

APPENDIX A: CALEEMOD OUTPUT



Technical Memorandum

To: Joseph Broadhead, Principal Water Resource Specialist

From: Eliza Laws, Senior Environmental Analyst
Monica Tobias, Associate Environmental Analyst
Noemi Avila, Assistant Environmental Analyst

Date: October 31, 2023

Re: Air Quality/Greenhouse Gas Analysis for the Mead Valley Cajalco Sewer Project

The following air quality assessment was prepared to evaluate whether the expected criteria air pollutant emissions generated as a result of construction and operation of the proposed Project would cause exceedances of the South Coast Air Quality Management District's (SCAQMD) thresholds for air quality in the Project area. The greenhouse gas (GHG) assessment was prepared to evaluate whether the expected criteria GHG emissions generated as a result of construction and operation of the proposed Project would exceed the SCAQMD draft screening significance thresholds. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 *et seq.*). The methodology follows the *CEQA Air Quality Handbook* prepared by the SCAQMD for quantification of emissions and evaluation of potential impacts to air resources. As recommended by SCAQMD staff, the **California Emissions Estimator Model** version 2022.1 (CalEEMod) was used to quantify Project-related emissions.

The Eastern Municipal Water District (EMWD) proposes the Mead Valley Cajalco Sewer Project (Project). The Project involves the construction of approximately 12,600 linear feet of 8-inch to 15-inch diameter polyvinyl chloride (PVC) or vitrified clay pipe (VCP) gravity trunk sewer pipeline, in the City of Perris in Riverside County. The Project consists of the construction of sewer line within Cajalco Road from Day Street to Carpinus Street. The Project will also include demolition of the Clark Street Lift Station and the associated sewer connections to re-direct the existing sewer connections to the new Cajalco sewer pipelines.

▪ Regional Significance Thresholds

The thresholds contained in the *SCAQMD CEQA Air Quality Handbook*¹ and posted in a supplemental table as mass daily thresholds on SCAQMD's website² are considered regional thresholds and are shown in **Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds**, below. These regional thresholds were developed based on the SCAQMD's treatment of a major stationary source.

¹ South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993. (Available at SCAQMD.)

² [Air Quality Analysis Handbook \(aqmd.gov\)](https://www.aqmd.gov/air-quality-analysis-handbook)

Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_x	CO	SO_x	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operation	lbs/day	55	55	550	150	150	55

Air quality impacts can be described in a short- and long-term perspective. Short-term impacts occur during site grading and Project construction and consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Long-term air quality impacts occur once the Project is in operation. Operational emissions would be primarily from infrequent visits by vehicles driven by existing maintenance personnel and are considered negligible; therefore, only short-term impacts were quantified.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 or more acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of this Project’s disturbance area (approximately 12.82 acres) a Fugitive Dust Control Plan or a Large Operation Notification Form would not be required.

Short-Term Analysis

Short-term emissions from sewer construction were evaluated using the CalEEMod version 2022.1 program. The total construction period estimated for the proposed Project is approximately twenty-months, beginning no sooner than April 2024. The default parameters within CalEEMod were used and these default values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated emissions. In addition to the default values used, assumptions relevant to model inputs for short-term construction emission estimates used are:

- Construction is anticipated to begin no sooner than April 2024. The Project was modeled as a linear road construction project. The first construction activity is trenching which was modeled as grading and excavation. The second construction activity is paving which was modeled as paving. Lastly, the lift station decommissioning/demolition activity was modeled as grubbing and land clearing. The modeled construction schedule for each activity is shown below:

Construction Activity	Start Date	End Date	Total Working Days
Trenching	04/01/2024	09/30/2025	392 days
Paving	10/01/2025	10/15/2025	11 days
Decommissioning/Demolition	10/16/2025	12/16/2025	44 days

- The off-road equipment to be used for each activity is shown below based on input from EMWD. The engine tier for each piece of equipment is calculated using CalEEMod defaults for the statewide fleet average emissions factors. Each piece of equipment is assumed to operate 8 hours per day:

Activity	Off-Road Equipment	Unit Amount
Trenching	Excavators	2
	Rollers	2
	Rubber Tired Loaders	1
	Tractor Loader Backhoes	2
Paving	Pavers	1
	Tractor/Loader/Backhoe	2
	Paving Equipment	1
	Rollers	3
Decommissioning/Demolition	Crushing Processing Equipment	1
	Crawler Tractors	1
	Excavators	1

- The approximate 1,560 square feet of existing Clark Street Lift Station facility will be decommissioned and demolished.
- Four (4) one way vendor trips per day were added to the trenching and paving activity to account for material delivery/hauling.
- The Project consists of water pipeline improvements on paved and unpaved surfaces. It was conservatively assumed that approximately 7.18 acres of asphalt pavement would be disturbed.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control during the demolition phase, the Project utilized the option of watering the demolished area 2 times daily which achieves a control efficiency of 36 percent for PM-10 and PM-2.5 emissions.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the option of watering the Project site three times daily which achieves a control efficiency of 74 percent for PM-10 and PM-2.5 emissions. Two (2) daily vendor trips per day were added to each phase to account for water truck trips.

The results of this analysis are summarized below.

Table 2 –Estimated Maximum Daily Construction Emissions

Construction Activity	Peak Daily Emissions (lb/day)					
	VOC	NO _x	CO	SO ₂	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	75	100	550	150	150	55
2024	1.07	8.06	12.50	0.02	0.64	0.40
2025	34.30	8.00	52.10	0.02	1.12	0.70
Exceeds Threshold?	No	No	No	No	No	No

Note: See the detailed model output reports attached herewith. Numbers are the maximum of summer or winter emissions in a given year and may not match due to rounding within the model.

As shown in the table above, the emissions from construction of the Project are below the SCAQMD Daily construction thresholds for all criteria pollutants.

▪ Localized Significance Threshold Analysis

Background

As part of the SCAQMD’s environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST)

methodology³ that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (both short- and long-term). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). The Project is located within SRA 24.

Short-Term Analysis

According to the LST methodology, only on-site emissions need to be analyzed. Emissions associated with vendor and worker trips are mobile source emissions that occur off site. The emissions analyzed under the LST methodology are NO₂, CO, PM-10, and PM-2.5. SCAQMD has provided LST lookup tables to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the Project disturbs approximately 12.82 acres, the Project is linear and will progress in a linear fashion and disturb a smaller area per day. To be conservative, the one-acre LST lookup tables were utilized to estimate the construction emissions.

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the Project to the nearest sensitive receptors (in meters). The closest sensitive receptors are residences adjacent to the Project alignment. According to LST methodology, projects with boundaries closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters. Therefore, a receptor distance of 25 meters (82 feet) was used to ensure a conservative analysis. The results are summarized below.

Table 3 – LST Results for Daily Construction Emissions

Activity	Peak Daily Emissions (lb/day)			
	NO _x	CO	PM-10	PM-2.5
LST for 1-acre at 25 meters	118	602	4	3
Trenching – 2024	7.74	11.00	0.35	0.33
Trenching - 2025	7.17	11.00	0.30	0.27
Paving – 2025	7.71	10.80	0.34	0.31
Decommissioning/Demolition – 2025	4.24	51.60	0.94	0.65
Maximum	7.74	51.60	0.94	0.65
Exceeds Threshold?	No	No	No	No

Note: Maximums are the greater of either trenching, paving, or decommissioning/demolition because these activities do not overlap. Maximums are shown in bold.

Emissions from construction of the Project will be below the LST established by SCAQMD for the Project.

Long-Term Analysis

This Project involves sewer pipeline construction and improvements, with no stationary sources of emissions present. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed Project

³ South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008. (Available at <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>, accessed October 2023.)

does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term LST analysis is needed.

■ Greenhouse Gas Analysis

Greenhouse gases (GHG) are not presented in lbs/day like criteria pollutants; they are typically evaluated on an annual basis using the metric system. Additionally, unlike the criteria pollutants, GHG do not have adopted significance thresholds associated with them at this time. Several agencies, at various levels, have proposed draft GHG significance thresholds for use in CEQA documents. SCAQMD has been working on GHG thresholds for development projects. The most recent draft proposal was in September 2010⁴ and included significance thresholds for residential, commercial, and mixed-use projects at 3,500, 1,400, and 3,000 metric tonnes per year of carbon dioxide equivalents (MTCO₂E/yr), respectively. Alternatively, a lead agency has the option to use 3,000 MTCO₂E/yr as a threshold for all non-industrial projects. Although both options are recommended by SCAQMD, a lead agency is advised to use only one option and to use it consistently. In December 2008, the SCAQMD adopted a threshold of 10,000 MTCO₂E/yr for stationary source projects where SCAQMD is the lead agency. The SCAQMD significance thresholds evaluate construction emissions by amortizing them over an expected project life of 30 years.

The CalEEMod output results for construction-related GHG emissions present the GHG emissions estimates for the Project for CO₂, methane (CH₄), nitrous oxide (N₂O), refrigerants (R) and CO₂E.⁵

Short-Term Analysis

Construction Related Emissions

The CalEEMod model calculates GHG emissions from fuel usage by construction equipment and construction-related activities, like construction worker trips, for the Project. CalEEMod also calculates the indirect GHG emissions related to electricity consumption (CalEEMod Version 2022.1 User's Guide, p. 2).

Table 4 – Project Construction Equipment GHG Emissions

Year	Metric Tons per year (MT/yr)				
	Total CO ₂	Total CH ₄	Total N ₂ O	Total R	Total CO ₂ E
2024	184	0.01	0.00	0.06	186
2025	210	0.01	0.01	0.07	212
Total	394	0.02	0.01	0.13	398
				Amortized	13.27

Evaluation of the table above indicates that an estimated 398 MTCO₂E will occur from Project construction equipment over the course of the estimated approximately twenty-month construction period, which is approximately 13.27 MTCO₂E amortized for a project lifetime of 30 years.

The proposed Project does not fit into the categories provided (industrial, commercial, and residential) in either the draft thresholds from SCAQMD. The Project's GHG emissions do not exceed any of the SCAQMD recommended screening levels. Due to the estimated amount of emissions from Project construction, and negligible operational emissions from the infrequent visits by vehicles related to the

⁴ [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2)

⁵ CO₂E is the sum of CO₂ emissions estimated plus the sum of CH₄ and N₂O and refrigerant emissions estimated multiplied by their respective global warming potential (GWP).

sewer pipeline improvements, the proposed Project will not generate GHG emissions that exceed the draft screening thresholds.

- **Conclusion**

The conclusion of this analysis indicates that the proposed Project's construction emissions will not exceed criteria pollutant thresholds established by SCAQMD on a regional or localized level. The Project will also not generate GHG emissions that exceed the GHG screening thresholds recommended by SCAQMD. No mitigation is required.

Should you have any questions, please contact me at (951) 686-1070.

CALEEMOD OUTPUT FILES

Mead Valley Cajalco Sewer Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

3. Construction Emissions Details

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

3.3. Linear, Grading & Excavation (2024) - Unmitigated

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

3.7. Linear, Paving (2025) - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Mead Valley Cajalco Sewer Project
Construction Start Date	4/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	9.00
Location	33.83705988575832, -117.31763542766298
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5461
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.20

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	2.38	Mile	12.8	0.00	—	—	—	—

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.	1.26	1.07	8.04	12.5	0.02	0.36	0.28	0.64	0.33	0.07	0.40	—	2,087	2,087	0.08	0.05	1.52	2,105
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	34.6	34.3	8.06	52.1	0.02	0.80	0.32	1.12	0.64	0.07	0.70	—	2,067	2,067	0.08	0.05	0.04	2,084
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.83	4.69	4.78	13.1	0.01	0.27	0.20	0.46	0.23	0.04	0.28	—	1,269	1,269	0.05	0.03	0.40	1,280
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.88	0.86	0.87	2.39	< 0.005	0.05	0.04	0.08	0.04	0.01	0.05	—	210	210	0.01	0.01	0.07	212

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	1.26	1.07	8.04	12.5	0.02	0.36	0.28	0.64	0.33	0.07	0.40	—	2,087	2,087	0.08	0.05	1.52	2,105
2025	1.17	0.98	7.45	12.4	0.02	0.30	0.28	0.58	0.28	0.07	0.34	—	2,079	2,079	0.08	0.05	1.43	2,097
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.26	1.06	8.06	12.2	0.02	0.36	0.28	0.64	0.33	0.07	0.40	—	2,067	2,067	0.08	0.05	0.04	2,084
2025	34.6	34.3	8.00	52.1	0.02	0.80	0.32	1.12	0.64	0.07	0.70	—	2,059	2,059	0.08	0.05	0.04	2,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.68	0.57	4.34	6.59	0.01	0.19	0.15	0.34	0.18	0.04	0.21	—	1,114	1,114	0.04	0.03	0.35	1,123
2025	4.83	4.69	4.78	13.1	0.01	0.27	0.20	0.46	0.23	0.04	0.28	—	1,269	1,269	0.05	0.03	0.40	1,280
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.12	0.10	0.79	1.20	< 0.005	0.03	0.03	0.06	0.03	0.01	0.04	—	184	184	0.01	< 0.005	0.06	186
2025	0.88	0.86	0.87	2.39	< 0.005	0.05	0.04	0.08	0.04	0.01	0.05	—	210	210	0.01	0.01	0.07	212

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	34.6	34.3	4.24	51.6	0.01	0.80	—	0.80	0.64	—	0.64	—	568	568	0.02	< 0.005	—	570

Dust From Material Movement:	—	—	—	—	—	—	0.14	0.14	—	0.01	0.01	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.17	4.13	0.51	6.22	< 0.005	0.10	—	0.10	0.08	—	0.08	—	68.5	68.5	< 0.005	< 0.005	—	68.7
Dust From Material Movement:	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.75	0.09	1.14	< 0.005	0.02	—	0.02	0.01	—	0.01	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Dust From Material Movement:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 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	0.04	0.03	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.2	97.2	< 0.005	< 0.005	0.01	98.4
Vendor	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	184	184	< 0.005	0.03	0.01	192
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.2	28.2	< 0.005	< 0.005	< 0.005	29.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.1	22.1	< 0.005	< 0.005	0.03	23.2
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.40	3.40	< 0.005	< 0.005	< 0.005	3.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	1.99
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.66	3.66	< 0.005	< 0.005	< 0.005	3.84
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.59

3.3. Linear, Grading & Excavation (2024) - 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	1.16	0.97	7.74	11.0	0.02	0.35	—	0.35	0.33	—	0.33	—	1,649	1,649	0.07	0.01	—	1,654
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	1.16	0.97	7.74	11.0	0.02	0.35	—	0.35	0.33	—	0.33	—	1,649	1,649	0.07	0.01	—	1,654
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.62	0.52	4.17	5.93	0.01	0.19	—	0.19	0.18	—	0.18	—	887	887	0.04	0.01	—	890
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.11	0.10	0.76	1.08	< 0.005	0.03	—	0.03	0.03	—	0.03	—	147	147	0.01	< 0.005	—	147
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.10	0.09	0.08	1.46	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	252	252	0.01	0.01	1.00	256

