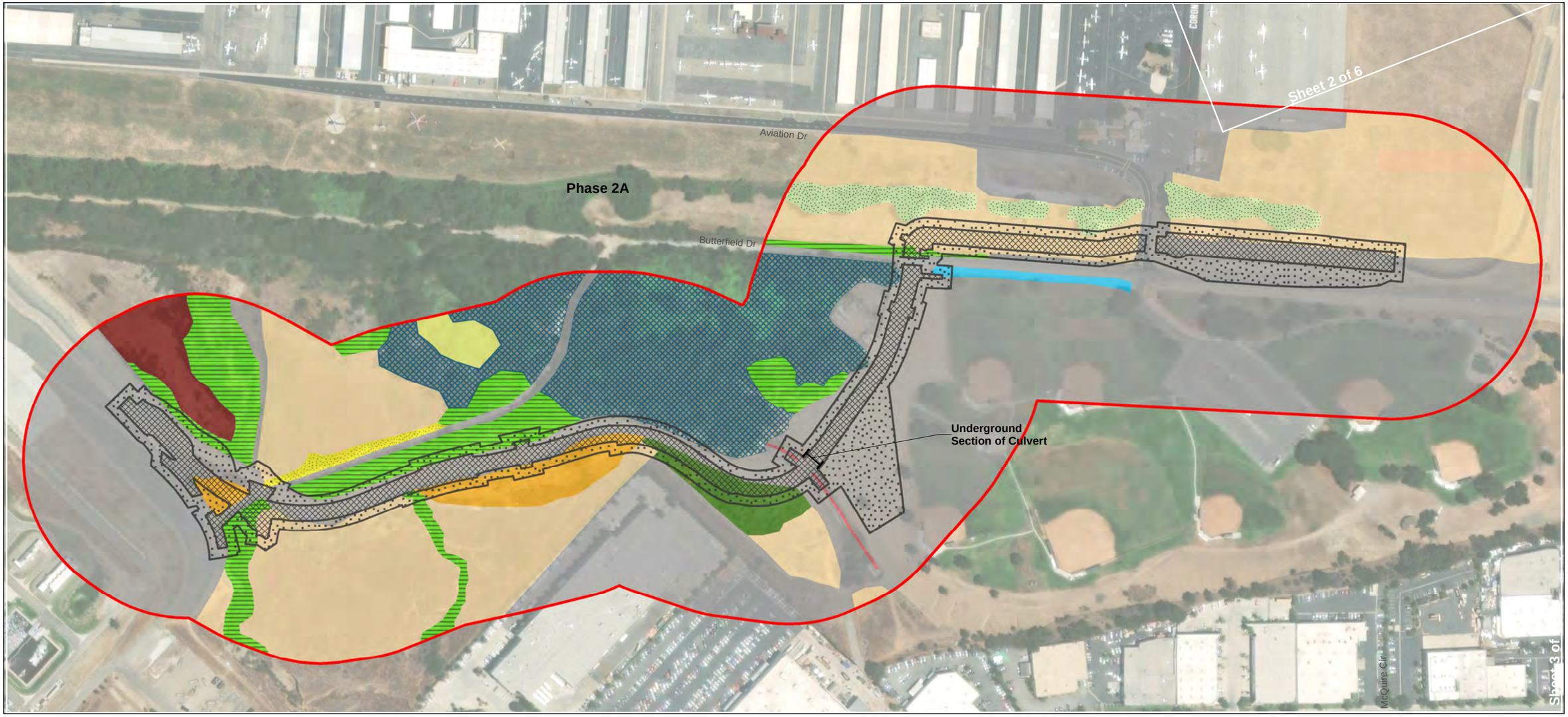

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- Coyote brush scrub
- Disturbed/Developed
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Shining willow groves
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 10

Title
Vegetation Communities and Land Cover Types Impacts

Sheet 3 of 6

V:\1858\business_development\Santa_Ana_River_Trail\DBESP_Exhibit\10_VegetationImpacts_DDP_20230421_11x17.mxd Revised: 2023-04-25 By: dallaw

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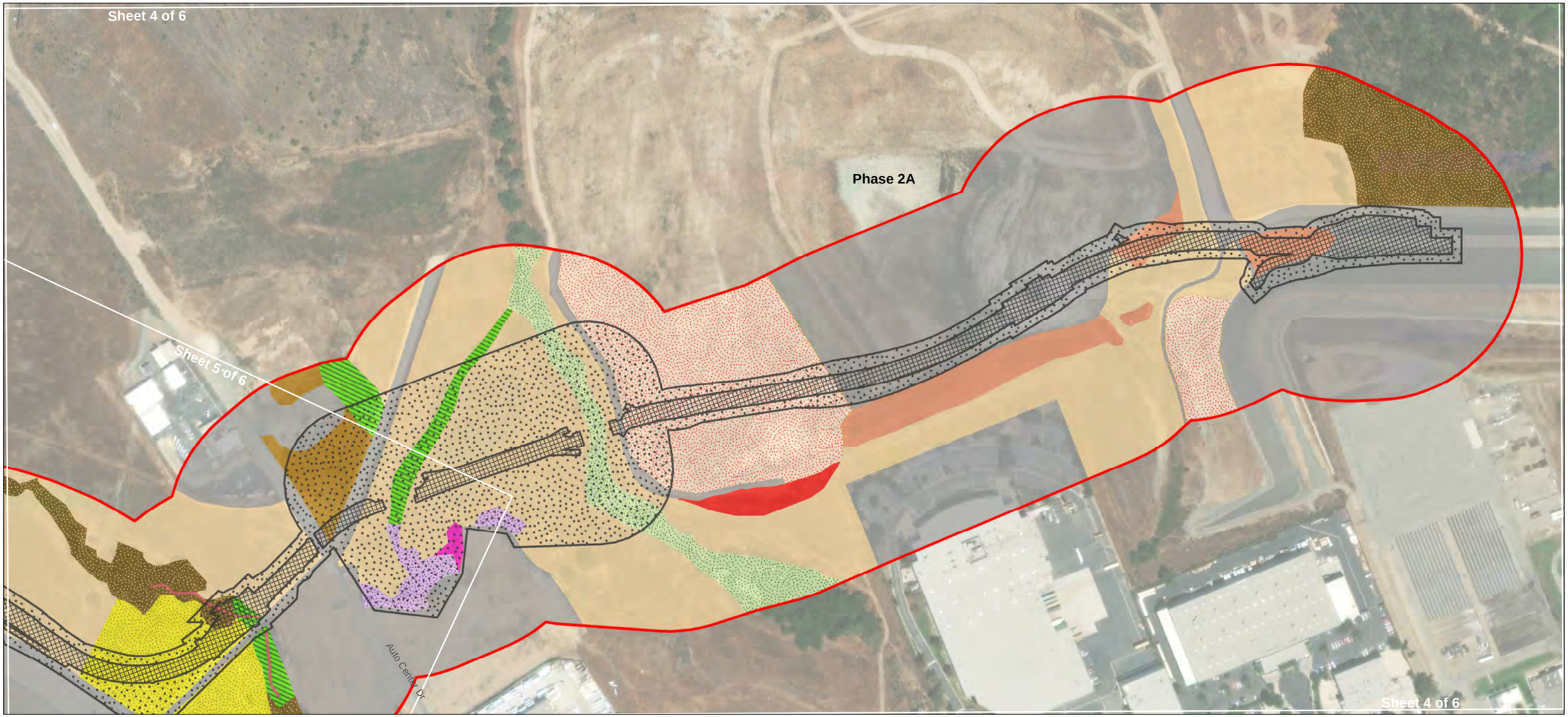

Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California sagebrush scrub
- Cheeseweed flats
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
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Client/Project
2042483140

Riverside County Regional Park & Open-Space District
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DBESP Addendum

Figure No.
Exhibit 10

Title
Vegetation Communities and Land Cover Types Impacts

Sheet 4 of 6

V:\1965\business_development\Santa_Ana_River_Trail\DBESP_Exhibit\10_VegetationImpacts_DDP_20230421_11x17.mxd Revised: 2023-04-25 By: dalaw

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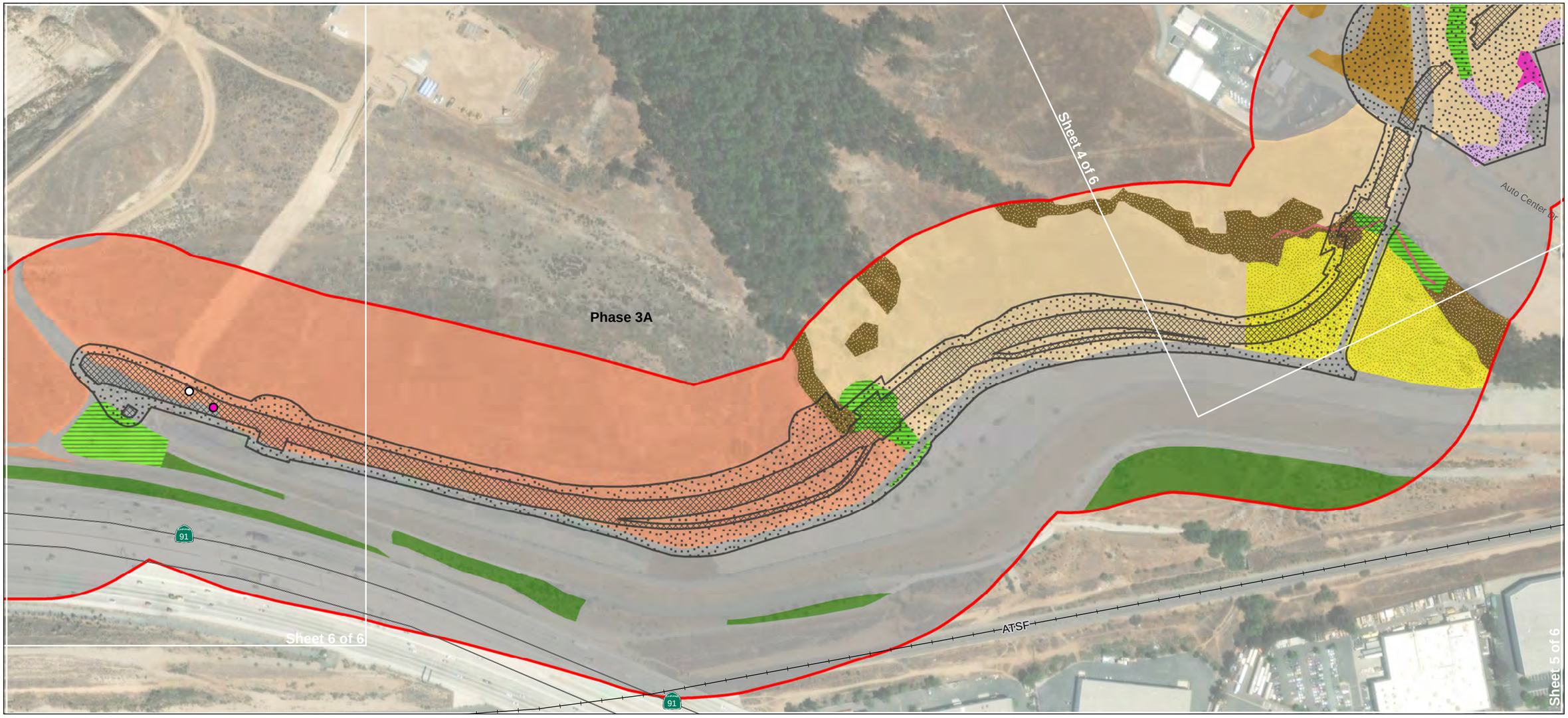

Railroad

Proposed Action (2023 Trail-60% Design)

Temporary Impact (39.20 ac.)

Permanent Impact (16.18 ac.)

Special-Status Species

Coastal California Gnatcatcher

Paniculate Tarplant

Vegetation Communities and Land Cover Types

California buckwheat scrub

California sagebrush scrub

Disturbed/Developed

Eucalyptus groves

Mulefat thickets

Partially vegetated channel

Perennial pepperweed patches

Poison hemlock or fennel patches

Ruderal

Upland mustards or star-thistle fields

Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet

2. Data Sources:Stantec 2021,2022,2023.

3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

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Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.

Exhibit 10

Title

Vegetation Communities and Land Cover Types Impacts

Sheet 5 of 6

V:\1858\business_development\Santa_Ana_River_Trail\DBESP_Exhibit\10_VegetationImpacts_DDP_20230421_11x17.mxd Revised: 2023-04-25 By: dallaw

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Proposed Action (2023 Trail-60% Design)

- Temporary Impact (39.20 ac.)
- Permanent Impact (16.18 ac.)

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- California buckwheat scrub
- California sagebrush scrub
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Mulefat thickets
- Open water
- Restoration
- Ruderal
- Western ragweed meadow

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

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Project Location
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Riverside County, California

Prepared by DL on 2023-04-21
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Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 10

Title
Vegetation Communities and Land Cover Types Impacts

Sheet 6 of 6

V:\1856\business_development\Santa_Ana_River_Trail\DBESP_Exhibit10_VegetationImpacts_DDP_20230421_11x17.mxd Revised: 2023-04-25 By: dallaw

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Project Footprint
Trail System Entry Points
Phase 2A End Location / Phase 3A Start Location
Railroad

0 1,200 2,400 Feet

(At original document size of 11x17)
1:14,400

N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022,2023. LBV data from Leatherman 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2023-04-21
TR by SET on 2023-04-21
IR by JV on 2023-04-21

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
DBESP Addendum

Figure No.
Exhibit 11

Title
Trail System Entry Points

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APPENDIX B

Biological Resources Technical Report

Biological Resources Technical Report

Santa Ana River Trail Phases 2, 2A, and 3A

July 4, 2022

Prepared for:

Riverside County Regional Park & Open-Space District
4600 Crestmore Road
Jurupa Valley, California 92509

Prepared by:

Stantec Consulting Services Inc.
735 East Carnegie Drive Suite 280
San Bernardino CA 92408-3588

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Prepared by Hannah Hart
(signature)
Hannah Hart, Project Biologist

Reviewed by
(signature)
Melissa Tu, Senior Biologist

Reviewed by
(signature)
Geoff Hoetker, Senior Biologist

Prepared and Approved by
(signature)
Jared Varonin, Principal Biologist/Ecosystems Practice Leader

Table of Contents

LIST OF TABLES

LIST OF APPENDICES

Abbreviations

ADA	Americans with Disabilities Act
BGEPA	Bald and Golden Eagle Protection Act
BRTR	Biological Resources Technical Report
BSA	Biological Study Area
Caltrans	California Department of Transportation
CCH	Consortium of California Herbaria
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Riverside County
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DCH	Designated Critical Habitat
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
FR	Federal Register
General Plan	Riverside County General Plan
GPS	Global Positioning System
iPaC	Information for Planning and Consultation
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCVII	Manual of California Vegetation, 2nd Edition
MSHCP	Multi Species Habitat Conservation Plan
NEPA	National Environmental Policy Act
NCCP	Natural Community Conservation Plan
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
OHWM	ordinary high-water mark
Project	Santa Ana River Trail
RHA	River and Harbors Act
RWQCB	Regional Water Quality Control Board
SR-	State Route
SSC	Species of Special Concern
Stantec	Stantec Consulting Services Inc.
SWRCB	State Water Resources Control Board
U.S.	United States

USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States
WRC	Western Riverside County
WRCMSHCP	Western Riverside County Multi-Species Habitat Conservation Plan

1.0 INTRODUCTION

This Biological Resources Technical Report (BRTR) is intended to document the biological resources that are associated with the proposed Santa Ana River Trail Phases 2, 2A, and 3A Project (Project) located in unincorporated Riverside County, California (refer to Appendix A Figures 1 and 2). The surveys conducted and discussions presented within this BRTR are intended to support planning and regulatory agency permitting and associated documentation.

Surveys were conducted in 2021 by Stantec Consulting Services Inc. (Stantec) and Leatherman BioConsulting (Leatherman Bio) biologists within accessible portions of the proposed Project site in addition to a surrounding 300-foot buffer zone. This approximately 362-acre area is defined as the Biological Study Area (BSA) (refer to Appendix A Figure 3). The BRTR describes the existing environmental conditions that occur within the BSA and surrounding areas and evaluates the potential for biological resources to occur based on those conditions with an emphasis on special-status plant and wildlife species, wildlife corridors, and special-status/sensitive natural communities.

1.1 PROJECT LOCATION

The proposed Project is located within the Prado Dam Flood Control Basin area of the Santa Ana River in unincorporated Riverside County, California, within the United States (U.S.) Geological Survey (USGS) Riverside West 7.5-minute topographic quadrangle. The Prado Dam Flood Control Basin area is located within Riverside County, approximately 26 miles east of the Pacific Ocean and 35 miles southeast of downtown Los Angeles. The proposed Project site is located within the northwestern portion of Riverside County (County) at the juncture of the administrative boundaries of Riverside, San Bernardino, and Orange counties and south and southeast of the City of Corona's jurisdictional boundaries (Appendix A Figure 1 Regional Location).

The east and west improvement limits of the proposed Project extend from approximately Rincon Street to the east to Auto Center Drive to the west and are shown in Appendix A Figure 2, Site Plan. As shown in Figure 2, the proposed Project intersects with the following roadways, including Rincon Street, Butterfield Drive, and Auto Center Drive. The proposed Project limits are the Prado Dam Flood Control Basin area to the north, State Route (SR-) 91 to the south, West Rincon Street to the east, and State Route (SR)-71 to the west. Access to the proposed Project site is via regional freeways (SR-91 and SR-71) and local roads (West Rincon Street, Butterfield Drive, Auto Center Drive, and Corydon Street).

The proposed Project occurs within an approximately 46-acre area. In general, the proposed Project site is characterized as open space. Land uses to the north are comprised of natural lands, open space, and residential, while uses to the south include residential, light industrial, and the freeway (SR-91). To the east, land uses include light industrial and natural lands, while to the west, uses include natural lands and SR-91. The Santa Ana River Trail is also located within the Temescal Canyon Area Plan, Santa Ana River Policy Area, Western Riverside County (WRC) Multi-Species Habitat Conservation Plan (MSHCP) Areas, and Public/Quasi Public Lands.

1.2 PROJECT DESCRIPTION

The proposed Project consists of trail construction that would complete a portion of the larger 110-mile regional Santa Ana River Trail system. Specifically, the proposed Project includes a 2.79-mile dual-track Class I multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. The Project includes the construction of three new trail segments, Phase 2 will be 0.65-mile long, Phase 2A will be 1.37-mile long, and Phase 3A will be 0.77-mile long. The three trail segments are shown in Appendix A Figures 2-1 to 2-4.

Once constructed, the trail would be Americans with Disabilities Act (ADA) compliant and follow the California Department of Transportation (Caltrans) Highway Design Manual guidance for bicycle paths.

The following construction is proposed:

- Class I bicycle path with adjacent pedestrian and equestrian path separated by a split rail fence with a general design, as follows:
    - Eight-to-ten-foot-wide bicycle path travel way with two-foot shoulders
    - Ten-foot wide decomposed granite trail (pedestrian and equestrian path)
    - Five percent max longitudinal slope
    - Two percent max crossfall path and shoulder slopes
    - Minimum 2 to 1 foot slope ratio for cut / fill slopes
- Signage and striping along the trail
- Implementation of drainage improvements
- Application of native hydroseed mix along slope areas of the new trail phases

At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 11 feet wide on the bridges and at the Temescal Wash crossing would be 20 feet wide. A combined paved trail will also be required for a portion of the trail along West Rincon Street and Corydon Street within Phase 2 due to right-of-way constraints and existing Southern California Edison overhead powerlines.

1.2.1 Drainage Crossings

To protect the trail as it crosses drainages, riprap would be installed along the alignment (Appendix A Figure 2). Table 1: Preliminary Riprap Quantities shows the estimated square feet of riprap in each trail phase.

Table 1. Preliminary Riprap Quantities

Phase	Riprap Location	Riprap Quantity (square feet)
3A	1	28,134
	2	1,418
2A (west)	3	5,577
2A (east)	4	805
	5	801
	6	803
	7	842
2	8	21,378
	Total	**59,758**

Source: Stantec 2022

In Phase 2, a box culvert extending across Temescal Wash is proposed. Clear-span bridges ranging in length from approximately 100-feet to 180-feet would be used to cross two un-named drainages located in Phase 2A.

1.2.2 Trail Access

Trail access to each of the Phases would be achieved as follows:

- Phase 2: Stagecoach Road/Corydon Street (Stagecoach Park area) and West Rincon Street/Smith Avenue (Corona Airport area)
- Phase 2A: Auto Center Drive (western portion of trail) and Butterfield Drive (eastern portion of trail)
- Phase 3A: Auto Center Drive/Railroad Street (United States Army Corps of Engineers [USACE] office)

2.0 METHODS

This biological resources assessment of the BSA included but was not limited to a literature review, reconnaissance-level surveys, a habitat assessment, vegetation mapping, rare plant surveys, focused surveys for burrowing owl (*Athene cunicularia*); and protocol surveys for southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*) (vireo), and western yellow-billed cuckoo (*Coccyzus americanus*). Prior to the survey, a preliminary literature review of readily available resources was performed. The surveys were conducted on foot throughout the BSA.

2.1 LITERATURE REVIEW

A focused literature search of the BSA was conducted prior to the field survey. The BSA is located within the USGS Corona North, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted for the BSA and a surrounding ten-mile buffer area to determine special-status plants, wildlife, and vegetation communities that have been documented within this area (CDFW 2021a). The database included portions of the following quadrangles surrounding the BSA:

- Guasti
- Fontana
- Black Star Canyon
- Ontario
- Prado Dam
- Lake Mathews
- Corona South
- Riverside West

Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2021b)
- Special Animals List (CDFW 2021c)
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2021d)
- California's Wildlife – Life History and Range (CDFW 2021e)
- California Sensitive Natural Communities (CDFW 2021f)
- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (iPaC) (USFWS 2021)
- Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS] 2021)
- Consortium of California Herbaria (CCH) (CCH 2021)
- WRCMSHCP (2015)

2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENT

The methods for the general and focused wildlife surveys, rare plant surveys, and vegetation mapping are described in the following sections.

2.2.1 Site Reconnaissance and Wildlife Surveys

Stantec initially conducted a habitat assessment and reconnaissance-level survey to document the environmental conditions present within the BSA, this assessment did not include focused, protocol-level surveys for rare plants or wildlife or other special-status resources. The primary goal of the initial survey was to identify and assess habitat that may be capable of supporting special-status plant or wildlife species and determine the potential need for additional focused surveys for special-status resources. Biologists recorded all incidental plant and wildlife observations.

The survey was conducted during a season and time of day when resident and migratory birds would be expected to be present and exhibiting normal activity, small mammals would be active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. The survey was conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 65-95 degrees Fahrenheit). The site reconnaissance survey was conducted on May 6, 2021. Additional focused surveys were conducted and described in the following sections.

The BSA was investigated on foot (where accessible) by experienced field biologists walking throughout publicly accessible areas at an average pace of approximately 1.5 kilometers per hour while visually scanning for wildlife and their sign and listening to wildlife songs and calls. Biologists paused as necessary to listen for wildlife or to identify, record, or enumerate any observed species. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.). Species identifications conform to the most up-to-date online databases and technical literature.

In addition to the general reconnaissance wildlife survey, protocol bird surveys and rare plant surveys were conducted and are described in the following sections.

2.2.1.1 Burrowing Owl Surveys

A habitat assessment and focused burrowing owl surveys were conducted by Stantec Senior Biologist Melissa Tu and Principal Biologist Jared Varonin following the WRCMSHCP Burrowing Owl Survey Instructions (RCA 2006). On May 6, 2021, biologists from Stantec conducted the burrowing owl habitat assessment and the first focused burrow survey. The other three burrow surveys were conducted on June 30, August 12, and September 3, 2021.

Qualified biologists walked through suitable habitat within the Survey Area to identify burrows or other potential signs of burrowing owl, per the WRCMSCHP Burrowing Owl Survey Instructions. During the burrowing owl habitat assessment, the entire Survey Area was surveyed on foot. Unsuitable habitat was documented and was not surveyed during the focused burrow surveys.

For the focused burrowing owl surveys, only suitable burrowing owl habitat including open grassland and other open habitat was surveyed. Suitable habitat included large California ground squirrels (*Otospermophilus beecheyi*) burrows .

2.2.1.2 Riparian Bird Surveys

Protocol surveys were conducted for southwestern willow flycatcher (flycatcher), least Bell's vireo (vireo), and western yellow-billed cuckoo by Brian Leatherman (USFWS permit No. TE827493-9) of Leatherman Bio. Survey methods followed the guidelines endorsed by the USFWS for each species as described below. In general, surveys were conducted in riparian habitat by walking slowly and methodically within and along the margins of all suitable riparian habitat for each species. The focus of the surveys was on the detection and identification of the target species. Nest surveys were not conducted.

The presence/absence surveys for the vireo followed the 2001 survey guidelines developed by the USFWS, which requires that eight surveys be conducted 10 days apart between April 10 and July 31 (USFWS 2001).

The surveys for the flycatcher followed the 2010 protocol. Five surveys at least five days apart were conducted between May 15 and July 17 from dawn to 1030 under suitable weather conditions (Sogge et al 2010). Recorded vocalizations were played as described in the survey protocol in an attempt to elicit a response from individuals potentially present. The recording was played for roughly 15 seconds, stopped for one or two minutes to listen for a response, and then played again. The surveys for the cuckoo followed the protocol developed by Halterman et al. (2015). The protocol requires that four surveys be conducted within three certain periods between June 15 and August 15. Halterman et al. (2015) recommend that surveys be conducted from 12 to 15 days apart between dawn and 1100 under suitable weather conditions. Recorded vocalizations were played as described in the survey protocol in an attempt to elicit a response from individuals potentially present. The prescribed 6-minute broadcast with five vocalizations spaced one minute apart was played every 100 meters (328 feet).

2.2.2 Floristic Surveys

Floristic surveys for rare plant species were performed according to the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018) and *California Native Plant Society Botanical Survey Guidelines* (CNPS 2001). Two surveys were conducted on May 6 and June 30, 2021, by Stantec biologists. Jared Varonin, Melissa Tu, and Ashleigh Townsend conducted the survey on May 6, and Jared Varonin conducted the survey on June 30. The surveys were conducted during the documented blooming periods of most of the vascular rare plant known to occur within 10 miles of BSA. The species that bloom later in the year are shrubs that can be identified any time of year.

2.2.3 Vegetation Mapping

Vegetation descriptions and nomenclature are based on the second edition of *A Manual of California Vegetation* (MCVII) (Sawyer et al. 2009), where applicable, and have been defined to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the ESRI Collector for ArcGIS app on an Apple iPad coupled with a Bad Elf GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ESRI ArcGIS (version 10.7) with aerial photograph base maps with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however, boundaries between some vegetation types are less precise due to difficulties in interpreting aerial imagery and accessing stands of vegetation.

To support the vegetation mapping presented in this BRTR, Stantec conducted a reconnaissance-level field survey. Stantec used this data in conjunction with vegetation mapping data collected/provided by the MSHCP from 2012 (WRCMSHCP 2015) to produce a vegetation community and land cover map for the BSA (refer to Appendix A Figure 3).

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. All vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.

3.0 REGULATORY ENVIRONMENT

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (FESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful "take" and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of Designated Critical Habitat (DCH). Under FESA, take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The USFWS regulations define harm to mean "an act which actually kills or injures wildlife." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 Code of Federal Regulations [CFR] Section 17.3).

DCH is defined in FESA Section 3(5)(A) as "(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features: (I) essential to the conservation of the species; (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior that such areas are essential for the conservation of the species." The effects analyses for DCH must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, Gifford Pinchot Task Force v. USFWS.

Activities that may result in "take" of individuals are regulated by USFWS. USFWS produced an updated list of candidate species December 6, 2007 (72 Federal Register [FR] 69034). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code [USC] 703-711) makes it unlawful to possess, buy, sell, purchase, barter or take any migratory bird listed in Title 50 of CFR Part 10. "Take" is defined as possession or destruction of migratory birds, their nests, and eggs. Disturbances that cause nest abandonment or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA encompasses whole birds, parts of birds, bird nests, and eggs.

3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

USFWS is the primary federal authority charged with the management of golden eagles in the U.S. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this Project. USFWS guidance on the applicability of current BGEPA statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the take of golden and bald eagles. The new rules were released under the existing BGEPA, which has been the primary regulatory protection for unlisted eagle populations since 1940.

All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in the western U.S., it is expected that permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

3.1.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act, as amended in 1964, requires that all federal agencies consult with National Marine Fisheries Service (NMFS), USFWS, and state wildlife agencies (i.e., CDFW) when proposed actions might result in modification of a natural stream or body of water. Federal agencies must consider effects that these projects would have on fish and wildlife development and provide for improvement of these resources. The Fish and Wildlife Coordination Act allows NMFS, USFWS, and CDFW to provide comments to USACE during review of projects under Section 404 of the Clean Water Act (concerning the discharge of dredged materials into navigable waters of the U.S. [WOTUS]) and Section 10 of the Rivers and Harbors Act (RHA) regarding obstructions in navigable waterways. NMFS comments provided under the Fish and Wildlife Coordination Act are intended to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats. Since the proposed Project involves impacts to WOTUS, the USACE will be the lead federal agency and will initiate consultation with the USFWS and CDFW per the requirements of this act.

3.1.5 Federally Regulated Habitats

Areas that meet the regulatory definition of "WOTUS" are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the River and Harbors Act (RHA) (1899). WOTUS may include all waters used or potentially used for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (e.g., intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as WOTUS, tributaries of waters otherwise defined as WOTUS, territorial seas, and wetlands (i.e., "Special Aquatic Sites") adjacent to WOTUS (33 CFR Part 328, Section 328.3). The proposed Project area is within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within WOTUS are regulated by USACE. The placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of State Water Quality Certification pursuant to Section 401 of the CWA. As a part of the permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources. The jurisdictional extent of USACE regulation changed with the 2001 Solid Waste Agency of Northern Cook County ruling. The U.S. Supreme Court held that the USACE could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-state waters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to USACE jurisdiction.

The U.S. Environmental Protection Agency and USACE announced on October 21, 2021, that they will cease implementation of the Navigable Water Protection Rule and are instead interpreting WOTUS consistent with pre-2015 regulatory regime (i.e., the 2015 Clean Water Rule). This proposed rule was published on December 7, 2021 (86 FR 232).

3.1.6 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 requires all federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA into other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision-making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans and documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 USC 4321- 4327; 40 CFR 1500-1508). These guidelines establish an overall federal process for the environmental evaluation of projects.

3.1.7 Rivers and Harbors Act of 1899

3.1.7.1 Section 14

Section 14 of the RHA (1899 and codified in 33 USC 408) is required if a project would modify, alter, and/or occupy an existing USACE-constructed public works project (e.g., a levee). For the USACE Lead District to approve any proposed alterations requests, the alterations must meet USACE standards, and must not be injurious to the public interest or affect the USACE project's ability to meet its authorized purpose.

3.1.7.2 Section 10

Section 10 of the RHA (33 USC Section 403) requires authorization from the USACE for work or structures in or affecting navigable WOTUS.

The term "navigable WOTUS" generally includes those waters that are subject to the ebb and flow of the tide or are presently used, have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events that impede or destroy navigable capacity (33 CFR Section 329.4).

The term "structure" includes, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other obstacle or obstruction (33 CFR Section 322.2).

The term "work" includes, without limitation, any dredging or disposal of dredged material, excavation, filling, or other modification of a navigable WOTUS (33 CFR Section 322.2).

The geographic and jurisdictional limits of the USACE's Section 10 jurisdiction in rivers and lakes:

(a) *Jurisdiction over entire bed. Federal regulatory jurisdiction, and powers of improvement for navigation, extend laterally to the entire water surface and bed of a navigable waterbody, which includes all the land and waters below the ordinary high-water mark (OHWM). Jurisdiction thus extends to the edge (as determined above) of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation or other barriers. Marshlands and similar areas are thus considered navigable in law, but only so far as the area is subject to inundation by the ordinary high waters.*

(1) *The OHWM of non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.*

(2) Ownership of a river or lakebed or of the lands between high and low water marks will vary according to state law; however, private ownership of the underlying lands has no bearing on the existence or extent of the dominant Federal jurisdiction over a navigable waterbody.

(b) Upper limit of navigability. The character of a river will, at some point along its length, change from navigable to non-navigable. Very often that point will be at a major fall or rapids, or other place where there is a marked decrease in the navigable capacity of the river. The upper limit will therefore often be the same point traditionally recognized as the head of navigation, but may, under some of the tests described above, be at some point yet farther upstream.

The geographic and jurisdictional limits of Corps jurisdiction in oceanic and tidal WOTUS:

(a) Ocean and coastal waters. The navigable WOTUS over which Corps regulatory jurisdiction extends include all ocean and coastal waters within a zone three geographic (nautical) miles seaward from the baseline (The Territorial Seas). Wider zones are recognized for special regulatory powers exercised over the outer continental shelf. 33 C.F.R. § 322.3(b).

(1) Baseline defined. Generally, where the shore directly contacts the open sea, the line on the shore reached by the ordinary low tides comprises the baseline from which the distance of three geographic miles is measured. The baseline has significance for both domestic and international law and is subject to precise definitions. Special problems arise when offshore rocks, islands, or other bodies exist, and the baseline may have to be drawn seaward of such bodies.

(2) Shoreward limit of jurisdiction. Corps regulatory jurisdiction in coastal areas extends to the line on the shore reached by the plane of the mean (average) high water. Where precise determination of the actual location of the line becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline" which is determined by reference to physical markings, lines of vegetation, or changes in type of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.

(b) Bays and estuaries. Corps regulatory jurisdiction extends to the entire surface and bed of all waterbodies subject to tidal action. Jurisdiction thus extends to the edge (as determined by paragraph (a)(2) above) of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation, or other barriers. Marshlands and similar areas are thus considered "navigable in law," but only so far as the area is subject to inundation by the mean high waters. The relevant test is therefore the presence of the mean high tidal waters, and not the general test described above, which generally applies to inland rivers and lakes.

Structures or work outside the limits defined above for navigable WOTUS require a Department of the Army permit pursuant to Section 10 of the RHA if the structure or work affects the course, location, or condition of the water body in such a manner as to impact on its navigable capacity (33 CFR Section 322.3).Section 14 of the RHA of 1899 (33 USC Section 408), commonly referred to as "Section 408," authorizes the USACE to grant permission to alter, occupy, or use a USACE civil works project if the Secretary of Commerce determines that the activity would not be injurious to the public interest and would not impair the usefulness of the project.

3.2 STATE REGULATIONS

3.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes state policy to prevent significant and avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by state lead agencies. Regulations for implementation are found in the CEQA Guidelines published by the California Natural Resources Agency. These guidelines establish an overall state of California process for the environmental evaluation of projects.

3.2.2 California Endangered Species Act

Provisions of the California Endangered Species Act protect state-listed threatened and endangered species. The CDFW regulates activities that may result in take of individuals (i.e., take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of take under the California Fish and Game Code (FGC). Additionally, the FGC contains lists of vertebrate species designated as "fully protected" (FGC Sections 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern (SSC) to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. SSC may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the FGC. FGC Section 3503.5 states that it is "unlawful to 'take', possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to 'take', possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW. Under Sections 3503 and 3503.5 of the FGC, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or

the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to FGC Section 3800 are prohibited.

3.2.3 Section 1602 of the California Fish and Game Code

Section 1602 of the FGC requires any person, state or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. Notification is generally required for any project that would take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials submitted, the CDFW would determine whether the proposed project may impact fish or wildlife resources.

If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would be required. A completed CEQA document must be submitted to CDFW before an LSAA would be issued. The Project area falls within the South Coast Region of the CDFW.

3.2.4 Porter-Cologne Water Quality Control Act

California Regional Water Quality Control Boards (RWQCBs) regulate the “discharge of waste” to “waters of the State”. All projects proposing to discharge waste that could affect waters of the State must file a Waste Discharge Report with the appropriate RWQCB. The board responds to the report by issuing Waste Discharge Requirements or by waiving them for that project discharge. Both terms “discharge of waste” and waters of the State are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered waters of the State, as defined by Section 404 of the CWA, are addressed under the Porter Cologne Water Quality Control Act. The proposed Project area is under the jurisdiction of the Region 8 – Santa Ana RWQCB.

3.2.5 State-Regulated Habitats

The State Water Resources Control Board (SWRCB) is the state agency (together with the RWQCBs) charged with implementing water quality certification in California.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered

streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFW 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; that substantially change its bed, channel, or bank; or that use any materials (including vegetation) from the streambed may require that the project applicant enter into an LSAA with the CDFW.

3.2.6 Native Plant Protection Act

Under FGC Sections 1900 to 1913, the Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. a Project applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of the NPPA and sections of CEQA that apply to rare or endangered plants.

3.3 LOCAL REGULATIONS

3.3.1 Riverside County General Plan – Multipurpose Open Space Element

The Multipurpose Open Space Element of the Riverside County General Plan (General Plan) contains policies and programs that are designed to protect and conserve environmental resources in the County while encouraging economic development and growth and setting the direction for the framework of its transportation system. Resources covered under the Multipurpose Open Space Element consist of the protection and preservation of natural resources including following key resources: water, biological, forest, vegetation, agriculture and soils, open space- parks and recreation and regional aesthetics, cultural and paleontological, and renewable and non-renewable resources.

The Multipurpose Open Space Element discusses the enactment of policies to protect natural resources within the County for future generations as detailed in the following sections.

3.3.1.1 Water Resources

The General Plan establishes policies that prioritize water conservation by addressing the County's water supply issue through balancing consideration of water supply requirements between urban, agricultural, and environmental needs, promotion of the use of recycled water for landscape irrigation, minimization of pollutant discharge, retention of stormwater for groundwater percolation, development of a repository for the collection of county water resource information, discouragement of development within watercourses, and the provision of active leadership in the regional coordination of water resource management and sustainability efforts. The policies propose efforts to limit the modification of floodways and watercourses, and to preserve and enhance riparian, upland, and wetland habitats.

3.3.1.2 Multi Species Habitat Conservation Plans (MSHCP)

To address the issues of wildlife health and sustainability, the County has directed the development of two Multi-Species Habitat Conservation Plans (MSHCPs), the WRCMSHCP and the Coachella Valley Association of Governments' MSHCP. These MSHCPs are stakeholder driven, comprehensive, and multi-jurisdictional, and focus on the conservation of both species and associated habitats, in order to address biological and ecological diversity conservation needs and provide mitigation for the impacts of development in Riverside County. They seek to preserve natural resources that are sensitive, rare, threatened, endangered, and irreplaceable. They allow the County and other local jurisdictions the ability to manage local land use decisions and maintain economic development flexibility, while providing a coordinated reserve system and implementation program that will facilitate the preservation of biological diversity as well as maintain the region's quality of life. The General Plan aims to enforce the provisions of applicable MSHCPs and implement related County policies when conducting review of possible legislative actions such as general plan amendments, zoning ordinance amendments, etc. The WRCMSHCP is discussed in further detail below.

3.3.1.3 Vegetation

The General Plan prioritizes the management of native vegetation in order to maintain the ecological diversity of the County and prevent drastic changes in wildlife habitats, microclimates, water absorption and purification, soil erosion, fires, and aesthetic quality. It aims to do this through the update and expansion of vegetation mapping, and the preservation of oak tree resources, native trees, natural vegetation, and established tree stands for ecosystem, aesthetic, and water conservation purposes. The conservation of important traditional Native American plant gathering resource areas, and the encouragement of research and education of pollution on human health and natural vegetation are also key elements to this directive.

3.3.1.4 Open Space, Parks, and Recreation

Open space preservation can serve many purposes, including the preservation and enhancement of environmental resources for both ecological and recreational purposes, as well as the proper management of environmental hazards. The County includes Joshua Tree National Park and major state parks such as Anza-Borrego, the Salton Sea State Recreation Area, and Chino Hills State Park. The open space policies set to protect and preserve open space areas from urbanization, develop a comprehensive system consisting of passive open space areas, and maintain or develop parks and recreation areas that have recreational, ecological, and scenic value. A key element is also to identify and conserve the skylines, scenic corridors, and outstanding scenic vistas within the County to protect their aesthetic value and the quality of life of County residents.

3.3.2 Western Riverside County MSHCP/Natural Community Conservation Plan

The WRCMSHCP is a comprehensive, multi-jurisdictional plan that involves the assembly and management of a Conservation Area intended to preserve biological diversity, as well as maintain the

quality of life within WRC by conserving over 100 listed and unlisted plant and wildlife species and their associated habitats, and coordinating, streamlining, and planning Development. The WRCMSHCP establishes a framework for complying with State and federal endangered species regulations in addition to accommodating future growth within the Cities and unincorporated portions of WRC including both unincorporated and incorporated areas. The WRCMSCHP was approved in 2003 and the permits issued on June 22, 2004, by the USFWS and California Department of Fish and Game (CDFG) (since renamed California Department of Fish and Wildlife). The WRCMSHCP Planning Area encompasses approximately 1.26 million acres in WRC and the Plan calls for the conservation and management of approximately 500,000 acres within the Plan Area.

The goals and objectives relative to natural resources that apply to the proposed Project are as follows:

A. The WRCMSHCP Conservation Area contains approximately 500,000 acres comprised of the following:

    1. Conservation of existing publicly owned lands,
    2. Voluntary acquisition of privately held lands by the Cities, the County, or other Permittees,
    3. Voluntary acquisition of privately held lands by state and/or federal agencies, and
    4. Contributions from public and private development.

B. The overarching goal of the WRCMSHCP is to allow for maintenance of biological diversity and ecosystem processes while allowing future economic growth:

    1. In the Plan Area, conserve Covered Species and their habitats.
    2. Improve the future economic development in the County by providing an efficient, streamlined regulatory process through which development can proceed in an efficient way. The MSHCP and the General Plan provide the County with a clearly articulated blueprint describing where future development should and should not occur.
    3. Provide for permanent open space, community edges, and recreational opportunities, which contribute to maintaining the community character of WRC.

The Natural Community Conservation Plan (NCCP) General Process Guidelines and NCCP Act, incorporates general principles of conservation biology that are captured in the Conservation Area design tenets described therein. These Conservation Area design tenets, which are summarized below, provided a framework for the conservation planning process:

- Conserve focus species and their habitats throughout the Plan Area
- Conserve large habitat blocks
- Conserve habitat diversity
- Keep conservation areas contiguous and connected
- Protect conservation areas from encroachment and invasion by non-native species

The WRCMSHCP is prepared pursuant to the provisions of the FESA, as well as a NCCP under the California NCCP Act of 1991. The WRCMSHCP allows participating jurisdictions (Riverside County and

each of the 14 Cities in the western portion of the County) to "take" (permit the loss of) the plant and animal species identified in the WRCMSHCP through the agencies' local land use planning and development review processes.

The WRCMSHCP created a conservation system to protect and manage 153,000 acres of habitat (Additional Conservation Area Lands) for Covered Species, consisting of 97,000 acres conserved as the local mitigation component and 6,000 acres conserved as mitigation for State Permittee projects (Caltrans and State Parks).

The WRCMSHCP conservation areas consist of the following: continued conservation of lands already within public ownership; public acquisition of private lands from willing sellers; private actions to conserve habitat within proposed development projects; implementation of off-site mitigation for the impacts or proposed development projects; and public actions to conserve habitats or otherwise mitigate the direct habitat impacts of public work projects.

The WRCMSHCP allows the issuance of Take Authorizations t. Issuance of Take Authorization to the local jurisdictions allows WRCMSHCP participants to implement land use decisions consistent with the MSHCP without project-by-project review and permitting by the Wildlife Agencies. This local, streamlined approach to planning for endangered and sensitive species results in greater economic development certainty and provides for and maintains biological diversity by creating an interconnected WRCMSHCP Conservation Area. In addition to the preservation of species and associated habitats, the WRCMSHCP Conservation Area provides open space and recreational opportunities that enhance the quality of life in WRC.

3.3.3 California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) is entered into the online CNPS Rare Plant Inventory and given a California Rare Plant Rank (CRPR). The Rare Plant Program currently recognizes more than 1,600 plant taxa (species, subspecies, and varieties) as rare or endangered in California (CNPS 2021).

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under state endangered species legislation, are defined by the following CRPRs:

- CRPR 1A: Plants considered by the CNPS to be extinct in California
- CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3: Plants about which we need more information – a review list

- CRPR 4: Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 0.1 to 0.3 ranking, with 0.1 being the most endangered and 0.3 being the least endangered and are described as follows:

- 0.1: Seriously threatened in California (high degree/immediacy of threat)
- 0.2: Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3: Not very threatened in California (low degree or immediacy of threats or no current threats known)

4.0 EXISTING CONDITIONS

4.1 SETTING

The BSA is located adjacent to the Santa Ana River, the Prado Basin, and the Corona Municipal Airport within the Jurupa Valley area of Riverside County. Elevations within the BSA range from approximately 500 to 600 feet above mean sea level from west to east. Photographs of the BSA are included in Appendix B Photographic Log.

4.2 VEGETATION COMMUNITIES AND LANDS COVER TYPES

As defined in MCVII (Sawyer et al. 2009), a vegetation alliance is “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors.” Generally, Stantec’s mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, generally disturbed habitat occurs within the BSA that is not defined in MCVII. Therefore, land cover types assigned to these types of habitats are descriptive in nature and are not specifically referenced in the MCVII. A list of vegetation communities and acreages in the BSA are included in Table 2. The proposed Project area temporary and permanent impact acreages are included in Appendix C. The botanical nomenclature within this report follows the Jepson Herbarium online database, eFlora (Jepson Flora Project 2022). Plant species documented during the reconnaissance survey are provided in Section 4.2.3.

Table 2 Vegetation Communities and Land Cover Types in the BSA

Vegetation Communities and Land Cover Types	BSA[1] *(Acres)*
Vegetation Communities	
Arroyo willow thickets	30.36
California buckwheat scrub	12.47
California sagebrush scrub	37.73
Cheeseweed flats	0.48
Common and giant reed marshes	0.88
Coyote brush scrub	2.43
Elderberry stands	0.68
Eucalyptus groves	5.44
Menzie's goldenbush scrub	1.28
Mulefat thickets	31.85
Perennial pepperweed patches	0.63
Poison hemlock or fennel patches	0.10
Shining willow groves	8.76
Smartweed-cocklebur patches	0.02
Tamarisk thickets	0.21
Upland mustards or star-thistle fields	8.62
Western ragweed meadow	2.24
Wild oats and annual bromes grassland	56.08
Subtotal	*200.26*
Land Cover Types	
Disturbed/Developed	141.44
Non-vegetated channel	0.27
Open water	2.24
Partially vegetated channel	2.13
Restoration	10.54
Ruderal	5.58
Subtotal	*162.20*
Total[1]	**362.46**

Note: [1] = the BSA total acreage does not add up due to rounding.

4.2.1 Vegetation Communities

4.2.1.1 Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)

This vegetation classification generally consists of arroyo willow (*Salix lasiolepis*) as the dominant in the tall shrub or low tree canopy with bigleaf maple (*Acer macrophyllum*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood

(*Cornus sericea*), California wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), other willows (*Salix* sp.), and black elderberry (*Sambucus nigra*) as co-dominants. Emergent trees may be present at a low cover. The plants are usually less than 10 meters in height, canopy is open to continuous, and the herbaceous layer is variable.