Vendor	0.01	0.01	0.21	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	186	186	< 0.005	0.03	0.52	195
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	1.10	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	231	231	0.01	0.01	0.03	234
Vendor	0.01	0.01	0.22	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	186	186	< 0.005	0.03	0.01	195
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	0.05	0.05	0.05	0.63	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	126	126	0.01	< 0.005	0.23	128
Vendor	< 0.005	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	100	100	< 0.005	0.02	0.12	105
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	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	16.6	16.6	< 0.005	< 0.005	0.02	17.4
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

3.5. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.17	11.0	0.02	0.30	—	0.30	0.27	—	0.27	—	1,649	1,649	0.07	0.01	—	1,654

Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	1.07	0.90	7.17	11.0	0.02	0.30	—	0.30	0.27	—	0.27	—	1,649	1,649	0.07	0.01	—	1,654
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.57	0.48	3.83	5.86	0.01	0.16	—	0.16	0.15	—	0.15	—	881	881	0.04	0.01	—	884
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.10	0.09	0.70	1.07	< 0.005	0.03	—	0.03	0.03	—	0.03	—	146	146	0.01	< 0.005	—	146
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
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	0.09	0.08	0.08	1.35	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	247	247	0.01	0.01	0.91	250
Vendor	0.01	< 0.005	0.20	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	184	184	< 0.005	0.03	0.52	193
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	0.08	0.07	0.08	1.02	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	227	227	0.01	0.01	0.02	230
Vendor	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	184	184	< 0.005	0.03	0.01	192
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	0.04	0.04	0.05	0.58	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	123	123	0.01	< 0.005	0.21	124
Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	98.1	98.1	< 0.005	0.01	0.12	103
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	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.3	20.3	< 0.005	< 0.005	0.03	20.6
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.2	16.2	< 0.005	< 0.005	0.02	17.0
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

3.7. Linear, Paving (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	1.06	0.89	7.71	10.8	0.01	0.34	—	0.34	0.31	—	0.31	—	1,620	1,620	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	0.03	0.03	0.23	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.8	48.8	< 0.005	< 0.005	—	49.0
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	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.08	8.08	< 0.005	< 0.005	—	8.11
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	0.08	0.07	0.08	1.02	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	227	227	0.01	0.01	0.02	230
Vendor	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	184	184	< 0.005	0.03	0.01	192
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	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.92	6.92	< 0.005	< 0.005	0.01	7.02
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.53	5.53	< 0.005	< 0.005	0.01	5.79
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.15	1.15	< 0.005	< 0.005	< 0.005	1.16
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.96
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	10/16/2025	12/16/2025	5.00	44.0	3
Linear, Grading & Excavation	Linear, Grading & Excavation	4/1/2024	9/30/2025	5.00	392	1
Linear, Paving	Linear, Paving	10/1/2025	10/15/2025	5.00	11.0	2

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	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grading & Excavation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
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	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	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
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

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	17.5	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	6.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT

Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	6.00	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	7.50	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	6.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.41	20.0	HHDT
Linear, Grubbing & Land Clearing	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 (Building Square Footage)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	—	—	12.8	1,561	—
Linear, Grading & Excavation	—	—	12.8	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Construction	12.8	56%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	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	28.8	annual days of extreme heat
Extreme Precipitation	2.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	8.20	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	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	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	0	0	0	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	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
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	1	1	1	2

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	91.1
AQ-PM	67.9
AQ-DPM	8.08
Drinking Water	76.1
Lead Risk Housing	2.41
Pesticides	18.2
Toxic Releases	58.2
Traffic	16.6
Effect Indicators	—
CleanUp Sites	37.6
Groundwater	30.9
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	0.00
Solid Waste	23.0
Sensitive Population	—
Asthma	43.7
Cardio-vascular	52.3
Low Birth Weights	15.5
Socioeconomic Factor Indicators	—
Education	30.0
Housing	14.7

Linguistic	2.81
Poverty	12.2
Unemployment	7.14

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	77.55678173
Employed	38.00846914
Median HI	85.12767869
Education	—
Bachelor's or higher	34.23585269
High school enrollment	26.43397921
Preschool enrollment	8.17400231
Transportation	—
Auto Access	73.42486847
Active commuting	15.02630566
Social	—
2-parent households	65.73848325
Voting	49.13383806
Neighborhood	—
Alcohol availability	93.71230592
Park access	9.303220839
Retail density	5.979725395
Supermarket access	2.399589375
Tree canopy	8.225330425

Housing	—
Homeownership	97.06146542
Housing habitability	91.50519697
Low-inc homeowner severe housing cost burden	85.15334274
Low-inc renter severe housing cost burden	50.78916977
Uncrowded housing	87.19363531
Health Outcomes	—
Insured adults	74.51559091
Arthritis	0.0
Asthma ER Admissions	54.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	38.4
Cognitively Disabled	4.9
Physically Disabled	41.1
Heart Attack ER Admissions	48.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	70.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—

Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	33.4
SLR Inundation Area	0.0
Children	72.4
Elderly	47.3
English Speaking	61.7
Foreign-born	17.2
Outdoor Workers	43.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	93.8
Traffic Density	13.4
Traffic Access	23.0
Other Indices	—
Hardship	33.6
Other Decision Support	—
2016 Voting	64.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	16.0
Healthy Places Index Score for Project Location (b)	55.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	4.00	0.00	20.0	0.00
Inclusive Engagement	5.00	0.00	25.0	0.00
Accountability	0.00	0.00	0.00	0.00
Construction Equity	6.00	0.00	30.0	0.00
Public Health and Air Quality	2.00	0.00	10.0	0.00
Inclusive Economics & Prosperity	3.00	0.00	15.0	0.00
Inclusive Communities	3.00	0.00	15.0	0.00
Total	23.0	0.00	115	0.00

Based on the weighted score of 0 out of a total 115 possible points, your project qualifies for the Acorn equity award level.

Organization(s) consulted by the user to complete the Health & Equity Scorecard:



7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Per District.
Construction: Off-Road Equipment	Per District.
Construction: Demolition	Demolishing of existing Lift Station
Construction: Trips and VMT	Per District assumed a total of 6 vendor trucks for each of the construction activities (2 for water trucks per Rule 403 and 4 for material delivery and misc. hauling) Changed Grubbing and Land Clearing vendor trips from 0 to 6; updated Grading and Excavation vendor trips from 1 to 6; updated Paving vendor trips from 0 to 6.
Construction: Paving	7.186 acres is project alignment 5.63 acres is staging areas

APPENDIX B: BIOLOGICAL TECHNICAL REPORT

BIOLOGICAL TECHNICAL REPORT

For:

Mead Valley Cajalco Sewer Project



Prepared By:

ALBERT A. WEBB ASSOCIATES

September 2023

Contents

EXECUTIVE SUMMARY	4
1.0 INTRODUCTION.....	6
1.1 Project Location	6
1.2 Project Description.....	6
2.0 METHODS.....	7
2.1 Literature Review.....	7
2.2 General Biological Survey	7
2.3 Focused Surveys for Special-Status Biological Resources	9
2.4 Survey Limitations	11
3.0 REGULATORY SETTING.....	12
3.1 Federal Regulations.....	12
3.2 State Regulations	14
3.3 Local Regulations.....	16
4.0 RESULTS	18
4.1 Land Uses	18
4.2 Soils	18
4.3 Vegetation and Land Cover Types	18
4.4 Common Plants.....	20
4.5 Common Wildlife	21
4.6 Jurisdictional Non-Wetland Waters and Wetlands	21
4.7 Special-Status Biological Resources.....	23
4.8 Wildlife Corridors and Habitat Linkages	26
5.0 IMPACTS ANALYSIS.....	27
5.1 Impacts to Vegetation Communities and Land Cover Types.....	27
5.2 Impacts to Special-Status Plant Species	28
5.3 Impacts to Special-Status Wildlife Species	29
5.4 Impacts to Jurisdictional Non-Wetland Waters and Wetlands.....	29
5.5 Impacts to Wildlife Corridors and Habitat Linkages.....	30
5.6 Impacts to Nesting Birds.....	30
5.7 Cumulative Impacts.....	30
6.0 Regional Resource Planning/MSHCP Consistency Analysis	31
6.1 Reserve Assembly Analysis.....	31
6.2 Public Quasi-Public Lands in Reserve Assembly Analysis	31
6.3 Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2)	31
6.4 Narrow Endemic Plant Species (MSHCP Section 6.1.3).....	32
6.5 Additional Survey Needs and Procedures (MSHCP Section 6.3.2).....	32

6.6 Information on Other Species.....34

6.7 Urban/Wildlands Interface (MSHCP Section 6.1.4).....34

6.8 Stephens Kangaroo Rat Habitat Conservation Plan34

7.0 RECOMMENDATIONS36

 BIO-1 Temporary Construction Fencing36

 BIO-2 Burrowing Owl Pre Construction Survey36

 BIO-3 Least Bell’s Vireo.....36

 BIO-4 SWPPP Plan37

 BIO-5 Biological Monitoring37

 BIO-6 Nesting Bird and Raptor Avoidance37

8.0 REFERENCES39

Appendices

Appendix A – Figure References

Appendix B – Photo Log

Appendix C – Potential to Occur Tables

Appendix D - Sept. 2023 Focused Burrowing Owl Survey Report, Albert A. Webb Associates.

 Aug. 22, 2023 Focused Least Bell’s Vireo Survey Summary Report, Albert A.
 Webb Associates.

Tables

Table 1. Project Areas..... 7

Table 2. General Biological Field Survey Conditions..... 8

Table 3. Schedule of Burrowing Owl Habitat Assessments and Focused Surveys 10

Table 4. Schedule of Least Bell’s Vireo Surveys 10

Table 5. Vegetation Communities and Land Cover Types 18

Table 6. Burrowing Owl Survey Results25

Table 7. Summary of Impacts to Vegetation Communities and Land Cover Types.....28

Table 8. Schedule of Burrowing Owl Habitat Assessments and Focused Surveys33

EXECUTIVE SUMMARY

Albert A Webb Associates (WEBB) has completed this biological technical report for the Mead Valley Cajalco Sewer Project (Project) as requested by Eastern Municipal Water District (EMWD). EMWD is proposing to construct a new gravity trunk sewer line within Cajalco Road in the County Riverside, California.

The main objective of this report is to provide an assessment of the existing biological conditions within the 7.2-acre Project footprint which is wholly within Cajalco Road, 5.6-acre staging areas, as well as the 79.3-acre biological study area (BSA) defined as a 100-foot wide buffer zone around the Project footprint and staging areas. This report also includes an analysis of potential impacts to sensitive biological resources and potentially jurisdictional resources, ensuring compliance with local, state, and federal policies. This report serves as the necessary biological resources documentation for EMWD's review process under the California Environmental Quality Act (CEQA).

During the period between February 2023 and August 2023, WEBB conducted several surveys, including a general biological assessment, potential jurisdictional aquatic features assessment, burrowing owl focused surveys, and focused least Bell's vireo surveys. The BSA comprises six land cover types and vegetation communities: urban/developed lands, disturbed habitat, non-native grasslands, eucalyptus woodland, southern riparian woodland, and emergent wetland; however, the Project footprint consists of only three cover types: urban/developed lands, disturbed habitat, and non-native grassland.

Within the Project footprint, several corrugated steel culverts are located within Cajalco Road, underground, intersecting the Project alignment at different points. Additionally, potentially jurisdictional aquatic features were observed outside the Project footprint but within the BSA, which are potentially under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW). The current Project design will have no direct impacts to these potentially jurisdictional aquatic resources. In the event the Project design changes to intersect with these areas, permits may be needed.

The Project does not propose any permanent impacts, but temporary impacts related to construction equipment and operating along Cajalco Road within the Project alignment are anticipated for urban/developed lands, disturbed habitat, and non-native grasslands. While no special-status species were observed within the Project footprint, least Bell's vireo was detected in riparian habitat located adjacent to Project alignment. Potential significant indirect impacts have been identified for burrowing owls, least Bell's vireo, and nesting bird species, unless the recommendations included herein are not implemented. This report proposes specific measures to address these potential impacts, ensuring their reduction to below a level of significance.

Although the Project is located within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), EMWD is not a permittee under the MSHCP and is not obtaining coverage as a Participating Special Entity (PSE) through the Western Riverside

County Regional Conservation Authority (RCA). However, the Project is consistent with the guidelines of the MSHCP. The Project also falls within the boundaries of the adopted Habitat Conservation Plan for Stephens' kangaroo rat but is exempt from paying development fees, as no impacts are proposed within the designated core reserves or within suitable habitat.

Remainder of Page Left Blank

1.0 INTRODUCTION

This report presents the findings of a biological resources study conducted by Albert A. Webb Associates (WEBB) for the Mead Valley Cajalco Sewer Project (Project) proposed by the Eastern Municipal Water District (EMWD) located in unincorporated Riverside County, California. The purpose of the study is to provide the EMWD, resource agencies, and the public with current biological data required for the review of the project under the California Environmental Quality Act (CEQA), as well as to ensure compliance with federal, state, and local regulations.

The report provides an overview of the Project alignment's existing biological conditions, including vegetation communities and sensitive habitat types, soils, potentially jurisdictional waters, and the presence or potential presence of special-status species. Additionally, the report assesses the impacts of the Project and proposes recommendations to address any significant adverse effects on special-status biological resources that are expected to occur as a result of Project implementation. Throughout this report, the Project alignment, including the staging areas, will collectively be referred to as the "Project," unless otherwise specified.

1.1 Project Location

The proposed Project is located in Riverside County, California, (Figure-1 Regional Map; all figures are provided in Appendix A). The Project is located within Cajalco Road, approximately 2 miles west of I-215 and 5 miles east of Lake Mathews (Figure 2- Project Vicinity). The Project alignment falls within Sections 8, 9, 10, and 11 of Township 4 South, Range 4 West, as depicted in the Steele Peak 7.5-minute quadrangle map. Cajalco Road is a public right-of-way and therefore does not have Assessor Parcel Numbers (APNs) assigned to it, however three staging areas related to the Project can be identified by the following APNs: 318-140-030, 317-060-043, 318-120-039, and 318-120-038 (Figure 2a-Project Site).

1.2 Project Description

EMWD is proposing to construct new a gravity trunk sewer line within Cajalco Road in Riverside County. The proposed Project alignment is within the EMWD and Western Municipal Water District's service areas, however EMWD will be the Lead Agency under the California Environmental Quality Act (CEQA).

The proposed Project entails the construction of approximately 12,600 linear feet of 8-inch to 15-inch diameter polyvinyl chloride (PVC) or vitrified clay pipe (VCP) gravity trunk sewer pipeline as well as 4-to-5-foot manholes along Cajalco Road. The Project gravity sewer line will be located entirely within the existing right of way of Cajalco Road. Once the sewer line is completed, EMWD will then demolish and decommission the existing Clark Street Sewer Lift Station located at the intersection of Clark Street and Cajalco Road.

Construction methods will include open excavation trenching techniques for the pipeline and the use of jack and bore trenchless techniques to avoid storm drain crossings, wherever

possible. Ground excavation will be at a minimum of 4-feet, but not to exceed 20 feet in depth. Table 1 summarizes the different Project areas evaluated in this study.

Table 1. Project Areas

Project Segment	Area (acres)
Project Footprint	7.2
Staging Areas	5.6
Biological Study Area (100-ft buffer)	79.3
Burrowing Owl Study Area (500-ft buffer)	376.5

2.0 METHODS

2.1 Literature Review

Literature and authoritative database queries were performed to assist in determining the presence or potential occurrences of special-status plant and animal species on the Project alignment or vicinity of the Project alignment. The following resources were reviewed:

- U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Perris, Lake Mathews, Steele Peak, Riverside West, Riverside East, Sunnymead, Alberhill, Lake Elsinore, Romoland) (USGS 2023A)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2023)
- Western Riverside Multiple Species Habitat Conservation Plan (MSHCP 2004)
- California Department of Fish Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (CNDDDB 2023)
- the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants (CNPS 2023)
- U.S Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC 2023A)
- USFWS National Wetlands Inventory (USFWS 2023B)
- USGS National Hydrography Dataset (USGS 2023B)

2.2 General Biological Survey

On February 22nd, 2023 and February 27th, 2023, WEBB Senior Biologist Marshall Paynard and WEBB Environmental Analyst Virginia Waters, conducted a reconnaissance-level field assessment of the proposed Project footprints, including a 100-foot survey buffer, herein defined as the biological study area (BSA). The field assessment was conducted on-foot to systematically assess and document the BSA for sensitive biota and their habitats, including other environmental attributes such as: topography, soil type, water features, and vegetation

communities. Table 1 below provides the date, time, and average weather conditions for the extent of the field assessments.

Table 2. General Biological Field Survey Conditions

Date/Time	Climatic Conditions
February 22 nd 2023 / 0630-1308	Air Temperature: 45-60°F; Wind: 0-1 miles per hour (MPH); Cloud Cover: 10%
February 27 th , 2021 / 1200-1600	Air Temperature: 63-64°F; Wind: 0-1 MPH; Cloud Cover: 40%

Vegetation Community and Land Cover Mapping

Vegetation communities and land cover types present in the BSA were mapped directly in the field on a 200-foot scale, aerial satellite imagery-based field map. Following completion of the field assessment, all vegetation communities were digitized and quantified using ArcGIS Pro software. Vegetation communities were mapped according to Holland (1986).

Plants

Plant species observed during the field assessment of the BSA were identified by morphology and recorded in a standard field notebook. Plant species that could not be identified immediately in the field were identified in the laboratory using taxonomic keys. Latin and common names for plant species included in this report follow, The Jepson Manual: Vascular Plants of California (Baldwin et al. 2012).

Wildlife

Wildlife species detected during field assessments by sight, calls, tracks, scat, or other signs were recorded in a standard field notebook. General information regarding wildlife species present in the region was obtained Center of North American Herpetology (2023) for amphibians and reptiles, the American Ornithologists' Union (2023) for birds, the North American Butterfly Association (NABA 2023) for butterflies, and Bradley et al. (2014) for mammals.

Jurisdictional Non-Wetland Waters and Wetlands

Satellite aerial imagery and USGS topographic maps were reviewed prior to the field survey to detect any potential Waters of the United States, including wetlands, under the jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the federal Clean Water Act; Waters of the State under the jurisdiction of the California Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the federal Clean Water Act and the Porter-Cologne Act; and Streambeds under the jurisdiction of California Department of Fish and Wildlife (CDFW), pursuant to Section 1602 of the California Fish and Game Code. All potential jurisdictional resources, if present in the BSA, were mapped in the field and then digitized using ArcGIS Pro software.

2.3 Focused Surveys for Special-Status Biological Resources

Special-status biological resources are defined herein as follows: plant or animal species listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA; plants and animals considered by CDFW to be rare, threatened, endangered, or a Species of Special Concern (SSC) in California, which includes plants and animals tracked by CNDDDB, and plants tracked by the CNPS as California Rare Plant Rank (CRPR) 1, 2, 3, or 4; plants and animals considered locally significant in local or regional plans, policies, or ordinances; habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; jurisdictional wetlands and non-wetland waters; and, wildlife corridors and habitat linkages.

A list of special-status plants and wildlife species evaluated for the BSA is provided as Appendix B to this report; the animal list is derivative of a nine-quad search performed in CNDDDB (CNDDDB 2023) and the plant list is derivative of a nine-quad search performed in CNDDDB (2023) and CNPS (2023).

WEBB biologists performed focused surveys within the Project footprint and corresponding 500-foot survey buffer for California Species of Special Concern (SSC) burrowing owl (*Athene cunicularia*), and the State/Federally endangered least Bell's vireo (*Vireo bellii pusillus*). The survey methods and limitations (if any) of each focused survey completed are discussed below.

2.3.1 Habitat Assessment/Focused Survey(s): Burrowing Owl

Burrowing owl is a CDFW SSC and a MSHCP covered species. WEBB Senior Biologist, Marshall Paynard, and WEBB Environmental Analyst, Virginia Waters, conducted a burrowing owl habitat assessment, followed by focused surveys in suitable habitat within the Project footprint, including a 500-foot survey buffer, herein defined as the burrowing owl study area. The habitat assessment and focused surveys were conducted in accordance with the survey guidelines as outlined in Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFG 2012).

The surveyors slowly walked transects no greater than 20 meters apart through all areas of potentially suitable habitat located in the burrowing owl study area, visually searching for suitable burrows or burrow surrogates (dimensions of >11 centimeters in diameter and >150 centimeters in depth), burrowing owl sign (i.e., pellets with regurgitated fur, bones, and insect parts; whitewash; or feathers), and burrowing owl individuals, with the aid of binoculars. All potentially suitable burrows observed were documented, and suitable habitat was identified. Post completion of the habitat assessment, suitable burrowing owl habitat areas were refined so that the subsequent surveys were conducted in the approximately 53-acres of suitable habitat. As shown in Table 2, following the habitat assessment, four subsequent surveys were conducted, with at least one site visit between February 15th and April 15th, and a minimum of three survey visits, at least three weeks apart, between April 15th and July 15th, with at least one visit after June 15th.

Table 3. Schedule of Burrowing Owl Habitat Assessments and Focused Surveys

Date/Time	Surveyor	Type	Climatic Conditions
February 22 nd 2023 / 0630-1308	Marshall Paymard, Virginia Waters	Habitat Assessment	Air Temperature: 45-60°F; Wind: 0-1 MPH; Cloud Cover:10%
March 8 th .2023 / 0630-1006	Marshall Paymard, Virginia Waters	Focused Survey #1	Air Temperature: 48-52°F; Wind: 0-1 MPH; Cloud Cover: 0%
April 20 th .2023 / 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #2	Air Temperature: 50-63°F; Wind: 0-1 MPH; Cloud Cover: 0%
May 24 th .2023 / 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #3	Air Temperature: 52-66°F; Wind: 0-1 MPH; Cloud Cover: 0%
June 27 th .2023 / 0630-0900	Marshall Paymard, Virginia Waters	Focused Survey #4	Air Temperature: 70°F; Wind:2-5 MPH; Cloud Cover: 0%
Source: <i>Focused Burrowing Owl Survey Report for Mead Valley Cajalco Sewer Project</i> , Albert A. Webb Associates, September 2023 (located in Appendix D).			

2.3.2 Habitat Assessment and Focused Survey(s): Least Bell's Vireo

Least Bell's vireo (LBV) is both State and Federally listed as endangered and is an MSHCP covered species. An LBV habitat assessment and protocol surveys were conducted in accordance with the USFWS Survey Guidelines (USFWS 2001) within the approximately 5-acres of suitable habitat located within 500-feet of the Project footprint. As shown in Table 3, a habitat assessment, and a total of eight focused LBV surveys were conducted by qualified WEBB biologist, Marshall Paymard, with assistance from WEBB environmental analyst, Virginia Waters, between April 10th to July 31st. All surveys were conducted between dawn and 11:00 a.m. during weather conditions conducive for species detection. Pursuant to the USFWS survey guidelines, no recorded vocalizations were used to initiate call-back. All LBV and brown-headed cowbird (*Molothrus ater*) locations were mapped on a map and digitized using GIS software.

Table 4. Schedule of Least Bell's Vireo Surveys

Date/Time	Surveyor	Type and Survey #	Climatic Conditions
February 27 th .2023 / 0800-1200	Marshall Paymard, Virginia Waters	Habitat Assessment	Not recorded.
April 12 th .2023 / 0620-1100	Marshall Paymard, Virginia Waters	Focused Survey #1	Air Temperature: 56-64°F; Wind: 0-1 MPH; Cloud Cover: 25%
May 3 rd .2023 / 0630-1006	Marshall Paymard, Virginia Waters	Focused Survey #2	Air Temperature: 48-55°F; Wind: 0-1 MPH; Cloud Cover: 50%

Date/Time	Surveyor	Type and Survey #	Climatic Conditions
May 22 nd , 2023 / 0632-1100	Marshall Paymard, Virginia Waters	Focused Survey #3	Air Temperature: 56-62°F; Wind: 0-2 MPH; Cloud Cover: 0%
June 10 th , 2023 / 0633-1100	Marshall Paymard, Virginia Waters	Focused Survey #4	Air Temperature: 68-70°F; Wind: 2-5 MPH; Cloud Cover: 0%
June 21 st , 2023 / 0615-1056	Marshall Paymard, Virginia Waters	Focused Survey #5	Air Temperature: 68-70°F; Wind: 2-5 MPH; Cloud Cover: 0%
July 1 st , 2023 / 0632-1058	Marshall Paymard, Virginia Waters	Focused Survey #6	Air Temperature: 62-70°F; Wind: 2-5 MPH; Cloud Cover: 0%
July 12 th , 2023 / 0638-1047	Marshall Paymard	Focused Survey #7	Air Temperature: 68-76°F; Wind: 1-3 MPH; Cloud Cover: 0%
July 31 st , 2023 / 0630-1025	Marshall Paymard, Virginia Waters	Focused Survey #8	Air Temperature: 68-70°F; Wind: 2-5 MPH; Cloud Cover: 0%
Source: 2023 Least bell's vireo Survey Summary Report for the Mead Valley Cajalco Sewer Project, Riverside County California, Albert A. Webb Associates. August 22, 2023 (located in Appendix D).			

2.4 Survey Limitations

Regarding LBV, although LBV vocalizations could be heard during the surveys, suitable habitat is located in close proximity of Cajalco Road, which generates significant ambient noise levels. Consequently, LBV detections in the proximity of Cajalco Road could have been intermittently obscured during periods of heightened ambient noise levels during peak traffic hours.

3.0 REGULATORY SETTING

3.1 Federal Regulations

Federal Endangered Species Act (FESA)

The Federal Endangered Species Act (FESA) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing FESA are the USFWS and the U.S National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a “take” under the FESA. Section 9(a) of the FESA defines take as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” and “harass” are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species’ behavioral patterns.

FESA Section 7 is called "Interagency Cooperation," and it is the mechanism by which Federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species’ use of a site and there is an associated federal action for a proposed impact.

Under the provisions of FESA Section 10(a), permits may be issued for the incidental take of endangered or threatened species, accompanied by the preparation of a Habitat Conservation Plan (HCP), regardless of the presence of a federal nexus. The term "incidental" denotes taking that is secondary to, and not the primary purpose of, a lawful activity. To obtain Section 10(a) permits, an HCP must be submitted, demonstrating how the taking will be minimized and ensuring the species' survival. For instance, the MSHCP serves as a regional HCP developed in accordance with FESA Section 10(a), allowing for the take of listed species, provided the project is in compliance with the MSHCP.

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is the specific areas within the geographic area, occupied by the species at the time it was listed, that contain the physical or biological features that are essential to the conservation of endangered and threatened species and that may need special management or protection. Critical habitat may also include areas that were not inhabited by the species at the time of listing but are crucial to its conservation. Critical habitat designations affect only Federal agency actions or federally funded or permitted activities. Critical habitat designations do not affect activities by private landowners if there is no Federal “nexus”, or no Federal funding or authorization associated with a project. Federal agencies are required to avoid “destruction” or “adverse modification” of designated critical habitat.

Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) prohibits the take of protected migratory bird species without prior authorization by the USFWS. Additionally, Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds,” requires that any project with

federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The list of migratory bird species protected by the law is primarily based on bird families and species included in the four international treaties (Canada 1916, Mexico 1936, Japan 1972, and Russia 1976). In the Code of Federal Regulations one can locate this list under Title 50 Part 10.13 (10.13 list). The 10.13 list was updated in 2020, incorporating the most current scientific information on taxonomy and natural distribution.

A migratory bird species is included on the list if it meets one or more of the following:

- It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
- Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
- New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

The Migratory Bird Treaty Reform Act of 2004 (MBTRA) amended the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes (USFWS 2023C). The MBTRA requires the USFWS to publish a list of all non-native, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions (USFWS 2023).

In general, the MBTA is used to place restrictions on disturbance of active bird nests during the nesting season (generally February 1 to August 31). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests. Currently, birds are considered to be nesting under the MBTA when there are eggs or chicks, which are dependent on the nest.

Clean Water Act

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects (EPA 2023). Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Proposed activities are regulated through a permit review process. An individual permit is required for potentially significant impacts. Individual permits are reviewed by the U.S. Army Corps of Engineers or an approved State/Tribal 404(g) Program which evaluates applications under a public interest review, as well as the environmental criteria set forth in the CWA Section 404(b)(1) Guidelines, regulations promulgated by EPA (EPA 2023).

For most discharges that will have only minimal adverse effects, a general permit may be suitable. General permits are issued on a nationwide, regional, or state basis for particular categories of activities. The general permit process eliminates individual review and allows certain activities to proceed with little or no delay, provided that the general or specific conditions for the general permit are met. For example, minor road activities, utility line backfill, and bedding are activities that can be considered for a general permit (EPA 2023).

3.2 State Regulations

California Endangered Species Act (CESA)

Originally enacted in 1970, CESA was repealed and replaced by an updated version in 1984 and amended in 1997. Plant and animal species may be designated threatened or endangered under CESA after a formal listing process by the California Fish and Game Commission (CDFW 2023). Approximately 250 species are currently listed under CESA. A CESA-listed species, or any part or product of the plant or animal, may not be imported into the state, exported out of the state, “taken” (i.e., killed), possessed, purchased, or sold without proper authorization. CESA Section 2053 requires that state agencies may not approve projects that will jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy (CDFW 2023). The CESA authorizes that private entities may “take” plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with CESA (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of CFG Code authorizes the CDFW to issue an Incidental Take Permit for state listed threatened and endangered species if specific criteria are met. “Take” is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California ESA allows for take incidental to otherwise lawful development projects.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) serves to: inform governmental decision makers and the public about the potential significant environmental effects of proposed activities; identify ways that environmental damage can be avoided or significantly reduced; prevent significant, avoidable damage to the environment by requiring feasible project alternatives and mitigation measures; and disclose to the public the reasons for a governmental approval despite the project causing significant environmental effects. Moreover, CEQA affords protections to threatened and endangered species that are not listed on the federal or state list of protected species, and may consider some species as, rare or

endangered if the species can be shown to meet certain specified criteria. CEQA Guidelines Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose “survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors” (14 CCR 15000 et seq.). A rare animal or plant is defined in CEQA Guidelines Section 15380(b)(2) as a species that, although not presently threatened with extinction, exists “in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or ...the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered ‘threatened’ as that term is used in the Federal Endangered Species Act.” Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c). CEQA also requires identification of a project’s potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate native plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, unless authorized by CDFW via a permit or other agreement pursuant to the applicable regulations, or under certain other limited circumstances. The CESA of 1984 (Fish and Game Code Section 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code (California Fish and Game Code §§ 1900-1913).