Within the BSA, this vegetation community is dominated by arroyo willow with smaller amounts of mulefat shrubs and scattered black willows. Most of the arroyo willow thickets occur in the BSA surrounding Phase 2. Approximately 30 acres of this community occurs in the BSA.

4.2.1.2 California Buckwheat Scrub (*Eriogonum fasciculatum* Shrubland Alliance)

This vegetation classification generally consists of California buckwheat (*Eriogonum fasciculatum*) as a dominant in the shrub canopy in cismontane stands with California sagebrush (*Artemisia californica*), coyote brush, sticky monkeyflower (*Diplacus aurantiacus*), bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), Menzies' goldenbush (*Isocoma menziesii*), common deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), white sage (*Salvia apiana*), or black sage (*Salvia mellifera*) as co-dominant species. Emergent trees may be present at low cover. Shrubs are usually less than two meters in height, canopy is continuous or intermittent, and the herbaceous layer is variable and may be grassy.

Within the BSA, this vegetation is dominated by California buckwheat with smaller amounts of California sagebrush, deerweed, and California brittlebush. California buckwheat scrub occurs in small patches in the BSA surrounding Phases 2A and 3A. Approximately 12.5 acres of this community occur in the BSA.

4.2.1.3 Coastal Sagebrush Scrub (*Artemisia californica* Shrubland Alliance)

This vegetation classification generally consists of California sagebrush as the dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod (*Cleome isomeris*), sticky monkeyflower, bush sunflower, brittlebush, desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal buckwheat (*Eriogonum cinereum*), California buckwheat, yellow yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), Menzie's goldenbush, heart leaved keckella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina*), chaparral prickly pear (*Opuntia littoralis*), evergreen buckthorn (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including southern California black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), or black elderberry. Shrubs are less than two meters in height or in two tiers with a second less than five meters tall. The canopy is intermittent to continuous, and the herbaceous layer is variable.

Within the BSA, this vegetation is dominated by California sagebrush with smaller amounts of California buckwheat and coyote brush. California sagebrush scrub occurs in large patches in the BSA in Phases 2A, 3, and 3A. Approximately 38 acres of this community occur in the BSA.

4.2.1.4 Cheeseweed Flats (*Malva parviflora*)

This non MCVII vegetation classification generally consists of a monoculture of cheeseweed (*Malva parviflora*).

Within the BSA, this vegetation is dominated by monoculture of dense cheeseweed with other non-native annual species such as short-pod mustard (*Hirschfeldia incana)* occasionally observed. Cheeseweed flats occur in one patch in the BSA southeast of Phase 2A and the area appears to have been previously disturbed and may have been used as an access road in the past. Approximately 0.5 acre of this community occurs in the BSA.

4.2.1.5 Common and Giant Reed Marshes (*Phragmites australis Arundo donax* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by common reed (*Phragmites australis*) or giant reed (*Arundo donax*).

Within the BSA, this vegetation is dominated by giant reed. One reed marsh occurs in the BSA north of Phase 2A in an area surrounded by native riparian vegetation. Approximately an acre of this community occurs in the BSA.

4.2.1.6 Coyote Brush Scrub (*Baccharis* pilularis Shrubland Alliance)

This vegetation classification generally consists of coyote brush, California coffeeberry (*Frangula californica*) and/or coast silk tassel (*Garrya elliptica*) is dominant to co-dominant in the shrub canopy with coastal sagebrush, sticky monkeyflower, California buckwheat, deerweed, California blackberry (*Rubus ursinus*), white sage*,* purple sage (*Salvia leucophylla*) and poison oak. Emergent trees may be present at low cover.

Within the BSA, this vegetation is dominated by coyote brush with smaller amounts of deerweed, bush sunflower, mulefat, and Menzie's goldenbush. Coyote brush scrub occurs in small patches in the Phase 2A BSA and in the BSA west of Phase 3A. Approximately two acres of this community occur in the BSA.

4.2.1.7 Elderberry Stands (*Sambucus nigra)*

This non MCVII vegetation classification generally consists of elderberry tress with occasional shrubs and an understory of native and non-native grasses and annual herb

Within the BSA, this vegetation is dominated by elderberry trees. One elderberry stand occurs in the BSA west of Phase 3A. Approximately 0.7 acre of this community occurs in the BSA.

4.2.1.8 Eucalyptus Groves (*Eucalyptus* spp. Woodland Semi-Natural Alliance)

This non MCVII vegetation classification generally consists of eucalyptus species/gum trees (*Eucalyptus* sp.) as the dominant in the tree canopy. The trees are less than 60 meters in height, canopy is open to continuous, shrub layer is generally sparse, and the herbaceous layer is sparse to intermittent.

Within the BSA, this vegetation is dominated by large eucalyptus trees with bare ground along low drainage areas. Eucalyptus groves occur in the BSA in Phases 2A and 3A. Approximately five acres of this community occur in the BSA.

4.2.1.9 Menzie's Goldenbush Scrub (*Isocoma menziesii* Shrubland Alliance)

This vegetation classification generally consists of Menzie's goldenbush as dominant or co-dominant in the shrub canopy with coastal sagebrush, coyote brush, broom baccharis (*Baccharis sarothroides*), giant coreopsis (*Coreopsis gigantea*), matchweed (*Gutierrezia californica*), island broom (*Acmispon dendroideus)*, silver bush lupine (*Lupinus albifrons),* and Virginia glasswort (*Salicornia depressa*). Herbs commonly present include San Miguel Island milkvetch (*Astragalus miguelensis*), California orach (*Etriplex californica*), ripgut brome (*Bromus diandrus*), coast morning glory (*Calystegia macrostegia*), saltgrass (*Distichlis spicata*), and purple needlegrass (*Stipa pulchra*).

Within the BSA, this vegetation is dominated by Menzie's goldenbush with smaller amounts of coyote brush. California buckwheat, and quailbush (*Atriplex lentiformis*). This community occurs in one patch in the BSA north of Phase 2A. Approximately an acre of this community occurs in the BSA.

4.2.1.10 Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance)

This vegetation classification generally consists of mulefat (*Baccharis salicifolia*) as the dominant in the shrub canopy with coastal sagebrush, willow baccharis (*Baccharis emoryi*), coyote brush, laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry species (*Rubus* spp.), narrow leaved willow (*Salix exigua*), arroyo willow, black elderberry, and tamarisk species (*Tamarix* spp.) as co-dominants. Emergent trees may be present at low cover, including grey pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oak species (*Quercus* spp.), or willow species (*Salix* spp.). Shrubs are less than five meters in height, the canopy is continuous with tie tiers at less than two meters and at less than five meters, and the herbaceous layer is sparse.

Within the BSA, this vegetation is dominated by mulefat with smaller amounts of arroyo willow and coyote brush. This community occurs in the BSA of all three phases and most of this vegetation in the Phase 2 BSA. Approximately 32 acres of this community occur in the BSA.

4.2.1.11 Perennial Pepperweed Patches (*Lepidium latifolium* Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by perennial pepperweed (*Lepidium latifolium*). Emergent trees and shrubs may be present at low cover.

Within the BSA, this vegetation is dominated by perennial pepperweed. This community occurs in one patch in the BSA at the edge of Phases 2A and 3A. Approximately 0.6 acre of this community occurs in the BSA.

4.2.1.12 Poison hemlock or fennel patches (*Conium maculatum- Foeniculum vulgare* Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of thoroughwort (*Ageratina adenophora*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), Indian teasel (*Dipsacus sativus*) and/or sweet fennel (*Foeniculum vulgare*). Emergent trees and shrubs may be present at low cover, including oak trees and coyote brush.

Within the BSA, this vegetation is dominated by poison hemlock. This community occurs in one patch in the BSA at the edge of Phases 2A and 3A. Approximately 0.1 acre of this community occurs in the BSA.

4.2.1.13 Shining Willow Groves (*Salix lucida* ssp. *lasiandra* Forest and Woodland Alliance)

This vegetation classification generally consists of shining willow (*Salix lucida*) as dominant or co-dominant in the tree canopy with bigleaf maple, white alder (*Alnus rhombifolia*), American dogwood, California sycamore, Freemont cottonwood, black cottonwood, coast live oak, willows, and blue elderberry.

Within the BSA, this vegetation is dominated by shining willow with smaller amounts of mulefat, other willow species, and castor bean. This community occurs in one large patch in the BSA in Phase 2A west of Butterfield Park. Approximately 9 acres of this community occurs in the BSA.

4.2.1.14 Smartweed and Cocklebur Patches (*Polygonum lapathifolium - Xanthium strumarium* Herbaceous Alliance)

This vegetation classification generally consists of sunflower (*Helianthus annuus*), curlytop knotweed (*Polygonum lapathifolium*), and/or cocklebur (*Xanthium strumarium*) or other knotweed or smartweed species as dominant or co-dominant in the herbaceous layer with five-angled dodder (*Cuscuta pentagona*), tall flatsedge (*Cyperus eragrostis*), barnyard grass (*Echinochloa* sp.), pale spikerush (*Eleocharis macrostachya*), western goldentop (*Euthamia occidentalis*), rushes (*Juncus* spp.) and docks (*Rumex* spp.).

Within the BSA, this vegetation consists of cocklebur, sunflower, and perennial pepperweed. One 0.02-acre patch occurs in the BSA in Temescal Wash in Phase 2.

4.2.1.15 Tamarisk Thicket (*Tamarix* spp. Shrubland Semi-Natural Alliance)

This vegetation classification generally consists of salt cedar (*Tamarix ramosissima*) or another *Tamarix* species dominant in the shrub canopy. Emergent trees may be present at low cover, including Freemont's cottonwoods or willow trees.

Within the BSA, this vegetation is dominated by salt cedar. This community occurs in one linear patch along West Rincon Street in the BSA east of Phase 2. Approximately 0.2 acre of this community occurs in the BSA.

4.2.1.16 Upland mustards or star-thistle fields (*Brassica nigra* – Centaurea [*solstitialis, melitensis*] Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of black mustard (*Brassica nigra*), common mustard (*Brassica rapa*), Italian thistle (*Carduus pycnocephalus*), Maltese star thistle (*Centaurea melitensis*), yellow starthistle (*Centaurea solstitialis*), cardoon artichoke thistle (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), short-pod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*), or similar ruderal forb is dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover.

Within the BSA, this vegetation is dominated by short-pod mustard and Maltese star-thistle with smaller amounts of other non-native annual grasses, mostly bromes, and non-native annual herbs. This community occurs along West Rincon Street in Phase 2 and in the eastern portion of Phase 3A. Approximately 8.6 acres of this community occurs in the BSA.

4.2.1.17 Western Ragweed Meadow (*Ambrosia psilostachya* Provisional Herbaceous Alliance)

This vegetation classification generally consists of western ragweed as dominant or co-dominant in the herbaceous layer with ripgut brome, soft chess (*Bromus hordeaceus*), Bermuda grass (*Cynodon dactylon*), filarees (*Erodium* spp.), gumplants (*Grindelia* spp.), barely (*Hordeum murinum*), checkerbloom (*Sidalcea malviflora*), and blue-eyed grass (*Sisyrinchium bellum*).

Within the BSA, this vegetation is dominated by western ragweed. Other non-native annuals occur in the flat area at the base of the Prado Basin spillway; approximately two acres of this community occur in one patch west of Phase 3A at the base of the Prado Basin spillway within the BSA.

4.2.1.18 Wild Oats and Annual Brome Grasslands (*Avena* spp.-*Bromus* spp. Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of slim oat (*Avena barbata*), wild oats (*Avena fatua*), purple false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima*), ripgut brome, soft chess, and foxtail barley (*Hordeum murinum*) as dominant or co-dominant in the herbaceous layer with other non-natives such as Australian saltbush (*Atriplex semibaccata*) and barley species (*Hordeum* sp.).

Emergent trees and shrubs may be present at low cover. Herbs are less than four feet in height and cover is open to continuous.

Within the BSA, this vegetation is dominated by bromes and other non-native annual grasses. Wild oats and annual brome grasslands occur in large patches in the BSA surrounding Phases 2A and 3A. Approximately 56 acres of this community occur in the BSA.

4.2.2 Land Cover Types

4.2.2.1 Disturbed/Developed

This land cover type includes areas that have been graded or paved and are developed with urban infrastructure. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil such as along disturbed areas or roadsides. The Phase 2 BSA includes Corydon Street, West Rincon Street, and disturbed areas between West Rincon Street and the Corona Airport. The Phase 2A BSA includes dirt access roads, a large borrow pit, portions of the Corona Airport and Butterfield Park, and buildings south and west of Phase 2A. The Phase 3A BSA includes portions of SR-91. Approximately 141 acres of this land cover type occurs in the BSA.

4.2.2.2 Non-vegetated Channel

Non-vegetated channel is not a MCVII classification. In this land cover type, the area is unvegetated on a relatively permanent basis. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Holland 1986).

A drainage ditch occurs along the south side of Butterfield Drive in the Phase 2A BSA. Approximately 0.3 acre of this land cover type occurs within the BSA.

4.2.2.3 Open Water

This land cover type was used to map the approximate limits of the open water habitat within the Santa Ana River in the western portion of the BSA west of Phase 3A. Approximately two acres of this land cover type occurs within the BSA.

4.2.2.4 Partially Vegetated Channel

This land cover type is a non-vegetated channel but has more than 10 percent vegetative cover. Partially vegetated channel is not a MCVII classification. The lack of vegetation is due to flowing water during the rainy season. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel.

This land cover type includes Temescal Wash east and west of West Rincon Street in Phase 2. Some large willow trees have been established on the edges of the wash. Approximately two acres of this land cover type occur within the BSA.

4.2.2.5 Restoration Areas

Areas mapped as restoration were either observed to be undergoing active habitat restoration activities or were areas that have been previously restored and are being monitored or have been completed.

Two restoration areas occur within Phase 2A, and two restoration areas occur in the western portion of the BSA west of Phase 3A. Approximately 10.5 acres of this land cover type occur within the BSA.

4.2.2.6 Ruderal Areas

Ruderal vegetation is not a MCVII classification. This land cover type is usually sparsely vegetated with pioneer plant species that readily colonize open disturbed soil. In the BSA these include non-native annual grasses, bromes, redstem filaree, and Maltese star-thistle.

Ruderal patches occur in the Phase 2A Survey Area near Auto Center Drive and the western portion of the BSA west of Phase 3A. Approximately 5.5 acres of this land cover type occur within the BSA.

4.2.3 Plant Species Observed

Table 3 includes a list of 119 vascular plant species that were observed in the BSA.

Table 3 Vascular Plant Species Observed in the BSA

Scientific Name	Common Name
Acmispon glaber	deerweed
Acmispon strigosus	strigose lotus
*Ailanthus altissima**	tree of heaven
Ambrosia psilostachya	western ragweed
Amsinckia intermedia	fiddleneck
*Anagallis arvensis**	scarlet pimpernel
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Artemisia dracunculus	tarragon
*Arundo donax**	giant reed
Asclepias fascicularis	narrow leaf milkweed
Atriplex canescens	hoary saltbush
Atriplex lentiformis	quailbush
*Atriplex semibacatta**	Australian saltbush

Scientific Name	Common Name
*Avena fatua**	wild oats
Baccharis pilularis	coyote bush
Baccharis salicifolia	mulefat
Baccharis sarothroides	Broom baccharis
*Bromus diandrus**	ripgut brome
*Bromus madritensis**	foxtail brome
*Bromus rubens**	red brome
Calystegia macrostegia	coast morning glory
Camissoniopsis micrantha	Spencer primrose
*Carduus pycnocephalus**	Italian thistle
*Carya illinoinensis**	pecan
*Centaurea melitensis**	Maltese star-thistle
Chenopodium californicum	California goosefoot
*Chrysanthemum coronarium**	garland daisy
*Cirsium vulgare**	bull thistle
*Conium maculatum**	poison hemlock
Corethrogyne filaginifolia	common sandaster
Croton californicus	California croton
Croton setigerus	turkey mullen
Cryptantha intermedia	common cryptantha
Cucurbita foetidissima	coyote gourd
Cuscuta californica	California dodder
Datura wrightii	jimsonweed
Deinandra fasciculata	clustered tarweed
Deinandra paniculata+	paniculate tarplant
Diplacus aurantiacus	sticky monkeyflower
*Dysphania ambrosioides**	Mexican tea
Eleocharis macrostachya	spike rush
Elymus condensatus	giant wildrye
Encelia californica	bush sunflower
Encelia farinosa	brittlebush
Ericameria palmeri	Palmer goldenweed
Erigeron canadensis	Canada horseweed
Eriogonum fasciculatum	California buckwheat
*Erodium cicutarium**	redstem filaree
Eucalyptus sp.*	gum tree

Scientific Name	Common Name
Euphorbia polycarpa	smallseed sandmat
*Festuca perenniis**	Italian ryegrass
*Foeniculum vulgare**	sweet fennel
Helianthus annuus	hairy-leaved sunflower
*Helminthotheca echioides**	bristly ox-tongue
Heteromeles arbutifolia	toyon
Heterotheca grandiflora	telegraph weed
*Hirschfeldia incana**	shortpod mustard
*Hordeum marinum**	barley
*Koelreuteria bipinnata**	goldenrain tree
*Lactuca serriola **	prickly lettuce
Lasthenia californica	goldenfields
*Lepidium latifolium**	perennial pepperweed
Lupinus bicolor	lupine
Malosma laurina	laurel sumac
*Malva parviflora**	cheeseweed
Marah macrocarpa	Chilicothe
*Marrubium vulgare**	horehound
*Medicago polymorpha**	California burclover
*Melilotus indicus**	annual yellow sweetclover
*Nicotiana glauca**	tree tobacco
Nicotiana quadrivalvis	Indian tobacco
*Oncosiphon pilulifer**	stinknet
Opuntia oricola	chaparral pricklypear
*Parkinsonia aculeata**	Jerusalem thorn
Phacelia ramosissima	branching phacelia
Plantago erecta	dot-seed plantain
Platanus racemosa	California sycamore
Pluchea sericea	arrow weed
*Polypogon monspeliensis**	rabbit's foot grass
Populus fremontii	Fremont cottonwood
Pseudognaphalium californicum	California cudweed
*Pseudognaphalium luteoalbum**	cudweed
Quercus agrifolia	coat live oak
*Raphanus sativus**	wild radish
*Ricinus communis**	castor bean

Scientific Name	Common Name
Rosa californica	California wild rose
Rubus ursinus	pacific blackberry
*Rumex pulcher**	fiddledock
Salix gooddingii	black willow
Salix laevigata	red willow
Salix lasiandra	shining willow
Salix lasiolepis	arroyo willow
*Salsola tragus**	Russian thistle
Salvia apiana	white sage
Salvia mellifera	black sage
Sambucus nigra ssp. *caerulea*	blue elderberry
*Schinus molle**	Peruvian peppertree
*Schinus terebinthifolius**	Brazilian peppertree
*Schismus barbatus**	old han schismus
Schoenoplectus californicus	California bulrush
*Silybum marianum**	milk thistle
*Sisymbrium irio**	London rocket
Solanum douglasii	Douglas' nightshade
*Sonchus arvensis**	perennial sow thistle
*Sonchus asper**	spiny sow thistle
*Sorghum halepense**	Johnsongrass
*Stipa miliacea**	smilo grass
Stipa pulchra	purple needlegrass
Trifolium willdenovii	tomcat clover
Toxicodendron diversilobum	poison oak
*Typha angustifolia**	narrowleaf cattail
Typha domingensis	southern cattail
Urtica dioica	stinging nettle
*Urtica urens**	dwarf nettle
*Veronica anagallis-aquatica**	water speedwell
Vitis girdiana	California wild grape
Washingtonia robusta*	Mexican fan palm
Xanthium strumarium	cocklebur
Notes: * = Non-native species, + = California Rare Plant Rank 4.2	

4.3 COMMON WILDLIFE

4.3.1 Terrestrial Invertebrates

While a focused survey for insects was not conducted within the BSA during the 2021 surveys; randomly selected areas within the appropriate micro habitats (e.g., leaf litter, woody debris piles, etc.) were visually inspected to determine the presence/absence of invertebrates and gastropods, as a variety of common insects are known to occur in the area. Conditions in the BSA provide a suite of microhabitat variations for a variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the BSA play a crucial role in biological processes. They serve as the primary or secondary food source for amphibian, bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. The visually inspected areas of the BSA detected a wide variety of common and non-native invertebrates. Some of the orders identified in the BSA included beetles (*Coleoptera* spp.), flies (*Diptera* spp.), grasshoppers (*Orthoptera* spp.), crickets (*Gryllidae* spp.), isopods (*Isopoda* spp.), snails (*Gastropoda* spp.), spiders (*Araneae* spp.), moths and butterflies (*Lepidoptera* spp.), bees (*Apis* spp.), and ants (*Hymenoptera* spp.).

4.3.2 Fish

Temescal Wash flows under West Rincon Street in Phase 2 in the eastern portion of the BSA. The ephemeral wash is usually dry except during the rainy season, when species of small non-native fish including mosquito fish (*Gambusia affinis*) are likely to occur in the wash and flow downstream.

4.3.3 Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments or by burrowing into the soil. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), likely provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988). These species are highly cryptic and often difficult to detect. Amphibians require aquatic habitat for all or part of their life cycle, which is present within the BSA. Baja California treefrog (*Pseudacris hypochondriaca*) was heard during 2021 surveys. Other common species known to occur in the region include the western toad (*Anaxyrus boreas*) and the non-native American bullfrog (*Lithobates catesbeianus*).

4.3.4 Reptiles

The number and type of reptile species that may occur at a given site is related to biotic and abiotic features present in the BSA. These include the diversity of plant communities, substrate, soil type, and

presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

Many reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG 2010). In some cases, they are only observed when flushed from their refugia. Two common reptile species were observed during 2021 surveys, the common side-blotched lizard (*Uta stansburiana*) and the western fence lizard (*Sceloporus occidentalis*). The BSA also includes suitable habitat for other common reptile species.

4.3.5 Birds

Focused surveys for burrowing owl and listed riparian birds were conducted. A list of common and special-status bird species and other wildlife species observed during 2021 surveys is included in Table 4. The BSA provides high quality nesting and foraging habitat for many bird species.

4.3.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). Multiple desert cottontails (*Sylvilagus audubonii*) and a few California ground squirrels were observed during the 2021 surveys. Signs of other mammal species (tracks, scat, etc.) were detected, but no live individuals were observed during the 2021 surveys. Sign observed included a wood rat midden, Botta's pocket gopher (*Thomomys bottae*) mounds, and mule deer (*Odocoileus hemionus*) tracks. Other common mammals are expected to occur within the BSA given the habitat conditions and species that are known to occur in the region. These may include coyote (*Canis latrans*), kangaroo rats (*Dipodomys* sp.), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*). No special-status mammal species were observed in the BSA.

Although bats were not detected in the BSA, they likely forage and roost in the region, particularly along Temescal Wash and the riparian corridors. Many bats tend to concentrate foraging activities in riparian habitats similar to those occurring within and adjacent to the BSA where insect abundance is high (CDFW 2000).

Table 4 Wildlife Species Observed in the BSA

Scientific Name	Common Name
Birds	

Scientific Name	Common Name
Aeronautes saxatalis	white-throated swift
Anthus rubescens	American pipit
Bombycilla cedrorum	cedar waxwing
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Calypte anna	Anna's hummingbird
Cathartes aura[1]	turkey vulture (fly over)
Charadrius vociferus	killdeer
Colaptes auratus	northern flicker
Corvus brachyrhynchos	American crow
Dendroica coronate	yellow-rumped warbler
Dryobates pubescens	downy woodpecker
Eremophila alpestris actia[1]	California horned lark
Geococcyx californianus	greater roadrunner
Geothlypis trichas	common yellowthroat
Haemorhous mexicanus	house finch
Icteria virens[1]	yellow-breasted chat
Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Mimus polyglottos	northern mockingbird
Passerina caerulea	blue grosbeak
Petrochelidon pyrrhonota	American cliff swallow
Picoides nuttallii	Nuttall's woodpecker
Pipilo maculatus	spotted towhee
Piranga ludoviciana	western tanager
Polioptila californica californica[1]	coastal California gnatcatcher
Polioptila caerulea	blue-gray gnatcatcher
Psaltriparus minimus	Bushtit
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Setophaga petechia[1]	yellow warbler
Spinus lawrencei[1]	Lawrence's goldfinch
Spinus psaltria	lesser goldfinch
Sturnus vulgaris	European starling
Tyrannus verticalis	western kingbird
Vireo bellii pusillus[1]	least Bell's vireo

Scientific Name	Common Name
Zenaida macroura	mourning dove
Invertebrates	
Anthocharis cardamines	orange tip butterfly
Apis mellifera	European honeybee
Coccinellidae sp.	lady bird beetle
Nymphalis antiopa	mourning cloak butterfly
Pogonomyrmex barbatus	red harvester ant
Mammals	
Thomomys bottae[2]	Bottas's pocket gopher (burrows)
Neotoma sp.[2]	woodrat (midden)
Odocoileus hemionus[2]	mule deer (tracks)
Ostospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	desert cottontail
Reptiles	
Sceloporus occidentalis	western fence lizard
Uta stansburiana	side-blotched lizard

Notes: [1] = Special-status Species including WRCMSHCP covered, [2] = Species observed by sign

4.4 AQUATIC RESOURCES

Aquatic resources within 100 feet of the proposed Project area (Aquatic Resources Survey Area) were delineated on May 6, December 8, 2021, and June 9, and June 16, 2022; details of the results are included in Appendix D - Aquatic Resources Survey Report and Preliminary Jurisdictional Assessment. Drainages with an OHWM, three-parameter wetlands, and sensitive riparian vegetation were mapped in the Aquatic Resources Survey Area (Appendix A Figures 5-1 to 5-4). The mapped waters and wetlands are under the jurisdiction of the USACE, SWRCB/Santa Ana RWQCB, and/or CDFW.

Determinations of jurisdictional waters, wetlands, and riparian habitat in this report were based on current conditions, (i.e., normal circumstances) and were made in accordance with relevant USACE, SWRCB and CDFW guidance. Determinations are subject to verification by the USACE, Santa Ana RWQCB and CDFW. Stantec advises all interested parties to treat the information contained herein as preliminary pending verification of jurisdictional boundaries by the regulatory agencies.

4.5 SOILS

Prior to conducting the field reconnaissance, historic soils data from the Natural Resources Conservation Service was used to determine potential soil types that may occur within the BSA (refer to Appendix A Figure 4). Characteristics of soils present on the site are summarized in Table 5; there are no hydric soils present in the proposed Project area.

Table 5 Historic Soil Units Occurring within the BSA

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
AkC	Arbuckle loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; loam, gravelly loam, and stratified sandy loam to vert gravelly sandy clay loam; parent material consists of alluvium derived from metasedimentary rock; minor components include Cortina, Garretson, and Perkins.	32.57
AkD	Arbuckle loam, 8 to 15 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; loam, gravelly loam, and stratified sandy loam to very gravelly sandy clay loam; parent material consists of alluvium derived from metasedimentary rock; minor components include Perkins, Garretson, and Cortina.	17.81
AlC	Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19	A well-drained non-hydric soil associated with fan remnants at elevations between 690 and 1,470 feet, medium runoff; gravely loam, gravelly very fine sandy loam, gravelly loam, gravelly clay loam, and very gravelly sandy loam; parent material is derived from alluvium derived from igneous, metamorphic, and sedimentary rock; minor components include Perkins, Garretson, and Cortina.	5.26
AlE3	Arbuckle gravelly loam, 2 to 25 percent slopes, severely eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 100 and 1,600 feet, high runoff; gravelly loam, gravelly clay loam, and stratified very gravelly sandy loam to very gravelly sandy clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Garretson, Cortina, and Unnamed.	22.27
BP	Borrow pit	A hole, pit, or excavated area that was dug for the purposes of removing soils for a construction project.	32.20
DAM	Dams	Impounded waterbody.	2.16
GaC	Garretson very fine sandy loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 430 and 1,740 feet, medium runoff; very fine sandy loam and loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle, Perkins, and Cortina.	11.05
GfF2	Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded	A well-drained non-hydric soil associated with hills at elevations between 100 and 4,000 feet, medium runoff; very fine sandy loam and unweathered; parent material is derived from residuum weathered from sandstone; minor components include Altamont, Vallecitos, and Gaviota.	9.17
GrB	Grangeville sandy loam, sandy substratum, drained, 0 to 5 percent slopes	A moderately well-drained non-hydric soil associated with alluvial fans at elevations between 600 and 1,800 feet, very low runoff; sandy loam; parent material is derived from alluvium derived from granite; minor components include Dello and Traver.	3.59

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
GvB	Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes	A somewhat poorly drained non-hydric soil associated with alluvial fans at elevations between 10 and 1,800 feet, low runoff; fine sandy loam and sandy loam; parent material is derived from alluvium derived from granite; minor components include Dello and Traver.	29.23
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 150 to 900 feet, low runoff; coarse sandy loam, fine sandy loam, and stratified loamy sand to coarse sandy loam; parent material is derived from alluvium derived from granite; minor components include Greenfield, Ramona, Tujunga, and two unnamed soils.	3.48
MdC	Metz loamy sand, 2 to 8 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, low runoff; loamy sand and stratified sand to loamy sand; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and two unnamed soils.	16.17
MgB	Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, very low runoff; loamy sand, stratified sand to silt loam, and stratified gravelly coarse sand to gravelly sand; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and an unnamed soil.	57.04
MhB	Metz loamy fine sand, sandy loam substratum, 0 to 5 percent slopes	A somewhat excessively drained non-hydric soil associated with alluvial fans at elevations between 30 and 1,200 feet, very low runoff; loamy fine sand and stratified sand to silt loam; parent material is derived from alluvium derived from sedimentary rock; minor components include San emigdio and an unnamed soil.	8.01
PeC	Perkins loam, 2 to 8 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 60 and 1,700 feet, high runoff; loam and stratified very gravely sandy loam to very gravelly clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle and Garretson.	48.97
PgD2	Perkins gravelly loam, 8 to 15 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 60 and 1,700 feet, high runoff; gravelly loam and stratified vert gravelly sandy loam to very gravelly clay loam; parent material is derived from alluvium derived from metasedimentary rock; minor components include Arbuckle and Garretson.	18.78
RaD2	Ramona sandy loam, 8 to 15 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans and terraces at elevations between 250 and 3,500 feet, medium runoff; sandy loam, fine sandy loam, sandy clay loam, and gravelly sandy loam; parent material is derived from alluvium derived from granite; minor components include Greenfield, Tujunga, and Hanford.	1.93

Map Unit Symbol	Map Unit Name	Description	Area within BSA (acres)
RaD3	Ramona sandy loam, 8 to 15 percent slopes, severely eroded	A well-drianed non-hydric soil associated with alluvial fans and terraces at elevations between 250 and 3,500 feet, high runoff; sandy loam, fine sandy loam, sandy clay loam, and gravelly sandy loam; parent material is derived from alluvium derived from granite; minor components include Tujunga, Hanford, and Greenfield.	1.62
SeC2	San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded	A well-drained non-hydric soil associated with alluvial fans at elevations between 600 and 1,800 feet, low runoff; fine sandy loam and stratified sandy loam to silt loam; parent material is derived from residuum weathered from sedimentary rock; minor components include Metz and San timoteo.	2.24
SgA	San Emigdio loam, 0 to 2 percent slopes	A well-drained non-hydric soil associated with alluvial fans at elevations between 430 and 2,340 feet, very low runoff; loam, fine sandy loam, and stratified sandy loam to silt loam; parent material is derived from alluvium derived from sedimentary rock; minor components include Metz and san timoteo.	20.93
TeG	Terrace escarpments	A steep slope pf 15 percent or greater made up of various layers of soil; parent material is derived from alluvium derived from mixed sources.	17.97
		Total	**362.45**

5.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

The background information presented above combined with habitat assessments performed during the surveys was used to evaluate special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and adjacent habitats. For the purposes of this BRTR, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California Endangered Species Act or FESA,
- Are candidate species being considered or proposed for listing under these same acts,
- Are recognized as SSC by the CDFW,
- Are ranked by CNPS as CRPR 1, 2, 3, or 4 plant species,
- Are fully protected by the FGC, Sections 3511, 4700, 5050, or 5515,
- Included in the CDFW Special Animals List (CDFW 2021c),
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions, or
- Are covered species under the WRCMSHCP.

5.1 SPECIAL-STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Shining willow grove occurs within the BSA; and is a CDFW natural community with a sensitivity ranking of S3 (vulnerable).

The BSA also occurs within the region covered by the WRMSHCP. Three riparian communities (mulefat thickets, arroyo willow thickets, and shining willow groves) and five native upland scrub habitats (California buckwheat scrub, California sagebrush scrub, coyote brush scrub, elderberry stands, and Menzie's goldenbush scrub) occur within the BSA and are WRC sensitive vegetation communities.

5.2 DESIGNATED CRITICAL HABITAT

The BSA occurs within and adjacent to DCH for the following federally listed species: Santa Ana sucker (*Catostomus santaanae*), coastal California gnatcatcher (*Polioptila californica californica*), southwestern willow flycatcher, and least Bell's vireo. DCH for these species occupies the Santa Ana River floodplain

extending from the San Bernardino Mountains in the northeast to the Chino Hills in the southwest. The coastal California gnatcatcher and the least Bell's vireo occur within the BSA.

5.3 SPECIAL-STATUS PLANTS

One special-status plant species, paniculate tarplant (*Deinandra paniculata*), a CNPS CRPR 4.2 species, was observed in coastal sage scrub in the Phase 3A during the spring 2021 rare plant survey (Appendix A Figure 3-4).

Table 6 presents a list of special-status plants, including federally- and state-listed species and CRPR 1-4 species and species protected by the WRCMSHCP that are known to occur in the region surrounding the BSA (within ten miles) (Appendix A Figure 6s and 6A).

Records searches of the USFWS iPaC CNDDB, the CNPS Online Inventory, and the CCH were performed for special-status plant taxa. Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present**: Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Both a documented recent record (within 10 years) exists of the taxa within the BSA, or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate**: Both a documented recent record (within 10 years) exists of the taxa within the BSA, or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the BSA; the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Low**: A historical record (over 10 years) exists of the taxa within the BSA, or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

Table 6 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Abronia villosa var. *aurita* chaparral sand-verbena	1B.1	Chaparral, coastal scrub, desert dunes; sandy substrates; 75-1600 meters (m).	(Jan) Mar-Sep	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 1.14 miles southeast of the BSA; this occurrence was recorded in 1934.
Allium marvinii Yucaipa onion	1B.2, WRCMSHCP	Clay openings in chaparral, 760-1,065 m.	Apr-May	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 3.24 miles south, southwest of the BSA; this occurrence was recorded in 1992.
Ambrosia pumila San Diego ambrosia	1B.1, FE, WRCMSHCP	Chaparral, coastal scrub, valley and foothill grassland, and vernal pools; sandy loam or clay substrates (sometimes alkaline); often found in disturbed areas; 20-415 m.	Apr-Oct	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 8.06 miles to the east, northeast of the BSA; this occurrence was recorded in 2006.
Astragalus brauntonii Braunton's milk-vetch	1B.1	Chaparral, coastal scrub, and valley and foothill grasslands. Occurs in recent burns or disturbed areas, usually sandstone with carbonate layers; 4-640 m.	Jan-Aug	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.59 miles to the southwest of the BSA; this occurrence was recorded in 2020.
Atriplex coulteri Coulter's saltbush	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland, ocean bluffs, ridgetops, as well as alkaline low places; alkaline, dry, or clay soils; 2-460 m.	Mar-Oct	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 5.38 miles to the north, northwest of the BSA; this occurrence was recorded in 1917.

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Baccharis malibuensis Malibu baccharis	1B.1	Chaparral, cismontane woodland, coastal scrub, and riparian woodland; 150-305 meters.	Aug	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 6.10 miles to the south, southwest of the BSA; this occurrence was recorded in 2008.
Calochortus plummerae Plummer's mariposa-lily	4.2, WRCMSHCP	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands; granitic and rocky substrates; 100-1700m.	May-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 4.69 miles south of the BSA; this occurrence was recorded in 1992.
Calochortus weedii var. *intermedius* intermediate mariposa-lily	1B.2, WRCMSHCP	Chaparral, coastal scrub, and valley and foothill grasslands; rocky, calcareous; 105 to 855 m.	May-Jun	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.20 miles south, southeast of the BSA; this occurrence was recorded in 2017.
Calystegia felix lucky morning-glory	1B.1	Historically associated with wetland and marshy places, but possibly found in drier habitats as well; meadows, seeps, and riparian scrub (alluvial); sometimes found in silty loam and alkaline substrates; 30-215 m.	Mar-Sep	**Moderate** Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.17 miles north the BSA; this occurrence was recorded in 1917.

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Centromadia pungens ssp. *laevis* smooth tarplant	1B.1, WRCMSHCP	Chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland; alkaline substrate; 0-640 m.	Apr-Sep	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.37 miles northeast of the BSA; this occurrence was recorded in 2010.
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	SE, 1B.1	Coastal scrub (sandy) and valley and foothill grasslands; 150-1,220 m.	Apr-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7.05 miles southwest of the BSA; this occurrence was recorded in 1902.
Chorizanthe parryi var. *parryi* Parry's spineflower	1B.1, WRCMSHCP	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands; sandy or rocky substrates; open habitat; 275-1220 m.	Apr-Jun	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 8.45 miles southeast of the BSA; this occurrence was recorded in 2009.
Chorizanthe polygonoides var. *longispina* long-spined spineflower	1B.2, WRCMSHCP	Chaparral, coastal scrub, meadows and seeps, valley and foothill grasslands, and vernal pools; often clay substrates; 30-1530 m.	Apr-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.38 miles west, southwest of the BSA; this occurrence was recorded in 2001.
Clinopodium chandleri San Miguel savory	1B.2, WRCMSHCP	Chaparral, coastal scrub, riparian woodlands, and valley and foothill grasslands; rocky and Gabboric substrates; 120-1075 m.	Mar-Jul	**Low** No recent occurrences within 10 miles.
Deinandra paniculata paniculate tarplant	4.2	Coastal scrub; valley and foothill grasslands; and vernal pools; 25-940 m.	Mar-Nov	**Present** Documented in coastal scrub in Phase 3A

Special-Status Biological Resources

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Dudleya multicaulis many-stemmed dudleya	1B.2, WRCMSHCP	Chaparral, coastal scrub, and valley and foothill grasslands; often clay substrates; 15-790 m.	Apr-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.91 mile south of the BSA; this occurrence was recorded in 1985.
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	1B.1, FE, SE, WRCMSHCP	Chaparral and coastal scrub (alluvial fan); sandy or gravelly substrate; 91-610 m.	Apr-Sep	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.77 miles northeast of the BSA; this occurrence was recorded in 2006.
Hesperocyparis forbesii Tecate cypress	1B.1	Closed-cone coniferous forest and chaparral; clay, gabbroic or metavolcanic; 80 to 1,500 m.	N/A	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 2.53 miles south, southwest of the BSA; this occurrence was recorded in 2011.
Horkelia cuneata var. *puberula* mesa horkelia	1B.1	Chaparral (maritime), cismontane woodland, and coastal scrub; sandy or gravelly substrate; 70-810 m.	Feb-Jul (Sep)	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.05 miles southwest of the BSA; this occurrence was recorded in 2008.
Lepechinia cardiophylla heart-leaved pitcher sage	1B.2, WRCMSHCP	Closed-cone coniferous forest, chaparral, and cismontane woodland; 520 to 1,370 m.	Apr-Jul	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 4.23 miles northwest of the BSA; this occurrence was recorded in 2016.

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Lepidium virginicum var. *robinsonii* Robinson's peppergrass	4.3	Chaparral and coastal scrub; 1-885 m.	Jan-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is within BSA; this occurrence was recorded in 2010.
Monardella australis ssp. *jokerstii* Jokerst's monardella	1B.1	Chaparral and lower montane coniferous forest. Occurs on steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes; 1,350-1,750 m.	Jul-Sep	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 2.15 miles north, northwest of the BSA; this occurrence was recorded in 1952.
Monardella hypoleuca ssp. *intermedia* intermediate monardella	1B.3	Chaparral, cismontane woodland, and lower montane coniferous forest; usually understory; 400 to 1,250 m.	Apr-Sep	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 3.58 miles south of the BSA; this occurrence was recorded in 1986.
Nolina cismontana chaparral nolina	1B.2	Chaparral and coastal scrub. Occurs on sandstone or gabbro; 140-1,275 m.	(Mar) May-Jul	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.16 miles south of the BSA; this occurrence was recorded in 1990.
Penstemon californicus California beardtongue	1B.2, WRCMSHCP	Chaparral, lower montane coniferous forest, and pinyon and juniper woodland, often in sandy soils; 1,170-2,300 m.	May-June (Aug)	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 6.83 miles west, southwest of the BSA; this occurrence was recorded in 1981.

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	1B.1	Coastal scrub (openings) and valley and foothill grasslands; 75-520 m.	Mar-Jun	**Moderate** Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.84 miles southwest of the BSA; this occurrence was recorded in 2000.
Phacelia keckii Santiago Peak phacelia	1B.3	Closed-cone coniferous forest and chaparral; 545-1,600 m.	May-Jun	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 6.01 miles south of the BSA; this occurrence was recorded in 1981.
Pseudognaphalium leucocephalum white rabbit-tobacco	2B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland; sandy and gravelly substrates; 0-2,100 m.	(Jul) Aug-Nov (Dec)	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.28 miles west of the BSA; this occurrence was recorded in 1928.
Sidalcea neomexicana salt spring checkerbloom	1B.2	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub; alkali springs and marshes; 15 to 1,530 m.	Mar-Jun	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 1.79 miles north of the BSA; this occurrence was recorded in 1917.
Symphyotrichum defoliatum San Bernardino aster	1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grasslands (vernally mesic); often found near ditches, streams, and springs; 2-2040 m.	Jul-Nov (Dec)	**Low** Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 5.63 miles north, northwest of the BSA; this occurrence was recorded in 1928.

Sources: CCH 2021, CDFW 2021a, 2021d; CNPS 2021, WRCMSHCP 2015

Notes: [1] = Months appearing in parenthesis listed under blooming period indicates an additional, but uncommon, blooming periods for that species.

Special-Status Biological Resources

Species	Status	Habitat and Distribution	Blooming Period[1]	Potential to Occur
Status Codes				
FE Federally listed Endangered Species				
SE State-listed Endangered Species				
WRCMSHCP = Western Riverside County MSHCP covered				
California Rare Plant Rank (CRPR)				
1A Plants considered by the CNPS to be extinct in California.				
1B Plants rare, threatened, or endangered in California and elsewhere.				
2B Plants presumed extinct in California but more common elsewhere.				
4 Plants of limited distribution – a watch list.				
.1 Seriously threatened in California (high degree/immediacy of threat).				
.2 Fairly threatened in California (moderate degree/immediacy of threat).				
.3 Not very threatened in California (low degree/ immediacy of threat or no current threats known).				

5.4 SPECIAL-STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA. Species protected by the WRCMSHCP are also included.

Seven special-status bird species, coastal California gnatcatcher, California horned lark (*Eremophila alpestris actia*), least Bell's vireo, Lawrence's goldfinch (*Spinus lawrencei*), turkey vulture (*Cathartes aura*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*) were observed in the BSA during 2021 surveys. Additional details on the least Bell's vireo observations and flycatcher and cuckoo surveys are provided in Appendix E. Focused surveys for burrowing owl were conducted but no owls were observed or are expected to occur in the BSA (Appendix F).

The CNDDB was queried for occurrences of special-status wildlife taxa within the BSA occurs and surrounding ten-mile area, as discussed above in Section 2.0. Table 7 summarizes the special-status wildlife taxa known to occur regionally (within 10 miles) and their potential for occurrence in the BSA (Appendix A Figure 6). Table 7 also includes WRCMSHCP covered species, USFWS iPaC data and Cornell Lab of Ornithology eBird data (Cornell 2021, USFWS 2021, WRCMSHCP 2015). Appendix A Figures 6B and 6C present CNDDB special-status wildlife that have been documented within two miles of the BSA.

Table 8 provides WRCMSHCP covered species that are not included in Table 7 that have high potential to occur in the BSA.

Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the taxa occurs on site and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs on site; or the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

Table 7 Known and Potential Occurrences of Special-Status Wildlife within the BSA

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
INVERTEBRATES					
Bombus crotchii	Crotch bumble bee	**SA**	Coastal California east to the sierra-cascade crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.14 miles southeast of the BSA from 1933.	**Low**
Branchinecta sandiegonensis	San Diego fairy shrimp	**FE**	Restricted to vernal pools in coastal southern California and northwestern Baja California, Mexico.	Suitable habitat does not occur within the BSA. Suitable habitat may occur west of the BSA. The nearest and most recent recorded occurrence is approximately 7.48 miles southwest of the BSA from 2006.	**Not Likely to Occur**
Danaus plexippus	monarch butterfly	**FC**	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation. Roosts located in wind-protected tree groves (eucalyptus, pine, cypress), with nectar and water sources nearby.	Suitable habitat occurs within the BSA. Narrow leaf milkweed (*Asclepias fascicularis*), a monarch butterfly host plant, occurs in the BSA. The nearest and most recent occurrence is within the BSA from 2021.	**High**
Eugnosta busckana	Busck's gallmoth	**SA**	Beaches, salt marshes, sand dunes & coastal scrub dunes, presumed extirpated.	Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 9.71 miles east, northeast of the BSA from 1906.	**Not Likely to Occur**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Euphydryas editha quino	Quino checkerspot butterfly	**FE, WRCMSHCP**	Native to southern California and northwestern Mexico. Occurs in localized colonies closely associated with the larval food plant, *Plantago erecta*. Adults use several chaparral annual flowers for food. Six known populations in southwestern Riverside and San Diego Counties and at least one population near Tecate, Mexico.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 4.68 miles south of the BSA from 1976.	**Not Likely to Occur**
Neolarra alba	white cuckoo bee	**SA**	Parasitic species that lays eggs in the nest of other bees.	Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is approximately 9.71 miles east, northeast of the BSA from 1928.	**Not Likely to Occur**
Rhaphiomidas terminates abdominalis	Delhi Sands flower-loving fly	**FE, WRCMSHCP**	Endemic to sand dune formations of San Bernardino Valley, from Colton to Ontario.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 6.50 miles north of the BSA from 2001.	**Not Likely to Occur**
FISH					
Catostomus santaanae	Santa Ana sucker	**FT, WRCMSHCP**	Native to the Los Angeles and Santa Ana basins in southern California. Live in the shallow portions of rivers and streams. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of algae.	Surface water was present within the BSA during the May 2021 surveys. The nearest recorded occurrence is approximately 0.40 mile west, southwest of the BSA from 2002.	**Low**
Gila orcuttii	arroyo chub	**SSC, WRCMSHCP**	Found in habitats characterized by slow-moving water, mud or sand substrate, and depths greater than 40 cm. Most abundant in low gradient pools that support at least some aquatic vegetation.	Surface water was present within the BSA during the May 2021 surveys. The nearest recorded occurrence is within BSA from 1997.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Oncorhynchus mykiss irideus pop. 10	steelhead – southern California Distinct Population Segment (DPS)	**FE**	Inhabits seasonally accessible rivers and streams with gravel for spawning. Requires sufficient flows in their natal streams to be able to return from oceans and lakes to spawn. Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerance to warmer water and more variable conditions.	Surface water was present within the BSA during the May 2021 surveys. The nearest recorded occurrence is within BSA from 2013.	**Not Likely to Occur**
Rhinichthys osculus	Santa Ana speckled dace	**SSC**	Found mainly in perennial steams fed by cool springs that maintain temperatures below 20°C. In the Los Angeles Basin, they occupy shallow rifles dominated by gravel and cobble. Prefer pools in low-gradient streams with slow-moving waters with overhanging riparian vegetation.	Surface water was present within the BSA during the May 2021 surveys. The nearest and most recent recorded occurrence is approximately 8.19 miles east, northeast of the BSA from 1996.	**Low**
AMPHIBIANS					
Anaxyrus californicus	arroyo toad	**FE, SSC, WRCMSHCP**	Occurs in the central San Joaquin valley and surrounding foothills, primarily in washes, arroyos, sandy riverbanks, and riparian areas.	Suitable habitat is present within the BSA. The nearest and most recent recorded occurrence is approximately 9.26 miles south, southeast of the BSA.	**Low**
Spea hammondii	western spadefoot	**SSC, WRCMSHCP**	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools and other temporary rain pools, cattle tanks, and occasionally pools of intermittent streams are essential for breeding and egg-laying.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.10 mile south of the BSA from 1964.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Taricha torosa	Coast Range newt	**SSC, WRCMSHCP**	Occurs in oak woodlands, chaparral, and grasslands.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.67 mile south of the BSA from 1997.	**Low**
REPTILES					
Anniella stebbinsi	southern California legless lizard	**SSC**	Generally, south of the transverse range, extending to northwestern Baja California, occurs in sandy or loose loamy soils under sparse vegetation; disjunct populations in the Tehachapi and Piute mountains in Kern County; variety of habitats; generally, in moist, loose soil, they prefer soils with a high moisture content.	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.87 miles east of the BSA from 2016.	**Moderate**
Arizona elegans occidentalis	California glossy snake	**SSC**	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7.91 miles north, northeast of the BSA from 1946.	**Low**
Aspidoscelis hyperythra	orange-throated whiptail	**WL, WRCMSHCP**	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of bush and rocks. Perennial plants necessary for its major food: termites.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.01 miles south of the BSA from 1990.	**Low**

Special-Status Biological Resources

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Aspidoscelis tigris stejnegeri	coastal whiptail	**SSC, WRCMSHCP**	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.43 miles south, southeast of the BSA from 2016.	**Moderate**
Coleonyx variegatus abbotti	San Diego banded gecko	**SSC, WRCMSHCP**	Found in southwestern California from Ventura County into Baja California. Inhabits coastal scrub chaparral and desert scrub habitats, preferring granite or rocky outcrops.	Limited marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.00 miles east, northeast of the BSA from 2003.	**Moderate**
Crotalus ruber	red-diamond rattlesnake	**SSC, WRCMSHCP**	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slope of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Limited marginally suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.64 miles east, northeast of the BSA from 2003.	**Moderate**
Emys marmorata	western pond turtle	**SSC, WRCMSHCP**	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches usually with aquatic vegetation, below 6,000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.3 mile from water for egg-laying.	Marginally suitable habitat occurs within the BSA. No perennial water occurs in the BSA. The nearest recorded occurrence is approximately 2.07 miles west of the BSA from 1992.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Phrynosoma blainvillii	coast horned lizard	**SSC, WRCMSHCP**	Primarily in sandy soil in open areas, especially sandy washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Main prey item is harvester ants. Occurs west of the deserts from northern Baja California, Mexico north to Shasta County below 2,400 m (8,000 feet) elevation.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.67 miles south, southeast of the BSA from 2016.	**Moderate**
Salvadora hexalepis virgultea	coast patch-nosed snake	**SSC**	Occurs in semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	Suitable habitat does not occur in the BSA. The nearest and most recent recorded occurrence is approximately 6.32 miles west, southwest of the BSA from 1999.	**Not Likely to Occur**
Thamnophis hammondii	two-striped gartersnake	**SSC**	Coastal California from vicinity of Salinas to northwest Baja California, Mexico. From sea level to about 7000 feet. elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7.98 miles southwest of the BSA from 2000.	**Low**
BIRDS					
Accipiter cooperii	Cooper's hawk	**WL, WRCMSHCP**	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks.	Suitable foraging and nesting habitat occur within the BSA. The nearest recorded occurrence is within the BSA from 2010.	**High (foraging)/ Moderate (nesting)**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Agelaius tricolor	tricolored blackbird	**ST, SSC, BCC, WRCMSHCP**	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate and foraging area with insect prey within a few km of the colony.	Suitable foraging and potential nesting habitat occur within the BSA. The nearest recorded occurrence is approximately 1.73 miles northeast of the BSA from 2009.	**Moderate (foraging)/Low (nesting)**
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	**WL, WRCMSHCP**	Resident in southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	Suitable foraging and nesting habitat occur within the BSA. The nearest recorded occurrence is approximately 0.50 mile southwest of the BSA from 2019.	**High**
Ammodramus savannarum	grasshopper sparrow	**SSC, WRCMSHCP**	Occurs in grasslands, hayfields, and prairies with sparse shrub cover. Known to nest in lowlands and foothills west of the Sierra Nevada Mountain range through most of California.	Suitable foraging habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3 miles west of the BSA from 2020.	**Moderate (foraging)/Low (nesting)**
Aquila chrysaetos	golden eagle	**BGEPA, FP, WL, BCC, WRCMSHCP**	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Suitable foraging habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2007.	**Low (foraging)/ Not Likely (nesting)**
Artemisiospiza belli	Bell's sage sparrow	**WL, BCC, WRCMSHCP**	Prefers semi-open habitats with relatively evenly spaced shrubs; dry chaparral and coastal sage scrub; shrub species include brittlebush, black sage, California buckwheat, California sagebrush, bush mallow, chamise, white sage, valley cholla, and willow.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is approximately 3.7 miles to the east of the BSA from 2020.	**Low**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Asio otus	long-eared owl	**SSC**	Riparian habitat required; also uses live oak thickets and other dense stands of trees. Found in Central Valley and Southern California deserts.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.55 miles to the west, southwest of the BSA from 2019.	**Low**
Athene cunicularia	burrowing owl	**SSC, WRCMSHCP**	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is within BSA from 1989. Focused surveys were conducted in 2021 and no sign of this species was observed.	**Low /Not likely**
Buteo swainsoni	Swainson's hawk	**ST, BCC, WRCMSHCP**	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Marginally suitable foraging and nesting habitat occur within the BSA. The nearest recorded occurrence is within the BSA from 2011.	**Low**
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	**SSC, BCC, WRCMSHCP**	Southern California coastal sage scrub. Wrens require tall cactus for nesting and roosting.	No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 4.55 miles west, southwest of the BSA from 1989.	**Not Likely to Occur**
Circus hudsonius	northern harrier	**WRCMSHCP**	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Breeds from sea level to 1700 m in the Central Valley and Sierra Nevada, and up to 800 m in northeastern California.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021.	**Moderate (foraging)/Low (nesting)**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Coccyzus americanus occidentalis	western yellow-billed cuckoo	**FT, SE, BCC, WRCMSHCP**	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Suitable foraging and nesting habitat occur within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2011. This species was not observed during 2021 protocol surveys.	**Low**
Coturnicops noveboracensis	yellow rail	**SSC, BCC**	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is within the BSA from 1914.	**Not Likely to Occur**
Elanus leucurus	white-tailed kite	**FP, WRCMSHCP**	Occurs in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous and open stages of most habitats mostly in cismontane California. Nest placed near top of dense oak, willow, or another tree stand. Nest located near open foraging area.	Suitable foraging and marginally suitable nesting habitat occurs within the BSA. The nearest recorded occurrence is within the BSA from 2020.	**Moderate (foraging)/ Low (nesting)**
Empidonax traillii extimus	southwestern willow flycatcher	**FE, SE, WRCMSHCP**	Riparian woodlands in southern California	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.31 mile north, northwest of the BSA from 1990. This species was not observed during 2021 protocol surveys.	**Low**
Eremophila alpestris actia	California horned lark	**WL, WRCMSHCP**	Coastal regions, chiefly from Sonoma County to San Diego County. Also, main part of San Joaquin Valley and east to foothills. Short-grass prairie, “bald” hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Suitable habitat occurs within the BSA. This species was observed in during riparian bird surveys.	**Present**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Falco peregrinus anatum	American peregrine falcon	**FP, BCC, WRCMSHCP**	Nesting habitats contain cliffs and almost always nest near water. Open habitats are often used for foraging. Non-breeding American peregrine falcons may also occur in open areas without cliffs. Many artificial habitats like towers, bridges and buildings are also utilized.	Suitable foraging habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.11 miles north of the BSA from 2021.	**Moderate (foraging)/ Not likely (nesting)**
Haliaeetus leucocephalus	bald eagle	**Delisted, BGEPA, SE, FP, BCC, WRCMSHCP**	Range extends from the Mexico border throughout the United States and Canada. Prefer large lakes for hunting.	Marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021. A nesting bald eagle was reported within the basin in 2020/2021.	**Low (foraging)/ Moderate (nesting)**
Icteria virens	yellow-breasted chat	**SSC, WRCMSHCP**	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests, in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft. of ground.	Suitable foraging and nesting habitat occur within the BSA. This species was observed in riparian habitat in the BSA during protocol bird surveys	**Present**
Laterallus jamaicensis coturniculus	California black rail	**ST, FP**	Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 4.23 miles northwest of the BSA form 1931.	**Not Likely to Occur**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Larus californicus	California gull	**WL**	Preferred habitats along the coast are sandy beaches, mudflats, rocky intertidal, and pelagic areas of marine and estuarine habitats, as well as fresh and saline emergent wetlands. Inland, frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. nests at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades, and an abundant visitor to coastal and interior lowlands in nonbreeding season.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021.	**High (foraging)/ Low (nesting)**
Plegadis chihi	white-faced ibis	**WL, WRCMSHCP**	Occurs in freshwater marshes, irrigated lands, and tules. For nesting, they select shallow marshes with scattered areas of taller emergent vegetation such as cattail, bur-reed, or bulrush.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is within the BSA from 2021.	**High(foraging)/ Low (nesting)**
Polioptila californica californica	coastal California gnatcatcher	**FT, SSC, WRCMSHCP**	Obligate, permanent resident of coastal sage scrub below 2500 feet in southern California. Low, coastal sage scrub in arid washes and on mesas and slopes with California sagebrush (*Artemisia californica*) as a dominant or co-dominant species. Not all areas classified as coastal sage scrub are occupied.	Suitable foraging and nesting habitat occur within the BSA. Observed in coastal sage scrub habitat during 2021 surveys.	**Present**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Setophaga petechia	yellow warbler	**SSC, BCC, WRCMSHCP**	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Suitable foraging and nesting habitat occur within the BSA. This species was observed in riparian habitat in the BSA during protocol bird surveys.	**Present**
Spinus lawrencei	Lawrence's goldfinch	**BCC**	Oak, pinyon-juniper woodlands and chaparral habitats. Breed in streamside trees, oak woodland, open pine woods, pinyon-juniper woods, and chaparral. Often found close to water.	Suitable habitat occurs within the BSA. This species was observed in riparian habitat in the BSA during protocol bird surveys Observed during protocol riparian bird surveys.	**Present**
Vireo bellii pusillus	least Bell's vireo	**FE, SE, WRCMSHCP**	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	Suitable foraging and nesting habitat occur within the BSA. Observed during 2021 biological resources field surveys.	**Present**

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
MAMMALS					
Chaetodipus fallax	northwestern San Diego pocket mouse	**SSC, WRCMSHCP**	Restricted to the central and northern Baja California Peninsula and southwestern California. Commonly found in sandy herbaceous areas, usually with coarse gravel. Habitats tend to be stony soils above sandy desert fans and rocky areas within shrub communities such as coastal sage scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent scrub, and annual grassland.	Marginally suitable habitat occurs within the BSA; however, substrates are not ideal. The nearest and most recent recorded occurrence is approximately 3.47 miles south, southeast of the BSA from 2001.	**Low**
Dipodomys stephensi	Stephens' kangaroo rat	**FE, ST, WRCMSHCP**	Require annual grasses for feeding. Prefer sparse perennial plant cover and firm soils. Often occupy abandoned pocket gopher burrows.	Limited marginally suitable foraging and nesting habitat occurs within the BSA. The nearest recorded occurrence is approximately 2.61 miles east of the BSA from 1992.	**Low**
Eumops perotis californicus	western mastiff bat	**SSC**	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Suitable foraging and roosting habitat occur within the BSA. The nearest recorded occurrence is approximately 2.92 miles west, southwest of the BSA from 1992.	**Moderate**
Lasiurus xanthinus	western yellow bat	**SSC**	Prefer riparian woodland habitat, especially with palm trees (for roosting). Also occupy cottonwood-willow riparian woodlands.	Suitable foraging and roosting habitat occur within the BSA. The nearest and most recent recorded occurrence is approximately 1.14 miles southeast of the BSA from 1999.	**Moderate**

Special-Status Biological Resources

Taxa		Status	Habitat Types	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Lepus californicus bennettii	San Diego black-tailed jackrabbit	**SSC, WRCMSHCP**	Occurs primarily in arid regions with short grass. Preferred habitats include open grasslands, agricultural fields, and sparse coastal scrub.	Marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9.24 miles east of the BSA from 2001.	**Moderate**
Myotis yumaensis	Yuma myotis	**SA**	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings, or crevices.	Suitable foraging habitat occurs within the BSA however the preferred habitat for maternity colonies is absent. The nearest recorded occurrence is approximately 7.20 miles east, southeast of the BSA form 1997.	**Low**
Nyctinomops femorosaccus	pocketed free-tailed bat	**SSC**	Variety of arid areas in southern California; pinyon-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. rocky areas with high cliffs.	Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 1.14 miles southeast of the BSA from 1986.	**Not Likely to Occur**

Sources: CDFW 2021a, 2021b, 2021c, 2021e; Cornell 2021, WRCMSHCP 2015

Federal Rankings:
FE = Federally Endangered
FT = Federally Threatened
FC = Federal Candidate for Listing
BCC = USFWS Bird of Conservation Concern
BGEPA = Bald and Golden Eagle Protection Act
Delisted = removed from federal listing

County:
WRCMSHCP = Western Riverside County MSHCP covered

State Rankings:
FP = Fully Protected
SE= State Endangered
ST = State Threatened
SA = CDFW Special Animal
SC = State Candidate for Listing
WL = CDFW Watch List
SSC = Species of Special Concern
Delisted = removed from state listing

Table 8 WRCMSHCP Covered Species likely to Occur in the BSA[1]

Scientific Name	Common Name
BIRDS	
black-crowned night heron	*Picoides pubescens*
downy woodpecker	Tachycineta bicolor
tree swallow	*Tachycineta bicolor*
turkey vulture	*Cathartes aura*
Wilson's warbler	*Wilsonia pusilla*
MAMMALS	
bobcat	*Lynx rufus*
coyote	*Canis latrans*
long-tailed weasel	*Mustela frenata*

Note: [1] = If a WRCMSHCP covered species is listed in Table 7, it is not repeated in this table.

5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts (*Taricha torosa*), California red-legged frogs (*Rana draytoni*), western pond turtles (*Emys marmorata*), and two-striped garter snakes (*Thamnophis hammondii*) found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor" (Hunt 1993; Rathbun et al., 1992; Bulger et al. 2002; Trentham 2002; Ramirez 2003). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark 1995; Beier 1993, 1995; Noss et al. 1996; Noss et al. no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of

habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.

- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll 1997).

5.5.1 Wildlife Movement in the BSA

The BSA is located within the Santa Ana River floodplain, which has been identified as an important wildlife movement corridor/riparian linkage (Penrod et al. 2001) and is part of a large area of open space within an otherwise heavily developed region. This corridor joins upland and riparian habitats. It joins the San Bernardino Mountains in the north to the Chino Hills, and by extension the Santa Ana Mountains, to the south, and Orange County to the west. Therefore, the riparian corridor, including the BSA, would be expected to experience substantial wildlife movement as fauna travel between these mountainous regions of southern California. Within the BSA, the lack of structures or other significant development and the presence of relatively intact habitat and features such as ephemeral drainages and unpaved roads all facilitate the unimpeded movement of wildlife throughout the area. The east/west corridor of the Santa Ana River floodplain is also important due to SR-91 and developed area surrounding the BSA impeding wildlife movement, especially movement south of the BSA.

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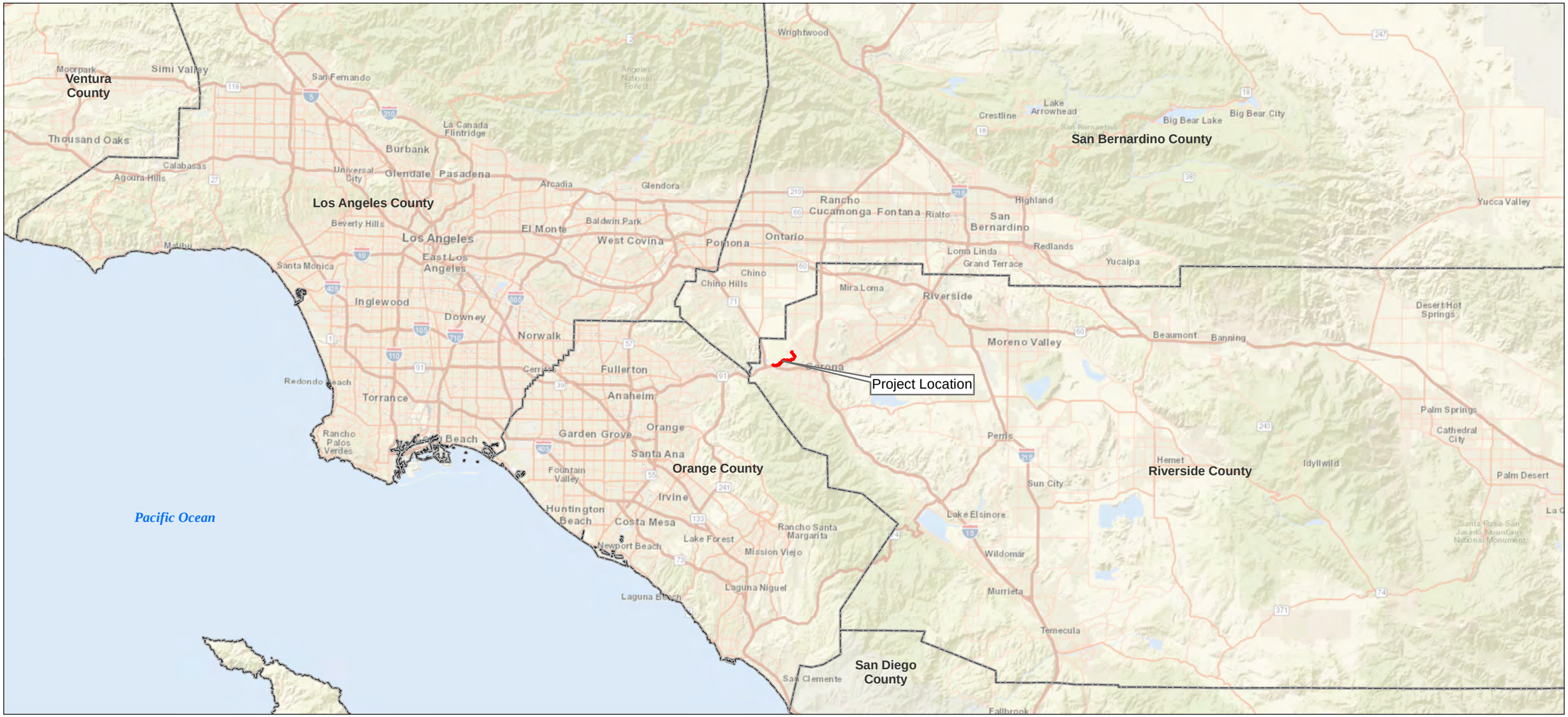
Appendix A FIGURES



Project Location

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Stantec

Project Location	Prepared by DL on 2022-06-29
Near Corona	TR by SET on 2022-06-29
Riverside County, California	IR by JV on 2022-06-29
Client/Project	2042483140
Riverside County Regional Park & Open-Space District	
Santa Ana River Trail Project	
Biolgical Resources Technical Report	
Figure No.	
1	
Title	
Regional Location	

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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△ Phase 2A End Location / Phase 3A Start Location

Railroad

Proposed Action (2022 Trail-60% Design)

Temporary Impact (54.00 ac.)

Permanent Impact (11.54 ac.)

0 1,200 2,400 Feet

(At original document size of 11x17)
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N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biolgical Resources Technical Report

Figure No.
2 - 0

Title
Site Plan

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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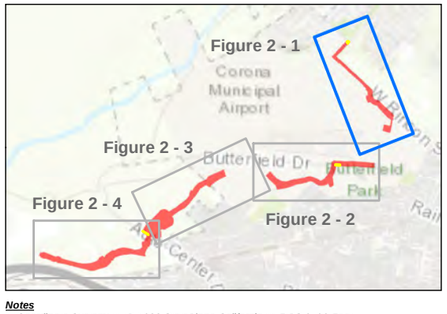

Proposed Action (2022 Trail-60% Design)

- Temporary Impact (54.00 ac.)
- Permanent Impact (11.54 ac.)

0 270 540 Feet

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N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
2 - 1

Title
Plan Sheet 1

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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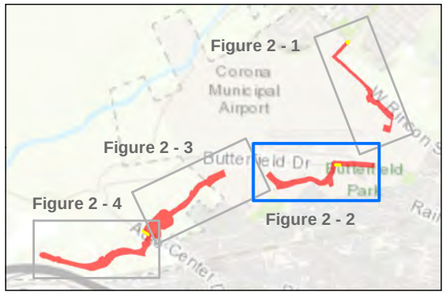

Proposed Action (2022 Trail-60% Design)

- Temporary Impact (54.00 ac.)
- Permanent Impact (11.54 ac.)

0 270 540 Feet

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Stantec

Project Location	Prepared by DL on 2022-06-29
Near Corona	TR by SET on 2022-06-29
Riverside County, California	IR by JV on 2022-06-29
Client/Project	2042483140
Riverside County Regional Park & Open-Space District	
Santa Ana River Trail Project	
Biological Resources Technical Report	
Figure No.	**2 - 2**
Title	**Plan Sheet 2**

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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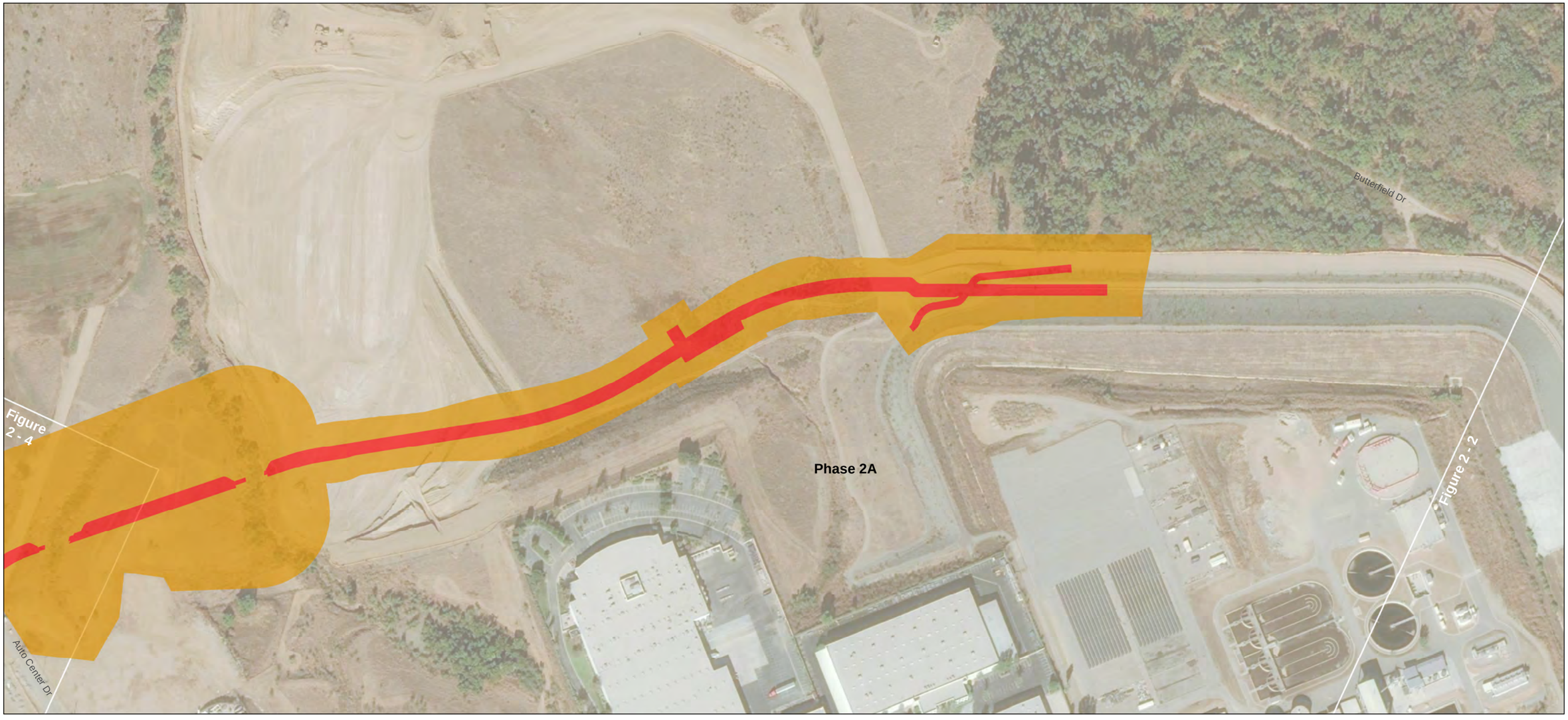

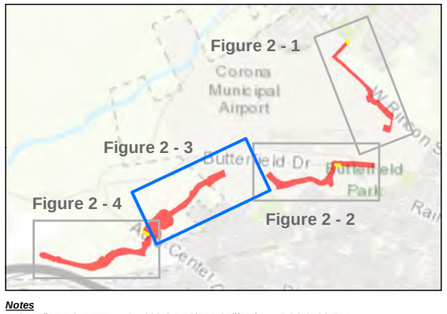

Proposed Action (2022 Trail-60% Design)

- Temporary Impact (54.00 ac.)
- Permanent Impact (11.54 ac.)

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
2 - 3

Title
Plan Sheet 3

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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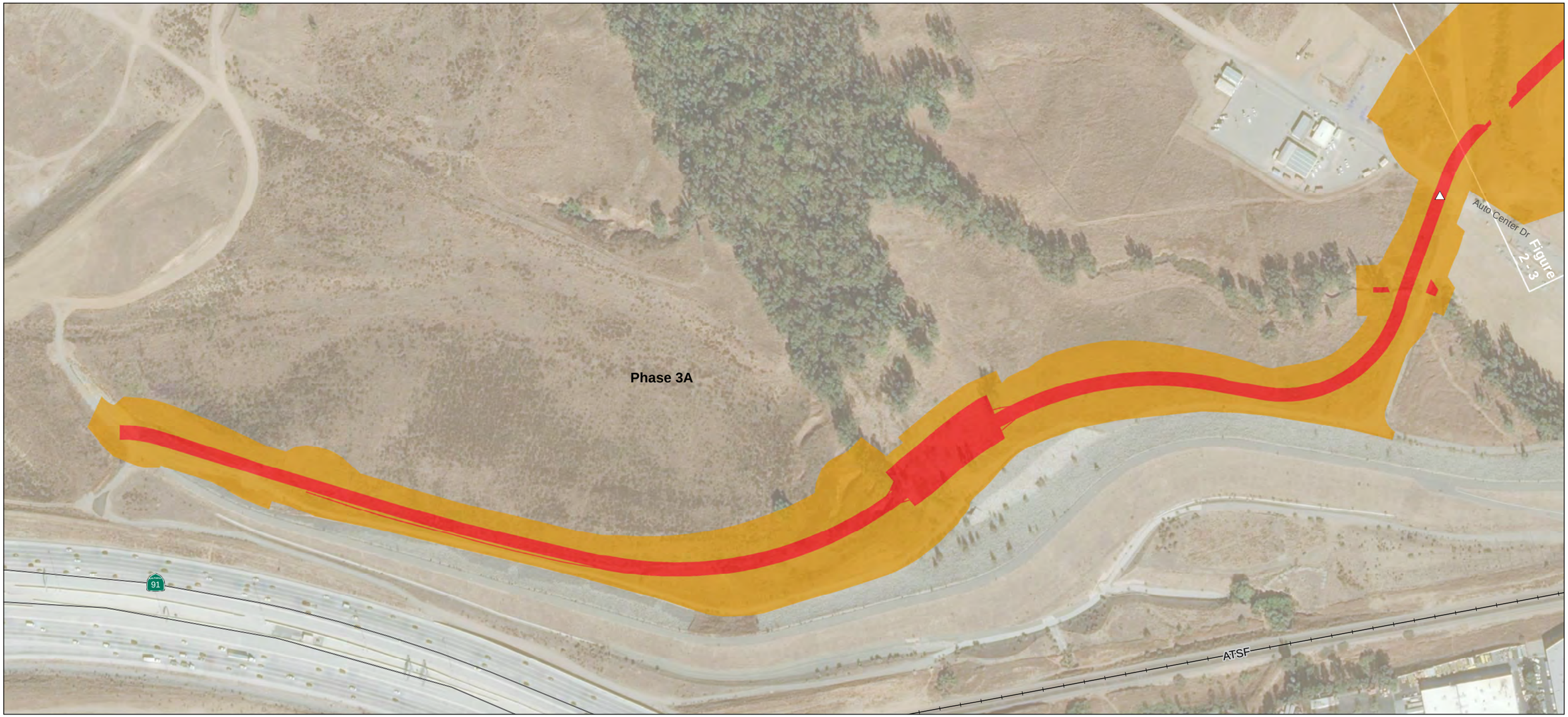

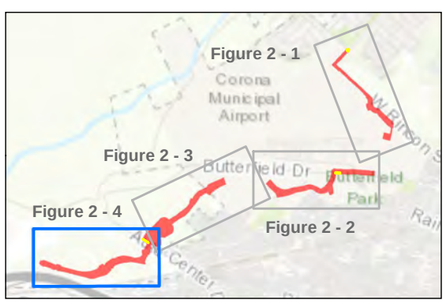

△ Phase 2A End Location / Phase 3A Start Location

Railroad

Proposed Action (2022 Trail-60% Design)

Temporary Impact (54.00 ac.)

Permanent Impact (11.54 ac.)

0 270 540 Feet

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Project Location
Near Corona
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Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
2 - 4

Title
Plan Sheet 4

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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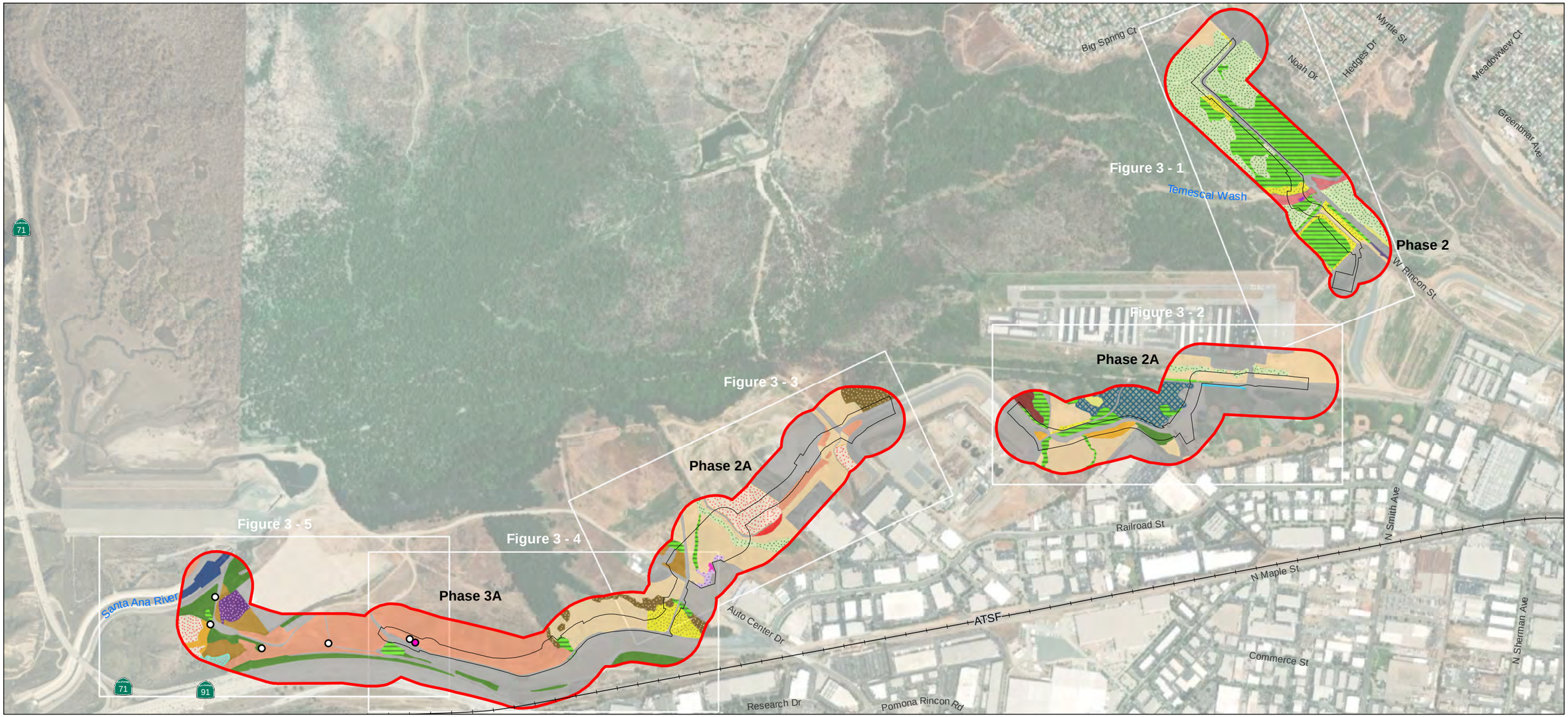

- Biological Survey Area
- Project Footprint

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
- Cheeseweed flats
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Eucalyptus groves
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Open water
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Shining willow groves
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Western ragweed meadow
- Wild oats and annual brome grasslands

0 1,200 2,400 Feet

(At original document size of 11x17)
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N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
3 - 0

Title
Biological Resources

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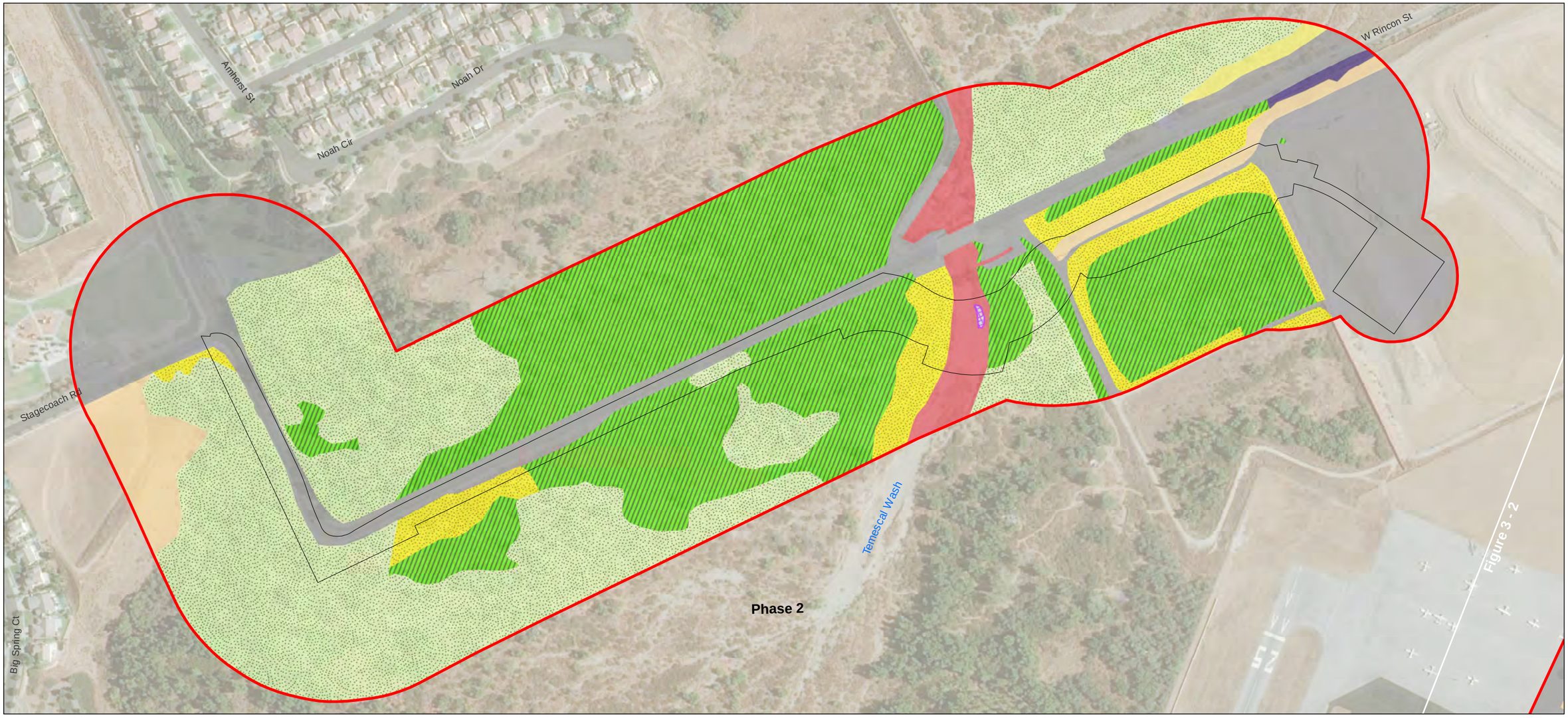

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- Disturbed/Developed
- Giant reed stands
- Mulefat thickets
- Partially vegetated channel
- Smartweed-cocklebur patches
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

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N

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Stantec

Project Location
Near Corona
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 1

Title
Biological Resources

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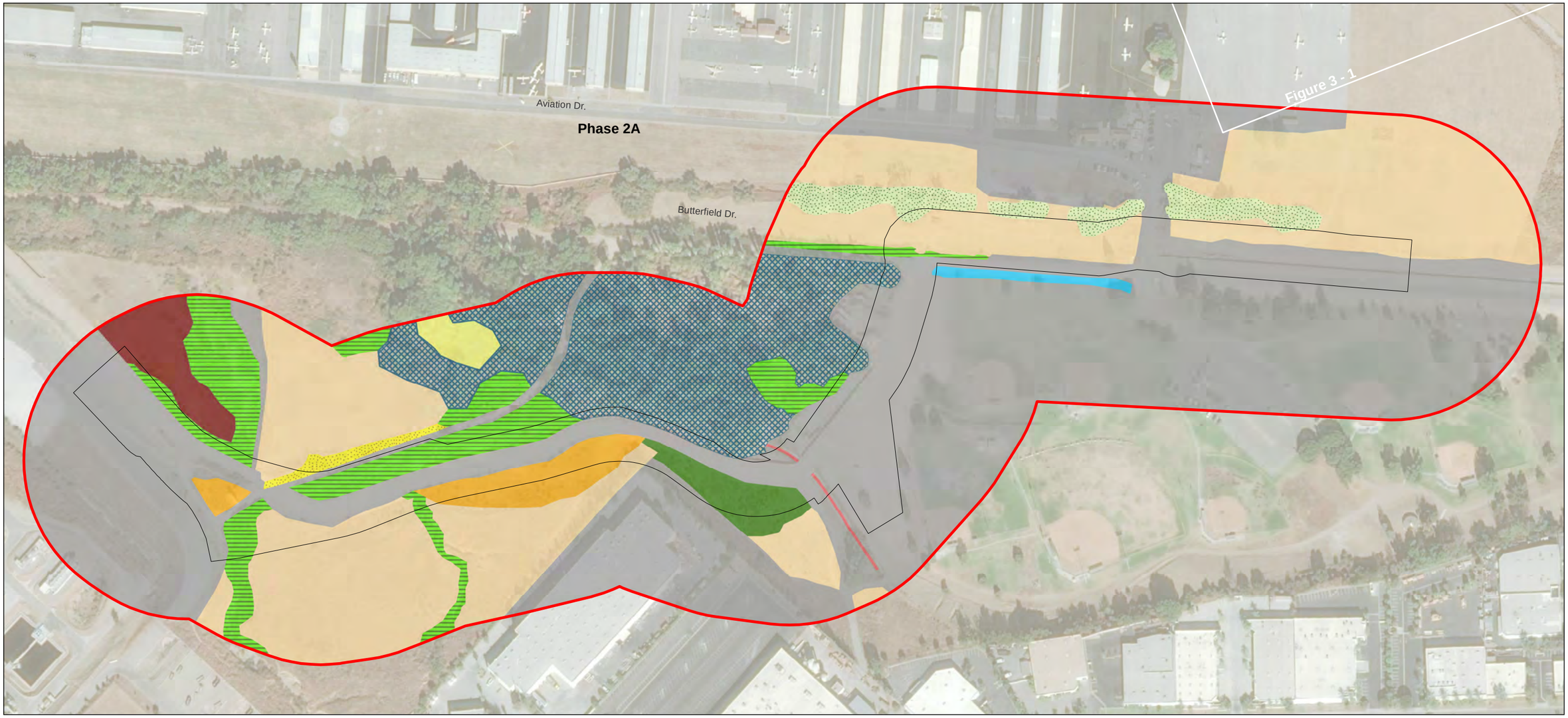

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- Coyote brush scrub
- Disturbed/Developed
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Shining willow groves
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
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N

Notes

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Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 2

Title
Biological Resources

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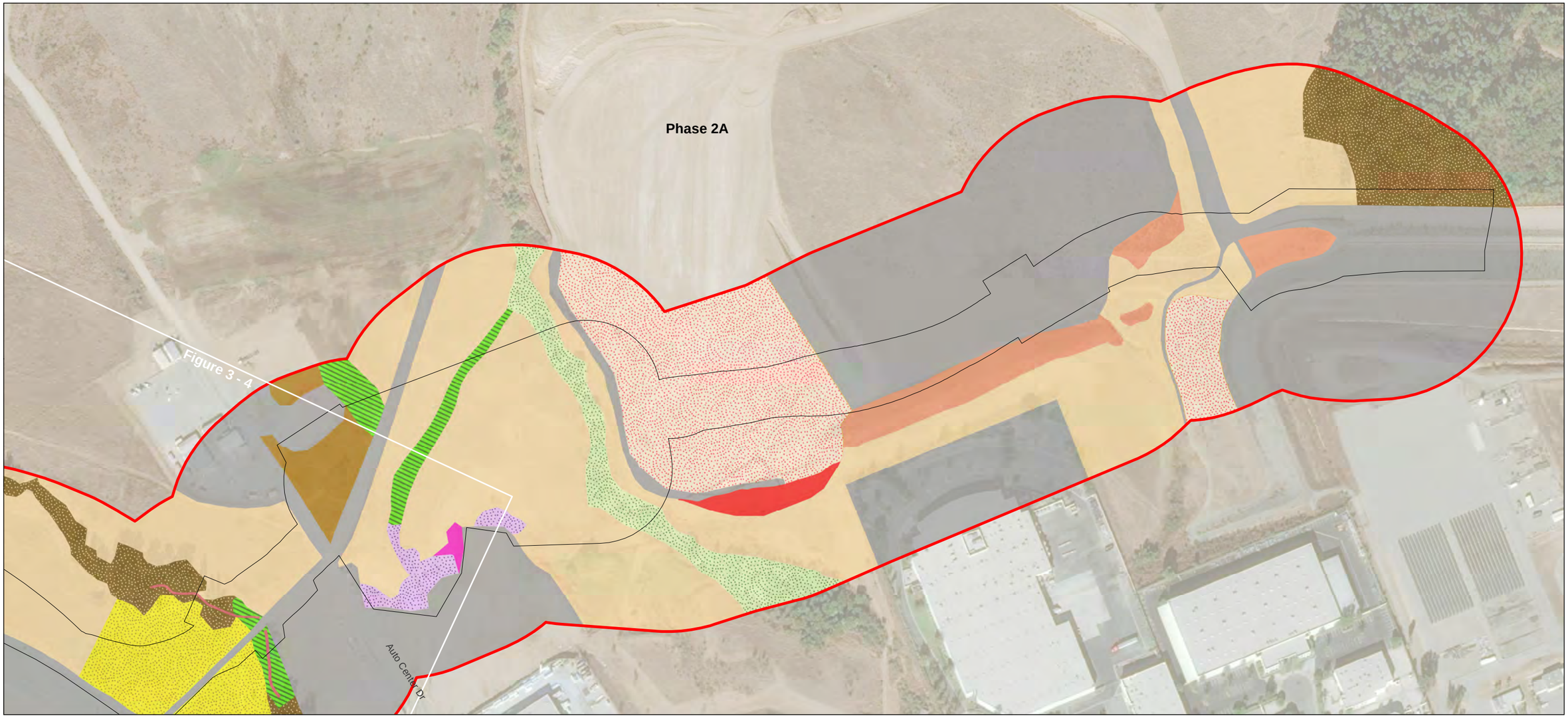

Biological Survey Area
Project Footprint

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California sagebrush scrub
- Cheeseweed flats
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

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Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
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Stantec

Project Location
Near Corona
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 3