Fully Protected Species

The State of California first began to designate species as “fully protected” prior to the creation of the FESA and the CESA. The designation and protection of fully protected species is established by FGC sections 3511, 4700, 5050, and 5515. Except in very limited circumstances such as pursuant to necessary scientific research, including efforts to recover a species, or an approved Natural Community Conservation Plan (NCCP), fully protected species may not be taken or possessed.

California Fish and Game Code

The California Fish and Game Code regulates the taking of birds, mammals, fish, amphibians, and reptiles, as well as natural resources such as wetlands and waters of the state. According to Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) 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. Section 3513 states that is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by

rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. CDFW currently defines an active nest as one that is under construction or in use and includes existing nests that are being modified. For example, if a hawk is adding to, or maintaining an existing stick nest in a tree, then the nest is deemed active and protected under these Fish and Game Code Sections.

In Section 1602 of the Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement is required for impacts to jurisdictional wetlands in accordance with Section 1602 of the California Fish and Game Code.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (the Act) is a California state law that was enacted in 1969 to protect and manage the state's water resources. The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. The Act establishes a framework for regulating discharges of pollutants into the state's waters and provides for the issuance of permits to regulate discharges. Under this Act, the State Water Resources Control Board (SWRCB) develops statewide water quality plans, and the Regional Water Quality Control Boards (RWQCB) develop basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans.

Projects with impacts to jurisdictional waters must demonstrate compliance with the goals of the Act by developing Stormwater Pollution Prevention Plans, Standard Urban Storm Water Mitigation Plans, and other measures to obtain a CWA Section 401 certification.

Under the Porter-Cologne Act, the SWRCB and the RWQCBs have the authority to:

- Regulate the discharge of pollutants into the state's waters.
- Establish water quality objectives and standards for surface waters.
- Develop and implement programs to protect and improve water quality.
- Conduct investigations and take enforcement actions to prevent violations of water quality standards and regulations.
- Regulate the use of groundwater to prevent contamination of surface waters.
- Regulate activities that may impact the quality of the state's waters, such as land use activities and mining operations.

3.3 Local Regulations

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP is a long-term conservation plan designed to protect and manage a diverse array of plant and animal species and their habitats in western Riverside County, California. The MSHCP was developed through a collaborative effort between federal, state, and local agencies, along with conservation groups, landowners, and other stakeholders.

The plan covers an area of over 1.26 million acres and provides for the conservation and management of over 146 plant and animal species. The MSHCP includes several conservation measures, such as habitat restoration, enhancement, and creation, as well as the preservation of key wildlife corridors and the acquisition of conservation easements and fee title interests. The MSHCP also includes provisions for monitoring and adaptive management to ensure that the conservation measures are effective in achieving their intended goals.

The Project proponent is not a permittee to the MSHCP, and as such is not subject to the requirements of the MSHCP, nor is subject to the benefits of the MSHCP. However, in accordance with CEQA, the Project must remain in compliance with the local adopted plans, such as the MSHCP. An MSHCP Consistency Analysis is provided below in Section 6 of this report.

Stephen's Kangaroo Rat Habitat Conservation Plan

The Habitat Conservation Plan (HCP) specifically developed for Stephens' kangaroo rat (SKR) outlines the strategies for conservation, mitigation, and monitoring of this species and its habitat. The HCP designates seven core reserves that are dedicated to the conservation of SKR and its associated habitat. Within these core reserves, measures are implemented to ensure the long-term survival and protection of the species.

The SKR HCP includes a 30-year incidental take authorization, which allows for limited and regulated impacts on SKR populations and their habitats within the designated boundaries. The authorized areas include lands within the County of Riverside, encompassing the cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula.

4.0 RESULTS

4.1 Land Uses

The BSA is a 100-foot buffer around the Project footprint and staging areas that totals an area of 79.3-acres. The land uses around the Project are comprised of paved roadway with associated disturbed shoulders, single-family homes, commercial businesses, and disturbed lots. The BSA exhibits characteristics of semi-rural residential development, with mixed disturbed lots and ornamental tree plantings. The Project alignment is 7.2 acres and staging areas are another 5.6-acres and are all included in the BSA.

4.2 Soils

The NRCS Web Soil Survey (USDA 2023) identifies 13 soil map units in the BSA (Figure 3- USDA Soils). The soils present in the BSA are as follows:

- CkF2 Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
- MmC2 Monserate sandy loam, 5 to 8 percent slopes, eroded
- VsD2 Vista coarse sandy loam, 8 to 15 percent slopes, eroded
- MmB Monserate sandy loam, 0 to 5 percent slopes
- FaD2 Fallbrook sandy loam, 8 to 15 percent slopes, eroded
- FfC2 Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded
- HcC Hanford coarse sandy loam, 2 to 8 percent slopes
- PaC2 Pachappa fine sandy loam, 2 to 8 percent slopes, eroded
- FbC2 Fallbrook sandy loam, shallow, 5 to 8 percent slopes, eroded
- ChC Cieneba sandy loam, 5 to 8 percent slopes
- ChD2 Cieneba sandy loam, 8 to 15 percent slopes, eroded
- MmD2 Monserate sandy loam, 8 to 15 percent slopes, eroded
- GyC2 Greenfield sandy loam, 2 to 8 percent slopes, eroded

4.3 Vegetation and Land Cover Types

The BSA contains a total of six land cover types and vegetation communities; including, urban/developed lands, disturbed habitat, non-native grasslands, eucalyptus woodland, southern riparian woodland, and emergent wetland (see Figures 4A thru 4J-Vegetation Communities and Land Cover Types). The land cover types and vegetation communities are discussed in detail below and summarized in Table 4. Representative photos are provided in Appendix C.

Table 5. Vegetation Communities and Land Cover Types

Vegetation Community/ Land Cover Type	Acres Within the Project Footprint	Acres Within the Project Staging Areas	Acres Within the BSA
Urban/Developed (URB/DEV)	7.00	5.6	43.08
Disturbed Habitat (DH)	0.13	0	15.23
Non-Native Grassland (NNG)	0.06	0.01	18.96

Vegetation Community/ Land Cover Type	Acres Within the Project Footprint	Acres Within the Project Staging Areas	Acres Within the BSA
Eucalyptus Woodland (EUC)	0	0	0.52
Southern Riparian Woodland (SRWD)	0	0	1.43
Emergent Wetland (EW)	0	0	0.03
Totals	7.2*	5.6	79.3*

*Acres may not sum due to rounding

Urban/Developed Lands (DEV)

According to Holland (1986), urban/developed lands refer to areas that have undergone construction or significant physical alterations, to an extent that native vegetation is no longer supported. These lands are typically characterized by the presence of permanent or semi-permanent structures, pavement, hardscape, and landscaped areas featuring various ornamental plants.

The BSA is occupied by 43.08 acres of urban/developed lands. These lands are characterized by single-family residences and commercial businesses, accompanied by ornamental plantings, paved roads, concrete sidewalks, and semi-permanent structures such as trailers, sheds, and graveled lots. Notable tree species commonly found in this classification include the Peruvian pepper tree (*Schinus molle*).

Disturbed Habitat (DH)

Disturbed habitat refers to areas that have not been developed but have experienced physical disturbances caused by human activities. These areas still have a soil substrate and are primarily covered by non-native species (Holland 1986).

Within the BSA, a total of 15.23 acres of disturbed habitat is present. Disturbed habitat refers to areas that retain a soil or earthen ground substrate and if vegetation is present, it is predominantly composed of ruderal species such as cheeseweed (*Malva parviflora*), foxtail barley (*Hordeum murinum*), *Bromus spp.* and *Erodium spp.* Disturbed habitat occurs in the BSA primarily along the shoulders of Cajalco Road and within vacant earthen lots.

Non-Native Grasslands (NNG)

Non-native grasslands are associated with the dominance of grasses, annual forbs, and often associated with numerous species of showy-flowered native annual forbs, especially in years of favorable rainfall (Holland 1986). Common indicator species of non-native grasslands are *Erodium spp.*, *Brassica spp.*, *Avena spp.*, and *Bromus spp.*

A total of 18.96 acres of non-native grasslands occurs in the BSA, primarily along the peripheral segments Cajalco Road. This community is dominated by red stemmed filaree (*Erodium cicutarium*), foxtail barley, London rocket (*Sisymbrium irio*), and stinknet (*Oncosiphon*

piluliferis), with occasional patches at low percent cover of *Amsinckia* spp., and *Plagiobothrys* spp.

Eucalyptus Woodland (EUC)

Eucalyptus habitats range from single-species thickets with little or no shrub understory to scattered trees over a well-developed herbaceous and shrubby understory (Holland 1986).

A total of 0.52-acre of eucalyptus woodlands occurs in the BSA as a sparse stands of red gum eucalyptus (*Eucalyptus camaldulensis*).

Southern Riparian Woodland (SRWD)

Moderate-density riparian woodlands, characterized by the prevalence of small trees or shrubs, alongside isolated taller riparian trees, are commonly found in site locations influenced by major river systems experiencing flood scour, as well as smaller major tributaries. These woodlands exhibit distinct species compositions, including broom baccharis (*Baccharis sarothroides*), western sycamore (*Platanus racemosa*), various species of *Populus*, *Salix* spp., and *Sambucus* spp.

A total of 1.43 acres of southern riparian woodland occurs primarily in the western portion of the BSA. This community is dominated by black willow (*Salix gooddingii*), with occasional stands of arroyo willow (*Salix lasiolepis*). It is important to highlight that this community has experienced substantial disturbance within the south-western portion of the BSA, due to past fire incidents and subsequent clearing activities by heavy equipment, such as bulldozers.

Emergent Wetland (EWTL)

Emergent wetland is typically characterized by low-growing, perennial wetland species, is commonly found in a variety of habitats including channels, seeps and springs, floodplains, lake and river margins, as well as different basins such as pools, ponds, palustrine lakes, montane meadows, and dune swales. These wetlands can occur in both freshwater and alkali environments. These wetlands often emerge in previously disturbed areas, although disturbance is not a requirement for the establishment of this vegetation community.

A total of 0.03-acre of emergent wetland occurs in the BSA ("Feature I") at northeast corner of Clark Street and Cajalco Road within a concrete lined v-ditch channel. The community is dominated by narrowleaf cattail (*Typha domingensis*).

4.4 Common Plants

Common plant species observed in the BSA were typical of disturbed habitat and included: foxtail barley, common fiddleneck, London rocket, red stemmed filaree, Peruvian pepper tree, and cheeseweed.

4.5 Common Wildlife

Common wildlife species observed in the BSA include: American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), mourning dove (*Zenaida macroura*), western fence lizard (*Sceloporus occidentalis*), house finch (*Haemorhous mexicanus*), and song sparrow (*Melospiza melodia*).

4.5.1 Nesting Birds

The BSA contains numerous surfaces, structures, and vegetation that could provide suitable ground nesting habitat and tree nesting habitat for bird species protected under the MBTA and the Fish and Game Code.

4.6 Jurisdictional Non-Wetland Waters and Wetlands

Several potentially jurisdictional aquatic features occur within the BSA (see Figures 5A thru 5J-Potentially Jurisdictional Aquatic Features). These features are described in detail below:

Feature A

Feature A is an ephemeral channel that transports water from offsite areas north of Cajalco Road to the south, facilitated by a single 12-inch corrugated steel culvert. The vegetation within Feature A consists of upland species such as foxtail barley and stinknet. Within BSA, this feature covers an area of 0.01-acre and spans approximately 307 linear feet.

Feature B

Feature B is an unnamed ephemeral channel that conveys flows from the offsite areas north of Cajalco Road to the south of Cajalco Road, via two underground 3-foot diameter corrugated steel culverts. The banks of Feature B north of Cajalco Road and segments south of Cajalco Road are dominated by black willow. It should be noted that portions of Feature B located in the south of the BSA have been recently disturbed by fire and heavy equipment. Within the BSA, this feature occupies an area of 0.01-acre and extends approximately 370 linear feet.

Feature C

Feature C is an unvegetated ephemeral swale that receives runoff from the roadside and direct precipitation. Following a rainfall event, ponding occurs in Feature C; however, it lacks other characteristics associated with vernal pools, such as specific soils and vernal pool plant species; but it is suitable habitat for fairy shrimp. Located just south of Cajalco Road, on the east side of Barton Street, this feature has an approximate size of 0.02-acre and encompasses approximately 156.5 linear feet.

Feature D

Feature D is an ephemeral channel that carries flows southward along the west side of Alexander Street, crossing Cajalco Road through an underground single concrete box-culvert. Within the BSA, this feature covers an area of 0.01-acre and spans approximately 268 linear feet.

Feature E

Feature E is an ephemeral pool that becomes inundated after significant rain events and drains southward under Cajalco Road through a 2-foot diameter corrugated steel culvert. The feature pools in both locations, north and south, of Cajalco Road, eventually infiltrating the ground surface or evaporating. Within the BSA, this feature occupies an area of 0.51-acre and extends approximately 1,100 linear feet. The pool lacks the soils and plant characteristics of vernal pools but it is suitable habitat for fairy shrimp.

Feature F

Feature F is an ephemeral channel that forms a pool just north of Cajalco Road. It then flows south through a concrete box culvert, exiting south of the Road. Upon leaving the culvert, the flow is once again pooled just south of Cajalco Road. When the pool reaches capacity, the flow continues south through a heavily disturbed earthen channel. The pool lacks the soils and plant characteristics of vernal pools but it is suitable habitat for fairy shrimp. Within the BSA, this feature occupies an area of 0.07-acre and spans approximately 545 linear feet.

Feature G

Feature G is an ephemeral channel that enters the BSA from the north and transports flows southward through sheet flow, into an earthen ditch, which then pools, and eventually continues south via a concrete box culvert beneath Cajalco Road. The flow then pools again just south of Cajalco Road and eventually continues south, outside of the BSA, within a shallow channelized earthen feature. The pool lacks the soils and plant characteristics of vernal pools but it is suitable habitat for fairy shrimp. Within the BSA, this feature covers an area of 0.16-acre and extends approximately 1,505 linear feet.

Feature H

Feature H is an ephemeral channel that carries water westward from roadside runoff, via an underground 8-inch diameter corrugated steel culvert that crosses under Haines Street, which then pools just west of Haines Street, and then continues off-site via an earthen channelized feature. Within the BSA, this feature occupies an area of 0.08-acre and spans approximately 913 linear feet.

Feature I

Feature I is an ephemeral channel that receives roadside run-off flow from Clark Street and flows east via a concrete lined v-ditch, which eventually pools in a boulder laden concrete basin, and then flows south underneath Cajalco Road via a concrete box culvert. Once flows reach south of Cajalco Road, they pool within a boulder laden earthen basin, just south of Cajalco Road. A 0.02-acre segment of Feature I located on the northside Cajalco Road is a potential jurisdictional wetland (Emergent Wetland) dominated by narrow leaf cattail. The feature exhibits water ponding, hydrophytic vegetation (cattails), including some riparian species (*Salix spp.*). The pool is suitable habitat for fairy shrimp. Within the BSA, Feature I occupies an area of 0.09-acre and spans approximately 695 linear feet.

4.6.1 Areas of Pooling

No vernal pools were identified in the Project footprint. Several unvegetated ephemeral pools are located in the BSA but adjacent and outside of the Project impact footprint. These pools are ephemeral in nature and have been anthropogenically created as a result from ponding underneath culverts. None of the pools documented exhibit characteristics of vernal pools (i.e., soils and vegetation). However, they are suitable habitat for fairy shrimp species. No fairy shrimp sampling surveys were conducted because EMWD is committed to staying within the Project footprint which will avoid these areas. In the even the Project design changes to impact an area of pooling, then surveys would be required.

4.7 Special-Status Biological Resources

4.7.1 Sensitive Vegetation Communities

CDFW assesses the rarity of vegetation communities, also known as natural communities, using the NatureServe's Heritage Methodology. This methodology evaluates communities at both the Global level, encompassing their full natural range within and outside of California, and the State level, focusing specifically on their occurrence within California. Each community is assigned a single rank, denoted as G (global) and S (state), on a scale of 1 to 5. A rank of 1 indicates a community that is very rare and threatened, while a rank of 5 signifies a community that is demonstrably secure.

When a vegetation community receives a Rarity Ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable), the CDFW considers it a sensitive natural community. These sensitive communities are to be addressed during the environmental review process of CEQA and its equivalent regulations.

Vegetation community descriptions used by the CDFW follow the National Vegetation Classification System (NVCS) using the Manual of California Vegetation (MCV), 2nd Edition (Sawyer et al. 2009). The MCV classifies vegetation communities based on floristic and structural details that are represented as alliances and associations. Vegetation communities mapped within the BSA, and described within this report, follow the descriptions and classifications as defined in Holland (1986). However, all Holland (1986) classifications used in this report were translated to the comparable classification unit under MCV to determine the sensitivity of the vegetation community being analyzed. If a natural community described under Holland (1986) did not have an appropriate direct translation within MCV, then professional judgement was used by the biologist to find the best corresponding association or alliance that would not jeopardize the conservation value of the vegetation community being analyzed.

Southern riparian woodland and emergent wetland are considered sensitive vegetation communities. Impacts to this community would require mitigation, however no impacts are proposed to this community from Project implementation.

4.7.2 Special-Status Plant Species

Special status plant species are defined herein as, plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA; plants considered by CDFW to be “rare, threatened or endangered in California”, which includes plants tracked by the California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1 or 2; plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors, which may include plants tracked by the CNDDDB and CNPS as CRPR 3 or 4; and plants considered locally significant or plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region, or as designated in local or regional plans (e.g., MSHCP), policies, or ordinances.

No special-status plant species were observed during the general habitat assessment, or focused surveys, which were conducted during the bloom periods for special-status plant species known to occur in the Project vicinity. Most of the BSA and all of the impact footprint is composed of urban/developed lands that lack suitable habitat for special-status plants.

4.7.3 Special-Status Wildlife Species

Special-status wildlife species are defined herein as, animal species listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA; animals considered by CDFW to be “rare, threatened, endangered, or a Species of Special Concern (SSC) in California”, which includes animals tracked by the California Natural Diversity Database (CNDDDB); and, animals considered locally significant in local or regional plans, policies, or ordinances.

Focused least Bell’s vireo and burrowing owl surveys were conducted in suitable habitat located within 500-feet of the Project footprint. Results of the focused surveys were positive for least Belle’s vireo and negative for burrowing owl. A brief discussion of the natural history of these species and the focused survey results are provided below.

Burrowing Owl Focused Surveys

The burrowing owl is a small, long-legged, ground-dwelling bird species, well-adapted to open, relatively flat expanses that prefers habitat generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils (DFG 2016). Unique amongst American raptors, the burrowing owl requires underground burrows or other cavities for nesting during the breeding season and for roosting and cover, year-round (DFG 2016). Burrows used by the owls are usually dug by other species, in particular the California ground squirrel and the round-tailed ground squirrel, which are described as host burrowers. They may also use pipes, culverts, and nest boxes where burrows are scarce, these structures are typically referred to as burrow surrogates.

No burrowing owl or burrowing owl sign was detected during the 2023 focused burrowing owl surveys and therefore burrowing owl is presumed to be absent from the burrowing owl study

area (Project footprint and 150-meter survey buffer). A total of 79 burrows suitable for burrowing owl were recorded within the mapped approximately 55-acres of suitable burrowing owl habitat (Figure 6- Burrowing Owl Survey Results). The burrowing owl focused survey results are summarized in Table 5, below and the focused burrowing owl survey report is included in Appendix D to this report.

Table 6. Burrowing Owl Survey Results

Date/Time	Surveyor	Type	Results
February 22 nd 2023 / 0630-1308	Marshall Paymard, Virginia Waters	Habitat Assessment	Suitable habitat identified.
March 8 th , 2023 / 0630-1006	Marshall Paymard, Virginia Waters	Focused Survey #1	No burrowing owl or sign detected.
April 20 th , 2023 / 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #2	No burrowing owl or sign detected.
May 24 th , 2023 / 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #3	No burrowing owl or sign detected.
June 27 th , 2023 / 0630-0900	Marshall Paymard, Virginia Waters	Focused Survey #4	No burrowing owl or sign detected.

Source: *Focused Burrowing Owl Survey Report for Mead Valley Cajalco Sewer Project*, Albert A. Webb Associates, September 2023 (located in Appendix D).

Least Bell's Vireo Focused Surveys

The least Bell's vireo (*Vireo bellii pusillus*) is a small migratory bird that historically inhabited the California Central Valley and the central California Coast ranges. This species gained endangered status in 1986 due to the progressive loss of its habitat over time. A significant factor affecting its nesting productivity is the detrimental impact of brood parasitism by brown-headed cowbirds, a species that invaded California in the early 1900s. Brown-headed cowbirds are notorious for depositing their eggs in the nests of other bird species, thus ensuring the survival of their own offspring while endangering the survival of the host species' young.

The breeding habitat of the least Bell's vireo mainly comprises riparian woodlands dominated by willows. However, it also forages and occasionally nests in nearby mulefat scrub, oak woodlands, and chaparral. In desert areas, it can be found in mesquite thickets. The primary diet of the least Bell's vireo consists of insects and spiders, which it gathers by carefully examining leaves and branches.

Least Bell's vireo was detected within 500-feet of the Project footprint during the 2023 surveys. One least Bell's vireo pair (male and female, adult) and one adult territorial male were identified within approximately 5-acres of southern riparian woodland located on the north and south sides of the Project footprint (Figure 7-LBV Survey Results). The brown-headed cowbird

(*Molothrus ater*) was also detected during a single survey within the southern riparian woodland habitat located on the north side of Cajalco Road (Figure 7-LBV Survey Results), least Bell's Vireo Survey Results). It should be noted that the riparian corridor is bisected by the existing Project footprint (Cajalco Road) and has sustained heavy disturbance from fire and heavy equipment use in the southern portion of its occurrence. Further details regarding the least Bell's vireo surveys can be found in the *Least Bell's Vireo Focused Survey Report for the Cajalco Sewer Project*, Appendix D of this report.

4.8 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that join large spans of natural open space that enable the movement of animals throughout the landscape. Habitat linkages are areas that provide connectivity between habitat patches as well as opportunities for foraging, reproduction, and dispersal habitat for plants and animals. Habitat linkages help minimize the effects of habitat fragmentation as they function as steppingstones for wildlife dispersal.

The Project alignment is not located within designated wildlife corridors or habitat linkages identified in the South Coast Missing Linkages analysis conducted by South Coast Wildlands (2008). The proposed Project is located on the existing Cajalco Road, providing limited to no connectivity to undeveloped areas with naturalized habitat.

5.0 IMPACTS ANALYSIS

The purpose of the impact analysis presented in this report is to accurately identify potential direct and indirect impacts that may arise from the implementation of the Project. The analysis has been conducted in accordance with the requirements of CEQA.

Pursuant to the CEQA Guidelines, three types of impacts or effects are defined:

Direct impacts, also known as primary effects, are actions caused by the Project that occur at the same time and place. These impacts involve the loss, modification, or disturbance of habitats, directly affecting the flora and fauna within those habitats. Additionally, direct impacts encompass the destruction of individual plants or animals. Permanent impacts are direct impacts.

Indirect impacts, also referred to as secondary effects, are reasonably foreseeable and caused by the Project but occur at different times or locations. The CEQA Guidelines describe indirect impacts as follows: "An indirect physical change in the environment is a physical change... which is not immediately related to the project but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect change in the environment" (Section 15064 (d)(2)). Examples of indirect impacts include increased ambient levels of noise or light, predation by domestic pets, competition with exotic plants and animals, introduction of toxins (including pesticides), and human disturbances such as hiking, off-road vehicle use, or unauthorized dumping. Temporary impacts are indirect impacts.

Cumulative impacts or effects refer to the combined effects of two or more individual impacts that, when considered together, are substantial or contribute to the amplification of other environmental impacts. Cumulative impacts can arise from multiple effects of the same Project or from several different projects. They can result from individually minor but collectively significant actions occurring over a period of time.

The impact analysis in this report examines these three types of impacts to provide a comprehensive understanding of the potential consequences associated with the Project.

5.1 Impacts to Vegetation Communities and Land Cover Types

5.1.1 Direct Impacts

The 7.2-acre Project impact footprint and 5.6-acre staging areas encompass three vegetation communities and land cover types: urban/developed lands, disturbed habitat, and non-native grasslands. Although southern riparian woodland, emergent wetland, and eucalyptus woodland are present in the BSA, and southern riparian woodland and emergent wetland are recognized as sensitive vegetation communities, these sensitive communities are outside the Project impact footprint. As a result, there will be no direct adverse effects on the sensitive vegetation communities caused by the implementation of the Project.

5.1.2 Indirect Impacts

Two types of sensitive vegetation communities are present in the BSA (but not within the Project footprint): southern riparian woodland and emergent wetland. Although no direct impacts are anticipated to occur to sensitive vegetation communities, recommendations **BIO-1** and **BIO-5** as outlined in Section 7 of this report should be implemented. These measures will help ensure that no accidental impacts occur to sensitive vegetation communities located in the Project vicinity.

Indirect impacts to vegetation communities and land cover types are quantified and summarized in Table 6 (see Figures 8A thru 8J- Project Impacts).

Table 7. Summary of Impacts to Vegetation Communities and Land Cover Types

Vegetation Community/ Land Cover Type	Direct Impacts (acres)	Indirect Impacts (acres)
Urban/Developed (URB/DEV)	0.00	12.63
Disturbed Habitat (DH)	0.00	0.13
Non-Native Grassland (NH)	0.00	0.06
Eucalyptus Woodland (EUC)	0.00	0.0
Southern Riparian Woodland ⁽¹⁾	0.00	0.0
Emergent Wetland ⁽¹⁾	0.00	0.0
Total	0.0	*12.8
*Acres may not sum due to rounding		
⁽¹⁾ Sensitive vegetation communities.		

5.2 Impacts to Special-Status Plant Species

5.2.1 Direct Impacts

The Project impact footprint is positioned on urban/developed lands, which do not provide suitable habitat for special-status plants. Consequently, no special-status plants were identified during the biological assessments or focused wildlife surveys conducted within the BSA. Therefore, no direct impacts are expected to occur to special-status plant species as a result of Project implementation.

5.2.2 Indirect Impacts

No special-status plants occur in the Project impact footprint, or within Project BSA. As such, no indirect impacts are anticipated to occur to special-status plants.

5.3 Impacts to Special-Status Wildlife Species

5.3.1 Direct Impacts

Project surveys found no suitable habitat for burrowing owl and least Bell's vireo is present in the Project impact footprint; however, suitable habitat is present in the BSA as discussed below under "Indirect Impacts."

5.3.2 Indirect Impacts

Focused surveys were conducted in areas of suitable habitat in the BSA for burrowing owl and least Bell's vireo (see reports in Appendix D). Focused survey results found no burrowing owl present within the burrowing owl survey area (500-foot buffer of the Project footprint); however, in the event burrowing owl colonize suitable burrows within the BSA prior to construction, recommendations **BIO-1**, **BIO-2**, **BIO-5**, and **BIO-6** would reduce indirect impacts to burrowing owl.

Focused survey results found least Bell's vireo individuals and pairs within suitable habitat adjacent to the Project footprint within the BSA. Therefore, indirect and temporary construction impacts to this species are possible during vireo breeding season (March 15-July 31st). Recommendations **BIO-1**, **BIO-3**, **BIO-5**, and **BIO-6** will reduce indirect impacts to least Bell's vireo.

5.4 Impacts to Jurisdictional Non-Wetland Waters and Wetlands

5.4.1 Direct Impacts

Multiple potentially jurisdictional aquatic features in the form of underground corrugated steel road culverts intersect the Project footprint along Cajalco Road. However, the Project has been designed to avoid potentially jurisdictional areas during Project construction. This will be achieved by utilizing the trenchless installation method of jack-and-bore to install the new pipeline beneath the existing road culverts. The launching and receiving pit locations will be strategically placed in upland areas, offset at least five feet on each side of the existing drainage.

It is important to note that jack-and-bore technology does not involve the use of a directional drill auger or fluid that could be unintentionally released during operation, thereby eliminating the risk of a potential frac-out event. The proposed jack-and-bore activities are not expected to result in any inadvertent drill fluid release or frac-out, and therefore no associated impacts are anticipated. Consequently, there will be no direct impacts on aquatic features as a result of the Project. Use of the jack-and-bore method ensures the protection of the drainage features while successfully installing the pipeline.

Moreover, with implementation of recommendations **BIO-1**, **BIO-4**, and **BIO-5**, direct impacts to potentially jurisdictional aquatic features within the Project footprint will be prevented.

5.4.2 Indirect Impacts

Indirect impacts to potentially jurisdictional aquatic features in the BSA may occur as a result of Project implementation if the appropriate measures are not taken. As such, with incorporation of recommendations **BIO-1**, **BIO-4**, and **BIO-5**, indirect impacts to aquatic features will be avoided.