Title
Biological Resources

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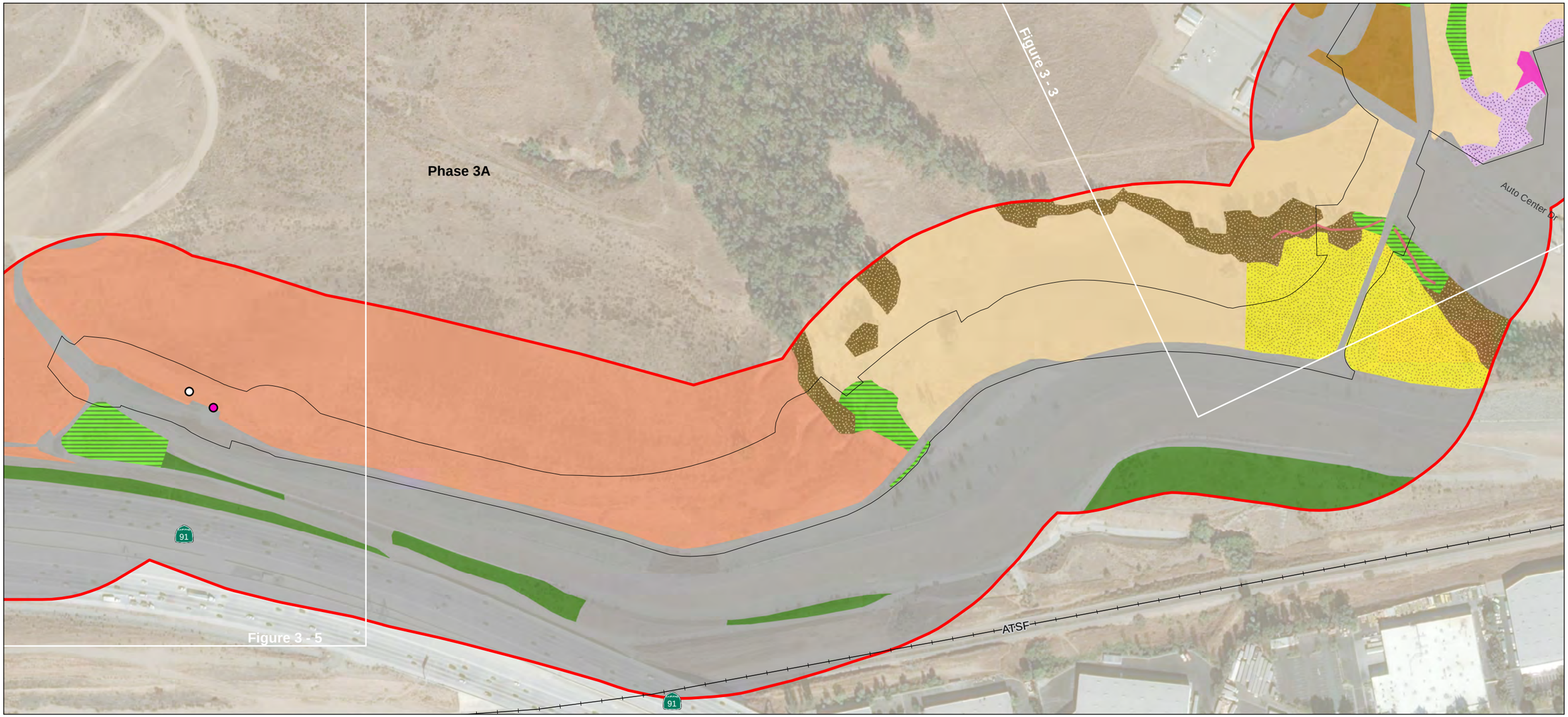

- Biological Survey Area
- Project Footprint
- Railroad

Special-Status Species

- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types

- California buckwheat scrub
- California sagebrush scrub
- Disturbed/Developed
- Eucalyptus groves
- Mulefat thickets
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Ruderal
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
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Stantec

Project Location
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Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 4

Title
Biological Resources

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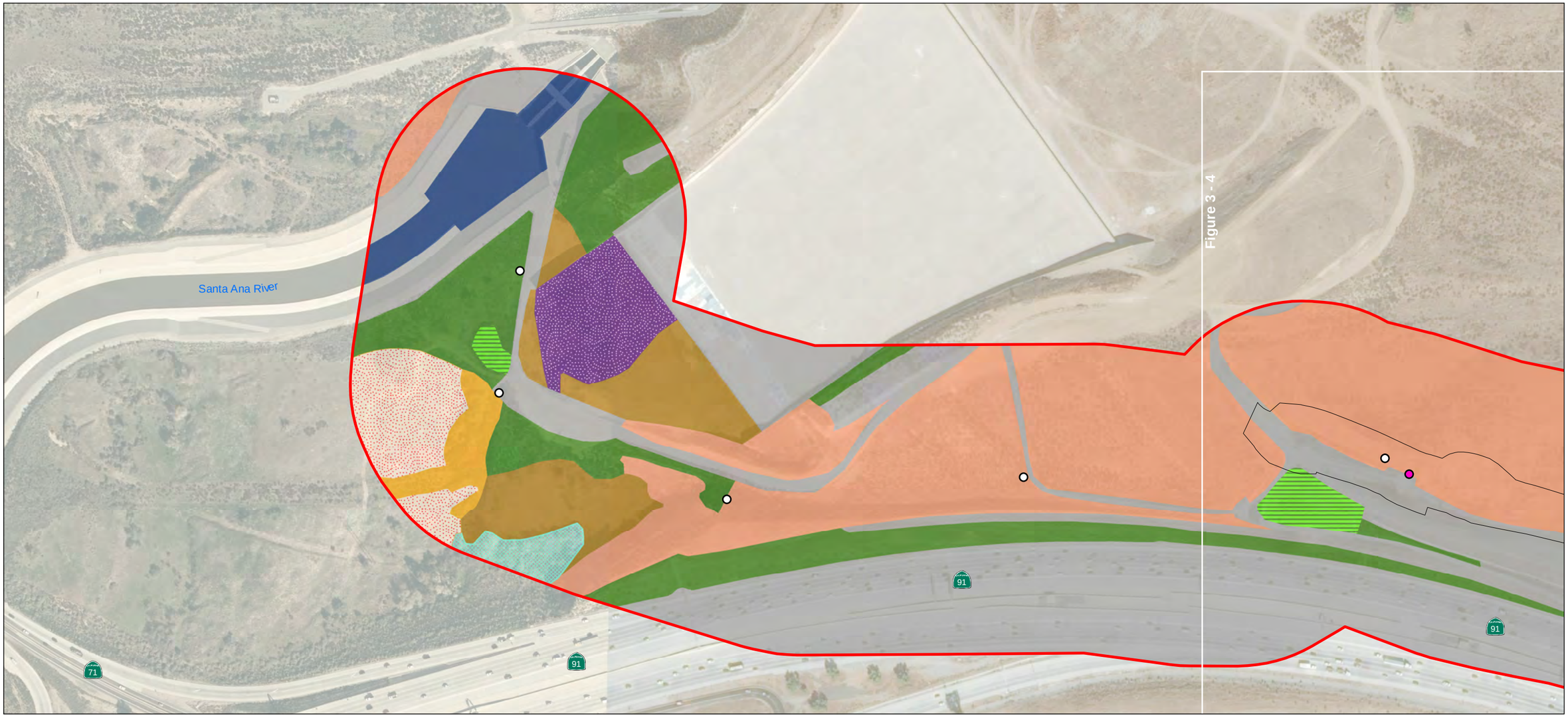

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

- Biological Survey Area
- Project Footprint

Special-Status Species
- Coastal California Gnatcatcher
- Paniculate Tarplant

Vegetation Communities and Land Cover Types
- California buckwheat scrub
- California sagebrush scrub
- Coyote brush scrub
- Disturbed/Developed
- Elderberry stands
- Mulefat thickets
- Open water
- Restoration
- Ruderal
- Western ragweed meadow

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure
3 - 5

Title
Biological Resources

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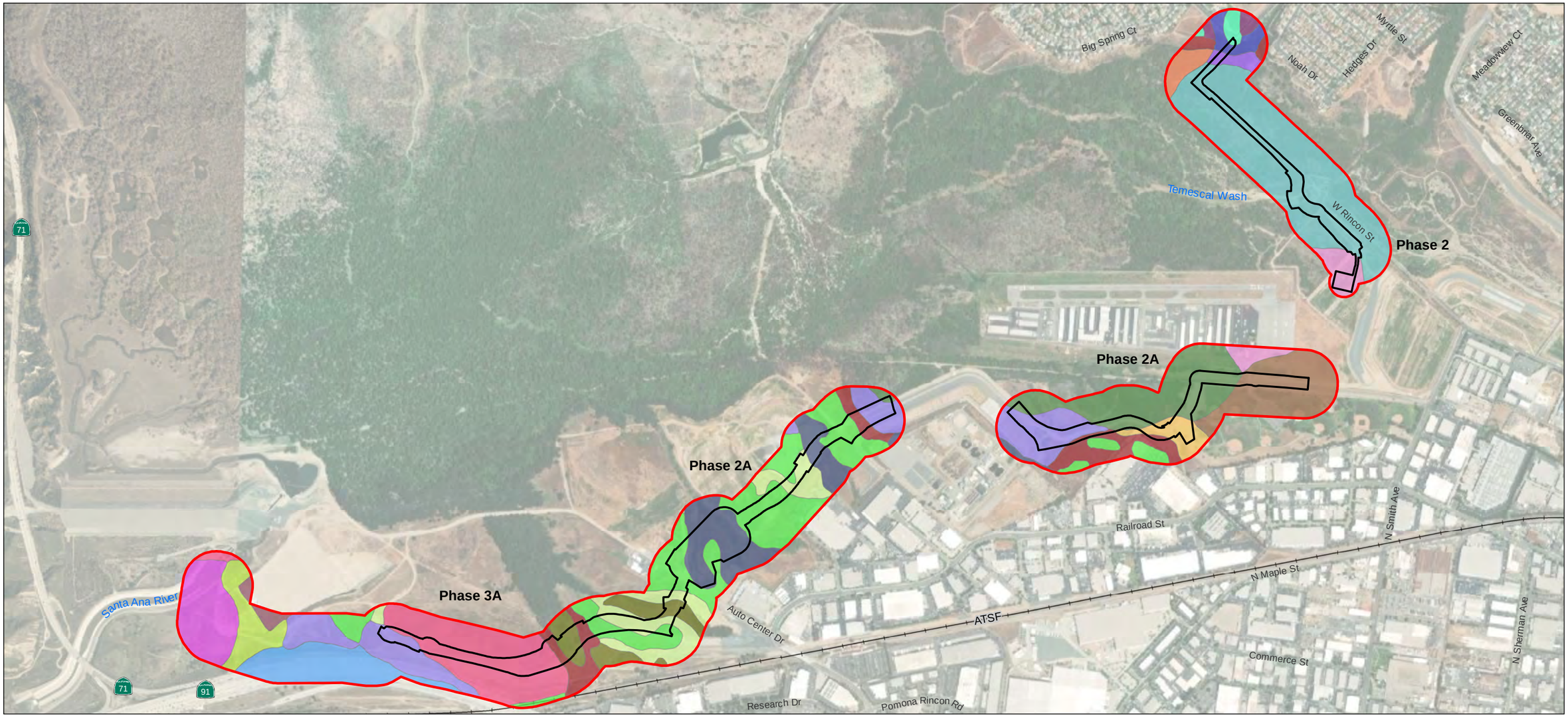

- Biological Survey Area
- Project Footprint
- Railroad

Soils Map Unit Symbol

- AkC; Arbuckle loam, 2 to 8 percent slopes
- AkD; Arbuckle loam, 8 to 15 percent slopes
- AlC; Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19
- AlE3; Arbuckle gravelly loam, 2 to 25 percent slopes, severely eroded
- BP; Borrow Pit
- DAM; Dams
- GaC; Garretson very fine sandy loam, 2 to 8 percent slopes
- GfF2; Gaviota very fine sandy loam, 15 to 50 percent slopes, eroded
- GrB; Grangeville sandy loam, sandy substratum, drained, 0 to 5 percent slopes
- GvB; Grangeville fine sandy loam, saline-alkali, 0 to 5 percent slopes
- HcC; Hanford coarse sandy loam, 2 to 8 percent slopes
- MdC; Metz loamy sand, 2 to 8 percent slopes
- MgB; Metz loamy fine sand, gravelly sand substratum, 0 to 5 percent slopes
- MhB; Metz loamy fine sand, sandy loam substratum, 0 to 5 per cent slopes
- PeC; Perkins loam, 2 to 8 percent slopes
- PgD2; Perkins gravelly loam, 8 to 15 percent slopes, eroded
- RaD2; Ramona sandy loam, 8 to 15 percent slopes, eroded
- RaD3; Ramona sandy loam, 8 to 15 percent slopes, severely eroded
- SeC2; San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SgA; San Emigdio loam, 0 to 2 percent slopes
- TeG; Terrace escarpments

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.NRCS 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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N

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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
4

Title
Historical Soils

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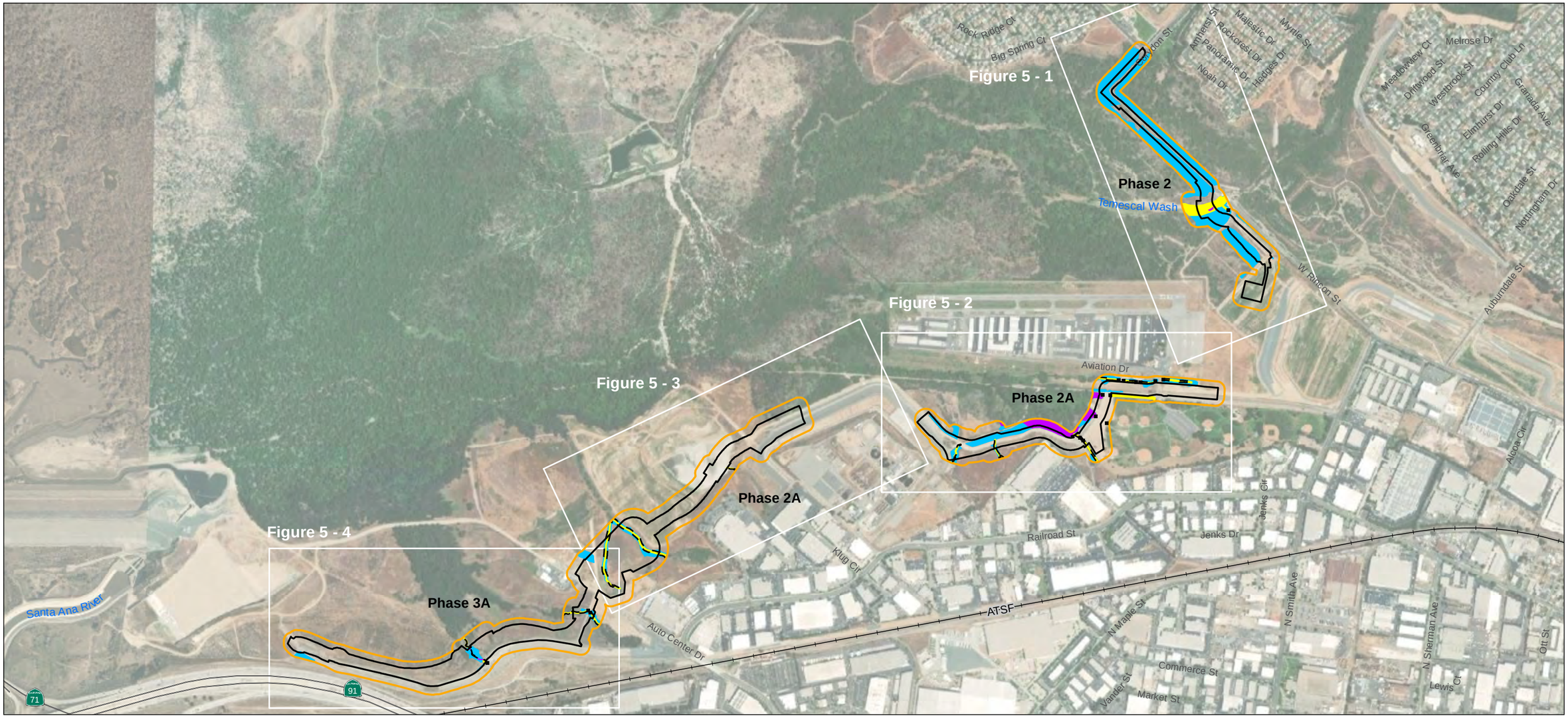

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

Potential CDFW Jurisdictional Waters

- Concrete Channel
- Riparian Wetlands and Waters

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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N

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IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
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Figure No.
5 - 0

Title
Aquatic Resources

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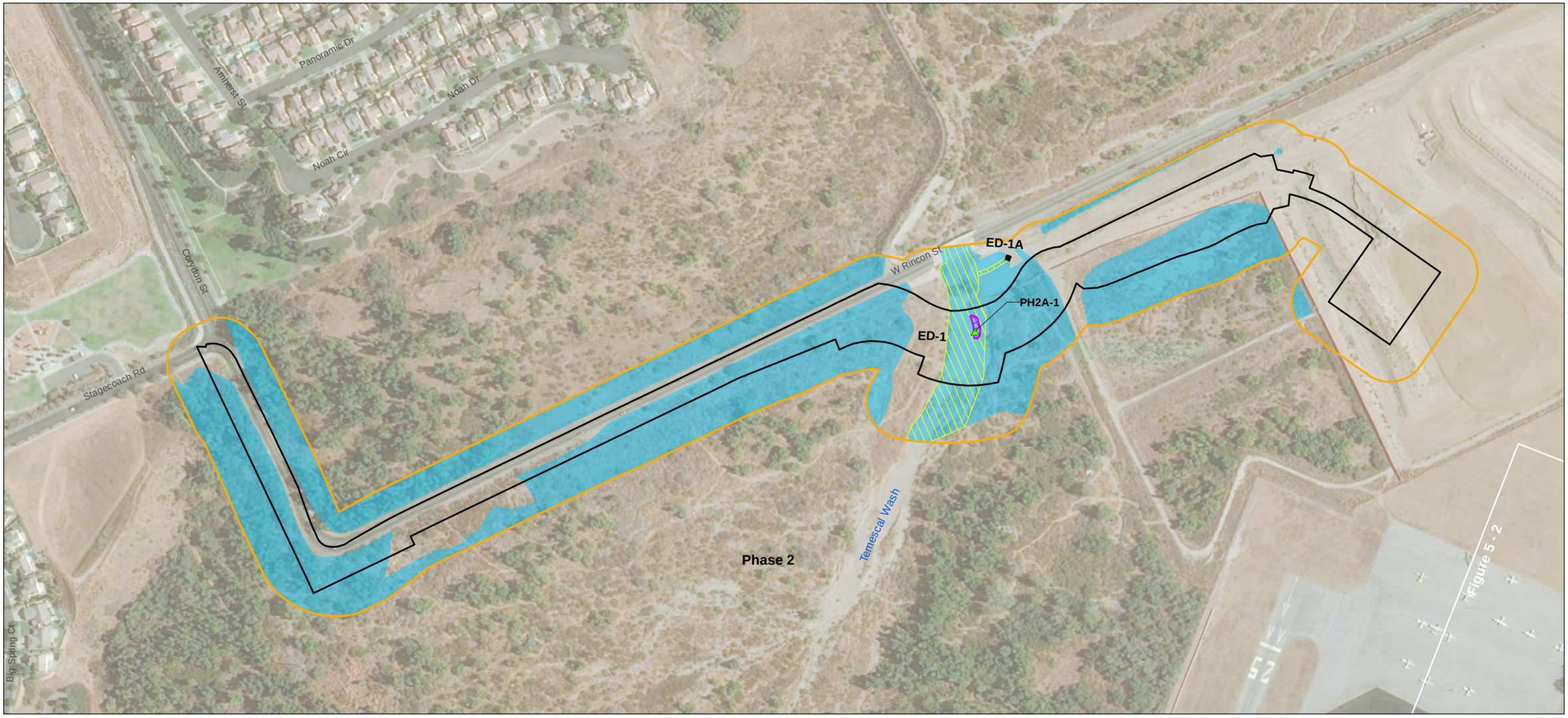

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint

Potential CDFW Jurisdictional Waters

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
TR by SET on 2022-06-29
IR by JV on 2022-06-29

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 1

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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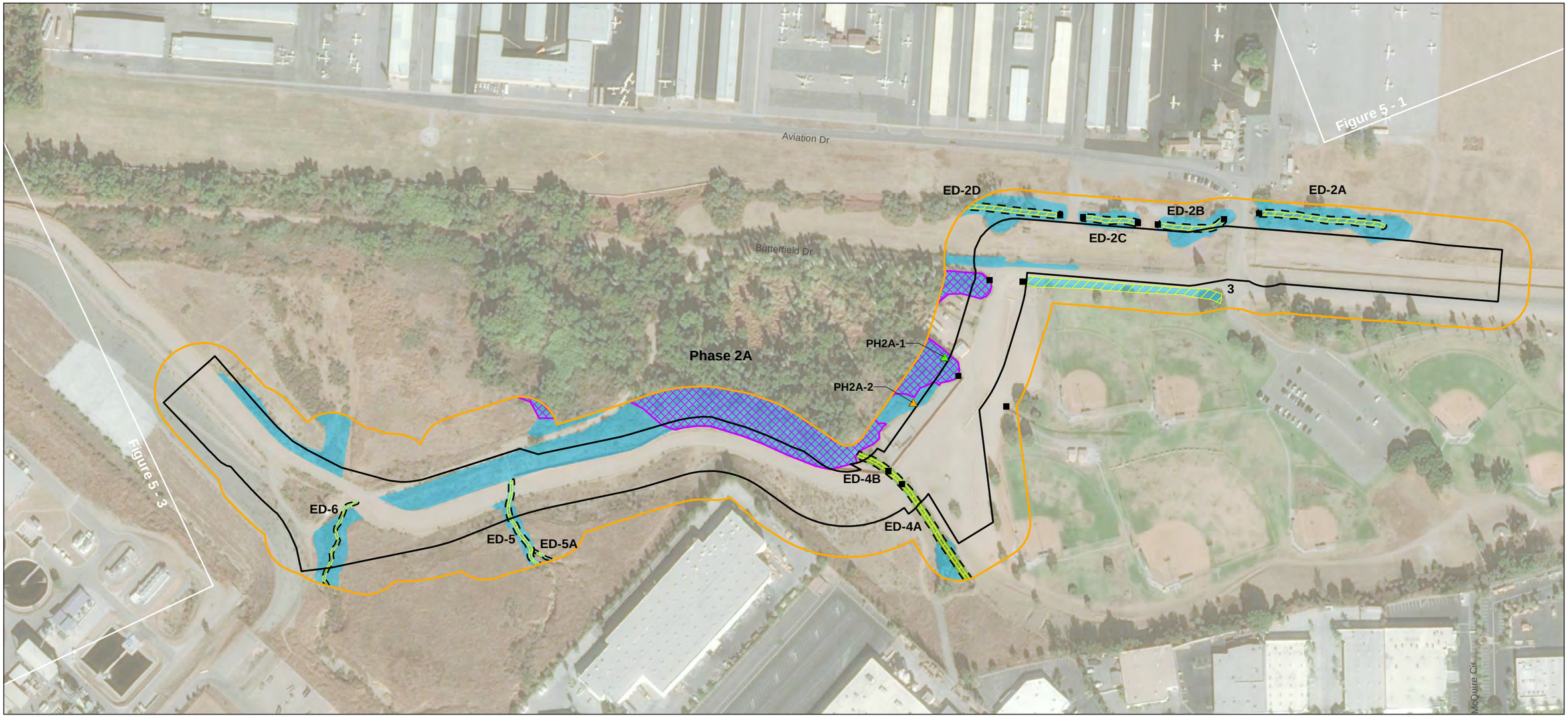

Aquatic Resources Survey Area (100 ft Buffer)
Project Footprint

Potential RWQCB Jurisdictional Waters
Waters of the State

Potential CDFW Jurisdictional Waters
Concrete Channel
Riparian Habitat

Potential USACE Jurisdictional Areas
Waters of the U.S.
Wetlands

Culvert

Sample Point
Non-wetland
Wetland

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 270 540 Feet
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Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 2

Title
Aquatic Resources

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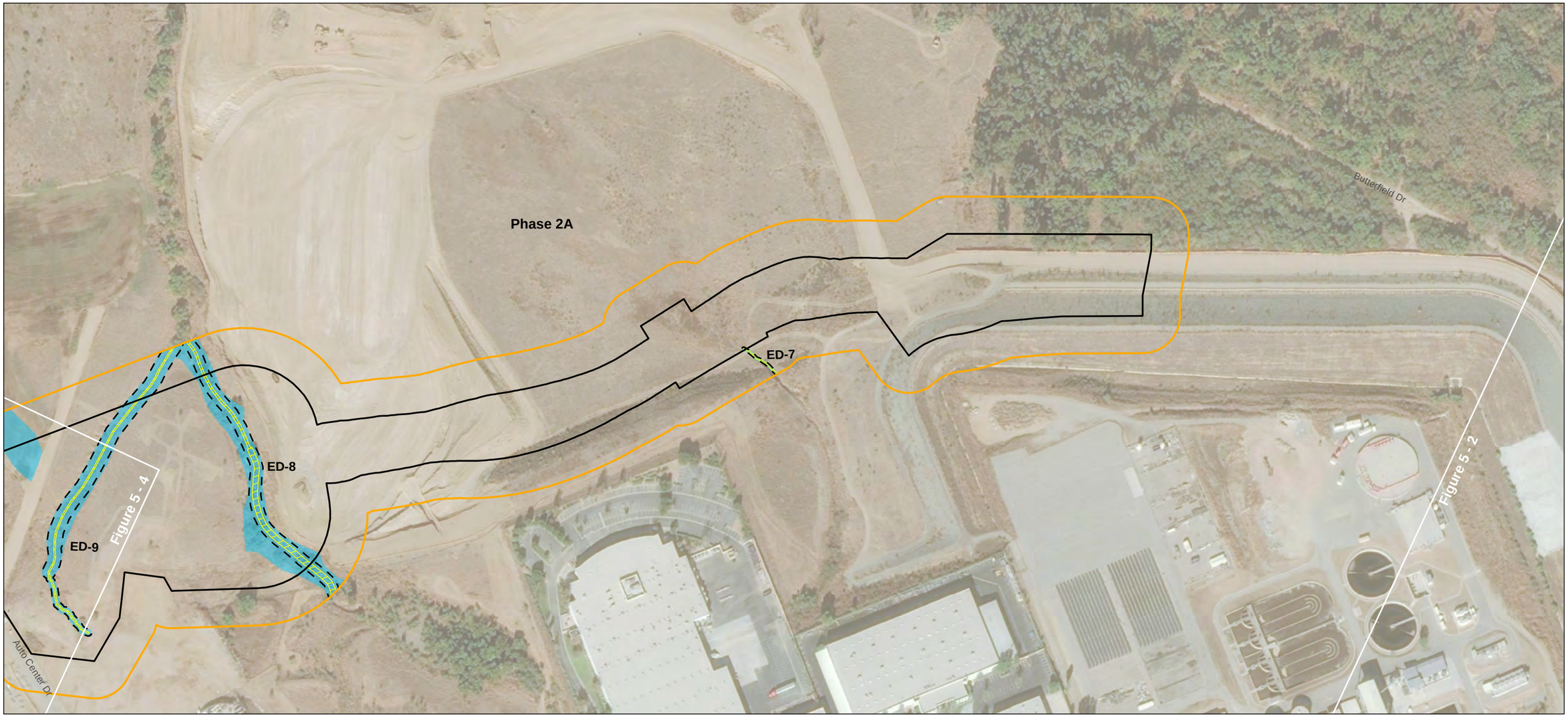

Aquatic Resources Survey Area (100 ft Buffer)

Project Footprint

Potential RWQCB Jurisdictional Waters

Waters of the State

Potential CDFW Jurisdictional Waters

Riparian Habitat

Potential USACE Jurisdictional Areas

Waters of the U.S.

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

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Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 3

Title
Aquatic Resources

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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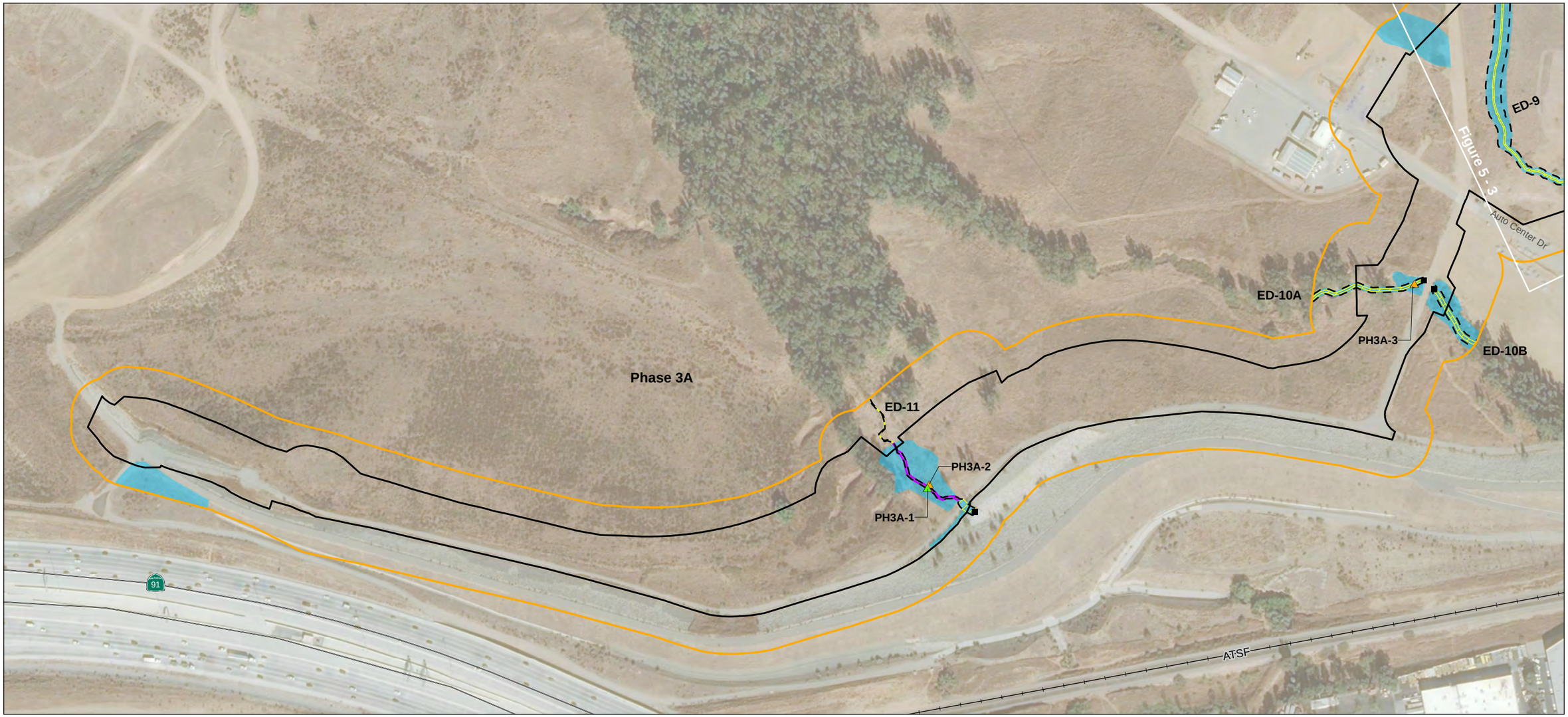

- Aquatic Resources Survey Area (100 ft Buffer)
- Project Footprint
- Railroad

Potential RWQCB Jurisdictional Waters

- Waters of the State

Potential CDFW Jurisdictional Waters

- Riparian Habitat

Potential USACE Jurisdictional Areas

- Waters of the U.S.
- Wetlands
- Culvert

Sample Point

- Non-wetland
- Wetland

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021,2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-06-29
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IR by JV on 2022-06-29

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
5 - 4

Title
Aquatic Resources

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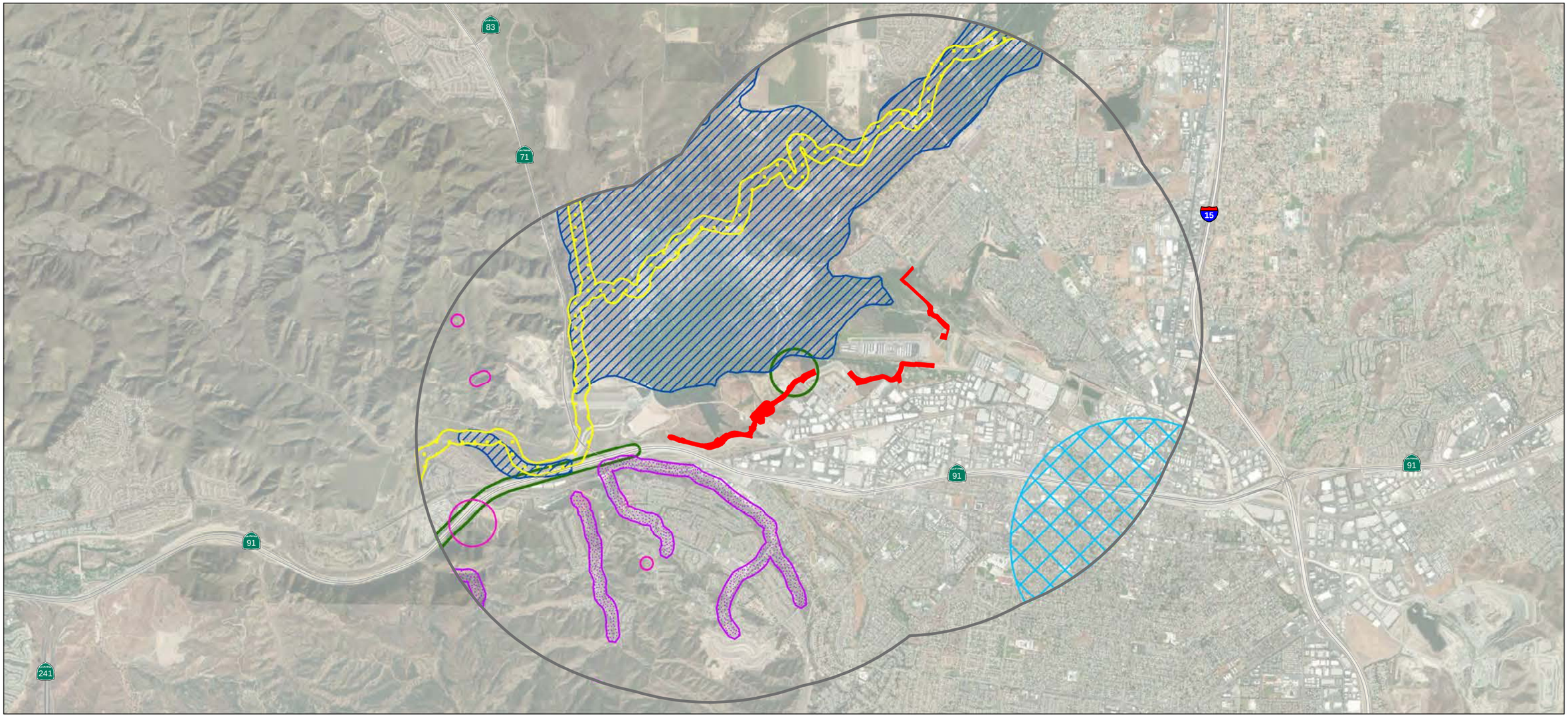

Project Location
2 Mile Search Radius

2 Mile Occurrences

Plants
- Abronia villosa var. aurita
- Dudleya multicaulis
- Lepidium virginicum var. robinsonii
- Sidalcea neomexicana

Terrestrial Communities
- Southern Cottonwood Willow Riparian Forest
- Southern Sycamore Alder Riparian Woodland

Aquatic Community
- Southern California Arroyo Chub/Santa Ana Sucker Stream

0 4,200 8,400 Feet

(At original document size of 11x17)
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N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-04-21
TR by SET on 2022-04-21
IR by JV on 2022-04-21

Client/Project
2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
6A

Title
2 Mile CNDDB Occurrences - Plants, Terrestrial Community, Aquatic Communities

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.CNDDB 2022.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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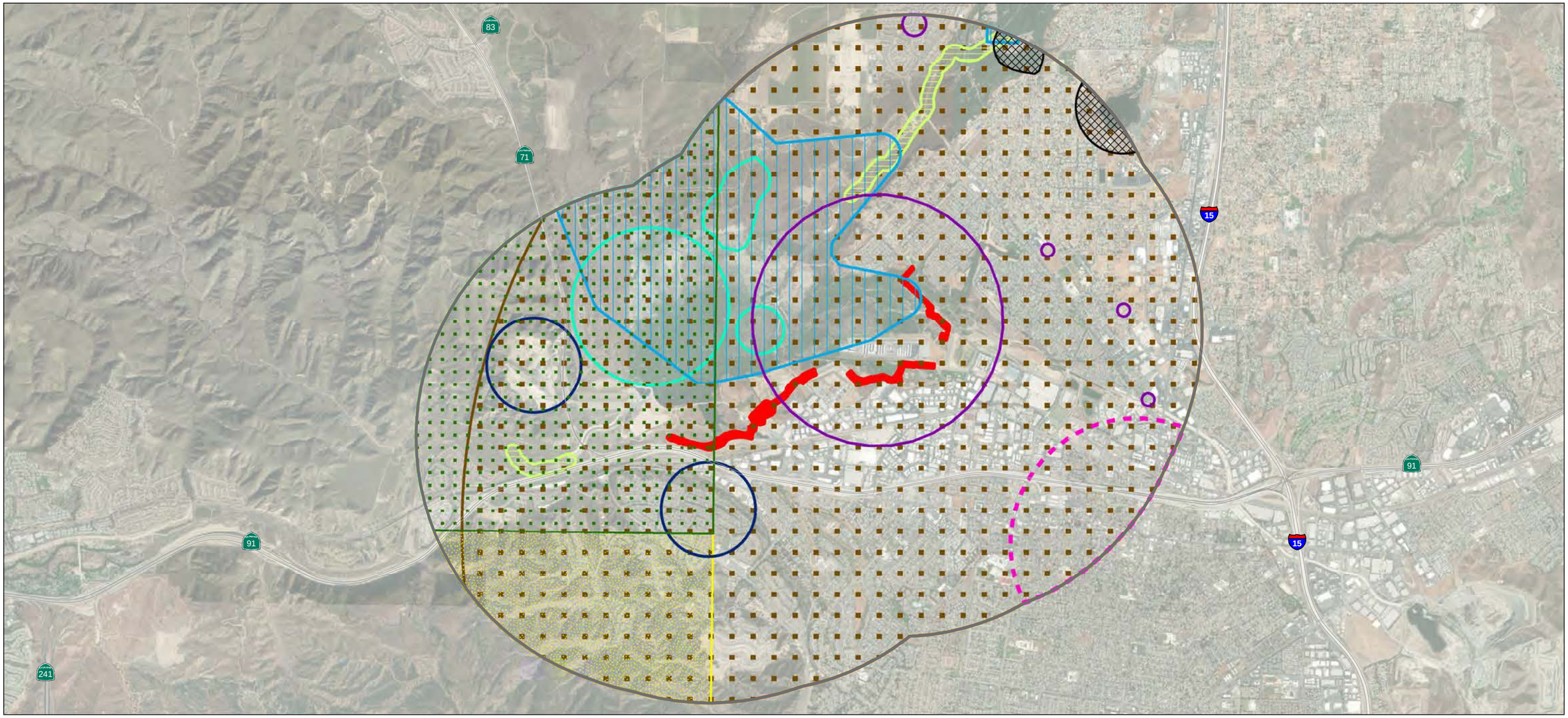

Project Location
2 Mile Search Radius

2 Mile Occurrences

Wildlife

- Agelaius tricolor
- Aquila chrysaetos
- Athene cunicularia
- Catostomus santaanae
- Coccyzus americanus occidentalis
- Coturnicops noveboracensis
- Empidonax traillii extimus
- Nyctinomops femorosaccus
- Spea hammondii
- Taricha torosa

0 4,200 8,400 Feet

(At original document size of 11x17)
1:50,400

N

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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-04-21
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IR by JV on 2022-04-21

Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Biological Resources Technical Report

Figure No.
6B

Title
2 Mile CNDDB Occurrences - Wildlife

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.CNDDB 2022.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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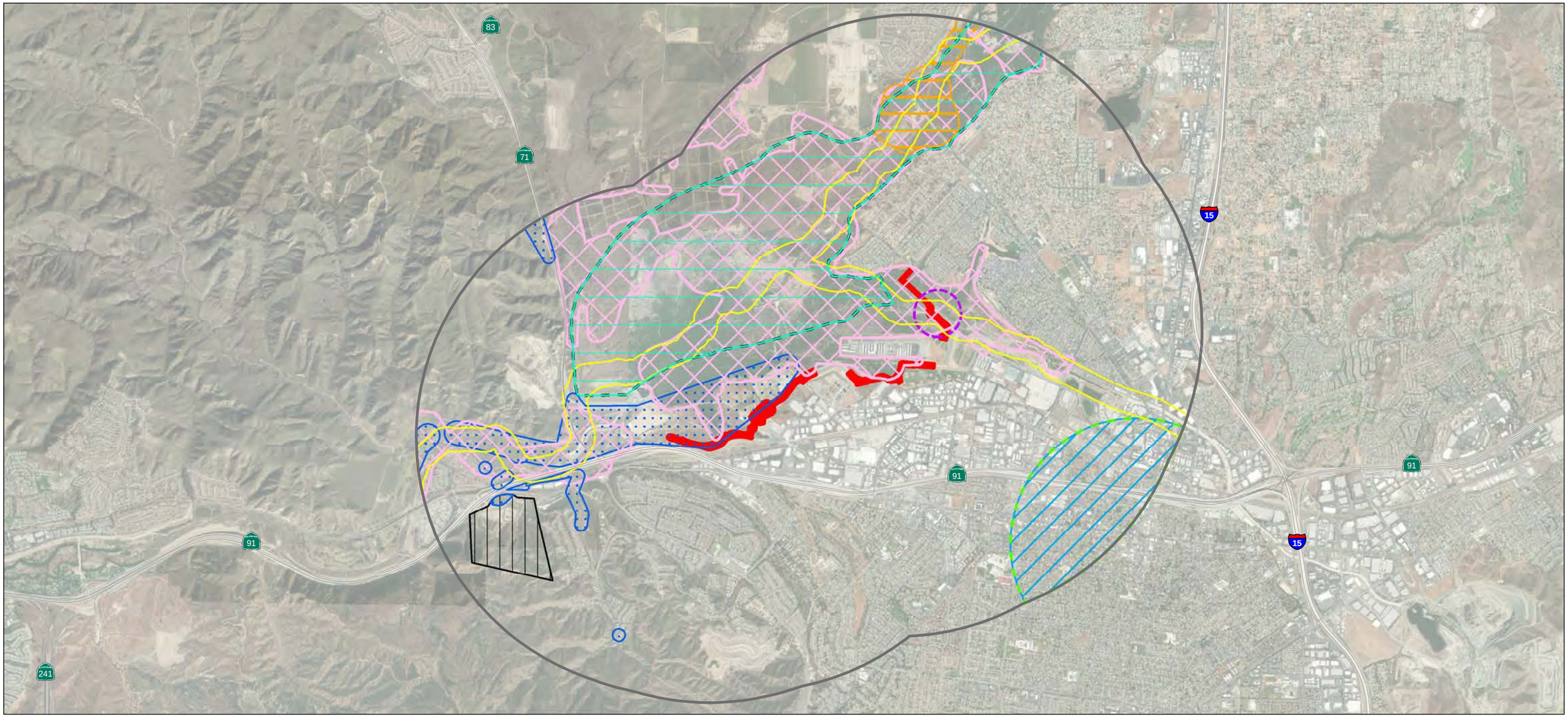

Project Location
2 Mile Search Radius

2 Mile Occurrences

Wildlife

- Aimophila ruficeps canescens
- Bombus crotchii
- Buteo swainsoni
- Gila orcuttii
- Icteria virens
- Lasiurus xanthinus
- Oncorhynchus mykiss irideus pop. 10
- Polioptila californica californica
- Setophaga petechia
- Vireo bellii pusillus

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Project Location
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Figure No.
6C

Title
2 Mile CNDDB Occurrences - Wildlife Continued

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.CNDDB 2022.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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Appendix B PHOTOGRAPHIC LOG

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 1: May 6, 2021

View of Temescal Wash (Drainage 1), a tributary to the Santa Ana River in Phase 2 looking northeast toward West Rincon Street

Photo 2: December 8, 2021

View of Phase 2A looking east toward Drainage 4.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	

Photo 3: May 6, 2021

View of borrow pit in Phase 2A looking northwest

Photo 4: May 6, 2021

View of ephemeral drainage channel in Phase 2A looking north.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 5: May 6, 2021

Drainage 10 in Phase 3A looking west

Photo 6: May 6, 2021

View of gravel road in Phase 3A looking east.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend

Photo 7: May 6, 2021

View of a mulefat (*Baccharis salicifolia*) bush in Phase 3A occupied by least Bell 's vireo (*Vireo bellii pusillus*) looking northwest.

Photo 8: May 6, 2021

Paniculate tarplant (*Deinandra paniculat*a), California Rare Plant Rank 4.2, in Phase 3A, looking north.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Riverside County Regional Park & Open-Space District	**Job Number:** 204283140
Site Name: Santa Ana River Trail	**Photographer:** M. Tu, J. Varonin, A. Townsend
Photo 9: May 6, 2021	
	
View of coastal California gnatcatcher (*Polioptila californica californica*) occupied coastal sage scrub habitat in Phase 3A looking north.	

Appendix C ACREAGES OF VEGETATION COMMUNITIES AND LAND COVER TYPES IN THE PROJECT AREA

Table C-1 Temporary and Permanent Impacts to Vegetation Communities and Land Cover Types within the Project Area

Vegetation Communities and Land Cover Types	Temporary Impacts[1]	Permanent Imapcts[1]	Project Area[1]
	Acres		
Vegetation Communities			
Arroyo willow thickets	2.07	0.30	2.37
California buckwheat scrub	0.50	0.24	0.74
California sagebrush scrub	6.34	2.10	8.44
Coyote brush scrub	0.76	0.17	0.93
Eucalyptus groves	0.68	0.04	0.72
Menzie's goldenbush scrub	0.04	0.00	0.04
Mulefat thickets	4.73	0.76	5.48
Perennial pepperweed patches	0.62	0.00	0.62
Poison hemlock or fennel patches	0.10	0.00	0.10
Shining willow groves	0.37	0.00	0.37
Smartweed-cocklebur patches	0.02	0.01	0.03
Upland mustards or star-thistle fields	2.48	0.62	3.10
Wild oats and annual bromes grassland	13.17	2.68	15.85
Subtotal	*31.88*	*6.92*	*38.79*
Land Cover Types			
Disturbed/Developed	18.55	4.04	22.59
Partially vegetated channel	0.47	0.06	0.53
Restoration	2.22	0.49	2.71
Ruderal	0.91	0.04	0.95
Subtotal	*22.15*	*4.63*	*26.78*
Total[1]	**54.03**	**11.55**	**65.57**

Note[1] = some of the total acreages and Project area acreages do not add up due to rounding. The Project and impact acreages in this table are from April 2022 design drawings.

Appendix D AQUATIC RESOURCES REPORT

This report will be provided separately

Appendix E RIPARIAN BIRDS

LEATHERMAN
BioConsulting, Inc.

4848 Lakeview Avenue, Suite 100E
Yorba Linda, CA 92886
(714) 701-0863

September 7, 2021

Ms. Stacey Love
USFWS
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Re: Results of Focused Surveys for the Western Yellow-billed Cuckoo, Southwestern Willow Flycatcher, and Least Bell's Vireo for the Santa Ana River Trail Project, Riverside County, California (Permit No. TE824793)

Dear Ms. Love:

This letter reports the results of focused surveys to evaluate the presence or absence of the southwestern willow flycatcher (*Empidonax traillii extimus*), (flycatcher) least Bell's vireo (*Vireo bellii pusillus*) (vireo), and western yellow-billed cuckoo (*Coccyzus americanus*) (cuckoo) conducted by Leatherman BioConsulting, Inc. (LBC) for the Santa Ana River Trail Project (Project) in Riverside County, California.

The Project is located on the Prado Dam and Corona North USGS 7.5minute series quadrangle maps in Township 2 South and Range 7 West, in an area where Section lines largely are not delineated (Figure 1). The UTM coordinates (NAD83) of the approximate survey area are 0440410 meters East (mE) and 3749650 meters North (mN) at the southwest end, and 0445675 mE and 3755765 mN at the northeast end.

The proposed alignment route includes three phases in the Prado Basin from just east of State Route 71 and proceeding east and then north to Archibald Avenue in Riverside County (Figure 2). Some phases of the alignment support little, or no habitat and other phases support stretches of nearly contiguous habitat. The survey area included all potentially suitable riparian habitat within 500 of the Project alignments for each of the three target species.

The proposed Project would assist in completing a portion of the Santa Ana Trail. It would entail construction of three (3) new trail segments (2, 2A, and 3A) within the Prado Dam Flood Control Basin area, as part of the existing Santa Ana River Trail project. Currently, only portions of the trail have been completed or are being constructed.

BACKGROUND

Willow Flycatcher

The willow flycatcher (*Empidonax traillii*) is a state-listed Endangered species (CDFG 1991), whereas only the southwestern subspecies (*E.t. extimus*) is federally listed as Endangered (USFWS 1995). This survey focused on the southwestern willow flycatcher because it is the only subspecies that nests in southern California. However, migrants of all subspecies may occur in the area during spring and fall migration, so multiple visits to the survey area are required to determine if individuals observed during the first surveys are nesting birds.

The willow flycatcher was formerly a common summer resident in suitable habitat throughout California (Grinnell and Miller 1944). It has now been extirpated as a breeding bird from most of its California range, and is seriously threatened in southern California primarily because of habitat loss and degradation, and brood parasitism by brown-headed cowbirds (*Molothrus ater*) (Garrett and Dunn 1981; USFWS 1995). The population of southwestern willow flycatcher in California was estimated to include approximately 66 territories at five sites (Kus 2019). The southwestern willow flycatcher has not shown the same recovery that the vireo has shown in response to habitat restoration and cowbird trapping (Kus 2011).

The willow flycatcher closely resembles other Empidonax flycatcher species in California, but the indistinct (or completely lacking) eye ring, broader and longer bill, and generally lighter appearance through the breast and throat help to distinguish it from other species. The species' vocalizations are the best form of identification in the field (but can't be used to identify subspecies). The southwestern willow flycatcher is a migratory bird, occurring in this region only during the breeding season (May to early August). The male arrives later in the spring than most migrants, usually in mid to late May or early June.

The southwestern willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands in floodplains and broader canyons, preferring dense riparian thickets near surface water (Sogge et al. 2010), often with adjacent open areas for foraging. Vegetation structure, composition, and extent vary widely but generally include extensive areas dominated by dense stands of willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), or other tree species (including tamarisk [*Tamarix* sp.] in some areas), usually with scattered cottonwoods (*Populus* spp.) overstory (USFWS 1995). These riparian areas provide both nesting and foraging habitat. Southwestern willow flycatcher will nest in areas with suitable habitat regardless of the elevation (from sea level to high mountains). Nests are constructed in thickets of trees and shrubs in a fork or horizontal branch between three and 15 feet above the ground.

The U.S. Fish and Wildlife Service (USFWS) published a final rule designating critical habitat for the flycatcher in 2005 (USFWS 2005); however, the USFWS proposed to revise the critical habitat designation in 2011, and a final rule was published in 2013 (USFWS 2013). Approximately 17,212 acres of critical habitat were designated in California.

Least Bell's Vireo

The vireo is a state and federally listed endangered species (USFWS 1986). This subspecies was once widespread throughout the Central Valley and other low elevation river systems of California (Grinnell and Miller 1944). The widespread loss of riparian habitat and brood parasitism by the brown-headed cowbird are the major causes of the decline of this species (Garrett and Dunn 1981). At the time of its listing, about 76 percent of the U. S. population is found in just five localities (USFWS 1994). The breeding population in California has increased dramatically because of brown-headed cowbird trapping efforts in breeding areas, and they are recolonizating areas where they were once locally extirpated; in fact, there were an estimated 3,504 territories reported in 2018 (Kus 2019). Continued cowbird control and exotic plant removal in riparian habitat are considered necessary for the foreseeable future in order to continue this increasing trend (USFWS 2006).

The vireo is a small grayish songbird with indistinct wing bars and facial markings. It is a very vocal species and can be easily detected from some distance by its unique song, which is given repeatedly. The vireo is migratory and only occurs in southern California during the breeding season. The males arrive sometime in late March to April and establish breeding territories, and the females arrive shortly thereafter. Nests are constructed (usually in willow trees) only about three to four feet off the ground where the female will lay 3 to 4 eggs on average. The vireo usually returns to the wintering grounds sometime in August or September. Preferred habitat is willow riparian woodland that supports dense understory thickets of scrubby willows and mule fat, especially within three to six feet of the ground (USFWS 1998).

The USFWS issued their final determination of critical habitat for the vireo in February 1994 (USFWS 1994). Approximately 37,560 acres of habitat were designated in California.

Western Yellow-billed Cuckoo

The cuckoo is a federally listed threatened and state listed endangered species (USFWS 2014a). The USFWS ruled that cuckoos west of the Rocky Mountains and Continental Divide meet the criteria for listing as a distinct population segment and that listing it as threatened was warranted. The current geographical range of the cuckoo in California is about 30 percent of what it was historically, and the current nesting population in the state likely does not exceed 40 to 50 pairs (USFWS 2013).

In California, the cuckoo is a rare summer visitor and breeder where it requires large blocks of riparian habitat for breeding (Halterman et al. 2015, USFWS 2021). It can occur from May to September (Grinnell and Miller 1944), but usually arrives and breeds in southern California from early June to mid-August (Garrett and Dunn 1981, USFWS 2013). It occurs almost exclusively in mature streamside forest with old growth willows and scattered cottonwoods (usually of at least 25 acres), particularly with a dense tangled understory of nettles (*Urtica* spp.), willows, blackberry (*Rubus* sp.), wild grape (*Vitus* sp.), mesquite (*Prosopis* spp.) etc. (Grinnell and Miller 1944; Garrett and Dunn 1981). Data collected in California indicate that nesting occurs in thickets dominated by willow trees along floodplains greater than 200 acres in extent and greater than 100 yards wide (USFWS 2021). It is rarely seen away from suitable breeding habitat

(Garrett and Dunn 1981). It was formerly fairly common and widespread in the broad lower floodplains of larger rivers in southern California and Central Valley (Garret and Dunn 1981). Its decline is primarily attributed to widespread habitat loss associated with agriculture, urban development, and flood control projects, and because the small, isolated populations that remain are more susceptible to decline (USFWS 2013). The current range of the cuckoo in California is estimated to be about 30 percent of its historical extent and estimates of the loss of riparian habitat state-wide are as high as 91 percent (USFWS 2013).

The USFWS published a proposed rule to designate critical habitat for the cuckoo in 2014 (USFWS 2014b); however, a proposed rule to revise the critical habitat designation was published in 2020 reopening the public comment period, and a final rule designating critical habitat was finally published in 2021 (USFWS 2021). Only two of 72 critical habitat units were designated in California (on the Sacramento River and South Fork Kern River) totaling approximately 36,580 acres, over 90 percent of which is in the Sacramento unit.

EXISTING HABITAT

Vegetation in the survey area consists of a variety of riparian communities that could be categorized under one of several riparian alliances under the current (online) classification system used by the California Native Plant Society (CNPS 2021). The extent and quality of the riparian vegetation varies widely among the Project phases, in some areas supporting sparse habitat with low diversity and others supporting dense habitat with high plant diversity. No surface water was present in any of the habitat surveyed. A description of the habitat in each of Project phases is provided below, beginning at the west end of the alignment and proceeding east.

Most of the habitat in the Phase 3A consists of high quality coastal sage scrub. Habitat at the west end of Phase 3A survey area consists of a relatively small, sparse patch of mule fat scrub with a few scattered blue elderberry (*Sambucus nigra* ssp. *caerulea*) trees providing structure similar to that provided by willow scrub. This most closely resembles the blue elderberry shrubland alliance (CNPS 2009). Below the existing dam, the habitat supports arroyo willow shrubland alliance dominated by mule fat, and arroyo willow (*Salix lasiolepis*), and blue elderberry. The alignment also traverses a low elevation area dominated by mule fat adjacent to a dense stand of eucalyptus trees (*Eucalyptus globulus*) where vegetation structure resembles the higher quality riparian habitat usually occupied by vireos.

The west end of Phase 2A consists primarily of non-native annual grassland and crosses disturbed lands recently used as a borrow area by a U.S. Army Corps of Engineers contractor to construct the Alcoa Dike adjacent to the Corona Airport. A portion of the area was recently hydroseeded with grassland species. Two incised drainages support the arroyo willow shrubland alliance dominated by mule fat, arroyo willow, and red willow (*Salix laevigata*). At the east end of Phase 2A, the alignment is adjacent to riparian habitat consisting of a variety of native and non-native trees including black willow (*Salix gooddingii*), red willow, eucalyptus, Brazilian pepper (*Schinus terebinthifolia*), fan palm (*Washingtonia* sp.), ash tree (*Fraxinus* sp.) and a mixed understory of mule fat, tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*),

and wild grape (*Vitus girdiana*). This most closely resembles the black willow woodland alliance.

The habitat along Phase 2 supports the most mature and diverse riparian forest in the survey area that includes the Fremont cottonwood forest alliance, black willow woodland alliance, arroyo willow shrubland alliance, and the mule fat shrubland alliance. Habitat at the southeast end is relatively open mule fat thickets and transitions to well developed willow forest habitat to the northwest. The willow forest habitat consists of dense stands of black willow and red willow with scattered Fremont's cottonwoods (*Populus fremontii*). Understory consists of dense patches of mule fat, arroyo willow, Pacific willow (*S. lasiandra*) and red willow. Some patches are deeply shaded and are dominated by dense cover of wild grape, other areas are more open and support a variety of non-native herbaceous cover, including large dense stands of perennial peppergrass (*Brassica latifolium*). This habitat was also occupied by several homeless camps, and associated trash and debris were evident in many areas. Lastly, sign (scat, trails, digs) of the domestic pig (*Sus scrofa*) were observed throughout this area indicating that they are common in this portion of the alignment.

METHODS

Prior to conducting the focused surveys, a search was conducted of the California Natural Diversity Data Base (CNDDB) (CDFW 2021a) for the Prado and Corona North USGS 7.5-minute series quadrangle maps and other references to determine if and to what extent the target species are known to occur in the Project region.

Survey methods followed the guidelines endorsed by the USFWS for each species as described below. In general, surveys were conducted in riparian habitat by walking slowly and methodically within and along the margins of all suitable riparian habitat for each species. The focus of the surveys was on the detection and identification of the target species, but all wildlife incidentally observed or detected in the survey area was documented. Identifications were made with the aid of high quality 8 X 42 Bosch and Lomb Elite binoculars. All focused surveys were conducted by Mr. Brian Leatherman (USFWS permit No. TE827493-9). A list of the species observed during the surveys is enclosed.

Surveys for the flycatcher followed the mandatory protocol developed by Sogge et al. (2010) and guidance promulgated by the USFWS (2000). The protocol requires that five surveys be conducted within three defined periods between May 15 and July 17 and at least five days apart. Sogge et al. (2010) recommend that surveys be conducted between dawn and 1030 under suitable weather conditions.

Surveys for the vireo followed the survey guidelines developed by the USFWS (2001), which requires that eight surveys be conducted 10 days apart between April 10 and July 31. Vireo surveys can be conducted between dawn and 1100 under suitable weather conditions, at a maximum rate of 1.5 km (0.93 mile) or 50 ha (124 acres) per day. Surveys reported here were conducted between dawn and 1115.

The surveys for the cuckoo followed the mandatory protocol developed by Halterman et al. (2015). The protocol requires that four surveys be conducted within three certain periods between June 15 and August 15. Halterman et al. (2015) recommend that surveys be conducted from 12 to 15 days apart between dawn and 1100 under suitable weather conditions. Surveys reported here were generally conducted between dawn and 1100.

Recorded vocalizations of the flycatcher and cuckoo were played as described in the survey protocols in an attempt to elicit a response from individuals potentially present. For the flycatcher, the tape was played for roughly 15 seconds, stopped for one or two minutes to listen for a response, and then played again before moving to the next spot. For the cuckoo, the prescribed 6-minute broadcast with five vocalizations spaced one minute apart was played every 328 feet (or 100 meters, per the survey protocol) before moving to the next spot. No vocalizations were used for the vireo in compliance with the protocol for that species.

Five of the eight surveys for the vireo were conducted on the same day as the flycatcher surveys. During those combined survey days, recent guidance from USFWS was followed so that surveys for both species were not conducted concurrently. Instead, surveys for the flycatcher were conducted on the outbound portion of the survey and surveys for the vireo were conducted on the return portion of each habitat segment within the survey area. Cuckoo surveys were conducted separately from the vireo and flycatcher surveys. Dates, times, and weather data for the focused surveys are shown in Table 1 and Table 2.

Table 1. Dates, Times, and Weather Data for Vireo and Flycatcher Surveys

DATE	SURVEY NO.	TIME		WEATHER CONDITIONS*					
				Temp (°F)		Winds (mph)		Cloud Cover (percent)	
		Start	End	Start	End	Start	End	Start	End
4-May	LBV1	600	1115	56	74	0-1	2-4	clear	clear
13-May	LBV2	615	1100	55	75	2-4	4-7	100	clear
24-May	LBV3/WIFL1	545	1100	54	78	0-2	4-7	clear	clear
4-Jun	LBV4/WIFL2	600	1100	59	85	0-2	8-12	clear	clear
14-Jun	LBV5/WIFL3	600	1030	64	88	2-4	4-7	clear	clear
25-Jun	LBV6/WIFL4	600	1015	62	77	0-2	2-4	clear	clear
5-Jul	LBV7/WIFL5	545	1015	63	78	2-4	4-7	clear	clear
15-Jul	LBV8	600	1030	67	83	2-4	2-4	clear	clear

LBV – Least Bell's Vireo, WIFL – Willow Flycatcher
*recorded with Kestrel 2000

Table 2. Dates, Times, and Weather Data for Cuckoo Surveys

DATE	SURVEY NO.	TIME		WEATHER CONDITIONS**					
				Temp (°F)		Winds (mph)		Cloud Cover (percent)	
		Start	End	Start	End	Start	End	Start	End
17-Jun	YBCU1	500	1000	63	83	0-2	8-12	100	20
2-Jul	YBCU2	530	1000	64	77	2-4	4-7	clear	clear
16-Jul	YBCU3	600	1015	65	79	0-2	4-7	100	clear
2-Aug	YBCU4	515	1000	67	84	0-2	2-4	30	clear

YBCU-yellow-billed cuckoo

RESULTS

No critical habitat for the cuckoo is designated in the survey area. Critical habitat for the flycatcher and vireo is designated in the Prado Basin and along the Santa Ana River in the vicinity of the Project.

Records for the flycatcher, vireo, and cuckoo were found in the CNDDB database (CDFW 2021a) for each of the two quads searched (Prado and Corona North). A large population of vireos continues to nest in Prado Basin and along the Santa Ana River on an annual basis. However, the small population of flycatchers that persisted for years has not been recorded in the basin since 2016 when only one pair was recorded (Kus 2019). The cuckoo occurred along the Santa Ana River and the Prado Basin historically, but recent records include only two birds in 2000 and one bird in 2011 (Clark et al. 2014).

No flycatchers or cuckoos were observed during the surveys. A total of an estimated 28 vireo territories were documented in the survey area during the focused survey effort (Figure 3), including four territories in Phase 3A, four in Phase 2A, and 20 in Phase 2. The presence of a territory was based on the detection of at least a singing male. Patches of habitat with mule fat or willow scrub or other suitable trees and shrubs with the vegetation structure favored by vireos were occupied along the entire Santa Ana River Trail survey area. No attempt was made to determine if each singing male was paired or nesting, but in most territories a female or breeding behavior was observed.

Due to the density of vireo territories along Phase 2 (along West Rincon Street), it was difficult to determine the number of individual territories. However, based on a review of the survey data, the distribution of the vireos in that area as depicted in Figure 3 represents our best estimate of the number of territories.

No brown-headed cowbirds were observed in riparian habitat during the surveys. Brown-headed cowbird trapping has been conducted in the Prado Basin for over two decades (although none were observed during the surveys).

CONCLUSION

Focused surveys were conducted for the flycatcher, vireo, and cuckoo along the Santa Ana River Trail Project survey area within suitable habitat for each species. No flycatchers or cuckoos were observed during the surveys. Twenty-eight vireo territories were documented in the survey area.

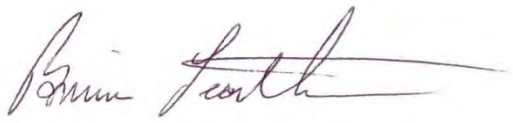
Based on the limited marginally suitable habitat and the negative focused survey results, the flycatcher and cuckoo are likely absent from the survey area at this time. In addition, based on trends in flycatcher and cuckoo populations and occurrences in the area in the recent past, none are expected to occur in the vicinity of the Project in the near future (if they are to reappear in the area, it is likely to be in the more extensive high-quality habitat immediately behind Prado Dam).

Vireos were observed throughout suitable habitat within the survey area during the focused surveys and are expected to occur in suitable riparian habitat in the Project area on an annual basis.

A copy of this letter report is being sent to the USFWS and California Department of Fish and Wildlife (CDFW) per conditions of the surveyors' 10(a)(1)(A) permit and memorandum of understanding (MOU). Figures 1-3, the references cited, a list of wildlife observed, and the required flycatcher and cuckoo survey forms are attached. Survey certification is provided below. If you have any comments or questions regarding the information provided in this report you can reach me by phone at (714) 701-0863, or by email at bleathermanwlb@aol.com.

Sincerely,

LEATHERMAN BIOCONSULTING, INC.



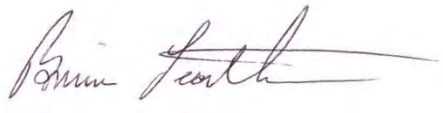
Brian Leatherman
Principal Biologist

Attachments: Figures 1-3
References
Wildlife Species List
Willow Flycatcher Survey Forms
Yellow-billed Cuckoo Survey Forms

Santa Ana River Trail Project
Survey Certification

CERTIFICATION:

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



August 26, 2021

Brian Leatherman
Permit No. TE827493-9

Date

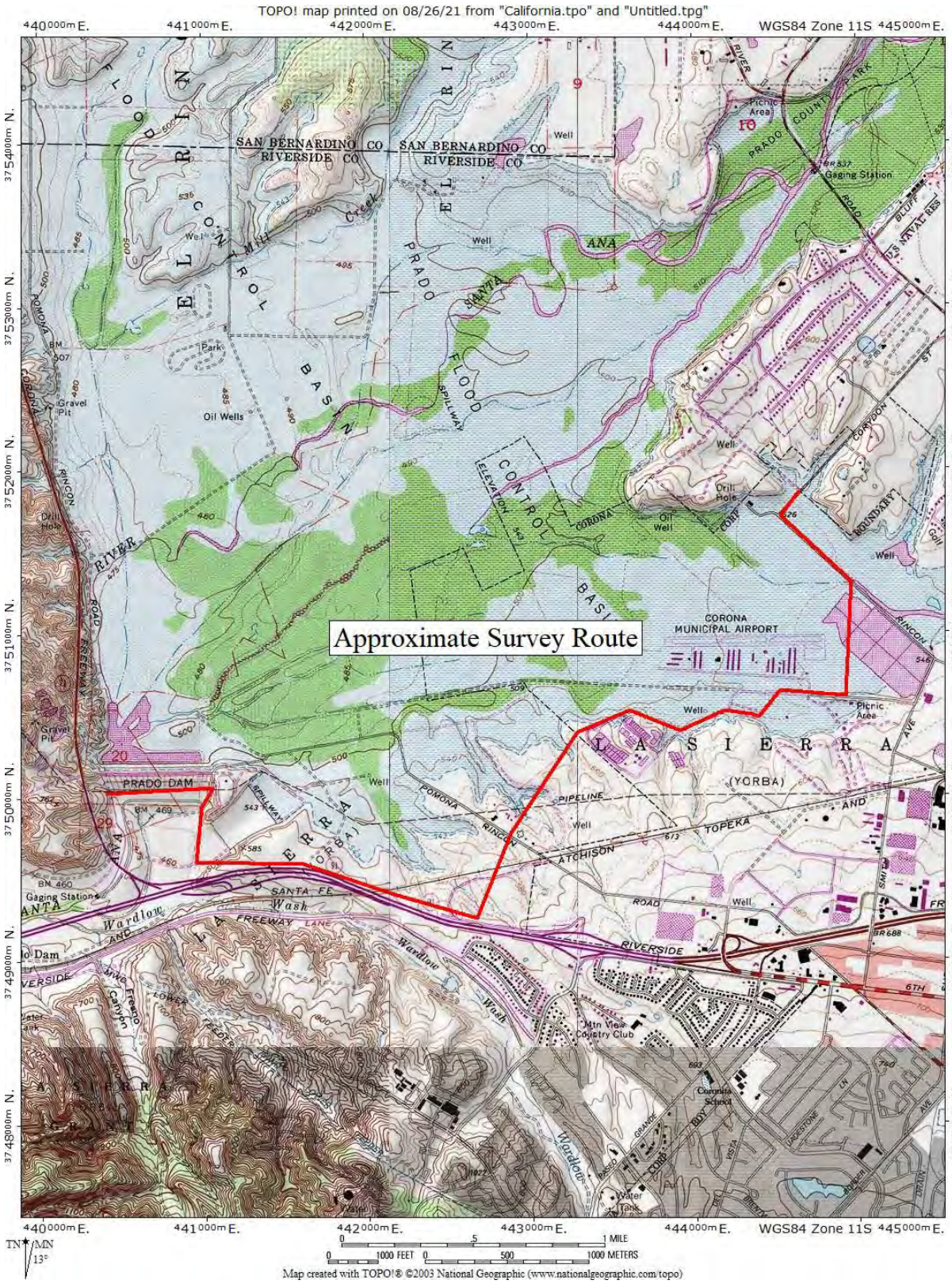


Figure 1. Santa Ana River Trail Project Region

Figure 2. Santa Ana River Trail Project Phases

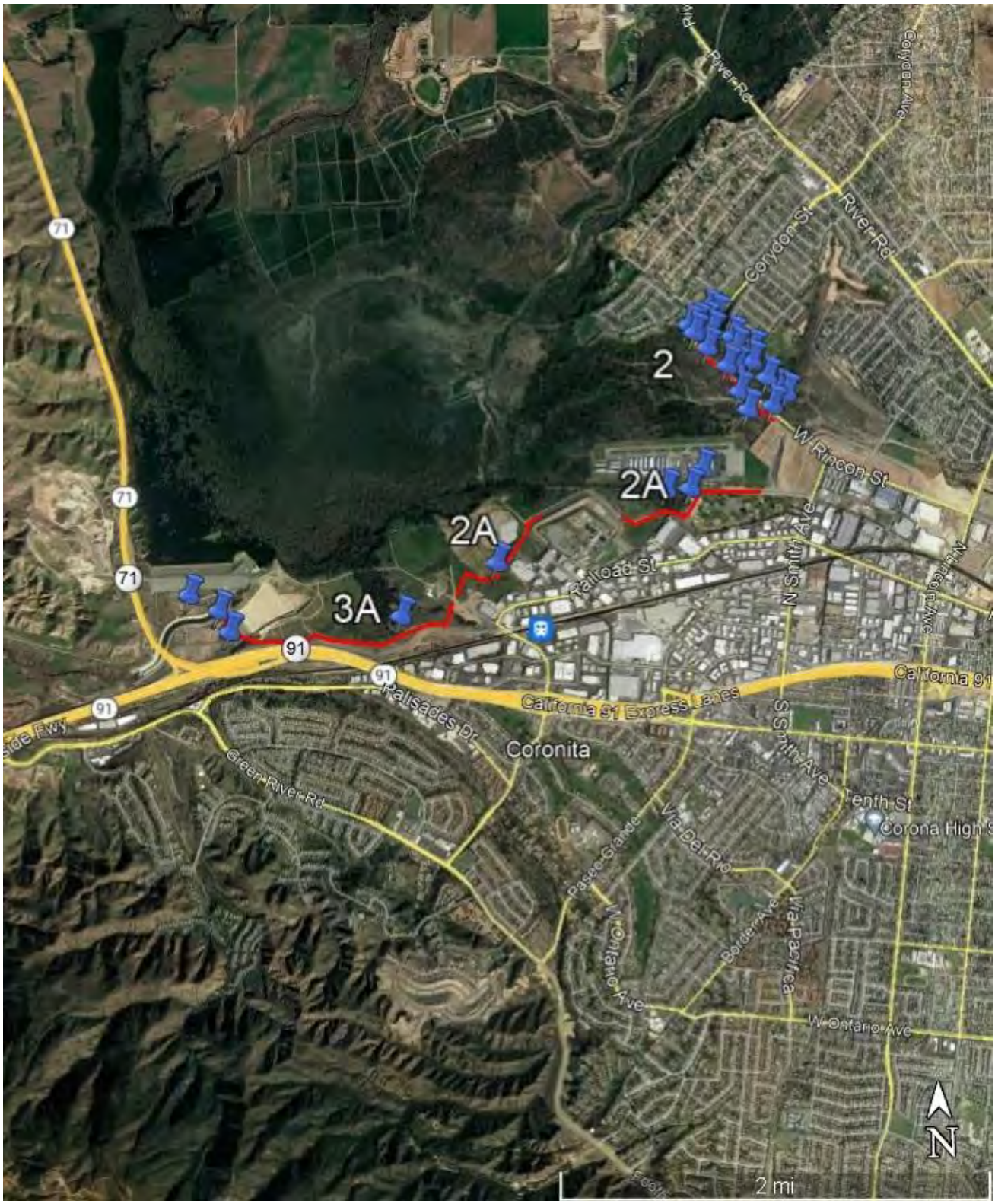


Figure 3. Least Bell's Vireo Territory Locations

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Santa Ana River Trail Project Wildlife Species List

Non-native species are indicated by an asterisk. Species on CDFW's Special Animals' list are indicated by two asterisks. Other species may have been overlooked or inactive/absent because of the season (amphibians are more active during/after rains, reptiles during summer, some birds (and bats) migrate out of the area for summer or winter, some mammals hibernate etc.), or because of the time of the survey (some species are strictly nocturnal). Taxonomy and nomenclature generally follow the Complete List of Amphibian, Reptile, Bird and Mammal Species in California (CDFW 2016).

	COMMON NAME	SCIENTIFIC NAME
	AMPHIBIANS	**AMPHIBIA**
	True Toads	**Bufonidae**
	Western toad	*Anaxyrus boreas*
	True Frogs	**Ranidae**
*	Bullfrog	*Lithobates catesbeianus*
	REPTILES	**REPTILIA**
	Box and Water Turtles	**Emydidae**
*	Pond slider	*Trachemys scripta*
	Softshells	**Trionychidae**
	Spiny softshell	*Apalone spinifera*
	Spiny Lizards, Horned Lizards, etc.	**Phrynosomatidae**
	Western fence lizard	*Sceloporus occidentalis*
	Common Side-blotched lizard	*Uta stansburiana*
	BIRDS	**AVES**
	Cormorants	**Phalacrocoracidae**
**	Double-crested cormorant	*Phalacrocorax auritus*
	Herons and Bitterns	**Ardeidae**
**	Great blue heron	*Ardea herodias*
**	Great egret	*Ardea alba*
**	Black-crowned night-heron	*Nycticorax nycticorax*
	Vultures	**Cathartidae**
	Turkey vulture	*Cathartes aura*
	Geese and Ducks	**Anatidae**
	Canada goose	*Branta canadensis*
	Mallard	*Anas platyrhynchos*
	Hawks, Eagles and Kites	**Accipitridae**
**	Cooper's hawk	*Accipiter cooperii*
	Red-shouldered hawk	*Buteo lineatus*
	Red-tailed hawk	*Buteo jamaicensis*
	Falcons	**Falconidae**
	American kestrel	*Falco sparverius*
	Quail	**Odontophoridae**
	California quail	*Callipepla californica*

Pidgeons and Doves		**Columbidae**
*	Eurasian Collared-dove	*Streptopelia decaocto*
	Mourning dove	*Zenaida macroura*
Cuckoos and Roadrunners		**Cuculidae**
	Greater roadrunner	*Geococcyx californianus*
Owls		**Strigidae**
	Great horned owl	*Bubo virginianus*
Swifts		**Apodidae**
	White-throated swift	*Aeronautes saxatalis*
Hummingbirds		**Trochilidae**
	Anna's hummingbird	*Calypte anna*
**	Allen's hummingbird	*Selasphorus sasin*
Woodpeckers		**Picidae**
**	Nuttall's woodpecker	*Dryobates nuttallii*
	Downy woodpecker	*Dryobates pubescens*
	Northern flicker	*Colaptes auratus*
Tyrant Flycatchers		**Tyrannidae**
	Western wood-pewee	*Contopus sordidulus*
	Pacific-slope flycatcher	*Empidonax difficilis*
	Black phoebe	*Sayornis nigricans*
	Say's phoebe	*Sayornis saya*
	Ash-throated flycatcher	*Myiarchus cinerascens*
	Cassin's kingbird	*Tyrannus vociferans*
Vireos		**Vireonidae**
**	Least Bell's vireo	*Vireo bellii pusillus*
Jays and Crows		**Corvidae**
	American crow	*Corvus brachyrhynchos*
	Common raven	*Corvus corax*
Larks		**Alaudidae**
**	Horned lark	*Eremophila alpestris*
Swallows		**Hirundinidae**
	Northern rough-winged swallow	*Stelgidopteryx serripennis*
	Cliff swallow	*Petrochelidon pyrrhonota*
	Barn swallow	*Hirundo rustica*
Bushtits		**Aegithalidae**
	Bushtit	*Psaltriparus minimus*
Wrens		**Troglodytidae**
	Rock wren	*Salpinctes obsoletus*
	Bewick's wren	*Thryomanes bewickii*
	House wren	*Troglodytes aedon*
Gnatcatchers		**Silviidae**
**	California gnatcatcher	*Polioptila californica*
Bluebirds and Thrushes		**Turdidae**
	Western bluebird	*Sialia mexicana*
Wrentits		**Timaliidae**
	Wrentit	*Chamaea fasciata*
Mockingbirds and Thrashers		**Mimidae**
	Northern mockingbird	*Mimus polyglottos*
Starlings		**Sturnidae**
*	European starling	*Sturnus vulgaris*

Silky Flycatchers		**Ptilogonatidae**
	Phainopepla	*Phainopepla nitens*
Wood Warblers		**Parulidae**
**	Yellow warbler	*Setophaga petechia*
	Common yellowthroat	*Geothlypis trichas*
**	Yellow-breasted chat	*Icteria virens*
Towhees and Sparrows		**Emberizidae**
	Spotted towhee	*Pipilo maculatus*
	California towhee	*Melozone crissalis*
	Song sparrow	*Melospiza melodia*
Cardinals,Grosbeaks, Buntings, Tanagers		**Cardinalidae**
	Black-headed grosbeak	*Pheucticus melanocephalus*
	Blue grosbeak	*Passerina caerulea*
	Western tanager	*Piranga ludoviciana*
Blackbirds and Orioles		**Icteridae**
	Hooded oriole	*Icterus cucullatus*
	Bullock's oriole	*Icterus bullockii*
Finches		**Fringillidae**
	House finch	*Haemorhous mexicanus*
	Lesser goldfinch	*Spinus psaltria*
**	Lawrence's goldfinch	*Spinus lawrencei*

MAMMALS		**MAMMALIA**
Hares and Rabbits		**Leporidae**
	Desert cottontail	*Sylvilagus audubonii*
Squirrels		**Sciuridae**
	California ground squirrel	*Ostospermophilus beecheyi*
Pocket Gophers		**Geomyidae**
	Botta's pocket gopher (burrows)	*Thomomys bottae*
Old World Rats and Mice		**Muridae**
	Dusky-footed woodrat (nest)	*Neotoma fuscipes*
Dogs, Wolves and Foxes		**Canidae**
	Coyote (scat, tracks)	*Canis latrans*
Pigs		**Suidae**
	Feral pig	*Sus scrofa*

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

Site Name: **Santa Ana River Trail Project** State: **CA** County: **Riverside**

USGS Quad Name: **Prado** Elevation: **155** (meters)

Creek, River, or Lake Name: **Santa Ana River**

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* **X** *No* ____

Survey Coordinates: Start: E **04 40 410m** N **37 49 650m** UTM Datum: **NAD83** (See instructions)

Stop: E **04 45 675m** N **37 55 765m** UTM Zone: **11S**

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	Date: 5/25/2021	0								
Observer(s): Brian Leatherman	Start: 545									
	Stop: 1115									
	Total hrs: 5.5									
Survey # 2	Date: 6/3/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 545									
	Stop: 1100									
	Total hrs: 5.25									
Survey # 3	Date: 6/15/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 545									
	Stop: 1045									
	Total hrs: 5									
Survey # 4	Date: 6/28/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 530									
	Stop: 1030									
	Total hrs: 5									
Survey # 5	Date: 7/9/2021	0					# Birds	Sex	UTM E	UTM N
Observer(s): Brian Leatherman	Start: 530									
	Stop: 1030									
	Total hrs: 5									
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: 25.0		Total Adult Residents: 0	Total Pairs: 0	Total Territories:	Total Nests:	Were any WIFLs color-banded? Yes ____ No ____ If yes, report color combination(s) in the comments section on back of form and report to USFWS.				

Reporting Individual: **Brian Leatherman** Date Report Completed: **8/19/2021**

US Fish & Wildlife Service Permit #: **TE827493-9** State Wildlife Agency Permit #: **SC-001562**

***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 Leatherman** Phone # **(714) 701-0863**

Affiliation **Leatherman BioConsulting Inc.** E-mail bleathermanwlb@aol.com

Site Name **Santa Ana River Trail** Date report Completed **8/19/2021**

Was this site surveyed in a previous year? Yes___ No_X___ Unknown___

Did you verify that this site name is consistent with that used in previous yrs? Yes____ No____ Not Applicable____

If 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____ No____ If no, summarize below.

Management Authority for Survey Area: Federal **X** Municipal/County **X** State____ Tribal____ Private____

Name of Management Entity or Owner (e.g., Tonto National Forest) **US Army Corps, Riverside County**

Length of area surveyed: **1.3** (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 name.

Salix goodingii, Salix laevigata

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.

Survey area along proposed bike trail route consists of isolated stretches of habitat in Prado Basin separated by different types of developments (housing, industrial, parks etc.) with very different vegetation components. Highest quality habitat along W. Rincon and Corydon Streets at northeast end of 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

Yellow-Billed Cuckoo Survey Summary Form (Form revised 2021)

Site Name: Santa Ana River Trail Project | County: Riverside | Elevation (m): 155 | State: CA

USGS Quad Name: Prado, Corona North | Creek, River, Wetland, Canyon, or Lake Name: Prado Basin, Santa Ana River

Site Coordinates (UTM): | UTM Zone: 11S | Start: E 440410 N 3749650 | Magnetic North Declination: 14

NAD 83 preferred | Datum: NAD83 | Stop: E 445675 N 3755765

Was site surveyed in a previous year? (Yes, No, Unknown): No | If yes, what name was used?:

Survey # Observer(s) (Last Name, First Initial)	Date (m/d/y) Survey, Time, Total Hours	Total # of YBCUs	Survey Number:	YBCU#:	Time Detected (AM):	Detection Method: I = Incidental P = Playback B=Both	Detection Type: A=Aural V=Visual B=Both	Vocalization Type: CN= Contact CO=coo AL=alarm OT=other	Number of 'kowlp' calls played prior to response:	Behavior Observed: (refer to codes)	Surveyor Detection Coordinates UTM E (6 digits)	Surveyor Detection Coordinates UTM N (7 digits)	Distance (m):	Bearing (in number degrees):	Corrected Coordinates (automatically generated) UTM E	Corrected Coordinates (automatically generated) UTM N
Survey	Date:	0	1												0	0
1	6/17/2021		1												0	0
Observer(s):	Start:		1												0	0
Brian Leatherman	500		1												0	0
	Stop:		1												0	0
	1000		1												0	0
	Total hrs:	Total:	1												0	0
	5	0	1												0	0
Survey	Date:		2												0	0
2	7/2/2021		2												0	0
Observer(s):	Start:		2												0	0
Brian Leatherman	530		2												0	0
	Stop:		2												0	0
	1000		2												0	0
	Total hrs:	Total:	2												0	0
	4.5	0	2												0	0
Survey	Date:		3												0	0
3	7/16/2021		3												0	0
Observer(s):	Start:		3												0	0
Brian Leatherman	600		3												0	0
	Stop:		3												0	0
	1015		3												0	0
	Total hrs:	Total:	3												0	0
	4.25	0	3												0	0
Survey	Date:		4												0	0
4	8/2/2021		4												0	0
Observer(s):	Start:		4												0	0
Brian Leatherman	515		4												0	0
	Stop:		4												0	0
	1000		4												0	0
	Total hrs:	Total:	4												0	0
	4.75	0	4												0	0
Survey	Date:		5												0	0
5			5												0	0
Observer(s):	Start:		5												0	0
			5												0	0
	Stop:		5												0	0
			5												0	0
	Total hrs:	Total:	5												0	0
			5												0	0

Survey Summary REQUIRED	Total Survey Hours:	Tot. # of Detections:	Total Estimated Breeding Territories: (refer to Territory Definitions below) Number of PO BreedingTerritories:	Number of PR Breeding Territories:	Number of CO Breeding Territories:	Number of Nests Found:
	18.5	0				

Sur. #:	YBCU #:	Detection Comments/Additional Behaviors/Nest UTM:

Breeding Behavior Observation Codes

Brooding/Incubating	BI
Carrying Nest Material	MAT
Copulation	COP
Distraction Display	DD
Feeds Mate	FM
Feeds Nestling	FN
Fledgling	FLG
Nest Building	NB
Carry Food	CF
Kowlp Exchange/Pair	VEX

Breeding Territory Definitions

Possible Breeding Territory (PO):	Probable Breeding Territory (PR):	Confirmed Breeding Territory (CO):
Detections within a 300 - 500 m area during at least 2 surveys and 12 - 14 days apart.	Detections within a 300-500 m area during at least 3 surveys and 12-14 days apart; or PO territory plus purposeful food carry (single observation, bird does not eat food), stick carry (single observation), multiple incidents of alarm calls in same area, or PO territory plus pair exchanging multiple kowlp or alarm calls (not coos) within 100 m of one another.	Observation of active nest (or multiple stick carries to nest being built), copulation, fledgling (unable to fly) with adult; or PR plus multiple food carries to same area or distraction display (dropped wings).

Page 2

Site Name:	Santa Ana River Trail Project	Date Report Completed:	8/26/2021
Name of Reporting Individual:	Brian Leatherman	Phone #:	714 -701-0863
Affiliation:	Leatherman BioConsulting, Inc.	Email:	bleathermanwlb@aol.com
USFWS Permit #:	TE827493-9	State Permit #:	SC-001562
Ownership: Primary:	Other (Municipal/County)	Owner Name (if applicable):	County, US ACE
Did you survey the same general area during each visit to this site this year (if no, summarize in comments section below)?			No
If site was surveyed last year, did you survey the same general area this year (if no, summarize in comments section below)?			No
Length of survey area (km):	1.26		

Overall Vegetation Characteristics:

Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

Native broadleaf plants (>75% native)		Mixed native and exotic plants (mostly native 51%-75%)	X
Exotic/introduced plants (>75% exotic)		Mixed native and exotic plants (mostly exotic 51%-75%)	

Average Overstory/Canopy (where playback calls were used):

List up to 5 species of overstory vegetation and proportion of average canopy cover of each species . Click on dropdown menu to select scientific name. If species is missing, select OTHER and include scientific name in Comments. For relative percent cover, the total should equal 100%.

		Relative				Relative	
Species 1:	Salix goodingii	% Cover	80	Species 3:	Platanus racemosa	% Cover	5
Species 2:	Populus fremontii	% Cover	10	Species 4:	Eucalyptus sp.	% Cover	5
				Species 5:	NONE	% Cover	

General Overstory/Canopy Characteristics:

Average Height (top of trees) of Overstory (meters; do not include a range):	2.5
Estimated Absolute (as opposed to relative) Canopy Cover (percent; may be < 100%):	50

Average Subcanopy (if present; where playback calls were used):

List up to 5 species of subcanopy vegetation (if present) and estimate proportion of average subcanopy cover of each species. Click on dropdown menu to select scientific name. If species is missing, select OTHER and include scientific name in Comments. For relative percent cover, the total should equal 100%.

		Relative				Relative	
Species 1:	Salix laevigata	% Cover	50	Species 3:	OTHER	% Cover	30
Species 2:	Salix lasiolepis	% Cover	20	Species 4:	NONE	% Cover	
				Species 5:		% Cover	

General Subcanopy Characteristics:

Average Height (top of trees) of Subcanopy (meters; do not include a range):	3.5
Estimated Absolute (as opposed to relative) Subcanopy Cover (percent; may be < 100%):	20

Average Understory (if present; where playback calls were used):

List up to 5 species of understory/ shrub vegetation (not all sites will have a separate understory) and estimate proportion of average understory cover of each species. Use scientific names. For relative percent cover, the total should equal 100% even if more than 5 species present.

		Relative				Relative	
Species 1:	Baccharis salicifolia	% Cover	30	Species 3:	Lepidium latifolium	% Cover	25
Species 2:	Vitus girdiana	% Cover	25	Species 4:	Salix lasiolepis	% Cover	10
				Species 5:	Brassica spp	% Cover	10

General Understory Characteristics:

Average Height (top) of Understory (meters; do not include a range):	2
Estimated Absolute (as opposed to relative) Understory Cover (percent; may be < 100%):	75

Immediate Adjacent Habitat Along Entire Transect (Outside of survey site):

Categorize adjacent habitat (e.g. rock outcrop, desert/scrub/thornscrub, urban/residential, agriculture/pasture, orchard, oak woodland, pinyon-juniper woodland, mixed conifer forest, grassland, marsh/wet meadow, open water, ditch/irrigation). List up to 5 categories of adjacent habitat, and estimate proportion of percent cover (should =100%). If adjacent habitat type is missing, select "OTHER" and enter habitat type in Comments.

Category 1:	Urban/Residential	% Cover	30	Category 3:	Desert/Scrub/thornscrub	% Cover	20
Category 2:	Grassland	% Cover	50	Category 4:		% Cover	
				Category 5:		% Cover	

Is the survey area or adjacent area (within 300 m) dominated by surface water or saturated soil during at least 2 surveys?	No
Perennial, intermittent, or ephemeral drainage (or body of water):	Perennial

Comments. If surface water changed between surveys please describe in this section. Provide comments regarding differences between the survey patches within the site. For example, if the average canopy for this site is 30% cover, but within one patch it is 60% cover--please note. Please note significant differences between dominant overstory, subcanopy, and understory vegetation among the patches. Document these differences with photographs whenever possible. referencing comments to photo number whenever available. Note potential threats (e.g., livestock, ORV, hunting, etc.) to the site. If *Diorhabda* beetles are observed, provide location and photos. Attach additional pages or use the continuation sheet if needed.

The Santa Ana River Trail Project alignment survey area spans several miles and traverses several habitat types. The riparian habitat along the alignment varies widely in composition, structure, and diversity, and most of the riparian habitat that is suitable for other species (i.e. least Bell's vireo) is not suitable for the yellow-billed cuckoo and was not surveyed. Highest qualify habitat consists of mature willow forest dominated by S. goodingii, with an understory of dense Vitus girdiana in some areas and dense Lepidium latifolium along W. Rincon Street and Corydon Street.

Appendix F BURROWING OWL

Stantec

Memo

To:	David Lewis Capital Projects Manager Project Delivery Riverside County Transportation Commission 4080 Lemon St Riverside, CA 92501	From:	Jared Varonin 290 Conejo Ridge Ave Ste 100 Thousand Oaks, CA 91361
Project/File:	Santa Ana River Trail Project	Date:	January 10, 2021

Reference: Santa Ana River Trail Project Phase 2, 2A, and 3A Burrowing Owl Habitat Assessment and Focused Surveys

1.0 Introduction

Riverside County Regional Park & Open-Space District requested Stantec Consulting Services Inc. (Stantec) conduct a burrowing owl (*Athene cunicularia*) habitat assessment for the Santa Ana River Trail Project Phases 2, 2A, and 3A (Project).

The Project is in the northwestern corner of Riverside County, California, within the United States Geological Survey (USGS) Riverside West 7.5-minute topographic quadrangle. The Project occurs within an approximately 46-acre area. The Project area is mostly open space and surrounded to the north by the Santa Ana River and the Corona Airport, to the east by light industrial and open space, and to the south/southwest by state route 91 and open space. Land use in the general area surrounding the Project area includes developed areas (Attachment A Figures 1 and 2).

The proposed Project consists of trail construction that would complete a portion of the larger 110-mile regional Santa Ana River Trail system. Specifically, the Project includes a 2.79-mile dual-track Class I multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. The Project includes the construction of three new trail segments, Phase 2 will be 0.65-mile long, Phase 2A will be 1.37-mile long, and Phase 3A will be 0.77-mile long. The three trail segments are shown in Attachment A Figures 2-1 to 2-4. The Survey Area for the burrowing owl habitat focused surveys included the Project area and a 150-meter buffer (Burrowing Owl Survey Area) (Attachment A Figure 3).

2.0 Background

The burrowing owl uses a variety of natural and modified habitats for nesting and foraging, typically low growing vegetation. The burrowing owl occupies open areas within grasslands, shrub lands, desert, golf-courses, earthen berms, unpaved airfields, drainage ditches, fallow fields, and agricultural land use areas (RCA 2006). Natural and artificial burrows are essential to burrowing owl habitat, they provide shelter and nesting locations. The burrows are typically remnant burrows of California ground squirrel (*Otospermophilus beecheyi*) but can also be man-made structures such as culverts, asphalt, cement, or wood debris piles or openings beneath cement or asphalt pavement.

Burrowing owls hunt at dawn and dusk but are often found perched in or near the entrance of their burrow during the day. They forage for small vertebrates and invertebrates in the low vegetation. Nesting season typically occurs between February 1 and August 31.

The burrowing owl was historically abundant and widely distributed within coastal southern California, but it has declined dramatically in Los Angeles, Orange, San Diego, Riverside, and San Bernardino counties. A petition was filed to list the California population of the burrowing owl as a state endangered or threatened species (Center for Biological Diversity 2003); however, the California Department of Fish and Wildlife (CDFW) declined to list the burrowing owl as either endangered or threatened. The burrowing owl is listed by the CDFW as a California Species of Special Concern (CDFW 2021a).

Burrowing owl historically occurred on the Burrowing Owl Survey Area. Based on CDFW California Natural Diversity Database (CNDDB) data, burrowing owls were documented in the Burrowing Owl Survey Area in 1989. In 2012, burrowing owl were documented near Norco College approximately 2.2 miles northeast of the Burrowing Owl Survey Area (CDFW 2021a, Cornell 2021).