5.5 Impacts to Wildlife Corridors and Habitat Linkages

5.5.1 Direct Impacts

No wildlife corridors or linkages occur within the Project footprint and BSA. As such, no direct impacts or interferences are anticipated to occur to wildlife corridors and habitat linkages.

5.5.2 Indirect Impacts

No wildlife corridors or linkages occur within the BSA. As such, no indirect impacts or indirect interferences are anticipated to occur to wildlife corridors and habitat linkages.

5.6 Impacts to Nesting Birds

The BSA encompasses various surfaces, structures, and vegetation that offer potential nesting habitat for bird species protected under the MBTA and the Fish and Game Code. Construction activities associated with the Project have the potential to indirectly disrupt nesting and breeding birds inhabiting trees and shrubs within BSA. Potential impacts on migratory birds resulting from construction of the Project may include the destruction of eggs or occupied nests, mortality of young birds, and abandonment of nests containing eggs or young birds prior to their ability to fly (fledge). Therefore, with implementation of recommendations **BIO-5** and **BIO-6**, potential direct and indirect impacts to nesting birds can be effectively minimized to a level that is considered less than significant.

5.7 Cumulative Impacts

It is anticipated that the proposed Project will not result in cumulative impacts on the biological resources within the Project alignment or the surrounding region. This conclusion is based on several factors. Firstly, the Project is situated within an already established roadway. Secondly, the impacts associated with the Project will all be temporary in nature and will occur in pre-existing paved and disturbed locations. Therefore, the overall cumulative effects on the biological resources are expected to be minimal.

6.0 Regional Resource Planning/MSHCP Consistency Analysis

In accordance with CEQA guidelines Appendix G, EMWD as the lead CEQA agency is obligated to disclose any potential conflicts between their Project and an existing Habitat Conservation Plan (HCP). Thus, this section will demonstrate the Project's consistency with the MSHCP. Specifically, this section will review how the Project aligns with Section 6.0 of the MSHCP, ensuring a thorough assessment of its adherence to the prescribed guidelines and requirements set forth in the MSHCP.

6.1 Reserve Assembly Analysis

The proposed Project does not occur in a Criteria Area and therefore a Reserve Assembly Analysis is not required. The Project will not conflict with Section 3.0 of the MSHCP.

6.2 Public Quasi-Public Lands in Reserve Assembly Analysis

The proposed Project does not occur in, or adjacent to, PQP Lands. No direct or indirect impacts will occur to PQP lands.

6.3 Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2)

6.3.1 Riparian/ Riverine Areas

Riparian/riverine areas are lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year (MSHCP 2004).

MSHCP riparian/riverine resources were assessed during the biological assessment, as described in Section 2.2 of this report. No riparian habitat occurs in the Project impact footprint and therefore no direct impacts to MSHCP riparian habitat is proposed. Riverine features do intersect the Project footprint via underground corrugated steel culverts and are also located adjacent to the Project footprint; however, as described above in section 5.4 of this report, no direct impacts to riverine resources are anticipated to occur through the use of jack and bore drilling. Indirect impacts are possible if construction goes beyond the Project footprint. By incorporating recommendations **BIO-1**, **BIO-4**, and **BIO-5**, potential indirect impacts to MSHCP riparian/riverine features will be reduced.

6.3.2 Vernal Pools

Vernal pools are seasonal wetlands that occur in depression areas that have wetland indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant

species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season.

No vernal pools were identified in the Project footprint. Several unvegetated ephemeral pools are located in the BSA but adjacent and outside of the Project impact footprint. These pools are ephemeral in nature and have been anthropogenically created as a result from ponding underneath culverts. None of the pools documented exhibit characteristics of vernal pools (i.e., soils and vegetation). With recommendations **BIO-1, BIO-4, and BIO-5**, indirect impacts to aquatic features located in the BSA are reduced.

6.3.3 Fairy Shrimp

The biological surveys identified several unvegetated ephemeral pools located outside of the Project footprint and therefore will not be impacted by Project construction. No fairy shrimp surveys were conducted as part of the Project evaluation. With incorporation recommendations **BIO-1, BIO-4, and BIO-5**, indirect impacts to aquatic resources will be further prevented.

6.3.4 Riparian Birds

As described in Section 4.7.3 of this report, least Bell's vireo was detected within riparian habitat located adjacent to the Project footprint. However, no direct impacts are proposed to riparian habitat. With incorporation of recommendations **BIO-1, BIO-3, BIO-5, and BIO-6** potential indirect impacts to breeding riparian birds including least Bell's vireo will be further reduced.

6.4 Narrow Endemic Plant Species (MSHCP Section 6.1.3)

The Project is not located in a Narrow Endemic Plant Species Survey Area. The Project would not conflict with Section 6.1.3 of the MSHCP.

6.5 Additional Survey Needs and Procedures (MSHCP Section 6.3.2)

6.5.1 Criteria Area Plant Species

The proposed Project is not located in a survey area for Criteria Area Plant species. The Project would not conflict with Section 6.3.2 of the MSHCP.

6.5.2 Amphibians

The proposed Project is not located in a survey area for amphibians. The Project would not conflict with Section 6.3.2 of the MSHCP.

6.5.3 Burrowing Owl

The proposed Project is located adjacent to and within mapped MSHCP survey areas for burrowing owl. As described in Section 4.7.3, WEBB Senior Biologist, Marshall Paynard, and WEBB Environmental Analyst, Virginia Waters, conducted a burrowing owl habitat assessment, followed by focused surveys in suitable habitat within the Project footprint, including a 500-foot

survey buffer, defined as the burrowing owl study area. The habitat assessment and focused surveys were conducted in accordance with the survey guidelines outlined in Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFG 2012).

As shown in Table 7, following the habitat assessment, four subsequent surveys were conducted, with at least one site visit between February 15th and April 15th, and a minimum of three survey visits, at least three weeks apart, between April 15th and July 15th, with at least one visit after June 15th.

Table 8. Schedule of Burrowing Owl Habitat Assessments and Focused Surveys

Date/Time	Surveyor	Type	Climatic Conditions
February 22 nd 2023 / 0630-1308	Marshall Paynard, Virginia Waters	Habitat Assessment	Air Temperature: 45-60°F; Wind: 0-1 MPH; Cloud Cover: 10%
March 8 th , 2023 / 0630-1006	Marshall Paynard, Virginia Waters	Focused Survey #1	Air Temperature: 48-52°F; Wind: 0-1 MPH; Cloud Cover: 0%
April 20 th , 2023/ 0545-1000	Marshall Paynard, Virginia Waters	Focused Survey #2	Air Temperature: 50-63°F; Wind: 0-1 MPH; Cloud Cover: 0%
May 24 th , 2023/ 0545-1000	Marshall Paynard, Virginia Waters	Focused Survey #3	Air Temperature: 52-66°F; Wind: 0-1 MPH; Cloud Cover: 0%
June 27 th , 2023/ 0630-0900	Marshall Paynard, Virginia Waters	Focused Survey #4	Air Temperature: 68-70°F; Wind: 2-5 MPH; Cloud Cover: 0%
Source: <i>Focused Burrowing Owl Survey Report for Mead Valley Cajalco Sewer Project</i> , Albert A. Webb Associates, September 2023 (located in Appendix D).			

A total of 79 suitable burrows were recorded within the burrowing owl study area; however no burrowing owl sign (i.e., pellets, whitewash, prey remains, feathers, tracks, nest burrow decoration materials, or animal manure) was observed at any of the burrows (Figure 6- Burrowing Owl Survey Results). Burrowing owl was not detected during the 2023 focused surveys and is presumed to be absent from the burrowing owl study area.

Impacts

No permanent, temporary, direct, or indirect impacts are proposed to burrowing owl. Burrowing owls are presumed absent from the burrowing owl study area.

Burrowing Owl Recommendations

Due to the presence of suitable habitat within the burrowing owl study area (500-foot buffer of Project footprint) and because burrowing owls may colonize the burrowing owl study area between the time surveys were conducted and the commencement of construction, a pre-construction take avoidance survey(s) shall be conducted in accordance with the Staff Report

on Burrowing Owl Mitigation (DFG 2012) as described in **BIO-2**. The initial take avoidance survey should be conducted no less than 14 days prior to ground disturbance and the second take avoidance survey should be conducted within 24 hours prior to ground disturbance. Both surveys should be performed between morning civil twilight and 10:00 AM, or two hours before sunset until evening civil twilight, walking transects at no greater 20 meters apart within the Project alignment, in suitable foraging habitat within the 150-meters of the Project alignment. If an active burrowing owl burrow is located during the pre-construction burrowing owl survey; the appropriate CDFW office shall be notified and a no-construction buffer should be demarcated in the field of at least 500-feet, or at a distance determined appropriate by the Project biologist. After completion of the burrowing owl take avoidance surveys, a letter report shall be prepared to describe the survey methods, results, and further recommendations, if any.

6.5.4 Mammals

The proposed Project is not located in a survey area for mammals. The Project would not conflict with Section 6.3.2 of the MSHCP.

6.6 Information on Other Species

6.6.1 Delhi Sands Flower Loving Fly

The proposed Project is not located within an area with mapped Delhi soils. No suitable habitat is present for this species within the BSA or Project footprint. The Project would not conflict with Section 6.3.2 of the MSHCP.

6.6.2 Coastal California Gnatcatcher

The proposed Project is not located within an area occupied by coastal California gnatcatcher. No suitable habitat is present for this species within the BSA or Project footprint. The Project would not conflict with Section 6.3.2 of the MSHCP.

6.7 Urban/Wildlands Interface (MSHCP Section 6.1.4)

The proposed Project does not have any adjacency or on-site connection to existing conservation areas or lands designated for conservation purposes. The Project will not conflict with Section 6.1.4 of the MSHCP.

6.8 Stephens Kangaroo Rat Habitat Conservation Plan

The Habitat Conservation Plan (HCP) specifically developed for Stephens' kangaroo rat (SKR) outlines the strategies for conservation, mitigation, and monitoring of this species and its habitat. The HCP designates seven core reserves that are dedicated to the conservation of SKR and its associated habitat. Within these core reserves, measures are implemented to ensure the long-term survival and protection of the species.

The HCP includes a 30-year incidental take authorization, which allows for limited and regulated impacts on SKR populations and their habitats within the designated boundaries.

The authorized areas include lands within the County of Riverside, encompassing the cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula.

The proposed Project falls within the jurisdiction of the SKR HCP. However, it is important to note that the Project does not propose to remove or alter SKR habitat and therefore is exempt from paying mitigation fees. The proposed Project includes the installation of a sewer line within developed and disturbed public rights-of-way that would be returned to pre-project conditions.

7.0 RECOMMENDATIONS

The following discussion provides project-specific mitigation/avoidance measures to reduce potential impacts to special-status resources to a less than significant level.

BIO-1 Temporary Construction Fencing

To protect biologically sensitive areas adjacent to the construction footprint (i.e., suitable habitat for least Bell's vireo and potentially jurisdictional aquatic features) from indirect and inadvertent disturbances, temporary construction fencing will be installed at the limits of Project impacts (refer to Figures 8A – 8J for locations of potentially jurisdictional aquatic features [Features A-I] and least Bell's vireo suitable habitat [southern riparian woodland, SRWD]). The installation of the fencing will be carefully executed by a Project biologist to ensure that it does not adversely affect the sensitive areas that need to be preserved. In the event that work extends beyond the fenced areas or occurs within sensitive habitat areas, all activities will immediately cease until the issue has been resolved to the satisfaction of the Eastern Municipal Water District (EMWD). Any impacts that occur to sensitive areas beyond the approved fence will be addressed through mitigation measures determined by EMWD in coordination with relevant authorities, such as the USFWS, USACE, RWQCB, and/or the CDFW, as applicable based on jurisdiction. Upon completion of the project, the temporary construction fencing will be removed from the site.

BIO-2 Burrowing Owl Pre Construction Survey

An initial burrowing owl take avoidance survey shall be conducted in suitable habitat no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Staff Report on Burrowing Owl Mitigation. (Refer to Figure 6 for location of burrowing owl suitable habitat.) Additionally, a final burrowing owl survey shall be conducted in suitable habitat within 24 hours prior to any ground disturbance related activities. If active nests are identified within the burrowing owl survey area during the pre-construction survey, the nests shall be avoided and an appropriate no-work buffer shall be demarcated in the field at a defined distance deemed adequate by the Project biologist. If Project construction cannot avoid the active burrowing owl area, the CDFW shall be consulted and the appropriate mitigation will need to be negotiated.

BIO-3 Least Bell's Vireo

Construction activities should avoid the off-site riparian habitat within 300 feet from Project construction, from March 15 to July 31, which corresponds to the least Bell's vireo breeding season. (Refer to Figure 7 for location of vireo suitable habitat.) If it is infeasible to avoid construction during this timeframe, a qualified biologist shall conduct surveys for the least Bell's vireo and noise monitoring should be conducted for any activities within 300 feet of occupied habitat. In the event that noise levels are found to potentially adversely affect the least Bell's vireo, appropriate noise attenuation measures should be implemented. This may involve installing a sound wall or employing other methods to minimize noise disturbances. If it is determined that noise levels cannot be adequately mitigated and may harm the least Bell's

vireo breeding cycle, construction activities within 300 feet of occupied habitat should be temporarily halted until after July 31, when the breeding season has concluded.

BIO-4 SWPPP Plan

In order to limit indirect impacts and protect aquatic features located adjacent to the Project footprint, a Storm Water Pollution Prevention Plan (SWPPP) shall be prepared. The SWPPP should include the following, but not limited to:

Best management practices (BMPs): Identify and implement appropriate BMPs to control erosion, manage stormwater runoff, and minimize the release of pollutants offsite. Examples of BMPs include sediment and erosion control measures, including fiber rolls and silt fencing placed around off-site aquatic features in a manner to deter sediment deposition and potential pollutant run-off.

Pollution prevention: Implement measures to prevent the discharge of pollutants into storm drains or nearby water bodies. This may include proper storage and handling of construction materials, spill prevention and response procedures, and regular site clean-up.

Field personal training: Provide training to construction personnel on the SWPPP requirements, BMP implementation, and the importance of preventing pollution. Ensure all employees are aware of their responsibilities in implementing the SWPPP.

Monitoring and reporting: Establish procedures for monitoring the effectiveness of the SWPPP, including regular inspections and reporting any incidents or deviations from the plan. Make necessary adjustments to the plan as needed.

BIO-5 Biological Monitoring

To ensure compliance with project approvals and protection of aquatic resources and sensitive biological resources, a pre-construction environmental training session will be conducted by a qualified biologist for all construction personnel (i.e., Workers Environmental Awareness Training). This training will provide personnel with comprehensive information about the resources present within the Project vicinity and the specific avoidance measures that must be followed. The purpose is to enhance worker awareness and understanding of the importance of protecting these resources during construction activities. Additionally, the qualified biologist will conduct periodic monitoring of the construction limits to ensure that designated avoidance areas are clearly delineated with the installation of temporary fencing. The biologist will also verify that the fencing remains intact and effectively prevents any encroachment or disturbance in the protected areas.