3.0 Methods

The following subsections provide the resources reviewed before conducting the burrowing owl habitat assessment and the methods used to conduct the habitat assessment.

LITERATURE REVIEW AND DESKTOP ANALYSIS

A focused literature search of the Burrowing Owl Survey Area was conducted prior to the habitat assessment for this Project. The Burrowing Owl Survey Area is located within the USGS Corona North, California, 7.5-minute topographic quadrangle. A search of the CDFW CNDDB was conducted for the Burrowing Owl Survey Area and a surrounding ten-mile buffer area to determine special-status plants, wildlife, and vegetation communities that have been documented within this area (CDFW 2021a). The database included portions of the following quadrangles surrounding the Burrowing Owl Survey Area:

- Guasti
- Fontana
- Black Star Canyon
- Ontario
- Prado Dam
- Lake Mathews
- Corona South
- Riverside West

Additional data regarding the potential occurrence of burrowing owl was gathered from the following sources:

- Special Animals List (CDFW 2021b)
- Bird Species of Special Concern (CDFW 2021c)
- Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) (RCA 2006)
- WRCMSHCP (2015)
- WRCMSHCP Burrowing Owl Reports (RCA 2017)
- WRCMHCP Burrowing Owl Survey Area (RCA 2021)

BURROWING OWL HABITAT ASSESSMENT

Based on the Burrowing Owl Survey Instructions for the WRCMSHCP (RCA 2006), three qualified biologists walked the entire Project area to identify the presence or absence of burrowing owl habitat (RCA 2006) (Attachment A Figures 2-1 to 2-4). In areas with potential habitat for burrowing owls (primarily open grassland or ruderal habitat), the biologists surveyed for burrows or other potential signs of burrowing owl. Ground squirrel burrows were mapped with ArcCollector connected to a sub-meter Arrow global positioning system receiver.

FOCUSED BURROW SURVEYS

One qualified biologist conducted the four focused surveys. The biologist used binoculars to scan suitable habitat and the area of mapped burrows to determine owl presence prior to walking the Burrowing Owl Survey Area. The biologist walked transects through the area adjacent to the ground squirrel burrows.

4.0 Existing Conditions

The Burrowing Owl Survey Area is adjacent to the Santa Ana River, the Prado Basin, and the Corona Municipal Airport within unincorporated Riverside County. Elevations within the Project area range from 500 to 600 feet above mean sea level.

VEGETATION COMMUNITIES AND LAND COVER TYPES

As defined in the Manual of California Vegetation, Second Edition (MCVII) (Sawyer et al. 2009), a vegetation alliance is “a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors.” Generally, Stantec’s mapping and description of plant communities follows the classification system described in MCVII. The MCVII is generally limited to communities that are native to or naturalized within California; however, (generally disturbed) habitat occurs within the Burrowing Owl Survey Area that is not defined in MCVII. Therefore, land cover types assigned to these types of habitats are descriptive in nature and are not specifically referenced in the MCVII. The scientific and common names of each species detailed within this report correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al. 2012).

The vegetation communities and land cover types in the Burrowing Owl Survey Area are presented on Figures 3-1 to 3-4 in Attachment A.

Vegetation Communities

Arroyo Willow Thickets (Salix lasiolepis Shrubland Alliance)

This vegetation classification generally consists of arroyo willow (*Salix lasiolepis*) as the dominant in the tall shrub or low tree canopy with bigleaf maple (*Acer macrophyllum*), coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood (*Cornus sericea*), California wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), other willows (*Salix* sp.), and black elderberry (*Sambucus nigra*) as co-dominants. Emergent trees may be present at a low cover.

The plants are usually less than 10 meters in height, canopy is open to continuous, and the herbaceous layer is variable.

Within the Burrowing Owl Survey Area, this vegetation community is dominated by arroyo willow with smaller amounts of mulefat shrubs and scattered black willows. Most of the arroyo willow thickets occur in the Survey Area surrounding Phase 2.

California Buckwheat Scrub (Eriogonum fasciculatum Shrubland Alliance)

This vegetation classification generally consists of California buckwheat (*Eriogonum fasciculatum*) as a dominant in the shrub canopy in cismontane stands with California sagebrush (*Artemisia californica*), coyote brush, sticky monkeyflower (*Diplacus aurantiacus*), bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), Menzies' goldenbush (*Isocoma menziesii*), common deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), white sage (*Salvia apiana*), or black sage (*Salvia mellifera*) as co-dominant species. Emergent trees may be present at low cover. Shrubs are usually less than two meters in height, canopy is continuous or intermittent, and the herbaceous layer is variable and may be grassy.

Within the Burrowing Owl Survey Area, this vegetation is dominated by California buckwheat with smaller amounts of California sagebrush, deerweed, and California brittlebush. California buckwheat scrub occurs in small patches in the Burrowing Owl Survey Area surrounding Phases 2A, 3, and 3A.

Coastal Sagebrush Scrub (Artemisia californica Shrubland Alliance)

This vegetation classification generally consists of California sagebrush as the dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod (*Cleome isomeris*), sticky monkeyflower, bush sunflower, brittlebush, desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal buckwheat (*Eriogonum cinereum*), California buckwheat, yellow yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), Menzie's goldenbush, heart leaved keckella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina*), chaparral prickly pear (*Opuntia littoralis*), evergreen buckthorn (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*). Emergent trees or tall shrubs may be present at low cover, including southern California black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), or black elderberry. Shrubs are less than two meters in height or in two tiers with a second less than five meters tall. The canopy is intermittent to continuous, and the herbaceous layer is variable.

Within the Burrowing Owl Survey Area, this vegetation is dominated by California sagebrush with smaller amounts of California buckwheat and coyote brush. California sagebrush scrub occurs in large patches in the Survey Area in Phases 2A, 3, and 3A.

Cheeseweed Flats (Malva parviflora)

This non MCVII vegetation classification generally consists of a monoculture of cheeseweed (*Malva parviflora*). Within the Burrowing Owl Survey Area, this vegetation is dominated by monoculture of dense cheeseweed with other non-native annual species such as short-pod mustard (*Hirschfeldia incana)* occasionally observed. Cheeseweed flats occur in one patch in the Survey Area southeast of Phase 2A and

the area appears to have been previously disturbed and may have been used as an access road in the past.

Common and Giant Reed Marshes (Phragmites australis Arundo donax Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by common reed (*Phragmites australis*) or giant reed (*Arundo donax*). Within the Burrowing Owl Survey Area, this vegetation is dominated by giant reed. One reed marsh occurs in the Burrowing Owl Survey Area north of Phase 2A in an area surrounded by native riparian vegetation.

Coyote Brush Scrub (Baccharis pilularis Shrubland Alliance)

This vegetation classification generally consists of coyote brush, California coffeeberry (*Frangula californica*) and/or coast silk tassel (*Garrya elliptica*) is dominant to co-dominant in the shrub canopy with coastal sagebrush, sticky monkeyflower, California buckwheat, deerweed, California blackberry (*Rubus ursinus*), white sage*,* purple sage (*Salvia leucophylla*) and poison oak. Emergent trees may be present at low cover.

Within the Burrowing Owl Survey Area, this vegetation is dominated by coyote brush with smaller amounts of deerweed, bush sunflower, mulefat, and Menzie's goldenbush. Coyote brush scrub occurs in small patches in the Phase 2A Survey Area and in the Survey Area west of Phase 3A.

Eucalyptus Groves (Eucalyptus spp. Woodland Semi-Natural Alliance)

This non MCVII vegetation classification generally consists of eucalyptus species/gum trees (*Eucalyptus* sp.) as the dominant in the tree canopy. The trees are less than 60 meters in height, canopy is open to continuous, shrub layer is generally sparse, and the herbaceous layer is sparse to intermittent.

Within the Burrowing Owl Survey Area, this vegetation is dominated by large eucalyptus trees with bare ground along low drainage areas. Eucalyptus groves occur in the Survey Area in Phases 2A and 3A.

Menzie's Goldenbush Scrub (Isocoma menziesii Shrubland Alliance)

This vegetation classification generally consists of Menzie's goldenbush as dominant or co-dominant in the shrub canopy with coastal sagebrush, coyote brush, broom baccharis (*Baccharis sarothroides*), giant coreopsis (*Coreopsis gigantea*), matchweed (*Gutierrezia californica*), island broom (*Acmispon dendroideus)*, silver bush lupine (*Lupinus albifrons),* and Virginia glasswort (*Salicornia depressa*). Herbs commonly present include *San Miguel Island milkvetch* (*Astragalus miguelensis*), California orach (*Etriplex californica*), ripgut brome (*Bromus diandrus*), coast morning glory (*Calystegi macrostegia*), saltgrass (*Distichlis spicata*), and purple needlegrass (*Stipa pulchra*).

Within the Burrowing Owl Survey Area, this vegetation is dominated by Menzie's goldenbush with smaller amounts of coyote brush. California buckwheat, and quailbush (*Atriplex lentiformis*). This community occurs in one patch in the Survey Area north of Phase 2A.

Mulefat Thickets (Baccharis salicifolia Shrubland Alliance)

This vegetation classification generally consists of mulefat (*Baccharis salicifolia*) as the dominant in the shrub canopy with coastal sagebrush, willow baccharis (*Baccharis emoryi*), coyote brush, laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry species (*Rubus* sp.), narrow leaved willow (*Salix exigua*), arroyo willow, black elderberry, and tamarisk species (*Tamarix* sp.) as co-dominants. Emergent trees may be present at low cover, including grey pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oak species (*Quercus* sp.), or willow species (*Salix* sp.). Shrubs are less than five meters in height, the canopy is continuous with tie tiers at less than two meters and at less than five meters, and the herbaceous layer is sparse.

Within the Burrowing Owl Survey Area, this vegetation is dominated by mulefat with smaller amounts of arroyo willow and coyote brush. This community occurs in the Survey Area of all three phases and most of this vegetation in the Phase 2 Survey Area. Approximately 30 acres of this community occurs in the Survey Area.

Perennial Pepperweed Patches (Lepidium latifolium Herbaceous Semi-Natural Alliance)

This vegetation classification is dominated by perennial pepperweed (*Lepidium latifolium*). Emergent trees and shrubs may be present at low cover. Within the Burrowing Owl Survey Area, this vegetation is dominated by perennial pepperweed. This community occurs in one small patch in the Survey Area at the edge of Phases 2A and 3A.

Poison hemlock or fennel patches (Conium maculatum- Foeniculum vulgare Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of thoroughwort (*Ageratina adenophora*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), Indian teasel (*Dipsacus sativus*) and/or sweet fennel (*Foeniculum vulgare*), or another non-native invasive plant of the *Apiaceae* is dominant or co-dominant with other non-native plants in the herbaceous layer. Emergent trees and shrubs may be present at low cover, including oak trees and coyote brush.

Within the Burrowing Owl Survey Area, this vegetation is dominated by poison hemlock. This community occurs in one small patch in the Survey Area at the edge of Phases 2A and 3A.

Shining Willow Groves (Salix lucida ssp. lasiandra Forest and Woodland Alliance)

This vegetation classification generally consists of shining willow (*Salix lucida*) as dominant or co-dominant in the tree canopy with bigleaf maple, white alder (*Alnus rhombifolia*), American dogwood, California sycamore, Freemont cottonwood, black cottonwood, coast live oak, willows, and blue elderberry.

Within the Burrowing Owl Survey Area, this vegetation is dominated by shining willow with smaller amounts of mulefat, other willow species, and castor bean. This community occurs in one large patch in the Survey Area in Phase 2A west of Butterfield Park. Approximately 10 acres of this community occurs in the Survey Area.

Tamarisk Thicket (Tamarix spp. Shrubland Semi-Natural Alliance)

This vegetation classification generally consists of salt cedar (*Tamarix ramosissima*) or another *Tamarix* species dominant in the shrub canopy. Emergent trees may be present at low cover, including Freemont's cottonwoods or willow trees.

Within the Burrowing Owl Survey Area, this vegetation is dominated by salt cedar. This community occurs in one linear patch along West Rincon Street in the Survey Area east of Phase 2.

Upland mustards or star-thistle fields (Brassica nigra – Centaurea [solstitialis, melitensis] Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of black mustard (*Brassica nigra*), common mustard (*Brassica rapa*), Italian thistle (*Carduus pycnocephalus*), Maltese star thistle (*Centaurea melitensis*), yellow starthistle (*Centaurea solstitialis*), cardoon artichoke thistle (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), short-pod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*), or similar ruderal forb is dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover.

Within the Burrowing Owl Survey Area, this vegetation is dominated by short-pod mustard and Maltese star-thistle with smaller amounts of other non-native annual grasses, mostly bromes, and non-native annual herbs. This community occurs along West Rincon Street in Phase 2 and in the eastern portion of Phase 3A.

Wild Oats and Annual Brome Grasslands (Avena spp.-Bromus spp. Herbaceous Semi-Natural Alliance)

This vegetation classification generally consists of slim oat (*Avena barbata*), wildoats (*Avena fatua*), purple false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima*), ripgut brome, soft chess, and foxtail barley (*Hordeum murinum*) as dominant or co-dominant in the herbaceous layer with other non-natives such as Australian saltbush (*Atriplex semibaccata*) and barley species (*Hordeum* sp.). Emergent trees and shrubs may be present at low cover. Herbs are less than four feet in height and cover is open to continuous.

Within the Burrowing Owl Survey Area, this vegetation is dominated by bromes and other non-native annual grasses. Wild oats and annual brome grasslands occur in large patches in the Survey Area surrounding Phases 2A and 3A. Approximately 50 acres of this community occur in the Survey Area.

Land Cover Types

Disturbed/Developed

This land cover type includes areas that have been graded or paved and are developed with urban infrastructure. These areas are generally periodically maintained for weed control, precluding any significant growth of non-ornamental species, but may be sparsely interspersed with ruderal pioneer plant species that readily colonize open disturbed soil such as along disturbed areas or roadsides. The Phase 2 Survey Area includes Corydon Street, West Rincon Street, and disturbed areas between West Rincon Street and the Corona Airport. The Phase 2A Survey Area includes dirt access roads, a large borrow pit, portions of the

Corona Airport and Butterfield Park, and buildings south and west of Phase 2A. The Phase 3A Survey Area includes portions of State Route 91. Over 100 acres of this land cover type occurs in the Survey Area.

Non-vegetated Channel

Non-vegetated channel is not a MCVII classification. In this land cover type, the area is unvegetated on a relatively permanent basis. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover (Holland 1986).

A drainage ditch occurs along the south side of Butterfield Drive in the Phase 2A Survey Area.

Partially vegetated channel

This land cover type is like non-vegetated channel but has more than 10 percent vegetative cover. Partially vegetated channel is not a MCVII classification. The lack of vegetation is due to flowing water during the rainy season. The area is usually dominated by sand, gravel, or rock and usually exhibits an ordinary-high water mark. Variable water lines inhibit the growth of vegetation; although, some grasses or other weedy species may grow along the outer edges of the channel.

This land cover type includes Temescal wash east and west of West Rincon Street in Phase 2. Some large willow trees have been established on the edges of the wash.

Restoration Areas

Areas mapped as restoration were either observed to be undergoing active habitat restoration activities or were areas that have been previously restored and are being monitored or have been completed. Two restoration areas occur within the Phase 2A Survey Area.

Ruderal Areas

Ruderal vegetation is not a MCVII classification. This land cover type is usually sparsely vegetated with pioneer plant species that readily colonize open disturbed soil. In the Burrowing Owl Survey Area these include non-native annual grasses, bromes, redstem filaree, and Maltese star-thistle. Ruderal patches occur in the Phase 2A Survey Area near Auto Center Drive.

5.0 Results

Based on the WRCMSHCP Burrowing Owl Survey Area and Survey Instructions and the existing conditions in the Survey Area, the entire Project area was assessed for habitat to support burrowing owl (Figure 2-1 to 2-4). On May 6, 2021, biologists from Stantec conducted the burrowing owl habitat assessment and the first focused burrow survey. The other three focused burrow surveys were conducted on June 30, August 12, and September 3, 2021.

Most of the Project area consists of unsuitable burrowing owl habitat that consists of dense riparian habitat and coastal sage scrub with an understory of non-native grasses (Figures 3-1 to 3-4).

The highest quality burrowing owl habitat was observed in disturbed non-vegetated areas in Phase 2A along Butterfield Drive just south of the Corona Airport (Figure 3-2). The mulefat thickets in the Phase 2A on along the north side of West Rincon Drive are partially disturbed and open and provide marginally suitable habitat for burrowing owl (Attachment A Figure 3-1). Marginally suitable non-native grasslands (Wild Oats and Annual Brome Grasslands) occur in Phases 2, 2A, and 3A (Attachment A Figures 3-1 to 3-4). Much of the non-native grassland habitat in the Project area consists of dense thatch that is not suitable for burrowing owl. Other potential burrowing owl habitat consists of restoration areas, ruderal habitat, and non-vegetated disturbed areas along the edge the dirt roads in Phases 2, 2A, and 3A (Attachment A Figures 3-1 to 3-4).

The four focused surveys were conducted in the Project area and the 150-meter-wide Burrowing Owl Survey Area in the suitable habitat described in the previous paragraph. The surveys were conducted in suitable conditions for burrowing owl. The temperature ranged from 60 to 81 degrees Fahrenheit (F) and it was a sunny day with clear skies and no clouds with a slight breeze during the first survey on May 6, 2021. On June 30, the temperature ranged from 68 to 85 degrees F; it was a sunny, clear day with no clouds and a slight breeze. On August 12, the temperature ranged from 86 to 95 degrees F; it was a sunny, clear day with no clouds; and windy at the start of the survey and calm by the end of the survey. On September 3, the temperature ranged from 66 to 79 degrees F; and it was a sunny, clear day with a slight breeze at the end of the survey.

Signs of ground squirrels were present, and individuals were observed, only within the eastern extent of the Project area/Survey Area; the sign/individuals were in the general vicinity of the Corona Municipal Airport. Three ground squirrel burrows were observed within a disturbed/developed area in the eastern portion of Phase 2A and mapped on Figure 3-2. The ground squirrel burrows ranged in size from 5 to 8 inches wide (Photograph 1).

No burrowing owl or sign of burrowing owl was observed.

Photograph 1. Ground squirrel burrows near Phase 2A

6.0 Conclusion

There are not any recent records of burrowing owl in the vicinity of the Survey Area and no burrowing owl or sign of burrowing owl was observed during these surveys. Based on the 2021 burrowing owl habitat assessment conducted for this Report, most of the Burrowing Owl Survey Area no longer contains suitable habitat for burrowing owl. However, pre-construction burrowing owl surveys are required by the WRCMSHCP in suitable burrowing owl habitat prior to construction. The surveys will need to be conducted no more than 30 days prior to ground disturbance.

Please contact us if you have any questions.

Respectfully,

Stantec Consulting Services Inc.

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Attachment: Attachment A Figures

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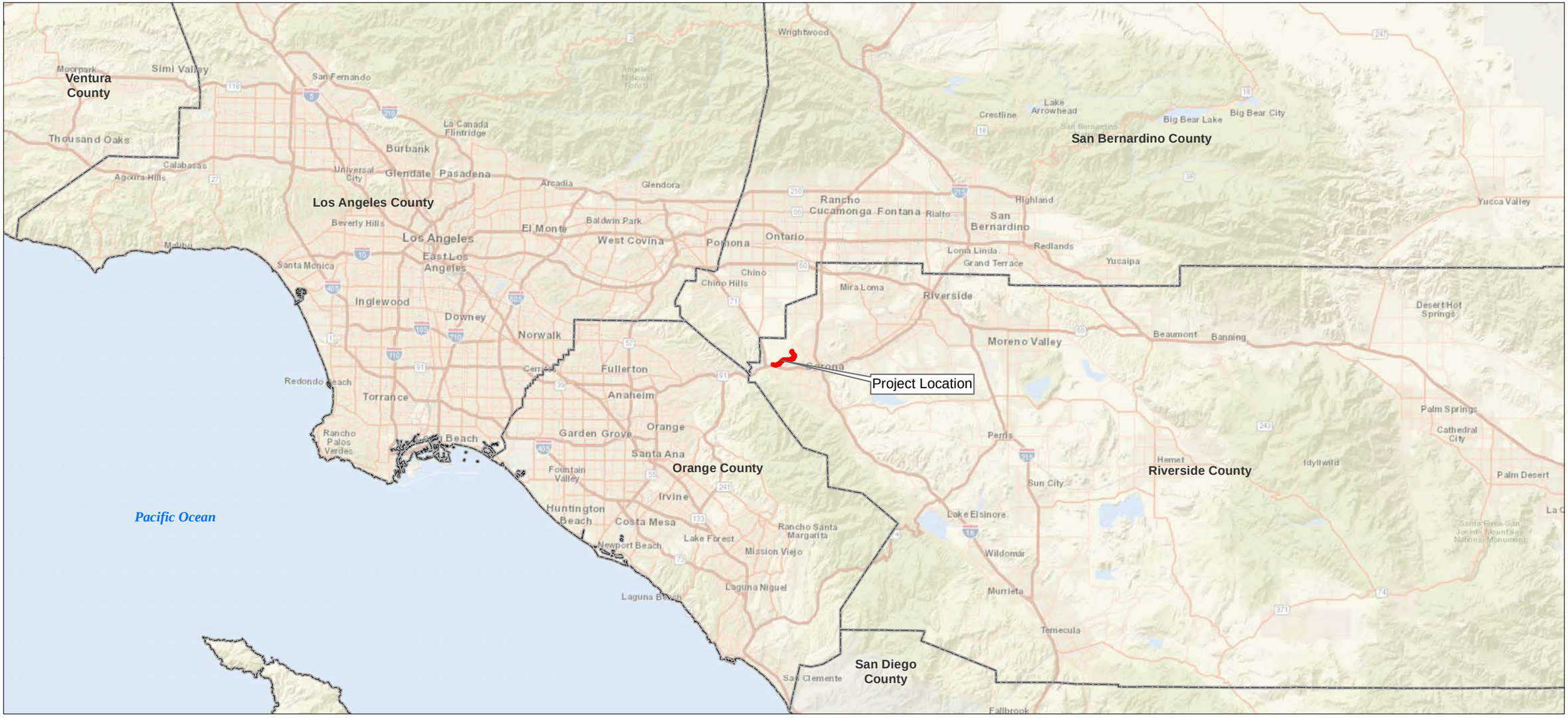
Attachment A Figures



Project Location

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Stantec

Project Location	Prepared by DL on 2022-01-04
Near Corona	TR by SET on 2022-01-04
Riverside County, California	IR by JV on 2022-01-04
Client/Project	2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.

1

Title

Regional Location

Notes

1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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- Laydown Yard: Temporary Impact
- Grading: Temporary Impact
- Grading: Permanent Impact
- Riprap: Permanent Impact
- Trail: Permanent Impact
- Ingress/Egress Location
- △ Phase 2A End Location / Phase 3A Start Location
- Railroad

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Stantec

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Client/Project	2042483140
Riverside County Regional Park & Open-Space District Santa Ana River Trail Project Burrowing Owl Habitat Assessment and Focused Surveys	
Figure No.	
2	
Title	
Site Plan	

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
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3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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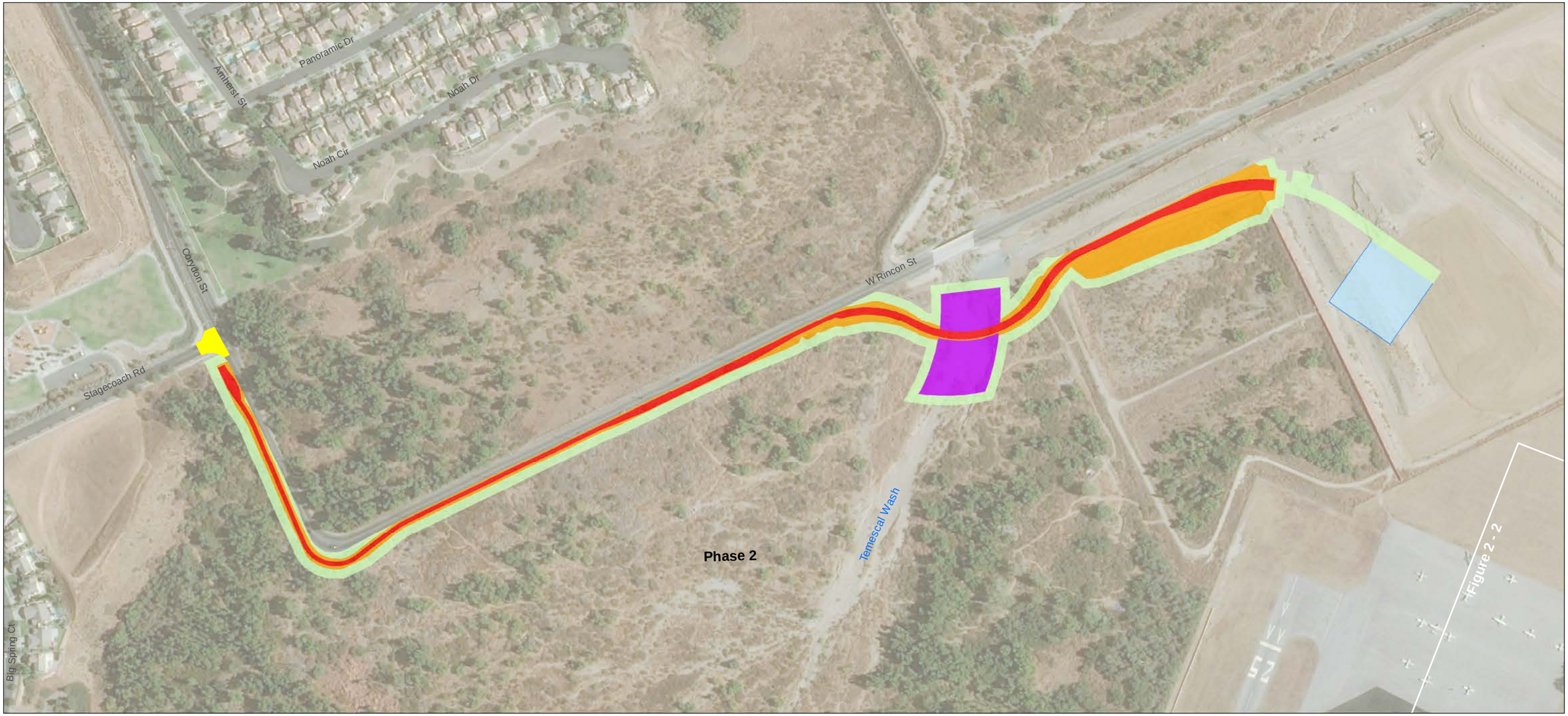

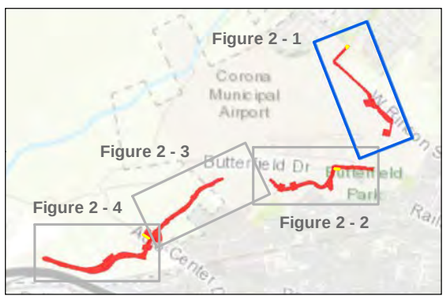

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- Trail: Permanent Impact
- Ingress/Egress Location

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Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 1

Title
Plan Sheet 1

Notes
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2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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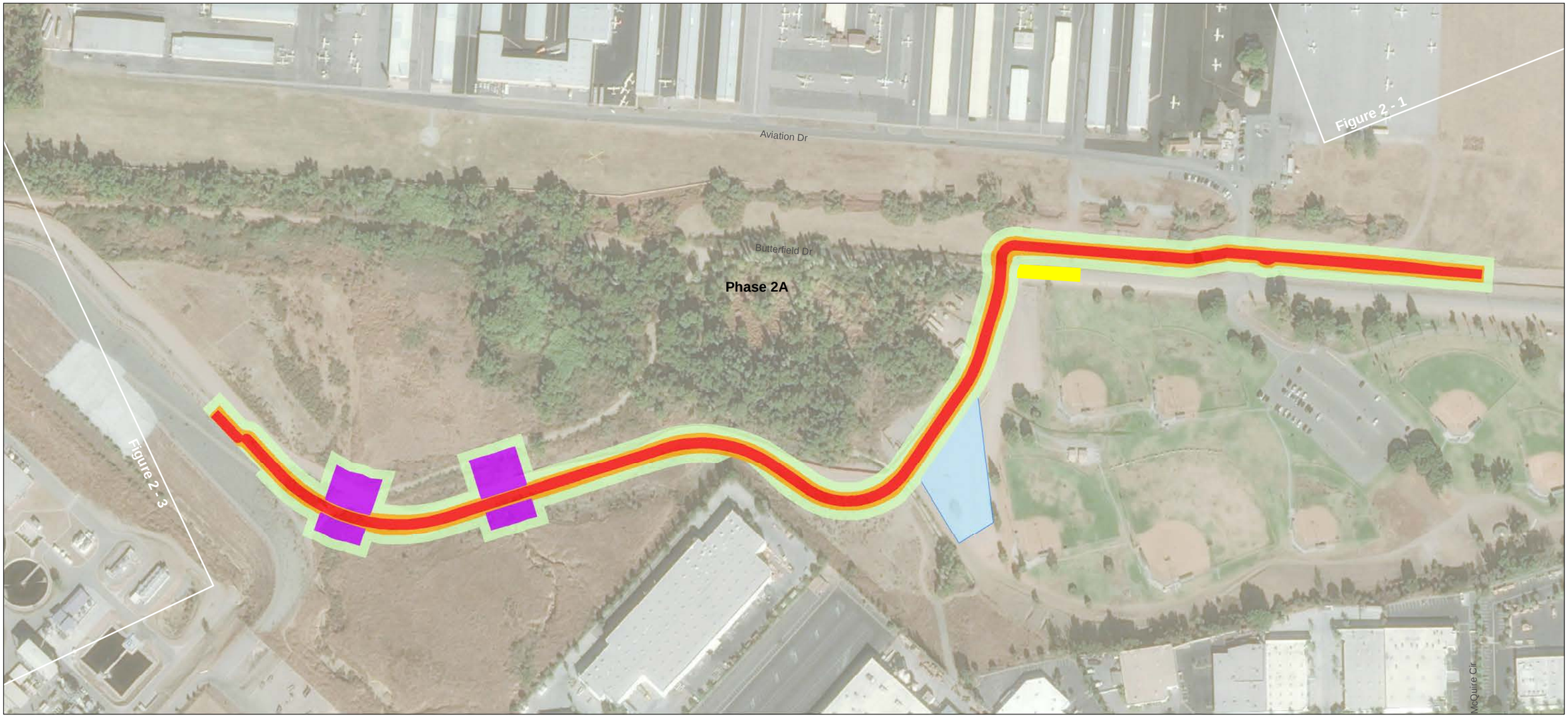

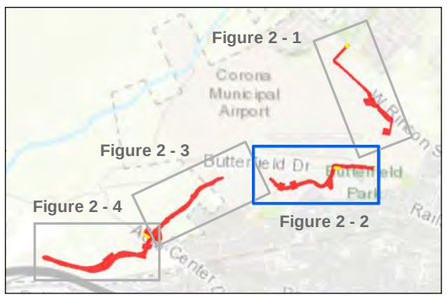

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- Trail: Permanent Impact
- Ingress/Egress Location

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Near Corona
Riverside County, California

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Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 2

Title
Plan Sheet 2

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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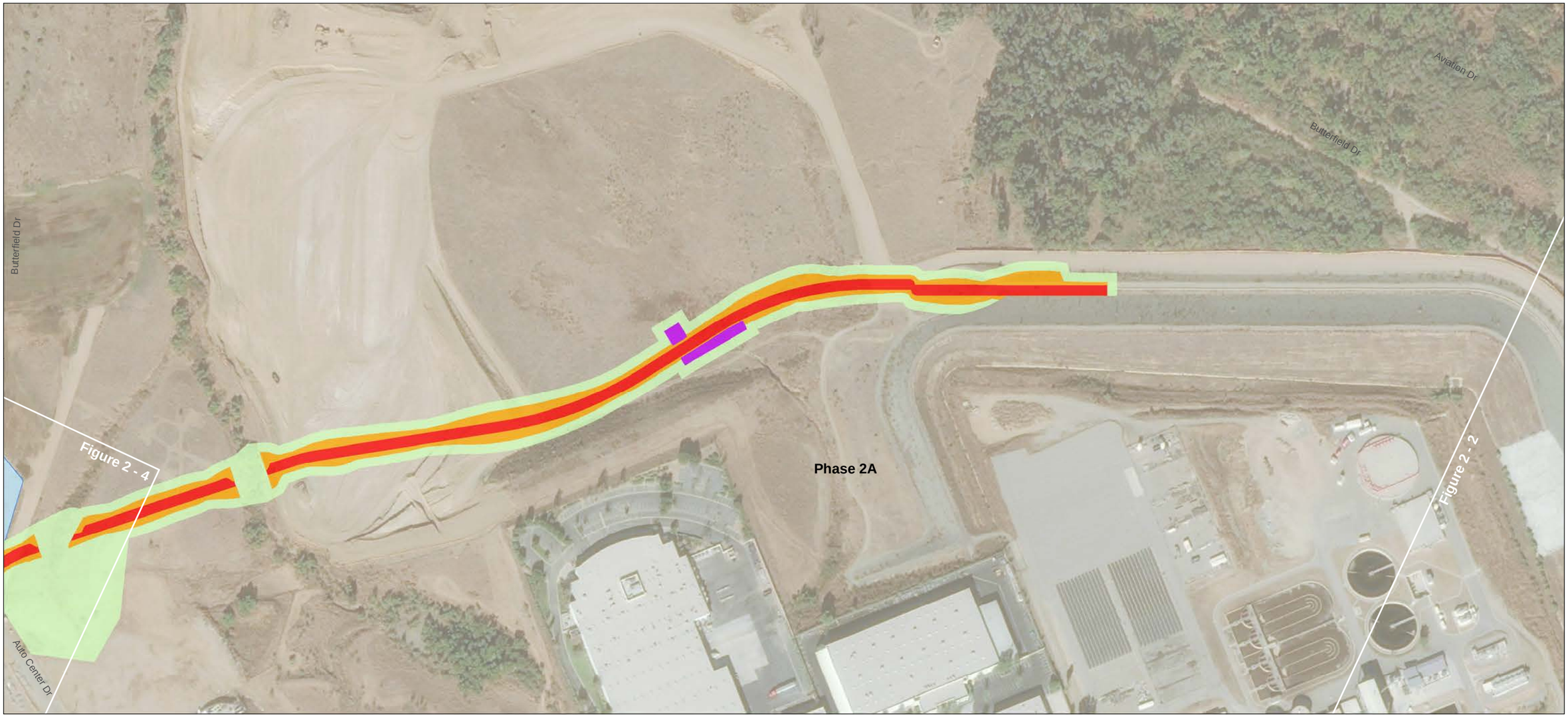

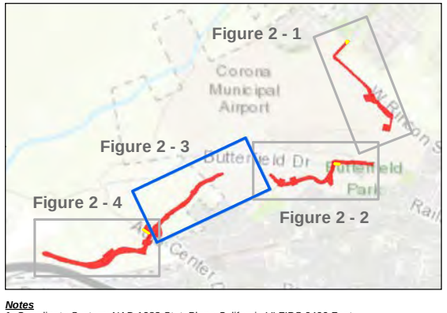

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Near Corona
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IR by JV on 2022-01-04

Client/Project 2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 3

Title
Plan Sheet 3

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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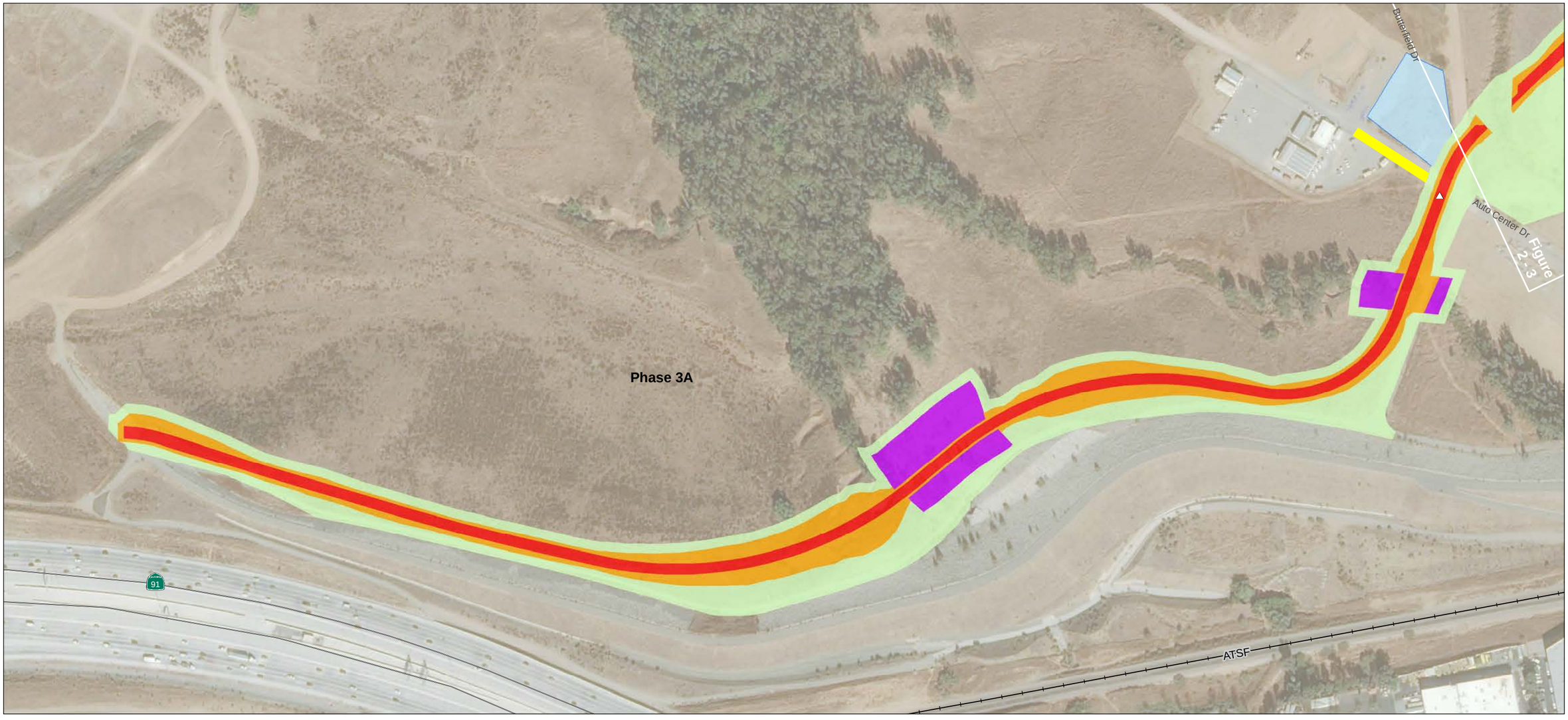

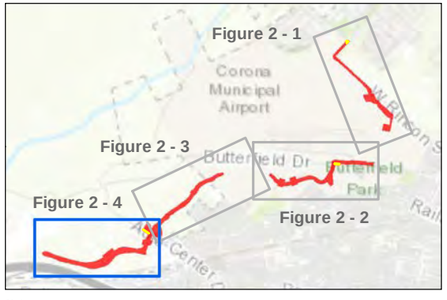

- Laydown Yard: Temporary Impact
- Grading: Temporary Impact
- Grading: Permanent Impact
- Riprap: Permanent Impact
- Trail: Permanent Impact
- Ingress/Egress Location
- △ Phase 2A End Location / Phase 3A Start Location
- Railroad

0 270 540 Feet

(At original document size of 11x17)
1:3,240

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project 2042483140
Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
2 - 4

Title
Plan Sheet 4

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Data Sources:Stantec 2021.
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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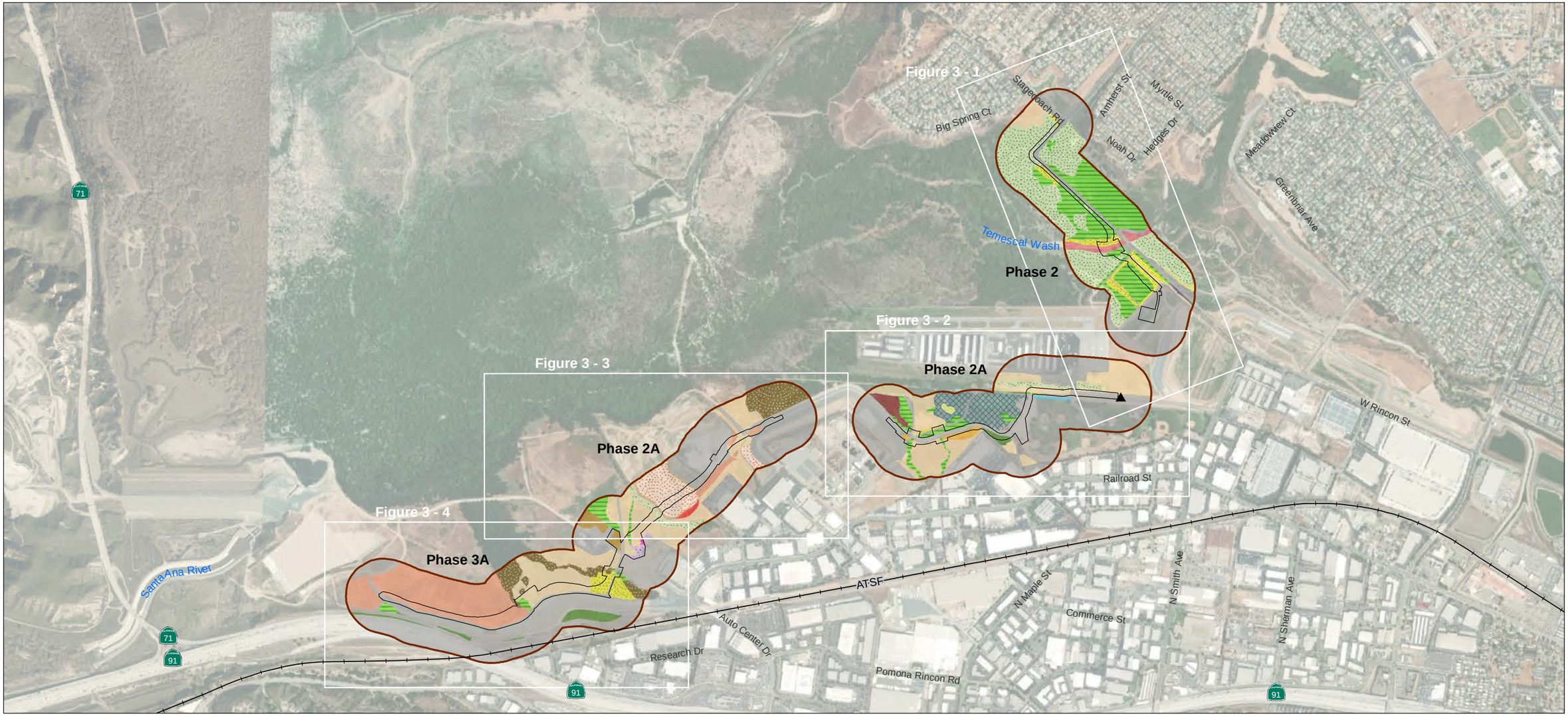

- Burrowing Owl Survey Area (150 Meter)
- Project Footprint
- ▲ Mammal burrow

Vegetation Communities and Land Cover Types

- Arroyo willow thickets
- California buckwheat scrub
- California sagebrush scrub
- Cheeseweed flats
- Coyote brush scrub
- Disturbed/Developed
- Eucalyptus groves
- Giant reed stands
- Menzie's goldenbush scrub
- Mulefat thickets
- Non-vegetated channel
- Partially vegetated channel
- Perennial pepperweed patches
- Poison hemlock or fennel patches
- Restoration
- Ruderal
- Shining willow groves
- Tamarisk thickets
- Upland mustards or star-thistle fields
- Wild oats and annual brome grasslands

0 1,500 3,000 Feet

(At original document size of 11x17)
1:18,000

N

Stantec

Project Location
Near Corona
Riverside County, California

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Client/Project 2042483140

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Figure No.
3 - 0

Title
Biological Resources

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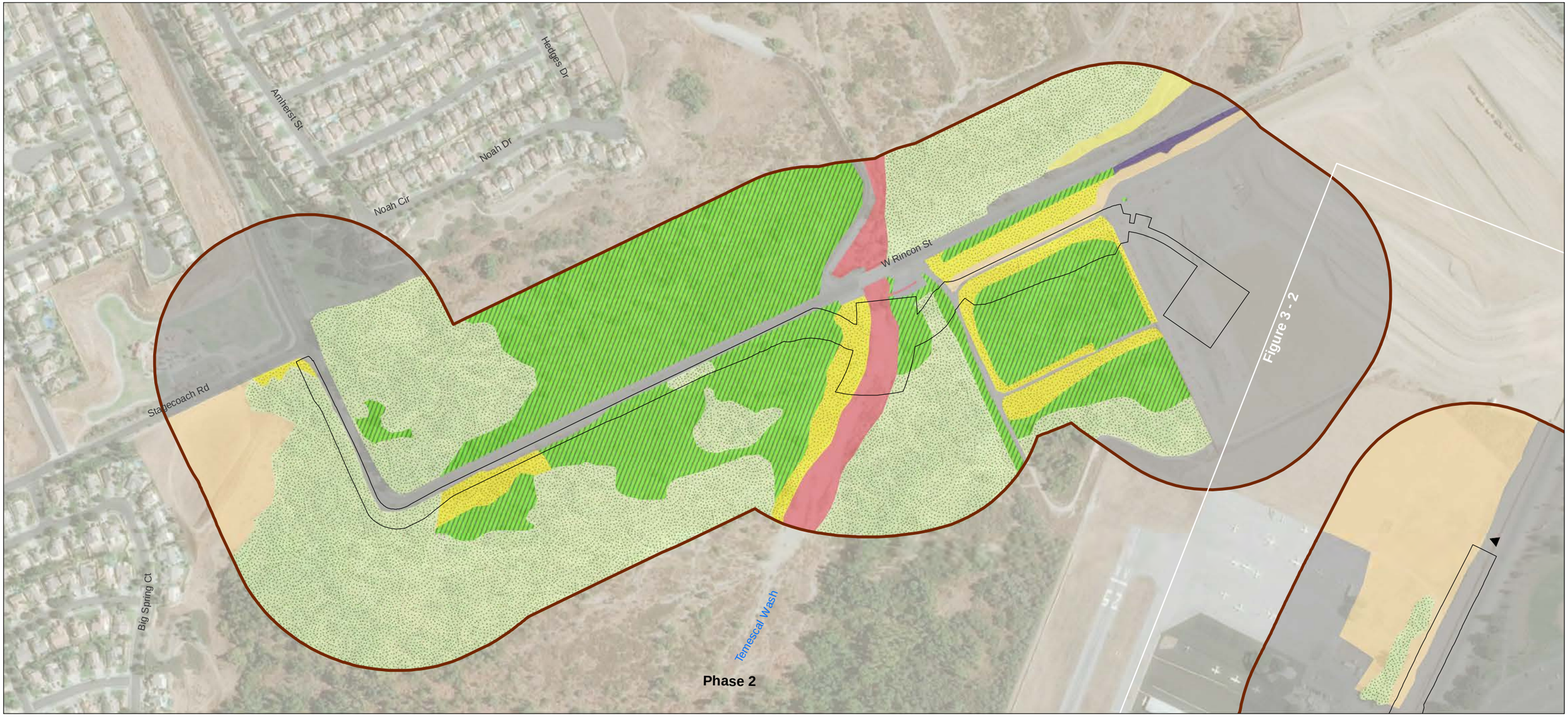

- Burrowing Owl Survey Area (150 Meter)
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- Wild oats and annual brome grasslands

0 350 700 Feet

(At original document size of 11x17)
1:4,200

N

Stantec

Project Location
Near Corona
Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 1

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Biological Resources

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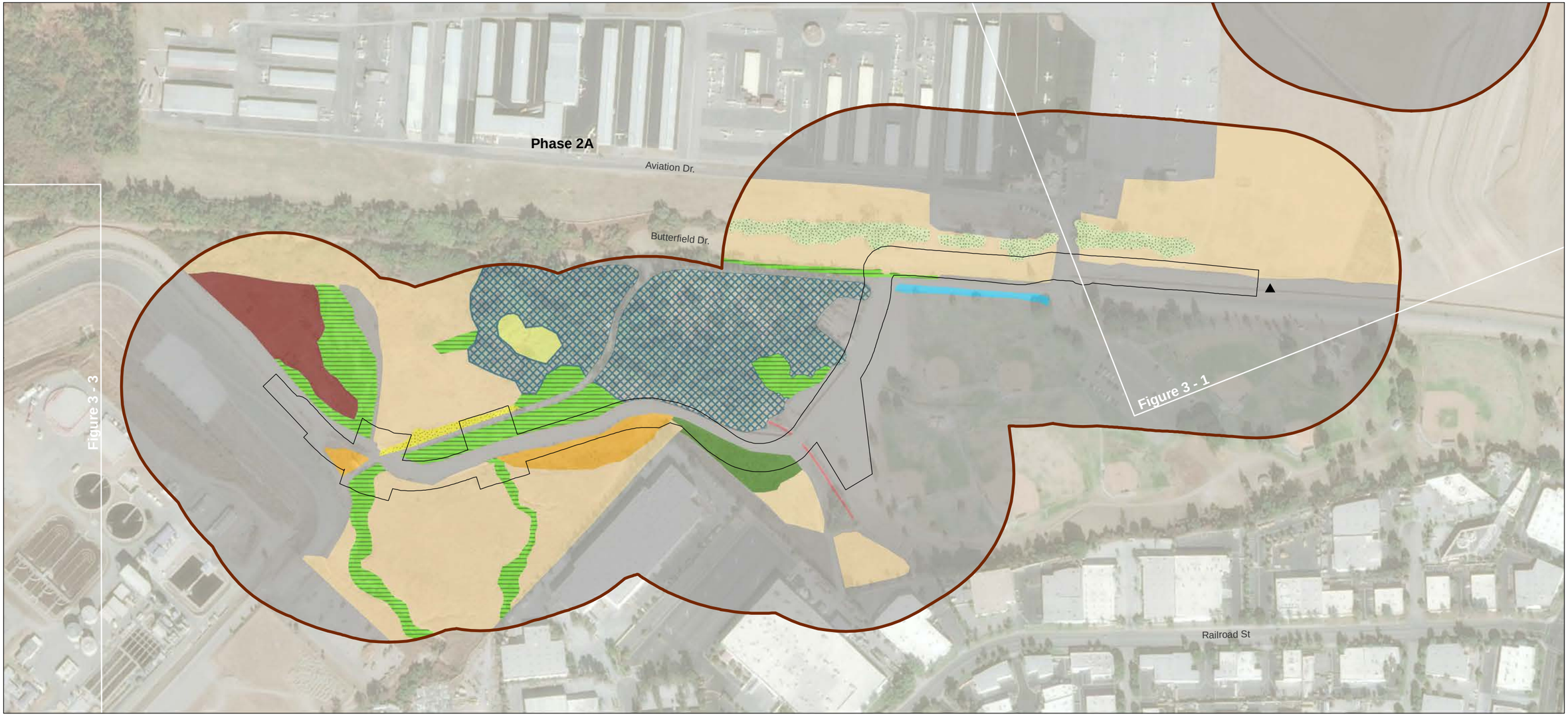

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IR by JV on 2022-01-04

Client/Project
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Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 2

Title
Biological Resources

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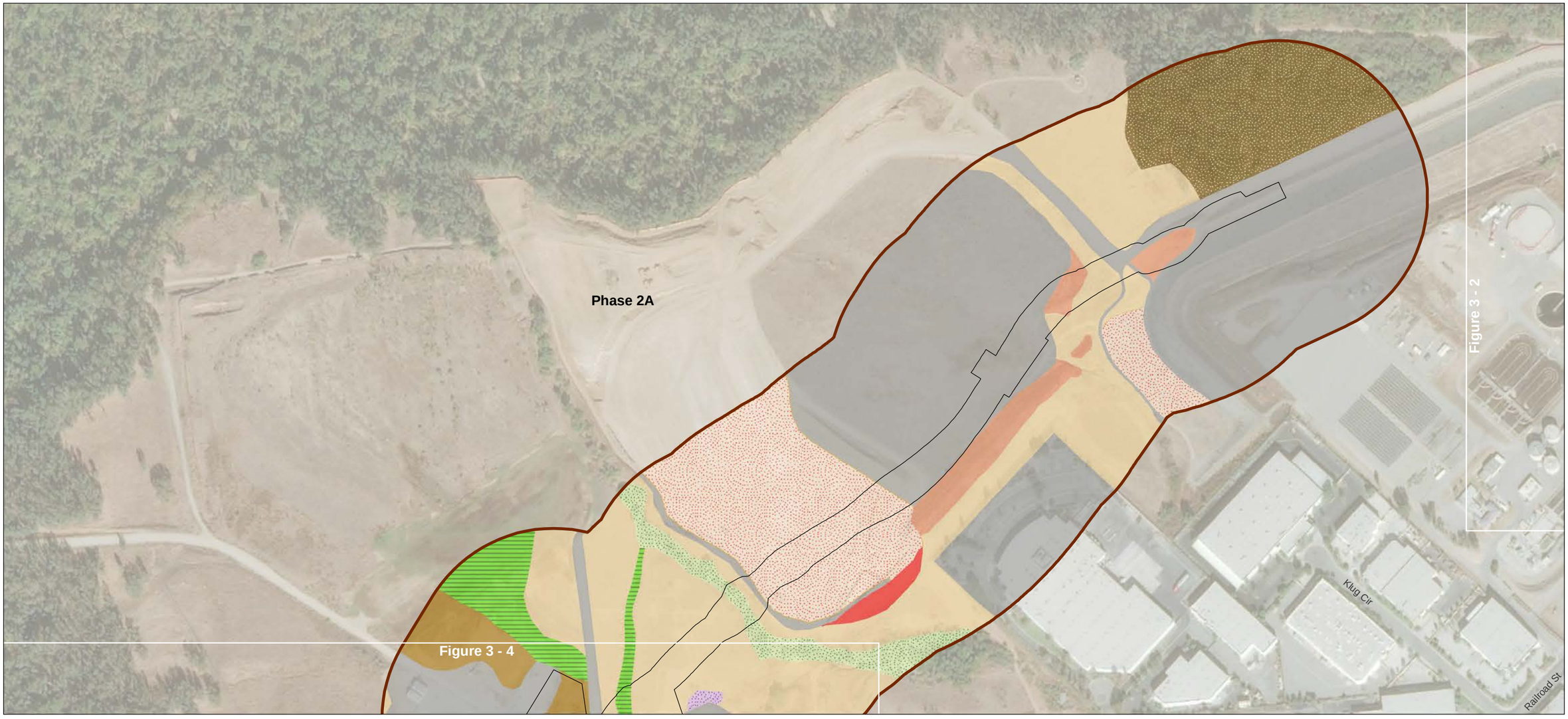

- Burrowing Owl Survey Area (150 Meter)
- Project Footprint

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- Ruderal
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0 350 700 Feet

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1:4,200

N

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Stantec

Project Location
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Riverside County, California

Prepared by DL on 2022-01-04
TR by SET on 2022-01-04
IR by JV on 2022-01-04

Client/Project
2042483140

Riverside County Regional Park & Open-Space District
Santa Ana River Trail Project
Burrowing Owl Habitat Assessment and Focused Surveys

Figure No.
3 - 3

Title
Biological Resources

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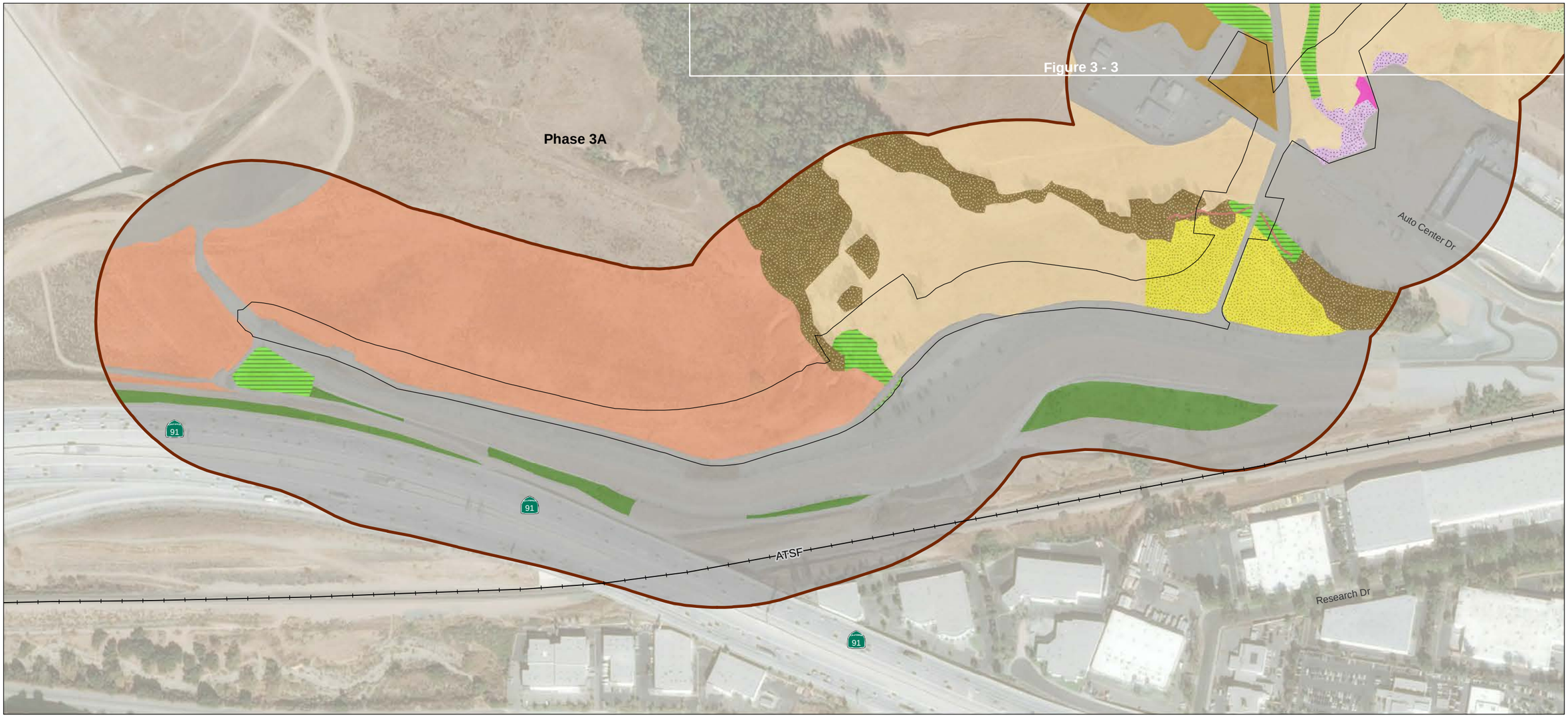
Figure 3 - 3



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- Project Footprint
- Railroad

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Santa Ana River Trail Project
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Figure No.
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APPENDIX F
Final Paleontological Resources Assessment

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Final Paleontological Resource Assessment for the Santa Ana River Trail Phases 2, 2A, and 3A Project, Riverside County, California

June 1, 2022

Prepared for:

Riverside County Regional Park &
Open-Space District
4600 Crestmore Road
Riverside, California 92509

Prepared by:

Alyssa Bell, Ph.D.
Senior Paleontologist

Stantec Consulting Services, Inc.
801 S. Figueroa Street
Suite 300
Los Angeles, California 90017

Revision	Description	Author		Quality Check		Independent Review	
Jan 18, 2022	Addressed comments from Riverside County	A. Bell	1/18	G. Ruiz	1/18		
March 16, 2022	Revised project area	A. Bell	3/16	G. Ruiz	3/16		
May 27, 2022	Revised project description	A. Bell	5/27	G. Ruiz	6/1		

This document entitled Final Paleontological Resource Assessment for the Santa Ana River Trail Phases 2, 2A, and 3A Project, Riverside County, California was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Riverside County Regional Park & Open-Space District (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by  _____
(signature)
Alyssa Bell, Ph.D.; Senior Paleontologist


Reviewed by _____
(signature)
Cara Corsetti, M.S.; Senior Principal


Approved by _____
(signature)
Gilberto Ruiz, Principal Environmental Planner

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted a paleontological resources assessment on behalf of the Riverside County Regional Park & Open-Space District (the District) for the Santa Ana River Trail Phases 2, 2A, and 3A Project (the Project) adjacent to the Prado Dam in unincorporated Riverside County, California. This paleontological study was conducted in support of the District as the Lead Agency (for the purposes of California Environmental Quality Act [CEQA] compliance) for the Project, which includes proposed trail improvements on a 2.79-mile dual-track Class I and Class II multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin.

The proposed Project is subject to compliance with CEQA and National Environmental Policy Act (NEPA) requirements regarding the Project's potential impacts on paleontological resources. As part of CEQA and NEPA compliance, a paleontological resources assessment was conducted to determine potential impacts of the proposed Project on paleontological resources.

This paleontological resource investigation consisted of a museum records search from the Natural History Museum of Los Angeles County Project Area and vicinity, as well as a review of the most recent geologic mapping and relevant scientific literature. This research was used to assign paleontological potential rankings of the Society of Vertebrate Paleontology (2010) to the geologic units present in the Project Area, either at the surface or in the subsurface. The results of this assessment indicate that three geologic units are present in the project area: young axial channel deposits, which are assessed as having low to high paleontological potential, increasing in depth; old alluvial fan deposits, which are assessed as having high paleontological potential; and very old alluvial fan deposits, which are assessed as having high paleontological potential. Damage or destruction to paleontological resources that may be present in these high potential units would constitute an adverse impact under CEQA and NEPA. Therefore, in order to avoid adverse impacts to paleontological resources in fulfillment of CEQA and NEPA obligations, Stantec recommends a qualified paleontologist meeting professional standards as defined by Murphey et al. (2019) be retained to oversee all aspects of paleontological mitigation. Paleontological mitigation to reduce potential impacts to paleontological resources to a less-than-significant level should consist of the following activities for this Project:

- The qualified paleontologist should develop and oversee the implementation of a Paleontological Monitoring and Mitigation Plan tailored to the Project plans that provides for paleontological monitoring of earthwork and ground disturbing activities into undisturbed geologic units with high paleontological potential, whether at the surface or in the subsurface, to be conducted by a paleontological monitor meeting industry standards (Murphey et al. 2019).
- The qualified paleontologist should develop a Worker’s Environmental Awareness Program training that communicates requirements and procedures for the inadvertent discovery of paleontological resources during construction, to be delivered by the paleontological monitor to the construction crew prior to the onset of ground disturbance.

- In the event that paleontological resources are encountered during construction activities, all work must stop in the immediate vicinity of the finds while the paleontological monitor documents the find. The designated qualified paleontologist shall assess the find. Should the qualified paleontologist assess the find as significant, the find shall be collected and curated in an accredited repository along with all necessary associated data and curation fees.
- A qualified paleontologist should develop a stand-alone paleontological resources awareness training for the District. This training will include information on the types of paleontological resources that may be encountered in the area, an overview of the area's geologic and paleontological history, and instructions on steps to follow should park personnel or members of the public using the SART report the discovery of a paleontological resource. The District should ensure this training is delivered to personnel responsible for operations and maintenance activities on the SART.

Based on the findings in this study and the implementation of the above mitigation recommendations, the proposed Project should not cause an adverse impact to paleontological resources. Therefore, no additional paleontological resource studies are recommended or required at this time. Changes to the Project plans or location from what has been assessed in this study will require additional assessment for impacts to paleontological resources.

Abbreviations

bgs	Below ground surface
CEQA	California Environmental Quality Act
District, Lead Agency	Riverside County Regional Park & Open-Space District
LACM	Natural History Museum of Los Angeles County
NEPA	National Environmental Policy Act
PRPA	Paleontological Resources Preservation Act
SART	Santa Ana River Trail
SOP	Standard Operating Procedures
SR	State Route
SVP	Society of Vertebrate Paleontology
USACE	United States Army Corps of Engineers

Glossary

Paleontological Monitor	An individual who has demonstrated experience in the collection and salvage of fossil materials. An undergraduate degree in geology or paleontology is preferable but is less important than documented experience performing paleontological monitoring and mitigation.
Paleontological Monitoring	Full-time observation of construction activities in high potential geologic units by a paleontological monitor, under supervision of the project paleontologist.
Paleontological Resource	Any evidence of ancient life. This includes the remains of the body of an organism, such as bones, skin impressions, shell, or leaves, as well as traces of an organism's activity, such as footprints or burrows, called trace fossils, and relevant associated geologic data. Also referred to as fossils.
Qualified Paleontologist	An individual with a graduate degree in paleontology, geology, or related field, with demonstrated experience in the vertebrate, invertebrate, or botanical paleontology of California or related topical or geographic areas; at least one year full time professional experience, or equivalent specialized training in paleontological research (i.e., the identification of fossil deposits, application of paleontological field and laboratory procedures and techniques, and curation of fossil specimens), administration, or management; at least four months of supervised field and analytic experience in general North American paleontology; and demonstrated ability to carry research to completion.

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted a paleontological resources assessment on behalf of the Riverside County Regional Park & Open-Space District (the District) for the Santa Ana River Trail Phases 2, 2A, and 3A Project (the Project) adjacent to the Prado Dam in unincorporated Riverside County, California. This paleontological study was conducted in support of the District as the Lead Agency for the Project, which includes proposed trail improvements on a 2.79-mile dual-track Class I and Class II multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin.

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1.1 PROJECT INFORMATION

1.1.1 Project Location

The Santa Ana River Trail (proposed Project; SART Phases 2, 2A, and 3A) is located within the Prado Dam Flood Control Basin1 area of the Santa Ana River in unincorporated Riverside County. The Prado Dam Flood Control Basin area is located within Riverside County, approximately 26 miles east of the Pacific Ocean and 35 miles southeast of downtown Los Angeles (Figure 1). The Project site is located within the northwestern portion of Riverside County at the juncture of the administrative boundaries of Riverside, San Bernardino, and Orange counties and south and southeast of the City of Corona's jurisdictional boundaries.

The east and west improvement limits of the proposed Project extend from approximately Rincon Street to the east to Auto Center Drive to the west and are shown in Figure 2: Project Location Aerial Photo Map. As shown in Figure 2, the proposed Project intersects with the following roadways, including Rincon Street, Butterfield Drive, and Auto Center Drive. The Project limits are the Prado Dam Flood Control Basin area to the north, State Route (SR) 91 to the south, Rincon Street to the east, and SR-71 to the west. Access to the Project site is via regional freeways (SR-91 and SR-71) and local roads (Rincon Street, Butterfield Drive, Auto Center Drive, and Corydon Street).

Introduction

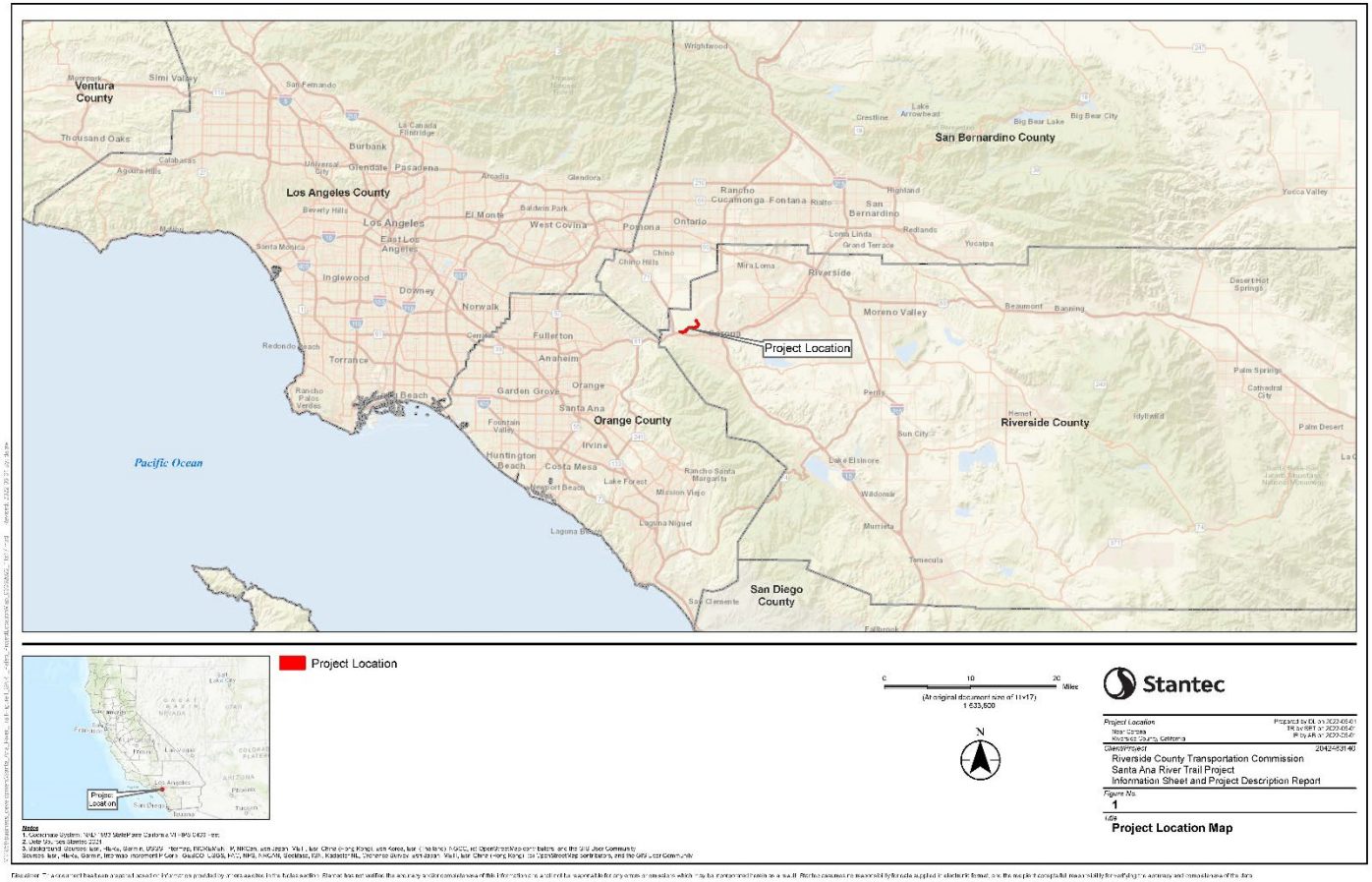

Figure 1. Project location map.

Introduction

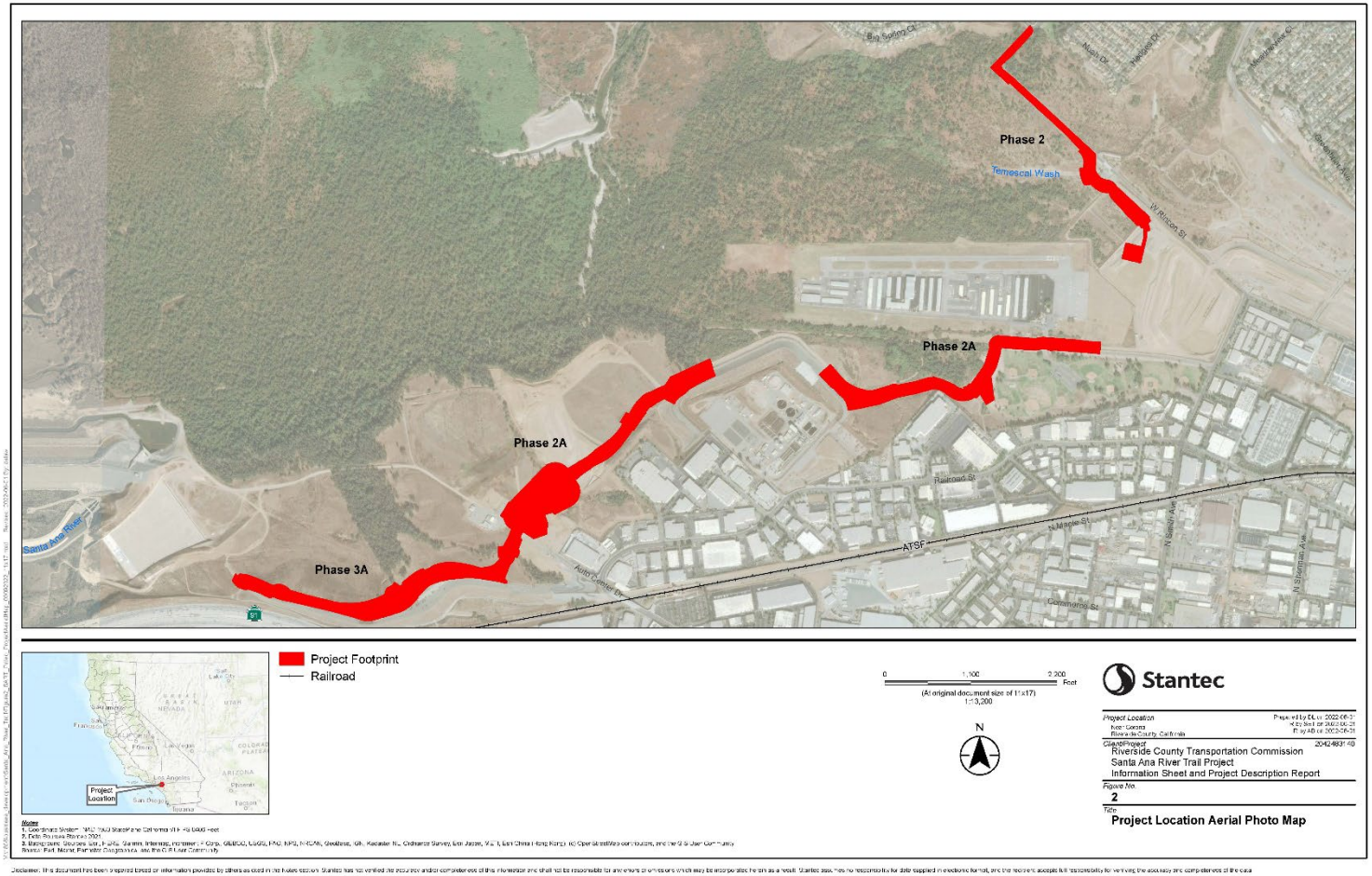

Figure 2. Project location aerial photo map

1.1.2 Project Description

The proposed Project consists of trail improvements that would complete a portion of the larger 110-mile regional SART system. Specifically, the Project includes a 2.79-mile dual-track Class I multi-use path/natural surface trail that would be constructed within the Prado Dam Flood Control Basin. It would entail construction of three (3) new trail segments (Phases 2, 2A, and 3A). These trail segments include the following lengths and are shown in Figure 3 (Site Plan), 3-1 (Plan Sheet 1), 3-2 (Plan Sheet 2), 3-3 (Plan Sheet 3), and 3-4 (Plan Sheet 4):

- **Phase 2**: 3,450 feet
- **Phase 2A**: 7,231 feet
- **Phase 3A**: 4,046 feet

Currently, only portions of the trail have been completed or are being constructed. Once constructed, the trail would be Americans with Disabilities Act (ADA) compliant and follow the California Department of Transportation (Caltrans) Highway Design Manual guidance for bicycle paths.

The following construction items are proposed in the Project:

- Class I bicycle path with pedestrian and equestrian path separated by a split rail fence with a general design, as follows:
    - Eight-to-ten-foot bicycle path travel way with two-foot shoulders
    - Five percent max slope
    - Two percent max crossfall path and shoulder slopes
    - Minimum 2 to 1 foot slope ratio for cut / fill slopes
- Signage and striping along the trail
- Implementation of drainage improvements
- Application of native hydroseed mix along slope areas of the new trail phases

At constrained locations such as bridge crossings, the Class I multi-use path and natural surface trail would merge into a combined paved trail and be shared by all users. The combined paved trail would accommodate bicyclists, equestrians, hikers, and pedestrians and would be approximately 11 feet wide on the bridges and at the Temescal Wash crossing be 20 feet wide. A combined paved trail will also be required for a portion of the trail along West Rincon Street and Corydon Street within Phase 2 due to right-of-way constraints and existing Southern California Edison (SCE) overhead powerlines.

Figure 3 shows the proposed trail alignment and preliminary slope, embankment, drainage/wash crossing locations, construction vehicle access points and roads, and potential construction and staging/laydown areas.

Introduction

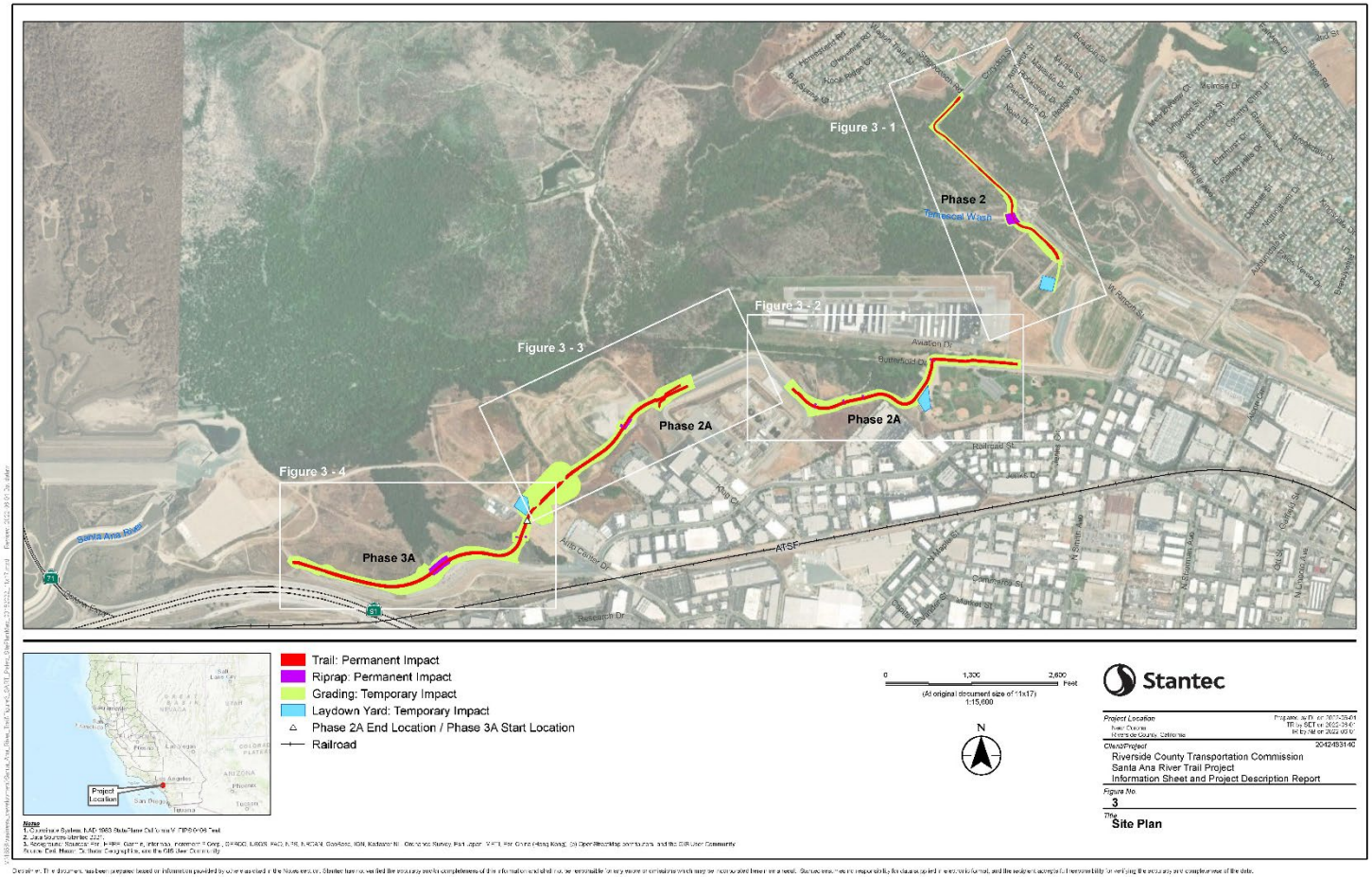

Figure 3. Site plan.

Introduction

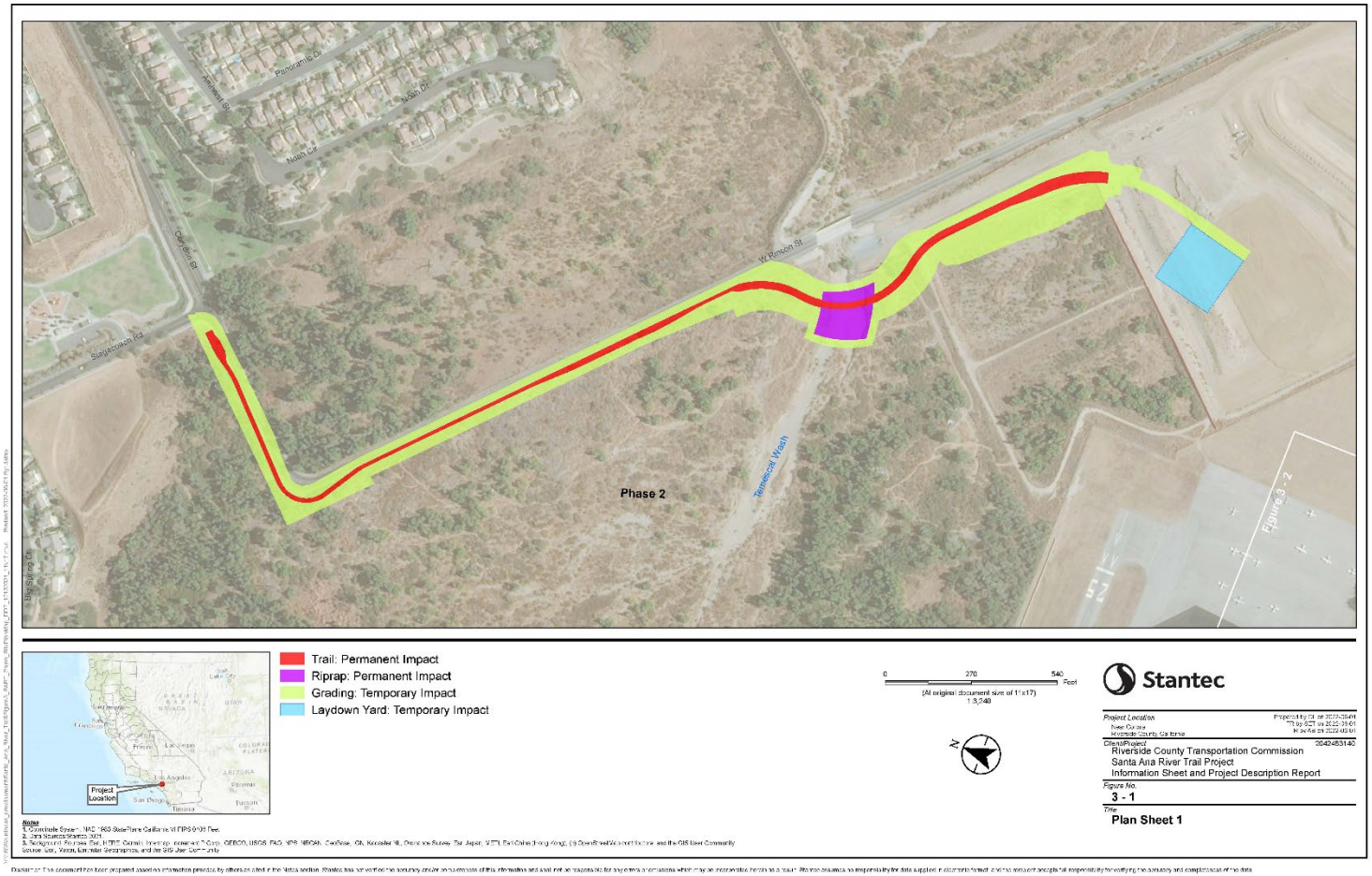

Figure 3-1. Plan Sheet 1

Introduction

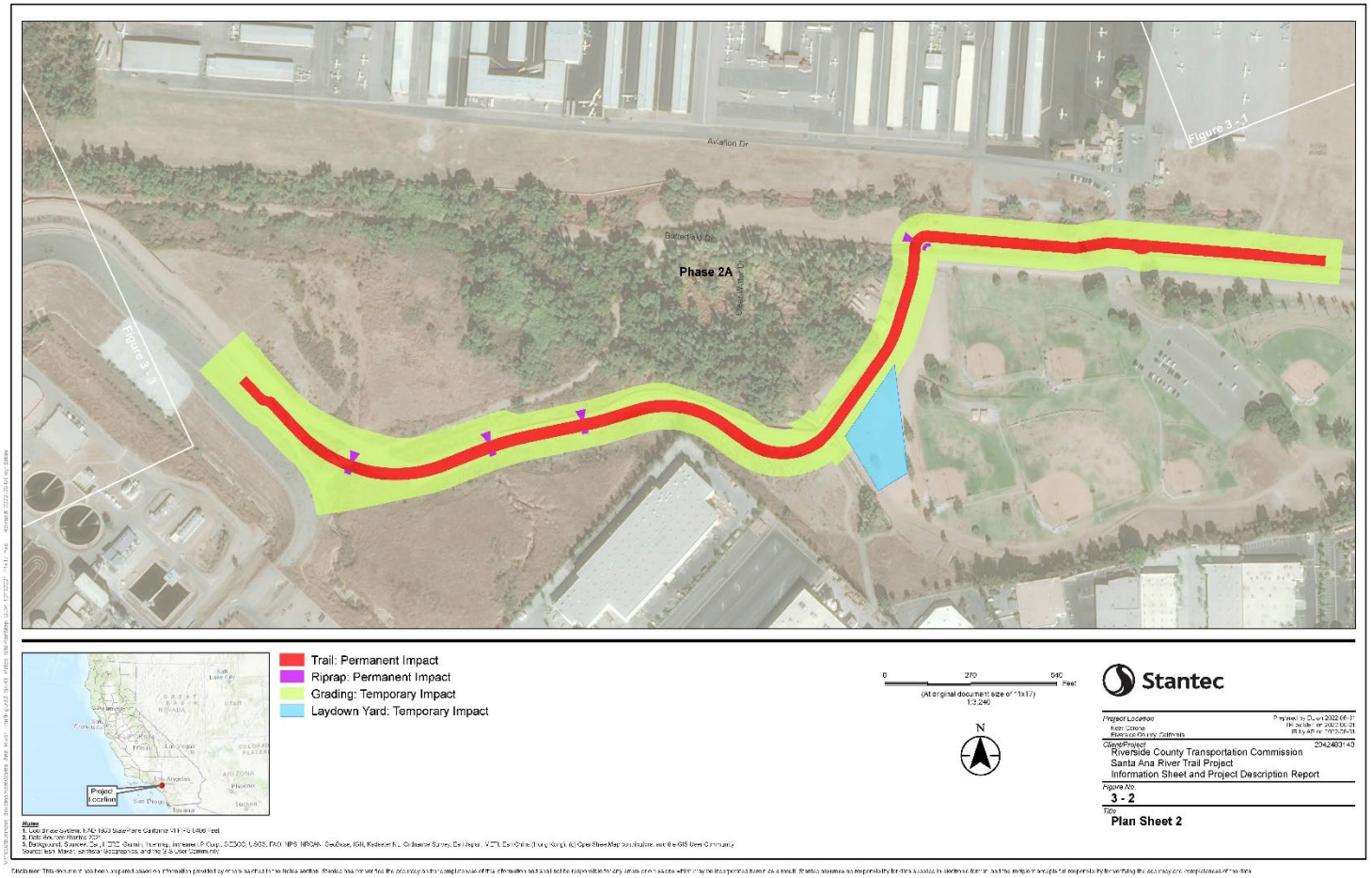

Figure 3-2. Plan Sheet 2

Introduction

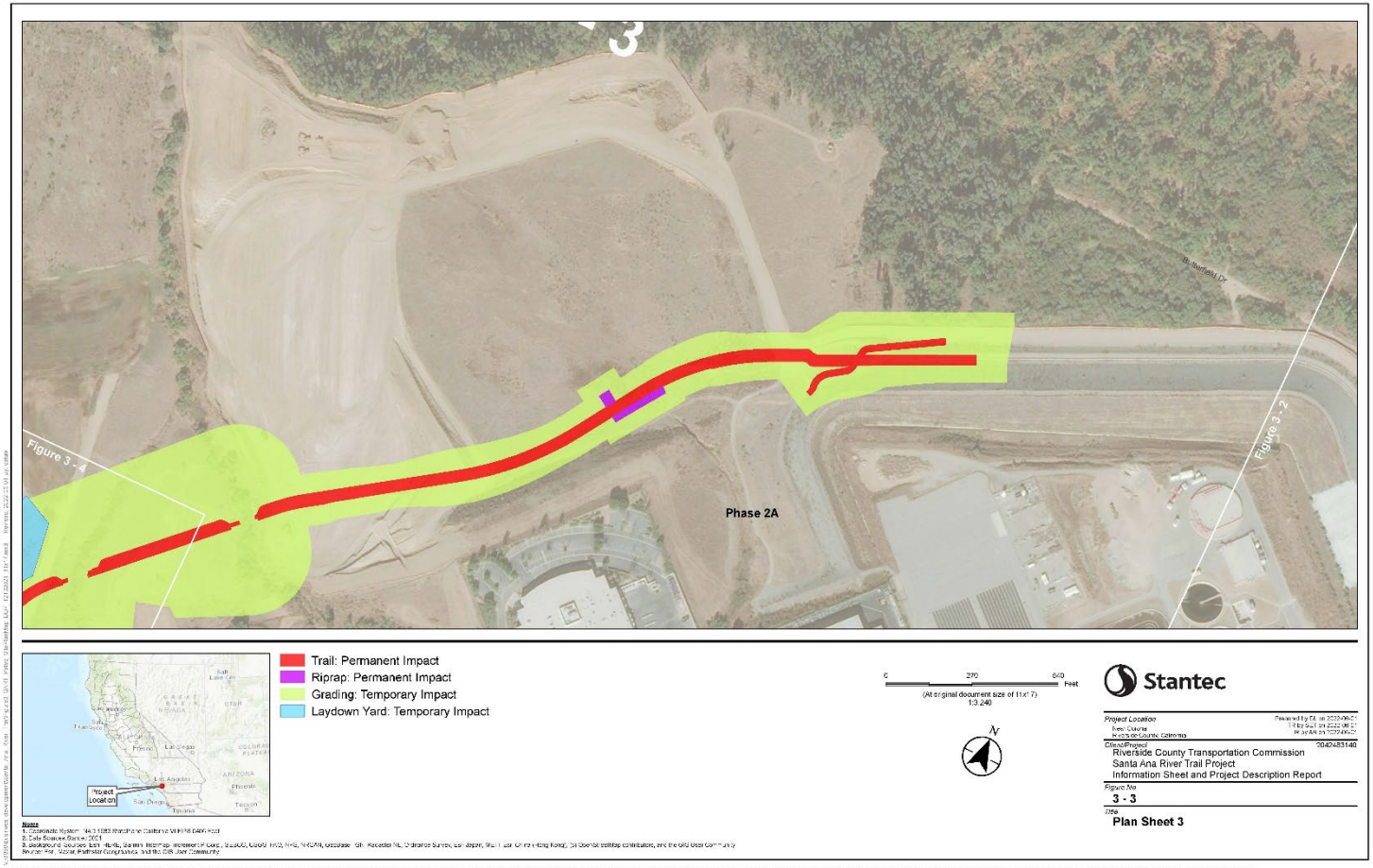

Figure 3-3. Plan Sheet 3

Introduction

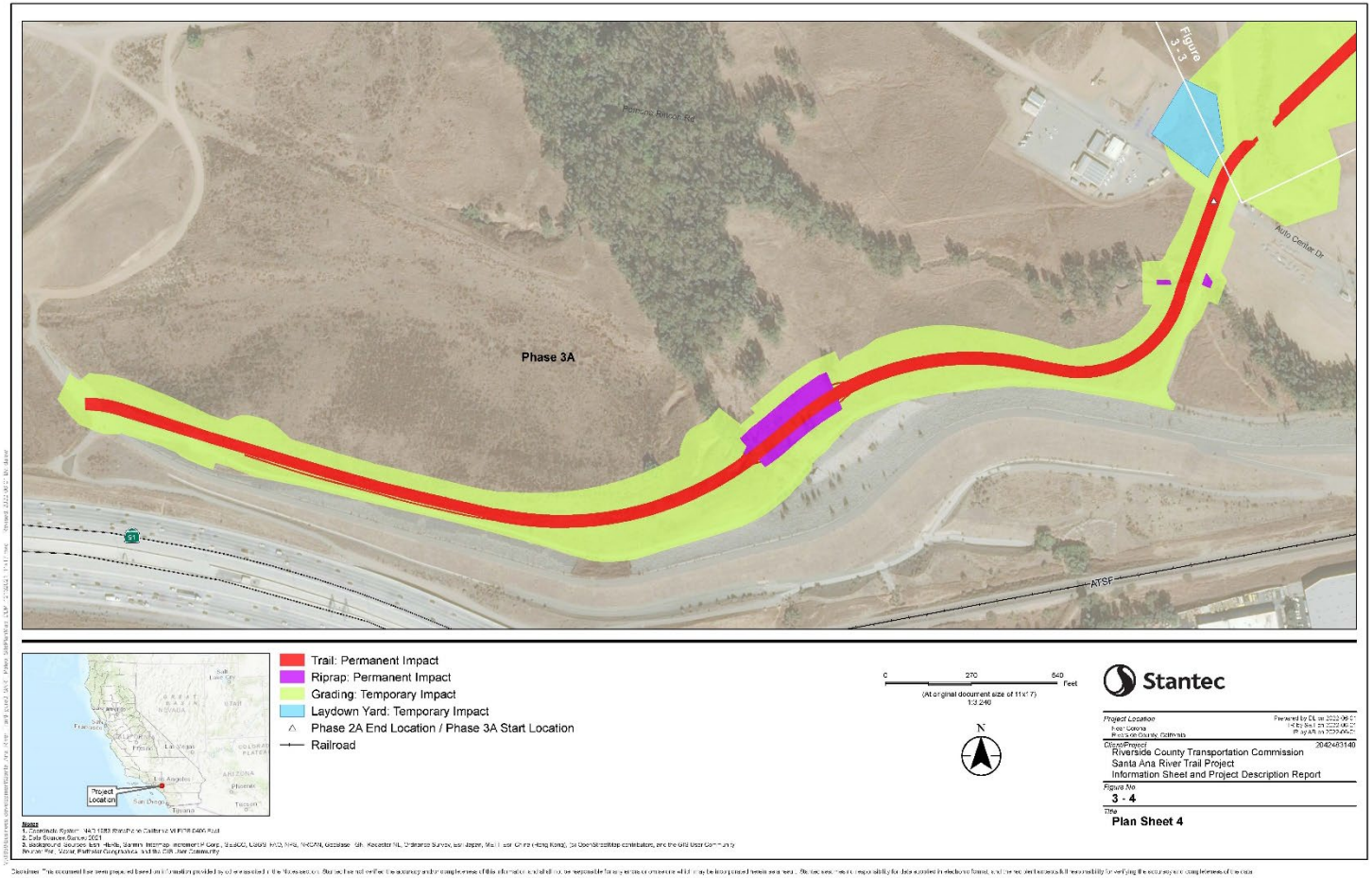

Figure 3-4. Plan Sheet 4

Drainage Crossings/Bridge Types

Figure 3 shows the location of the proposed drainage crossings along the trail phases. In Phase 2, a box culvert extending approximately 50 feet across Temescal Wash is proposed. Clear-span bridges ranging in length from about 100-feet to 180-feet would be used to cross two un-named drainages located in Phase 2A.[1] Figure 4 shows the typical trail and bridge sections. To protect the trail as it crosses drainages, riprap[2] would be installed in various locations along the alignment.