BIO-6 Nesting Bird and Raptor Avoidance

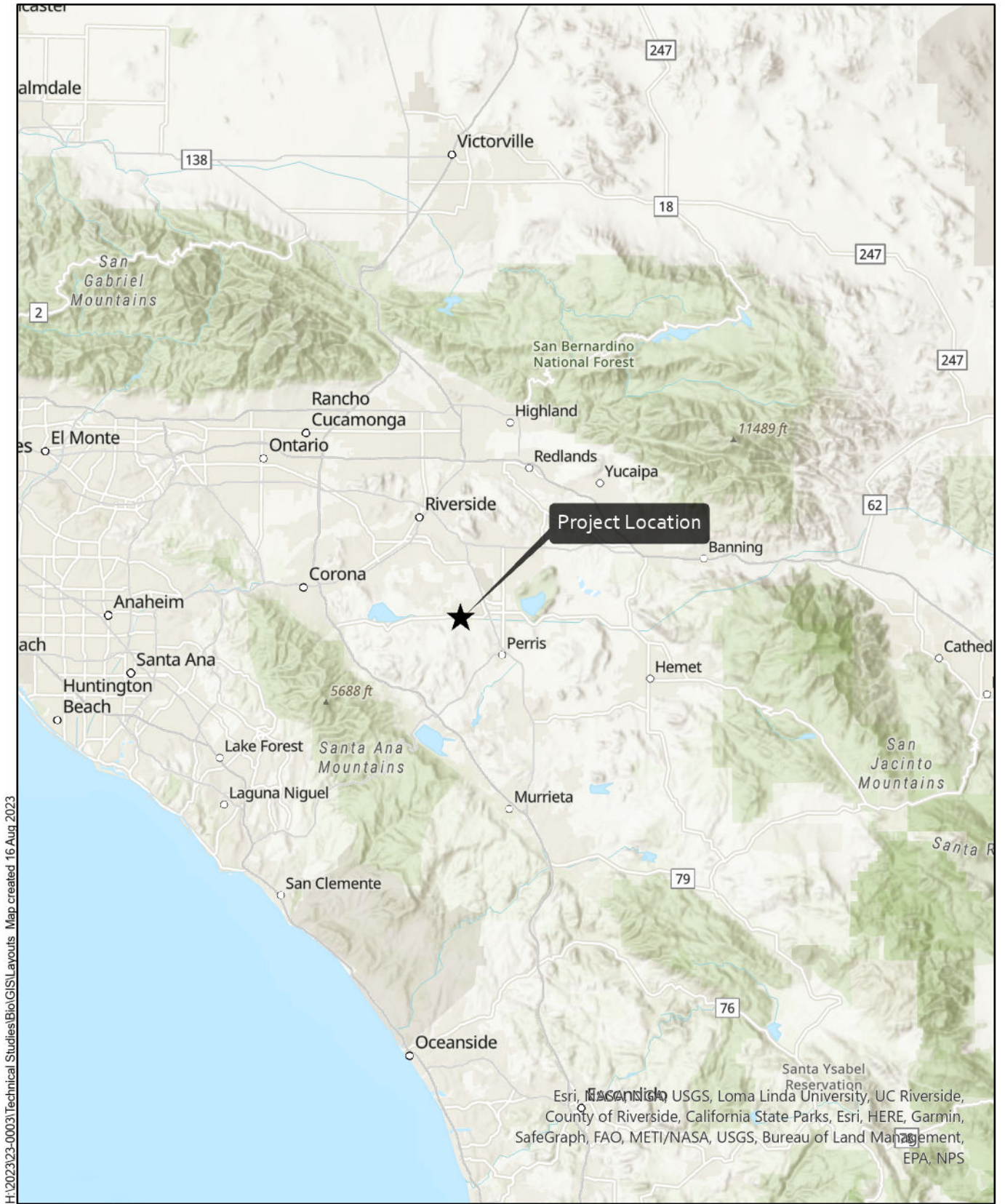
If Project construction cannot be avoided during the avian nesting season (February 1st to August 31st), a qualified biologist will conduct a nesting bird survey within 72 hours prior to commencement of construction within a specified area to determine if active nests of species protected by the MBTA or the California Fish and Game Code are present in the construction

zone and appropriate survey buffer defined as, 500-feet for raptor species, and 100-feet for passerines. If active nests are located during the nesting bird survey; a no-construction buffer will be demarcated in the field at a distance defined by the Project biologist. The no-construction buffers will be applied until it is determined by the biologist that the nesting cycle is completed or the nests are no longer active. If a previously surveyed area is left vacant (i.e., no construction work performed) for more than 72 hours, an additional nesting bird survey shall be conducted in those areas prior to commencement of construction to ensure no active nests are present.

8.0 REFERENCES

- American Ornithologist Union (AOU). 2023. Checklist of North American Birds (online). American Ornithological Society. <https://checklist.americanornithology.org/taxa/>. [accessed May 2023]
- Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley, California. 1400 pp.
- Bradley, R.D., Ammerman, L.K., Baker, R.J., Bradley, L.C., Cook, J.A., Dowler, R.C., Jones, C., Schmidly, D.F., Stangl, F.B., Van Den Bussche, R.A., and Wursig, N. 2014. Revised Checklist of North American Mammals North of Mexico, 2014. Occasional Papers. Museum of Texas Tech University, Number 327
- CDFW 2023. California Endangered Species Act. <https://wildlife.ca.gov/Conservation/CESA/Permitting> [accessed May 2023]
- Center for North American Herpetology (CNAH). 2023. <http://www.cnah.org/>. [accessed May 2023].
- CNDDDB. 2023. California Natural Diversity Data Base RareFind 5. <https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx> [accessed May 2023].
- California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website <https://www.rareplants.cnps.org> [accessed May 2023].
- DFG.2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency Department of Fish and Game
- EPA.2023. Summary of the Clean Water Act. <https://www.epa.gov/laws-regulations/summary-clean-water-act> [accessed May 2023].
- Holland.1986. Draft Vegetation Communities of San Diego County. Based on “Preliminary Descriptions of the Terrestrial Natural Communities of California”.
- MSHCP 2004. Western Riverside County Multiple Species Habitat Conservation Plan.
- NABA.2023. North American Butterfly Association. <https://www.naba.org/> [accessed May 2023].
- Sawyer, J., T. Keeler-Wolf, and J. Evans. 2009. A Manual of California Vegetation, Second 2nd Edition.
- South Coast Wildlands. 2008. South Coast missing linkages: A wildland network for the South Coast ecoregion. Retrieved from: <http://www.scwildlands.org/reports/SCMLRegionalReport.pdf>. March 2008.
- USDA (U.S. Department of Agriculture). 2023. Web Soil Survey. USDA, Natural Resources Conservation Service. <http://websoilsurvey.nrcs.usda.gov> [accessed May 2023].
- USGS.2023A. United States Geological Service (USGS), 1979. 7.5-Minute Quadrangle Map, Perris, Lake Mathews, Steele Peak, Riverside West, Riverside East, Sunnymead, Alberhill, Lake Elsinore, Romoland, California
- USGS.2023B. United States Geological Service (USGS), National Hydrography Dataset. <https://www.usgs.gov/national-hydrography/national-hydrography-dataset> [accessed May 2023]
- USFWS 2023A. Information for Planning and Consultation (IPaC). U.S. Fish and Wildlife Service. <https://ipac.ecosphere.fws.gov/> [accessed May 2023].
- USFWS 2023B. National Wetlands Inventory [accessed May 2023]. <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>
- USFWS 2023C. Migratory Bird Treaty Act of 1918. <https://www.fws.gov/law/migratory-bird-treaty-act-1918>. [accessed May 2023]
- USFWS.2017. USFWS Survey Guidelines for Listed Large Branchiopods

APPENDIX A

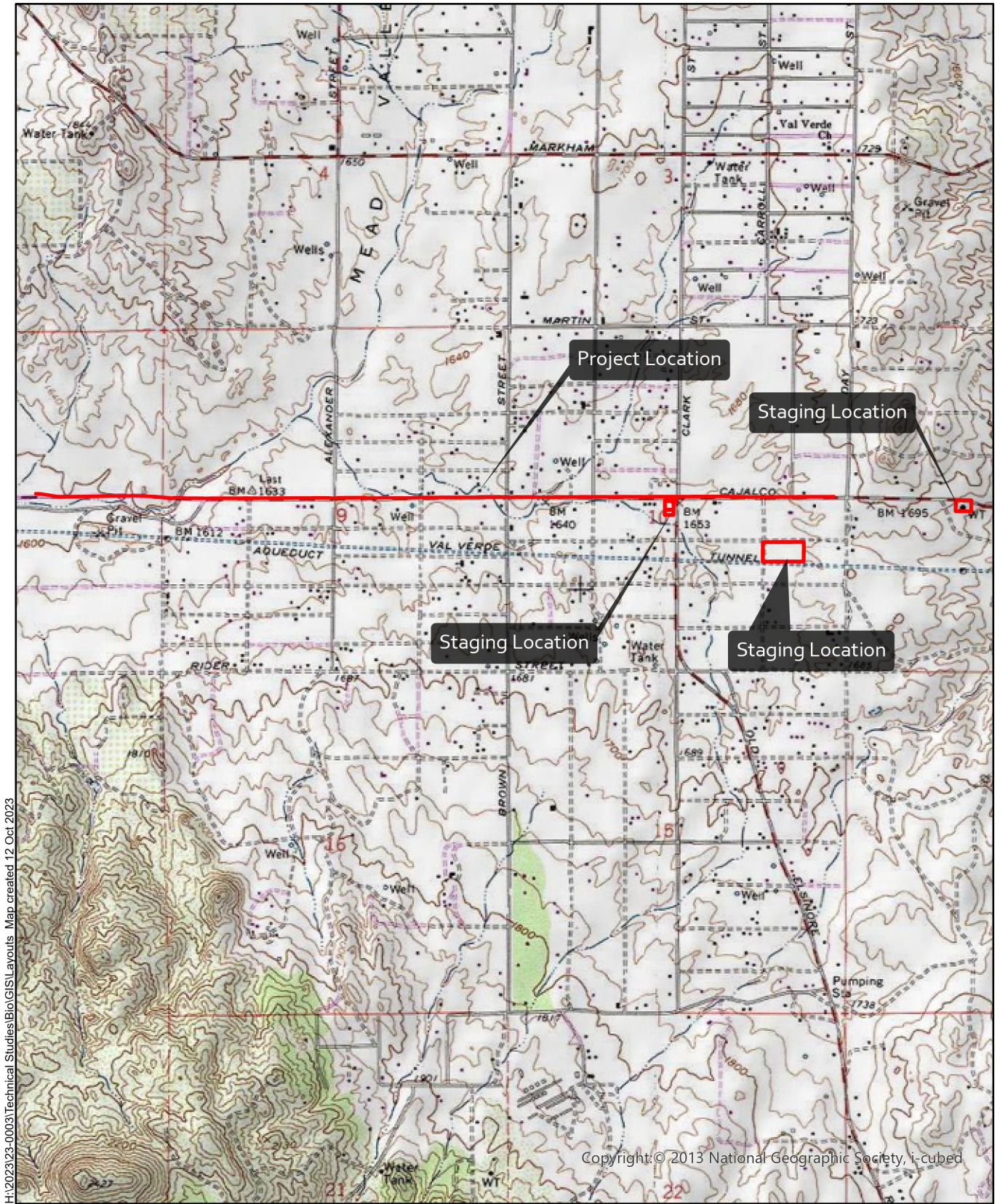


Source: ESRI



0 100 200 300 Feet

Figure 1- Regional Map
Mead Valley Cajalco Sewer Project



H:\2023\23-0003\Technical Studies\Bio\GIS\Layouts Map created 12 Oct 2023

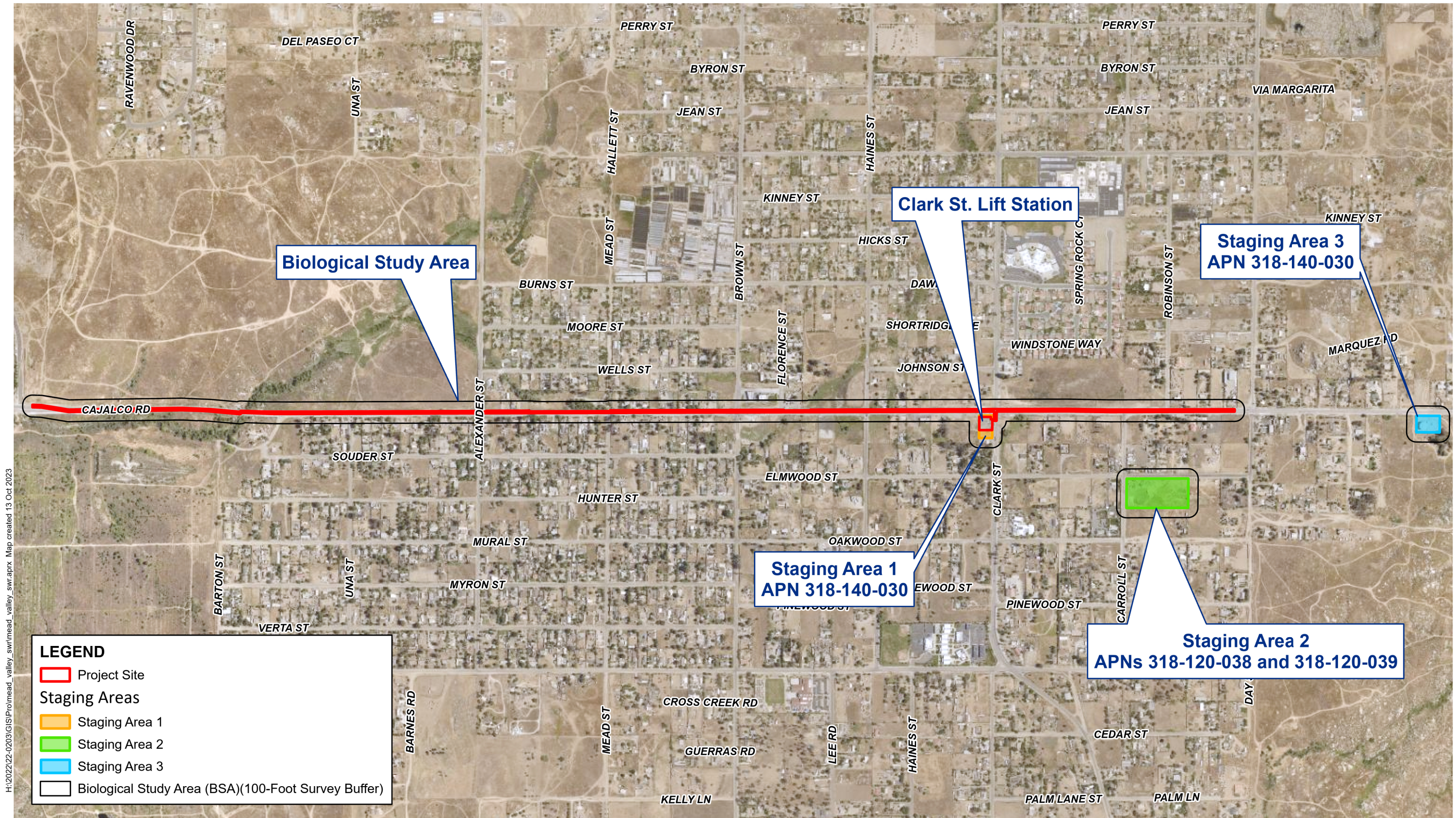
Source: Nearmap, 2023.