Trail Access

Trail access to each of the Phases would be achieved as follows:

- Phase 2: Stagecoach Road/Corydon Street (Stagecoach Park area) and Rincon Street/Smith Avenue (Corona Airport area)
- Phase 2A: Auto Center Drive (western portion of trail) and Butterfield Drive (eastern portion of trail)
- Phase 3A: Auto Center Drive/Railroad Street (USACE office)

1.1.3 CONSTRUCTION

The construction phasing and activities are expected to take 12 months to complete for each individual trail phase. Each trail phase will include site preparation, clear and grub, grading, drainage improvements, and construction of an asphalt-concrete (AC) bicycle trail and DG pedestrian trail. Two prefabricated bridges are proposed within Phase 2A to avoid impacts to existing natural drainages. Low flow crossings with culverts are proposed within Phases 2, 2A, and 3A. A box culvert crossing is proposed in Phase 2 for the Temescal Wash crossing. At grade dip crossings without culverts are also proposed within Phases 2 and 2A.

Although preliminary engineering is still underway, current earthwork calculations are presented in Table 1: Preliminary Grading Quantities. As noted below, a total of approximately 65,139 cubic yards of cut would result and a total of approximately 35,074 cubic yards of fill would occur, resulting in a total of approximately 30,070 cubic yards of remaining soil that would be exported off site to a landfill or other permitted location. Therefore, assuming a typical tandem-axle dump truck with an average payload capacity of 14 cubic yards, export would be expected to generate approximately 2,148 truck trips to remove the remaining 30,070 cubic yards of soil.

[1] Note: The actual lengths of the bridges will be determined based upon a detailed bridge type analysis and selected accordingly.
[2] Note: Riprap is a permanent layer of large, angular stone, cobbles, or boulders typically used to armor, stabilize, and protect the soil surface against erosion and scour in areas of concentrated flow or wave energy.

Introduction

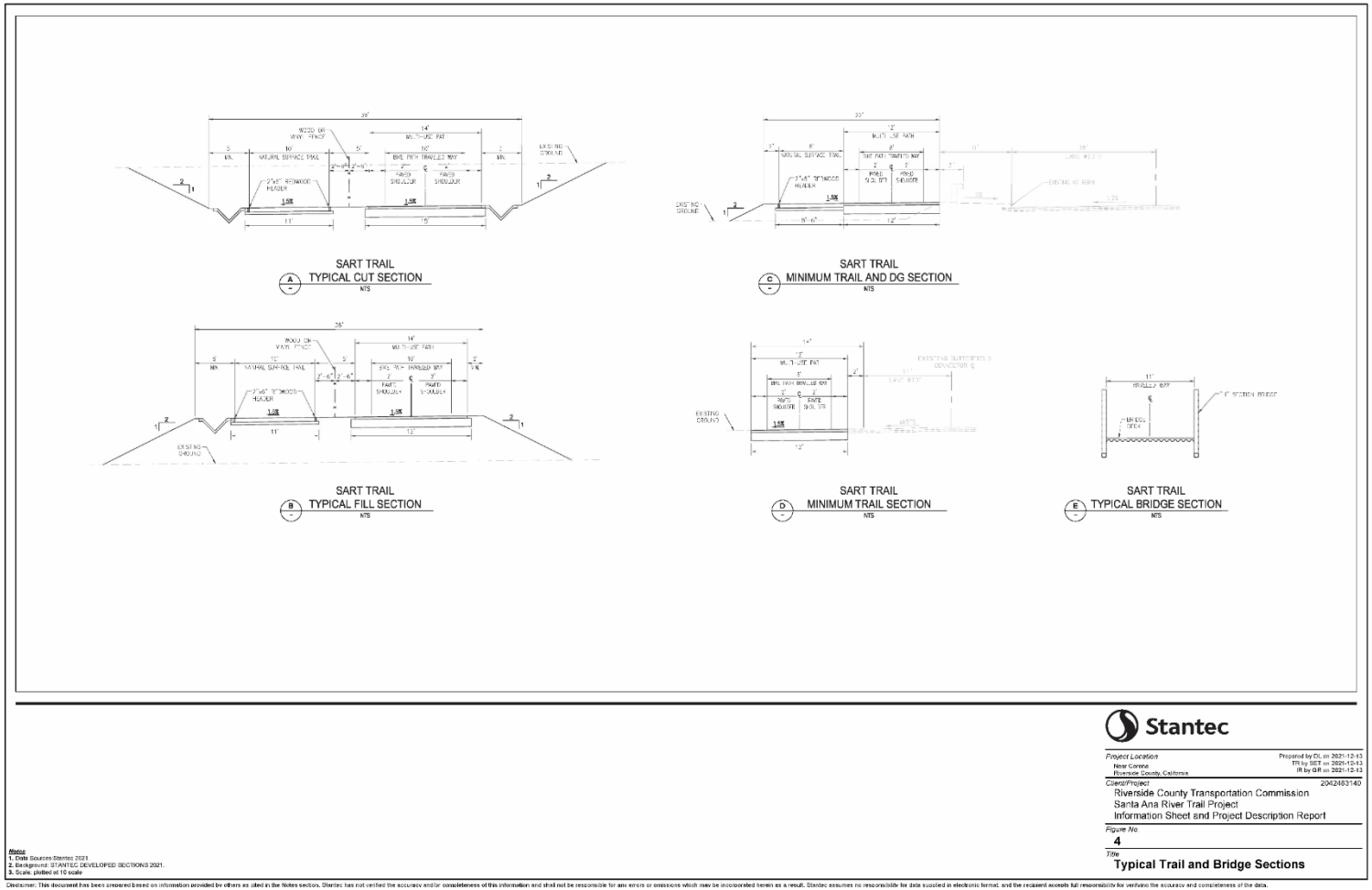

Figure 4. Typical Trail and Bridge Sections

Construction activities would be undertaken during permitted time periods, per the Riverside County Municipal Code.

Table 1. Preliminary Grading Quantities

Trail Phase	Cut (cubic yards)	Fill (cubic yards)	Net (cubic yards)
3A	45,911	10,085	-35,826
2A (west)	4,846	11,168	6,321
2A (east)	451	3,475	3,023
2	434	10,346	9,912
Trail Section (3.5 AC/12.5 AB)	9,707	0	-9,707
Ped Section (6” DG/4” AB)	3,790	0	-3,790
Total*	**65,139**	**35,074**	**30,070**

Source: Stantec, 2022
Note: Totals are rounded

Construction Vehicle Access

Construction vehicle access would be achieved via SR-91 and then via local roads, depending on the trail phase being constructed. Figure 3 shows the location of proposed ingress/egress points for construction vehicles. In addition, and in order ensure continuous and safe operation of the local roadways and intersections and worker safety during Project construction, a Traffic Management Plan (TMP) would be prepared and implemented. The TMP would assist to minimize delays by ensuring proper signage is posted to advise motorist and pedestrian of activities in the construction zone. In addition, it is also intended to ensure that safe traffic and work zones areas are in place during roadside construction activities. The TMP provides worker and public safety from vehicles and equipment both outside and within roadside worksites.

Construction Vehicle and Material Laydown

Construction vehicle and materials staging/laydown would be identified pending finalization of design and construction documents and would largely be determined by the contractor. However, it is anticipated that these areas would include only public property and no private property would be required. Figure 3 shows the preliminary location of proposed staging/laydown areas.

Utilities

Table 2 includes the existing utilities located within the Project site and which may require relocation and/or modifications.

Table 2. Existing Utilities Which May Require Relocation and/or Modifications

Owner	Utility	Location	Adjustment Required?	Relocation Required?	Description
Southern California Edison	Overhead power lines	Phase 2	Potential guy wire / guy anchor	No	Guy wires may need to be adjusted to accommodate trail
SoCalGas	Phases 2A and 3A	Phases 2A and 3A	No	No	-
City of Corona Department of Water & Power	Recycled Water	Phase 2	Yes	Yes	Waterline appurtenances will be relocated/adjusted
Santa Ana Watershed Project Authority	Inland Empire Brine Line	Phase 2A	No	No	-

Source: Stantec, 2022

Outgrant

The construction of the proposed Project within the Prado Dam Flood Control Basin area will require the acquisition of an Outgrant by the USACE, Los Angeles District. An Outgrant refers to grant of interest or right to one to use government real property by a lease, easement, license, or permit. It is an agreement whereby a private party may, depending on the type of real estate instrument issued, enjoy an interest in or use real property.

1.1.4 Operations & Maintenance

The District has established Standard Operating Procedures (SOPs) for managing and maintaining the trails. Those SOPs are intended to define and establish public safety and natural resource protection during routine patrol and maintenance. The proposed Project will be patrolled by District Rangers three to five days per week, based on active use periods. Rangers will monitor the area for disturbance, damage, or safety issues, which may include illegal off highway vehicle use, homeless encampments, and trail hazards with a focus on environmentally sensitive areas. The Homeless SOP and Homeless Eviction SOP has been developed to address illegal encampments along the SART and within Open Space areas.

In addition, the 2009 Santa Ana River Parkway Minimum Maintenance Guidelines provide minimum maintenance requirements that would be followed. The District Trails Management Team would conduct maintenance inspections of the proposed Project weekly as well as after high winds and heavy rain events to remove hazards such as downed or hazard limbs and erosion. Weekly maintenance may include soil and debris removal, tree trimming, and fence repair. The District Maintenance Team would be responsible for conducting annual weed abatement. In an effort to reduce invasive and non-native plant species along the trail corridor, and to reduce potential water quality impacts, routine scheduled

maintenance will include horse manure removal by the District at least once a month. Environmentally sensitive areas will be posted with signage at all access points to discourage entry.[3]

1.2 PALEONTOLOGICAL RESOURCES

Paleontological resources, or fossils, are any evidence of ancient life. This includes the remains of the body of an organism, such as bones, skin impressions, shell, or leaves, as well as traces of an organism's activity, such as footprints or burrows, called trace fossils. In addition to the fossils themselves, geologic context is an important component of paleontological resources, and includes the stratigraphic placement of the fossil as well as the lithology of the rock in order to assess paleoecologic setting, depositional environment, and taphonomy. Fossils are protected by federal, state, and local regulations as nonrenewable natural resources.

While CEQA does not define a significance threshold for paleontological resources, the standards of the Society of Vertebrate Paleontology (SVP) are often used in the absence of a legal definition of significance. The SVP defines significant paleontological resources as:

> identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i. e., older than about 5,000 radiocarbon years). [SVP 2010: 11].

It should be noted that the threshold for significance varies with a variety of factors, including geologic unit, geographic area, and the current state of scientific research, and may also vary between different agencies (Murphey et al. 2019). Numerous paleontological studies have developed criteria for the assessment of significance for fossil discoveries (e.g., Eisentraut and Cooper 2002, Murphey et al. 2019, Murphey and Daitch 2007, Scott and Springer 2003). In general, these studies assess fossils as significant if one or more of the following criteria apply:

- The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct.
- The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events, through biochronology or biostratigraphy and the correlation with isotopic dating.

[3] Source: https://www.rivcoparks.org/_files/ugd/3be3ea_0fe16fab040546ffac164a95b13c655f.pdf. Accessed on December 7, 2021

- The fossils provide ecological data, such as the development of biological communities, the interaction between paleobotanical and paleozoological biotas, or the biogeography of lineages.
- The fossils demonstrate unusual or spectacular circumstances in the history of life.
- The fossils provide information on the preservational pathways of paleontological resources, including taphonomy, diagenesis, or preservational biases in the fossil record.
- The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.
- The fossils inform our understanding of anthropogenic affects to global environments or climate.

A geologic unit known to contain significant paleontological resources is considered sensitive to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either disturb or destroy fossil remains directly or indirectly. This definition of sensitivity differs fundamentally from the definition for archaeological resources as follows:

> It is extremely important to distinguish between archaeological and paleontological (fossil) resource sites when defining the sensitivity of rock units. The boundaries of archaeological sites define the areal extent of the resource. Paleontological sites, however, indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case. [SVP 2010: 2].

Many archaeological sites contain features that are visually detectable on the surface. In contrast, fossils are often contained within surficial sediments or bedrock and are therefore not observable or detectable unless exposed by erosion or human activity.

In summary, in the absence of observable fossil resources on the surface, paleontologists must assess the potential of geologic units as a whole to yield paleontological resources based on their known potential to produce significant fossils elsewhere. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken to prevent adverse impacts to these resources.

2.0 REGULATORY FRAMEWORK

There are federal, state, and local laws and regulations that provide for the protection of paleontological resources. This investigation was conducted to meet these requirements regarding paleontological resources on the lands proposed for development.

2.1 FEDERAL

2.1.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969, as amended (Public Law [PL] 91-190, 42 USC 4321–4347, January 1, 1970, as amended by PL 94-52, July 3, 1975, PL 94-83, August 9, 1975, and PL 97-258 4(b), Sept. 13, 1982) recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage…" (Sec. 101 [42 USC 4321]) (#382). The passage of the Paleontological Resources Preservation Act (PRPA) (see below) in 2009 made paleontological resources widely recognized natural resources that must be considered under NEPA analyses, and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact.

2.1.2 Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act (PRPA) directs the U.S. Department of the Interior and U.S. Department of Agriculture to manage and protect paleontological resources on federal land using "scientific principles and expertise" (Sec. 6302), including plans for inventory, monitoring, and the scientific and educational use of paleontological resources. To formulate a consistent paleontological resources management framework, the PRPA incorporates most of the recommendations from the report of the Secretary of the Interior titled "Assessment of Fossil Management on Federal and Indian Lands" (USDI 2000). The PRPA officially recognizes the scientific importance of paleontological resources by declaring that these resources from designated federal lands are federal property that must be preserved and protected. The PRPA codifies pre-existing policies of the Bureau of Land Management (BLM), National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Reclamation, and U.S. Fish and Wildlife Service (USFWS), and provides for uniform:

- criminal and civil penalties for illegal removal, transport, and sale as well as theft and vandalism of fossils from federal lands (Sections 6306, 6307, and 6308);
- minimum requirements for the issuance of paleontological resource-use permits (terms, conditions, and qualifications of applicants) (Section 6304);
- protection of locality data (Section 6309);
- definitions for "paleontological resources" and "casual collecting" (Section 6301); and
- requirements for curation of federal fossils in approved repositories (Section 6305).

2.1.3 Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 United States Code [USC] 1712[c], 1732[b]); sec. 2, Federal Land Management and Policy Act of 1962 [30 USC 611]; Subpart 3631.0 et

seq.), Federal Register Vol. 47, No. 159, 1982, does not refer specifically to fossils. However, significant fossils are understood and recognized in policy as scientific resources, as recognized with the passage of the PRPA. Permits, which authorize the collection of significant fossils for scientific purposes from BLM lands, are issued under the authority of FLPMA. Under FLPMA, federal agencies are charged to:

- manage public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, archaeological, and water resources, and, where appropriate, preserve and protect certain public lands in their natural condition (Section 102);
- periodically inventory public lands so that the data can be used to make informed land-use decisions (Section 102); and
- regulate the use and development of public lands and resources through easements, licenses, and permits (Section 302).

2.1.4 Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) applies to the regulation of paleontological resources in that it defines paleontological specimens as separate from archaeological resources from a regulatory standpoint except in circumstances where the specimen was found in an archaeological context.

2.2 STATE OF CALIFORNIA

2.2.1 California Environmental Quality Act

CEQA (Public Resources Code Sections 21000 et seq) requires that before approving most discretionary projects, the Lead Agency must identify and examine any significant adverse environmental effects that may result from activities associated with such projects. As updated in 2016, CEQA separates the consideration of paleontological resources from cultural resources (Public Resources Code Section 21083.09). The Appendix G checklist (Title 14, Division 6, Chapter 3, California Code of Regulations [CCR] 15000 et seq.) requires an answer to the question, “Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?” Under these requirements, Stantec has conducted a paleontological resources assessment to determine impacts of the proposed project on paleontological resources within the Project Area.

2.2.2 Public Resources Code

The California Public Resources Code (PRC) (Chapter 1.7, Sections 5097 and 30244) includes additional state-level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from

development on state lands, define the removal of paleontological sites or features from state lands as a misdemeanor, and prohibit the removal of any paleontological site or feature from state land without permission of the applicable jurisdictional agency.

2.3 LOCAL REGULATIONS

2.3.1 County of Riverside General Plan

The Riverside County General Plan requires consideration of paleontological resources under the Multipurpose Open Space Element of the general plan (County of Riverside 2015). The Riverside County General Plan recommendations are based on the SVP's (2010) guidelines for the mitigation of paleontological resources. The Multipurpose Open Space Element of the general plan (County of Riverside 2015) provides the following requirements for paleontological resource protection in sensitive areas within the county:

- OS 19.6. Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as shown on Figure OS-8 [of the County of Riverside General Plan Multipurpose Open Space Element, 2015], a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.
- OS 19.7. Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
- OS 19.8. Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.
- OS 19.9. Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

3.0 PROFESSIONAL STANDARDS

The SVP (2010), the BLM (2016) and a number of scientific studies (Eisentraut and Cooper 2002; Murphey et al. 2019; Scott and Springer 2003) have developed guidelines for professional qualifications, conducting paleontological assessments, and developing mitigation measures for the protection of paleontological resources. These guidelines are broadly similar, and include the use of museum records searches, scientific literature reviews, and, in some cases, field surveys to assess the potential of an area to preserve paleontological resources. Should that potential be high, accepted mitigation measures include paleontological monitoring, data recordation of all fossils encountered, collection and curation of significant fossils and associated data, and in some cases screening of sediment for microfossils.

This study has been conducted in accordance with these guidelines and the recommendations provided herein meet these standards.

4.0 GEOLOGIC SETTING

The Project Area is located in the Peninsular Ranges geomorphic province. The Peninsular Ranges formed as a volcanic island arc collided with the west coast of North America and was accreted onto the margin of the continent, resulting in the expansion of the continent westward. The Peninsular Ranges are part of a larger subduction zone that extends all along western North America, with this particular geomorphic province extending from the Los Angeles Basin in the north to Baja in the south, and extending to Santa Catalina, Santa Barbara, San Nicolas, and San Clemente Islands on the west and the Colorado Desert on the east (Norris and Webb 1990). The core of the Peninsular Ranges formed as the core of a magmatic arc in the Mesozoic that resulted from active subduction along the Pacific Plate boundary (Harden 2004).

Two main batholiths of plutonic rock form the core of the Peninsular Ranges. The western batholith, where the project area is located, was emplaced first and is 140 – 105 million years old (Ma) and consists of mafic plutonic rocks, while the eastern batholith is 99 – 92 Ma and consist of silica-rich granodiorites and tonalities (Kimbrough et al. 2001). These plutonic rocks intruded into the older rocks of a Paleozoic carbonate platform, heavily metamorphosing them (Harden 2004). There was volcanic activity associated with the subduction zone as well, with the Santiago Peak Volcanics deposited from 130 – 120 Ma as primarily andesitic and silicic flows, that were then metamorphosed by the ongoing batholith emplacement (Fife et al. 1967). Later in the Cretaceous, marine sedimentary rocks accumulated over the plutons and volcanic rocks, deposited as turbidity currents in what was an ocean at the time (Kimbrough et al. 2001). These rocks are in turn overlain by more recent sedimentary deposits leading up to the present day, that have been heavily uplifted and faulted by tectonic activity throughout the Cenozoic. These deposits were marine through the Eocene and then shifted to terrestrial volcanic and sedimentary strata by the Oligocene and lower Miocene (Powell 1993).

5.0 METHODOLOGY

The paleontological resource assessment reported herein consisted of a records search from the Natural History Museum of Los Angeles County (LACM) as well as a review of the relevant scientific literature and the most recent geologic mapping. To assess if paleontological resources are likely to be encountered in any given area, the paleontological potential of the geologic units present in the area is assessed. Paleontological potential of a geologic unit consists of both (a) the potential for yielding abundant vertebrate fossils or for yielding significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data (SVP 2010). Unlike archaeological resources that often have a limited aerial extent, paleontological resources may occur throughout a geologic unit, and so paleontological potential is assessed for the unit as a whole. Provided below is the methodology used during the current study to assess the potential of the Project to impact paleontological resources.

5.1 RECORDS SEARCH

A records search of the Project Area and vicinity was requested from the LACM on June 2, 2021, with the results received from the LACM on June 3, 2021. The search returned the closest known paleontological localities of the LACM to the Project Area from geologic units that are present at the Project Area, either at the surface or in the subsurface.

5.2 SCIENTIFIC LITERATURE REVIEW

In order to assess the paleontological potential of the Project Area, the most recent geologic mapping) was consulted to identify all geologic units present at the surface or likely present in the subsurface of the Project Area. The scientific literature was then consulted to assess the history of each of these units for preserving fossil resources.

5.3 PALEONTOLOGICAL RESOURCES ASSESSMENT

The results of the museum records search and the scientific literature review were used to assign the paleontological potential rankings of the SVP (2010) to the geologic units present in the Project Area. These rankings are designed to inform the development of appropriate mitigation measures for the protection of paleontological resources and are widely accepted as industry standards in paleontological mitigation (Murphey et al. 2019; Scott and Springer 2003). These rankings are as follows:

> **High Potential.** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rock units classified as having high potential for producing

paleontological resources include, but are not limited to, sedimentary formations that are temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.), some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks.

Undetermined Potential. Rock units for which little information is available in the literature or museum records concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study and field work is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.

Low Potential. Rock units that are poorly represented by fossil specimens in institutional collections or, based on general scientific consensus, only preserve fossils in rare circumstances (e. g., basalt flows or Recent colluvium) have low paleontological potential.

No Potential. Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites).

5.4 PALEONTOLOGICAL RESOURCES IMPACTS ASSESSMENT

Impacts to paleontological resources can be classified as direct, indirect, or cumulative. Impacts can also be considered as adverse impacts or as positive impacts. Direct adverse impacts on paleontological resources are the result of damage or destruction of these nonrenewable resources by surface disturbing actions including construction excavations. Therefore, in areas that contain paleontologically sensitive geologic units, ground disturbance has the potential to adversely impact paleontological resources, by damaging or destroying them and rendering them permanently unavailable to science and society. Positive direct impacts, however, may result when paleontological resources are identified during construction and the appropriately documented and salvaged, thus ensuring the specimens are protected for future study and education.

Indirect adverse impacts typically include those effects which result from the continuing implementation of management decisions and resulting activities, including normal ongoing operations of facilities constructed within a given project area. They also occur as the result of the construction of new roads and trails in areas that were previously less accessible. This increases public access and therefore increases the likelihood of the loss of paleontological resources through vandalism and unlawful collecting, thus constituting an adverse indirect impact. Human activities that increase erosion also cause indirect impacts to surface and subsurface fossils as the result of exposure, transport, weathering, and reburial.

Cumulative adverse impacts can result from incrementally minor but collectively significant actions taking place over time. The incremental loss of paleontological resources over time from construction-related surface disturbance or vandalism and unlawful collection would represent a significant cumulative adverse impact, because it would result in the destruction of non-renewable paleontological resources and the associated irretrievable loss of scientific information.

Positive impacts can result from the preservation of significant paleontological resources identified during construction, a direct impact, or following Project activities, an indirect impact. By successfully identifying, salvaging, and curating significant paleontological resources in a federally accredited repository, they are preserved in perpetuity and may contribute to scientific understanding and public education and awareness.

The impact assessment conducted here takes into consideration all planned project activities in terms of aerial and subsurface extents, including the possibility of subsurface geologic units having a different paleontological potential than surficial units. For example, younger surficial sediments (alluvium, lacustrine, eolian, etc.) have low potential to preserve fossil resources due to their age; yet sediments increase in age with depth and so these surficial deposits often overly older units that have high paleontological potential. In areas with this underlying geologic setting surficial work may be of low risk for impacting paleontological resources while activities that require excavations below the depth of the surficial deposits would be at greater risk of impacting paleontological resources. For this reason the impact assessment takes into consideration both the surface and subsurface geology, and is tailored to Project activities.

6.0 RESULTS

The results of the paleontological resources assessment are described below.

6.1 PROJECT AREA GEOLOGY

Geologic mapping by Morton and Miller (2006) indicates the surface of the project area consists of three geologic units: young axial channel deposits; old alluvial fan deposits; and very old alluvial fan deposits, with an additional unit, the Puente Formation, likely present in the subsurface (Figure 4). These geologic units range in age from the Recent to the Miocene, up to approximately 12.6 Ma, and are described below.

> **Young axial channel deposits (Qya_a in Figure 4).** Young axial channel deposits are found underlying the entirety of Phase 2, the eastern-most end of Phase 2A, and along stream or drainages in Phases 2A and 3A (Figure 4). These sediments consist of slightly to moderately consolidated sands with lesser amounts of silt and gravel eroded from the surrounding highlands and deposited by fluvial action (Morton and Miller 2006). These sediments are relatively young in

age, dating from the Holocene to the late Pleistocene, and are likely underlain by older Quaternary sediments such as the old and very old alluvial deposits described below at undetermined depths.

Old alluvial fan deposits (Qof_g and Qof_{1g} in Figure 4). There are two units of old alluvial fan deposits present at the surface in the Project Area: old alluvial fan deposits, undivided, and old alluvial fan deposits, unit 1 (Morton and Miller 2006). Both of these units consist of moderately to well consolidated silty sand with a high proportion of gravel with moderate to well-developed pedogenic soil profiles (Morton and Miller 2006). Undivided old alluvial fan deposits are mapped in a single place in the Project Area, at the easternmost end of the western portion of Segment 2A (Figure 4). This unit ranges in age from the late to middle Pleistocene. Unit 1 of the old alluvial fan deposits are similar in lithology to the undivided deposits, but have a more refined age, dating to the middle Pleistocene, and are moderately dissected with 50 cm to 150 cm of soil developed (Morton and Miller 2006). This unit is mapped at the surface in the higher-relief areas of easternmost Phase 3A and westernmost Phase 2A, cut by drainages with young axial channel deposits.

Very old alluvial fan deposits ($Qvof_g$ in Figure 4). Very old alluvial fan deposits are mapped at the surface in the westernmost part of Phase 3A (Figure 4). Very old alluvial fan deposits consist of moderately to well consolidated silt, sand, and conglomerate with a high percentage of gravel, often heavily dissected (Morton and Miller 2006). This unit dates to the middle to early Pleistocene (Morton and Miller 2006).

Puente Formation, Sycamore Canyon Member (Tpsc in Figure 4). The Sycamore Canyon Member of the Puente Formation is not mapped at the surface within the Project Area but is mapped at the surface to the south and northwest of the westernmost end of Phase 3A (Figure 4). Therefore, this unit is likely present in the subsurface underlying very old alluvial fan deposits in the Project Area at unknown, but due to the proximity of the outcrops, potentially shallow depths. The Sycamore Canyon Member consists of marine sandstone and pebble conglomerate that records the deposition of submarine fans at bathyal depths during the early Pliocene and Miocene (Critelli et al. 1995). The member is highly variable laterally, with thick-bedded to massive medium- and coarse-gained sandstone, thin-bedded and poorly bedded siliceous siltstone, and lenses of massive conglomerate (Morton and Miller 2006). Some workers have elevated the Sycamore Canyon to formational status in this area (e.g., Dibblee and Ehrenspeck 2001).

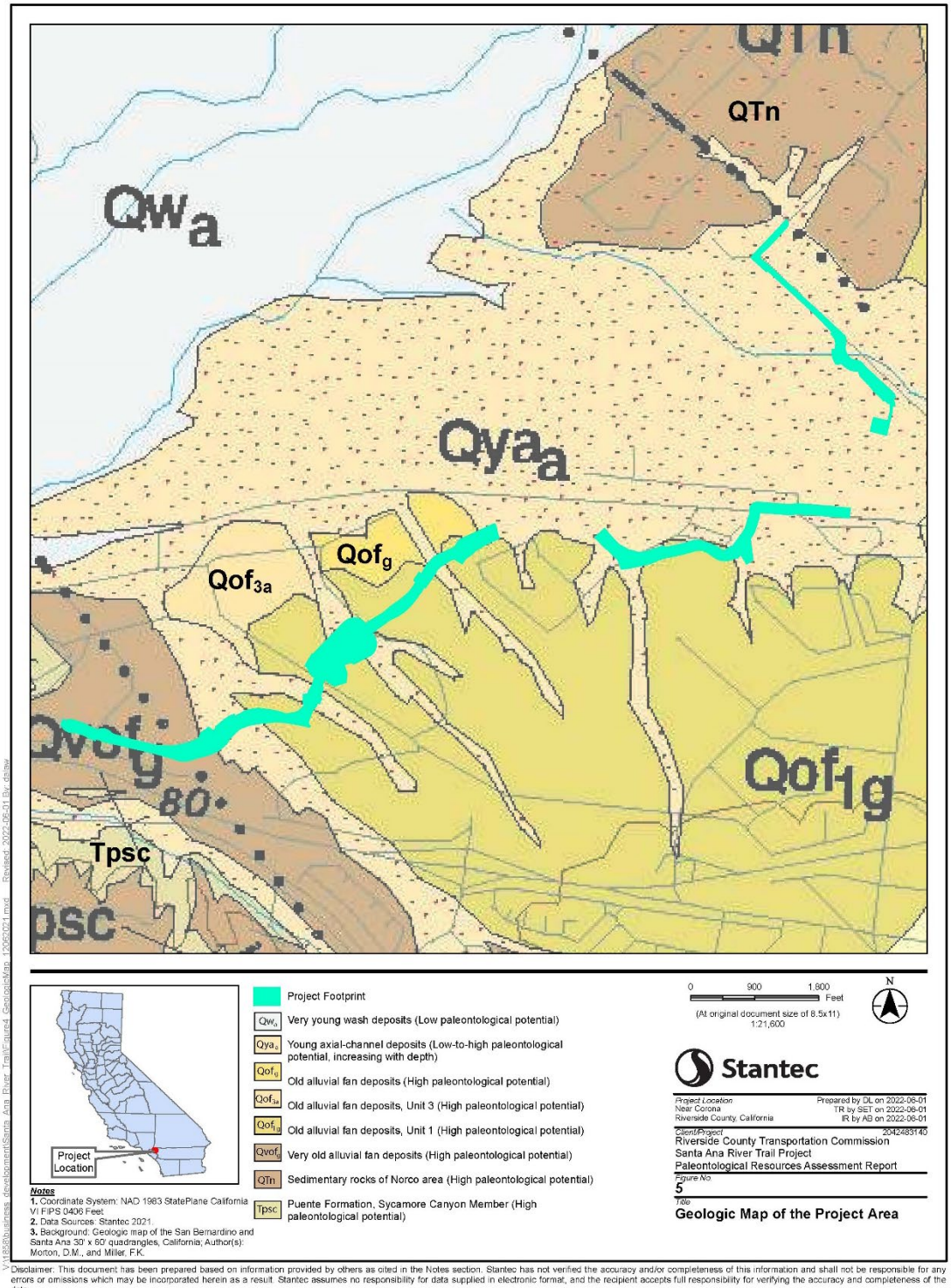

Figure 5. Geologic map of the Project Area

6.2 PALEONTOLOGICAL POTENTIAL OF GEOLOGIC UNITS IN THE PROJECT AREA

In order to assess the potential of the geologic units present at the surface or in the subsurface to preserve paleontological resources, Stantec conducted a review of the relevant scientific literature and requested a records search from the LACM (Appendix A), as summarized in Table 3 below. The results of this investigation are described below for each of the geologic units in the Project Area (Table 4).

Young axial channel deposits (Qya_a in Figure 4). The young axial channel deposits present in the Project Area date from the Holocene to the late Pleistocene, indicating they range from Recent in age to as much 1.9 Ma. As defined by the SVP (2010), fossil resources must be over 5,000 years in age, corresponding to the middle part of the Holocene. Therefore, the upper layers of the young axial channel deposits are too young to preserve paleontological resources, but as sediments increase in age with depth, the deeper layers of this unit are of an age to preserve paleontological resources.

Early Holocene and late Pleistocene sediments in Southern California have an extensive record of fossil preservation, including in the vicinity of the Project Area. The closest locality in similar sediments known to the LACM comes from near Corona, California, approximately 2 miles to 3 miles southeast of the Project Area, where a bovid fossil, a member of the group to which cows belong, was collected (LACM 2021). Other LACM localities within a 10-mile radius have preserved ground sloth, elephant, horse, and snake fossils (LACM 2021).

A review of the scientific literature indicates that across Riverside County and neighboring Los Angeles County Pleistocene fossils representing a rich Ice Age fauna are often found in similar Quaternary-aged sediments. These include animals still found in North America today, such as deer, bison, sheep, and horses, creatures no longer found in either North America, such as camels, lions, cheetahs, and sloths, and extinct creatures such as mammoths, dire wolves, and saber-toothed cats (Jefferson 1991 a and b, Graham and Lundelius 1994, McDonald and Jefferson 2008, Miller 1971, Reynolds and Reynolds 1991). In addition to these iconic large animals, a wide variety of small animals can be preserved as well, including reptiles such as frogs, salamanders, snakes (Hudson and Brattstrom 1977), and birds (Collins et al. 2018, Jones et al. 2008, Miller 1941). These fossils are important for recreating the history of Southern California, in particular studying climate change (e.g., Roy et al. 1996), extinction (e.g., Barnosky et al. 2004, Jones et al. 2008, Sandom et al. 2014, Scott 2010), and paleoecology (e.g., Connin et al. 1998). Given the extensive record of significant fossils recovered from the older layers of surficial sediments, the young axial channel deposits in the Project Area are here assessed as having low-to-high paleontological potential, increasing with depth. The exact depth at which this transition occurs cannot be determined precisely in the Project Area; however, the records of the LACM and reports in the scientific literature (i.e., Jefferson 1991 a and b, Reynold and Reynolds

1991) indicate depths of as little as 6 feet below ground surface (bgs) may yield paleontological resources.

Table 3 Summary of the records search from the LACM

Locality Number	Geologic Unit	Age	Taxa	Approximate Location	Approximate Distance to Project Area
LACM VP 1207	Unknown formation	Pleistocene	Bovidae	Corona, California	2 to 3 miles southeast of Project Area
LACM VP 7508	Unknown formation	Pleistocene	Ground sloth (*Nothrotheriops*); elephant family (Proboscidea); horse (Equus)	Near intersection of Vellano Club Dr. and Palmero Dr., Chino Hills	8 miles northwest of Project Area
LACM VP 7811	Unknown formation (eolian tan silt)	Pleistocene	Whip snake (*Masticophis*)	West of Orchard Park, Chino Valley	4 miles northeast of Project Area
LACM VP 7268, 7271	Unknown formation	Pleistocene	Horse (*Equus*)	Sundance Condominiums, south of Los Serranos Golf Course	7 miles northwest of Project Area
LACM IP 17925, 17932	Sycamore Canyon Formation (sandstone and conglomerate facies)	Pliocene-Miocene	Bivalves (Tellinidae, *Delectopecten*), Gastropods (Fasciolaridae); land plants (*Taxodium, Typha lesquereuxi, Phragmites*)	West end of the San Jose Hills, around intersection of North Azusa Ave and East Amar Rd.	19 miles northwest of Project Area

Old alluvial fan deposits (Qof_g and Qof_{1g} in Figure 4). Both undivided and Unit 1 of the old alluvial fan deposits present in the Project Area date from the late to middle Pleistocene, which ranges from approximately 11,700 to 7.7 Ma, making all depths of this unit old enough to preserve fossil resources. These sediments are similar to the deeper layers of the axial channel deposits described above, and therefore may preserve a similar collection of Ice Age fossils. Therefore, old alluvial fan deposits are assessed as having high paleontological potential.

Very old alluvial fan deposits ($Qvof_g$ in Figure 4). Very old alluvial fan deposits are much like old alluvial fan deposits described above, but are older, dating from the middle to early Pleistocene, approximately 12,900 years to 2.58 Ma. As such, they are old enough to preserve fossil resources. As described above for both the deeper layers of the axial channel deposits and the old alluvial fan deposits, these sediments are demonstrated to preserve a variety of significant paleontological resources across the region and are therefore assessed as having high paleontological potential.

Sycamore Canyon Member, Puente Formation (Tpsc in Figure 4). The Sycamore Canyon Member of the Puente Formation, sometimes elevated to formation status, has an extensive record of fossil preservation across Southern California. The nearest locality known to the LACM is approximately 19 miles northwest of the Project Area, where a variety of invertebrates, including bivalves and gastropods, as well as plant fossils were collected (LACM 2021). In addition to this locality, the Puente Formation and the Sycamore Canyon Member have been well-documented as preserving a wide range of significant fossils, such as cephalopods (Saul and Stadum 2005), crustaceans (Feldmann 2003), fishes (Carnevale et al. 2008, Huddleston and Takeuchi 2006), and other marine and terrestrial vertebrates (Barboza et al. 2017, Leatham and North 2017). One particularly interesting site has been published from which a possible mass death assemblage of decapod crustaceans was collected along with land plants, bivalves, fish, and marine mammals as a result of mitigation activities at the Corona Country Club Estates in the city of Corona, California (Feldman 2003, Lander 2002), less than five miles southeast of the Project Area. Given the extensive record of fossil preservation in the Sycamore Canyon Member of the Puente Formation, it is assessed here as having high paleontological potential.

Table 4 Paleontological potential of geologic units within the Project Area

Geologic Unit	Age	Occurrence within Project Area	Paleontological Potential*
Young axial channel deposits	Holocene to late Pleistocene	Phase 2; drainages in Phases 2A and 3A	Low-to-High, increasing with depth
Old alluvial deposits	Late to middle Pleistocene	Phases 2A and 3A	High
Very old alluvial deposits	Middle to early Pleistocene	Phase 3A	High
Puente Formation, Sycamore Canyon Member	Early Pliocene to Miocene	Phase 3A (subsurface)	High

**ranking based on the SVP (2010) classifications*

6.3 PALEONTOLOGICAL IMPACTS ASSESSMENT

The paleontological potential assessment presented above indicates that the Project Area includes two geologic units mapped at the surface that have high paleontological potential (old and very old alluvial deposits) with one unit mapped at the surface with low paleontological potential at the surface but high potential in the subsurface (young axial channel deposits). Should paleontological resources preserved in these units be damaged or destroyed by Project activities it would constitute a direct adverse impact under CEQA. Therefore, an impacts assessment was conducted to evaluate planned Project activities and their likelihood to pose an adverse impact to paleontological resources.

The Project plans to create three trail segments along the SART route (Phases 2, 2A, and 3A). This work will entail a variety of activities: vegetation removal and grubbing, cut (estimated 65,139 cubic yards) and fill (estimated 35,074 cubic yards) to level the trail surface, grading of the trail surface, drainage

improvements, laydown yards, box culverts, clear-span bridges, riprap installation, and utility relocation. Following construction, operations and maintenance activities include ranger patrols, weekly maintenance patrols and the removal of accumulated debris, monthly removal of horse manure, and annual weed abatement.

Of these activities, those that require ground disturbance that will extend into geologic units with high paleontological potential are at risk of posing an adverse impact to paleontological resources. Grading for trail construction is expected to entail a minimum of 5 feet of excavation bgs along the length of the trail, with cuts extending as much as 23 feet bgs planned on the west side of the existing auxiliary dike culvert. Other activities that may involve ground disturbance are the installation of box culverts and clear-span bridges as well as drainage improvements. Where these activities occur into previously undisturbed geologic units with high paleontological potential, either at the surface or in the subsurface, they risk posing a direct adverse impact to paleontological resources.

Following construction of the SART phases, increased recreational usage of the area may lead to increased risk of paleontological resources that are naturally exposed through erosion being lost to theft or vandalism. This would constitute an indirect adverse impact to paleontological resources.

Because this Project has the potential to cause both direct and indirect adverse impacts, Stantec has developed recommendations for mitigating these impacts, presented below.

7.0 RECOMMENDATIONS AND MANAGEMENT CONSIDERATIONS

As part of the current paleontological assessment, a records search from the LACM and a review of geologic mapping and the scientific literature were conducted to assess the potential of the geologic units in the Project Area to preserve paleontological resources. The results of this assessment show that the following geologic units are present in the project area:

- Young axial cannel deposits – present at the surface, low-to-high paleontological potential, increasing with depth;
- Old alluvial fan deposits – present at the surface, high paleontological potential;
- Very old alluvial fan deposits – present at the surface, high paleontological potential;
- Sycamore Canyon Member of the Puente Formation, present in the subsurface, high paleontological potential.

Because geologic units with high paleontological potential are present in the Project Area, Stantec conducted an impacts assessment to evaluate the Project's potential to damage or destroy unique

paleontological resources, in accordance with the CEQA Appendix G Checklist. Project activities include grading, cut slopes, drainage improvements, and installation of box culverts and clear-span bridges, all of which may involve ground disturbance. These activities, when conducted in previously undisturbed areas of geologic units with high paleontological potential, risk impacting paleontological resources. Furthermore, increased recreational use may pose an indirect impact through potential loss of paleontological resources to theft or vandalism. Therefore, in order to avoid direct or indirect impacts to paleontological resources, Stantec recommends a qualified paleontologist meeting professional standards as defined by Murphey et al. (2019) be retained to oversee all aspects of paleontological mitigation. Paleontological mitigation should consist of the following activities for this Project:

- The qualified paleontologist should develop and oversee the implementation of a Paleontological Monitoring and Mitigation Plan tailored to the Project plans that provides for paleontological monitoring of earthwork and ground disturbing activities into undisturbed geologic units with high paleontological potential, whether at the surface or in the subsurface, to be conducted by a paleontological monitor meeting industry standards (Murphey et al. 2019).

- The qualified paleontologist should develop a Worker's Environmental Awareness Program training that communicates requirements and procedures for the inadvertent discovery of paleontological resources during construction, to be delivered by the paleontological monitor to the construction crew prior to the onset of ground disturbance.

- In the event that paleontological resources are encountered during construction activities, all work must stop in the immediate vicinity of the finds while the paleontological monitor documents the find. The designated qualified paleontologist shall assess the find. Should the qualified paleontologist assess the find as significant, the find shall be collected and curated in an accredited repository along with all necessary associated data and curation fees.

- A qualified paleontologist should develop a stand-alone paleontological resources awareness training for the District. This training will include information on the types of paleontological resources that may be encountered in the area, an overview of the area's geologic and paleontological history, and instructions on steps to follow should park personnel or members of the public using the SART report the discovery of a paleontological resource. The District should ensure this training is delivered to personnel responsible for operations and maintenance activities on the SART.

These recommendations meet the standards of the SVP (2010) and conform to industry best practices (e.g., Murphey et al. 2019; Scott and Springer 2003) Based on the findings in this study the proposed project will not cause an adverse impact to paleontological resources with the incorporation of the above mitigation recommendations. Therefore, no additional paleontological resources studies are recommended or required at this time. Should the project location or plans change, this assessment will need to be revised to address those changes.

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APPENDIX A

Natural History Museum of Los Angeles County
Paleontological Records Search Results

Natural History Museum
of Los Angeles County
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Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

June 3, 2021

Stantec Consulting Services, Inc.
Attn: Alyssa Bell

re: Paleontological resources for the Santa Ana River Trails Project (#2042483140)

Dear Alyssa:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Santa Ana River Trails project area as outlined on the portion of the Prado Dam and Corona North USGS topographic quadrangles map that you sent to me via e-mail on June 1, 2021. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.
Sycamore canyon; norco conglomerate

Locality Number	Location	Formation	Taxa	Depth
LACM VP 1207	Hill on east side of sewage disposal plant; 1 mile N-NW of Corona	Unknown formation (Pleistocene)	Bovidae	Unknown
LACM VP 7508	Near intersection of Vellano Club Dr. and Palmero Dr., Oakcrest Development; N of Soquel Canyon	Unknown formation (Pleistocene)	Ground sloth (*Nothrotheriops*); elephant family (Proboscidea); horse (*Equus*)	Unknown
LACM VP 7811	W of Orchard Park, Chino Valley	Unknown formation (eolian, tan silt; Pleistocene)	Whip snake (*Masticophis*)	9-11 feet bgs
LACM VP 7268, 7271	Sundance Condominiums, S of Los Serranos Golf Course	Unknown (Pleistocene)	Horse (*Equus*)	Unknown
LACM VP 7508	Near intersection of Vellano Club Dr. and Palmero Dr., Oakcrest Development; N of Serrano Canyon	Unknown formation (Pleistocene)	Ground sloth (*Nothrotheriops*); elephant family (Proboscidea); horse (*Equus*)	Unknown
LACM IP 17925, 17932	West end of the San Jose Hills, around intersection of N Azusa Ave and E Amar Rd.	Sycamore Canyon Formation (Sandstone and conglomerate	Bivalves (Tellinidae, *Delectopecten*), Gastropods (Fasciolaridae); Land plants (*Taxodium*, *Typha lesquereuxi, Phragmites*)	6-6.5 ft bgs

facies)

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the Natural History Museum of Los Angeles County ("NHMLA"). It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

APPENDIX G
Noise Analysis Report

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Report date: 2/26/2024
Case Description: Construction Noise - RCTC Santa Ana River Trail

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential North of Rincon Road	Residential	60	55	50

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	450	0
Roller	No	20		80	450	0
Excavator	No	40		80.7	450	0
Dump Truck	No	40		76.5	450	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Front End Loader	60	56
Roller	60.9	53.9
Excavator	61.6	57.6
Dump Truck	57.4	53.4
Total	**66.3**	**61.6**