Figure 2 - Vicinity Map
Mead Valley Cajalco Sewer Project



0 100 200 300
Feet





H:\2022\22-0203\GIS\Pro\mead_valley_swr\mead_valley_swr.aprx Map created 13 Oct 2023

Source: Riverside GIS, 2020.

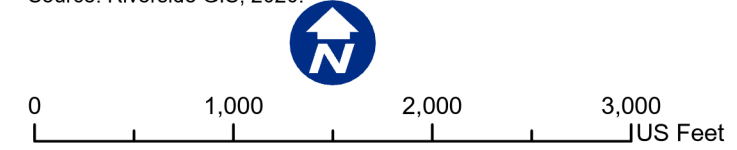
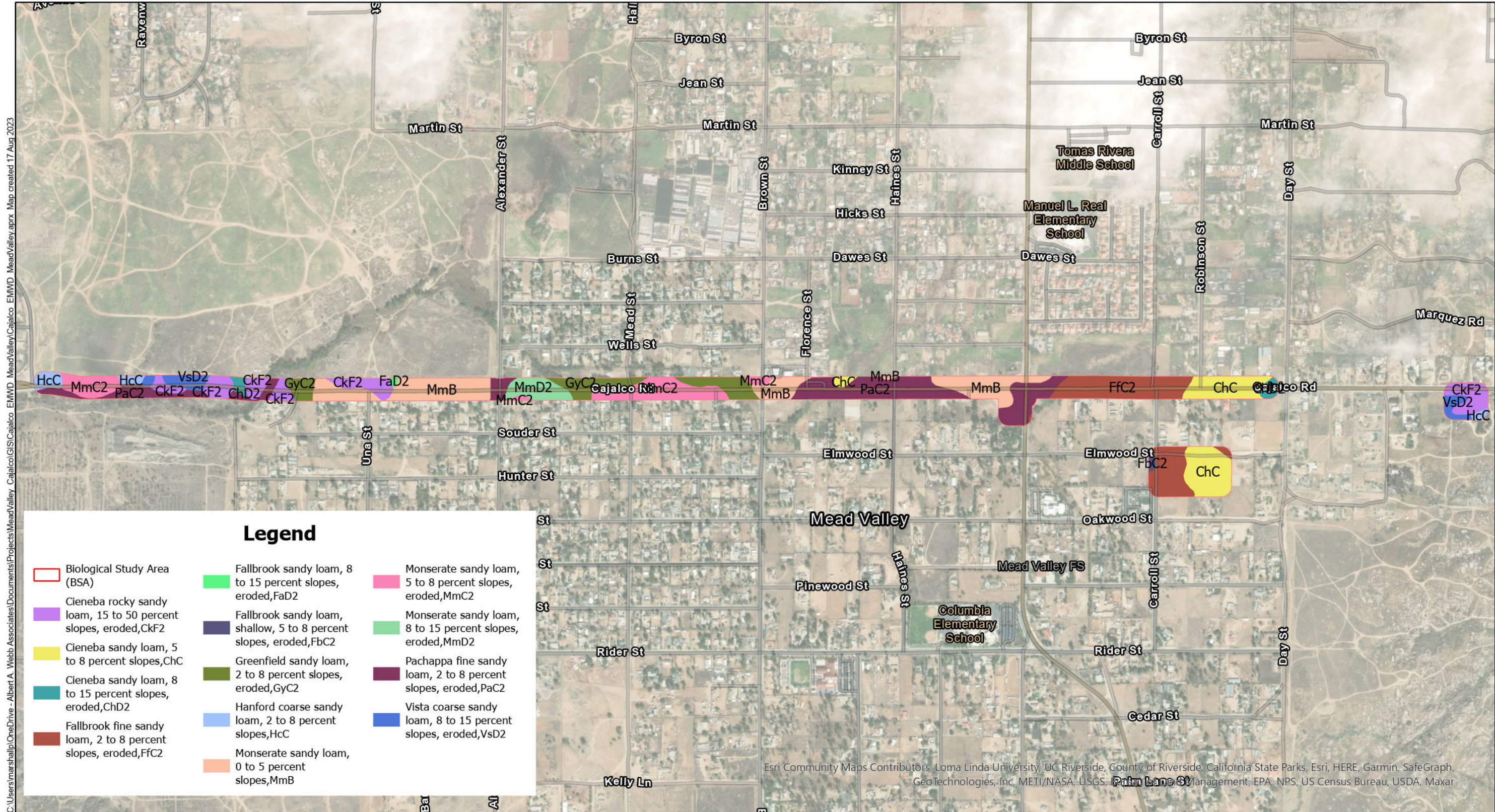


Figure 2A - Project Site
Mead Valley Cajalco Sewer Project

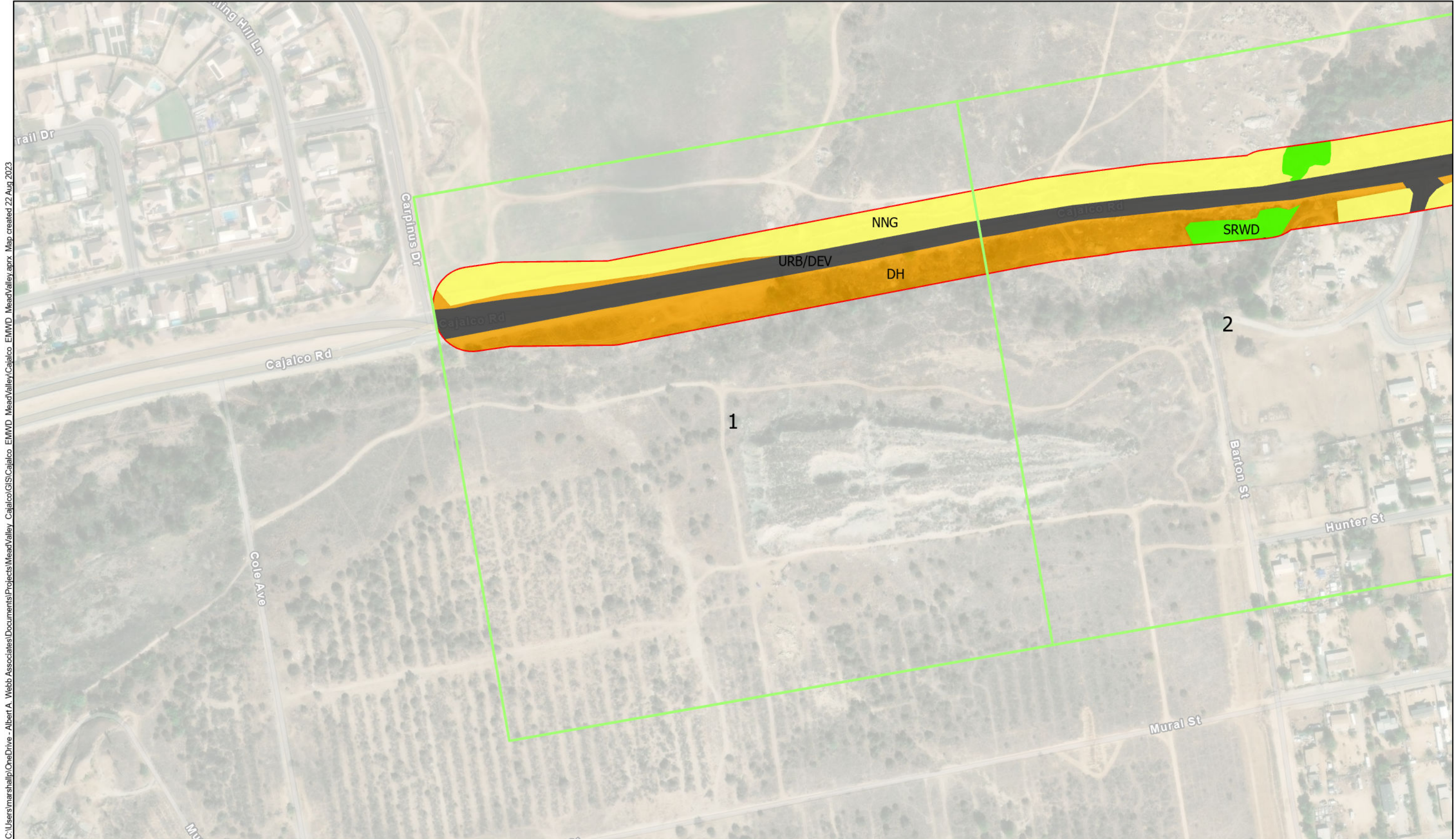


Source: Riverside County 2016

Figure 3- USDA Soils
Mead Valley Cajalco Sewer Project

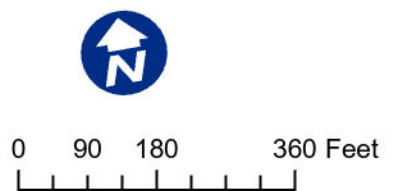







0 350 700 1,400 Feet



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016



Legend	
	Biological Study Area (BSA)
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

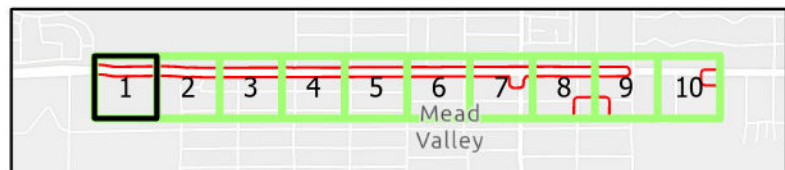
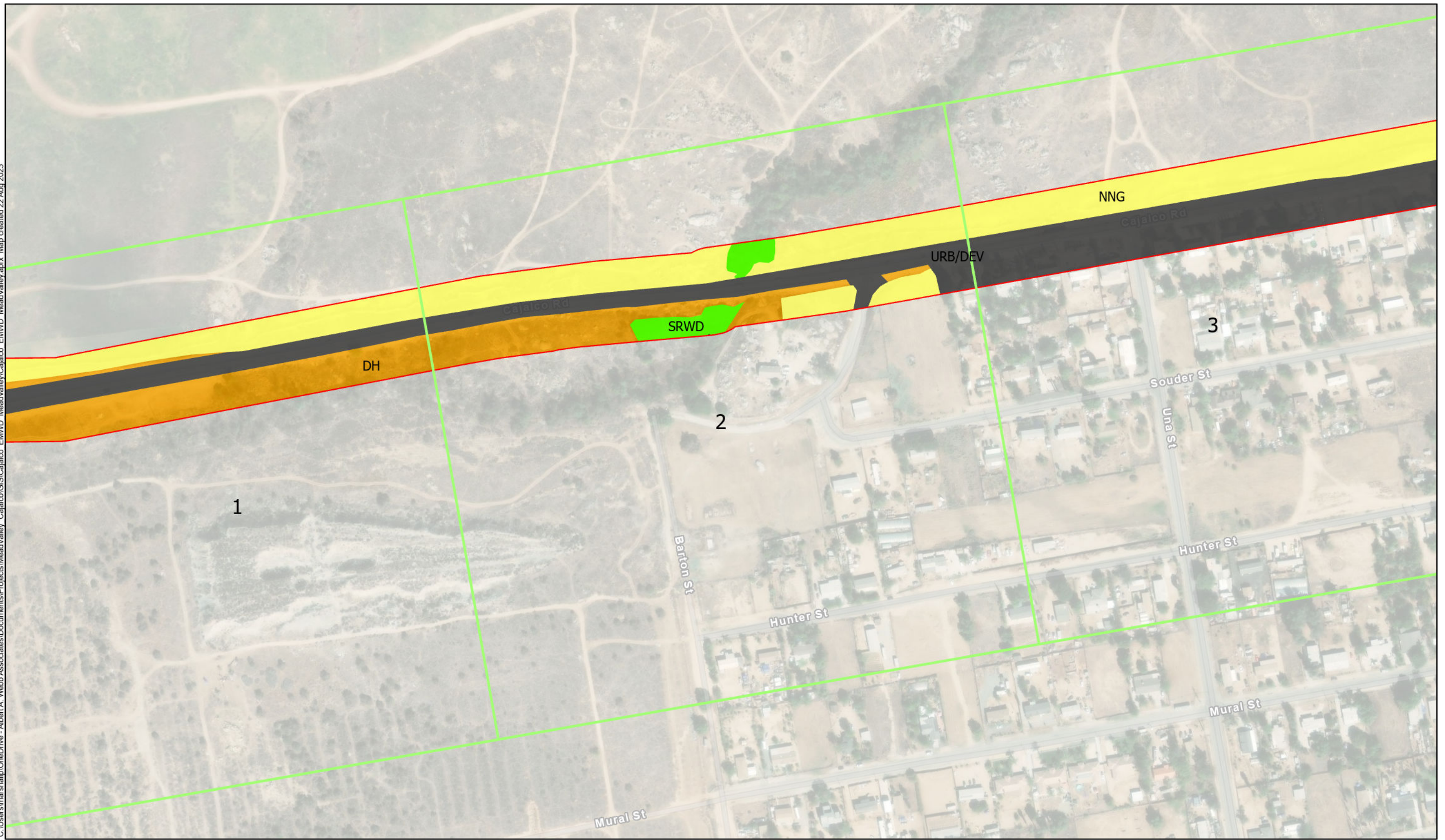


Figure 4A- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley\Cajalco\GIS\Cajalco EMWD MeadValley\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

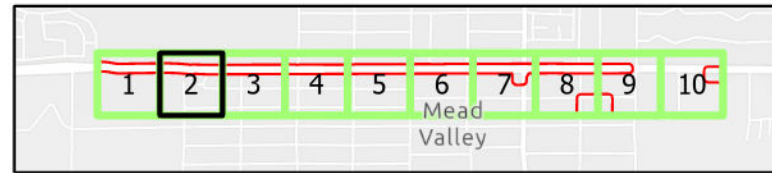
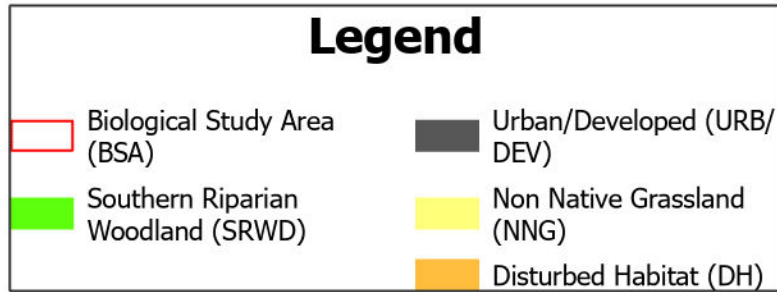
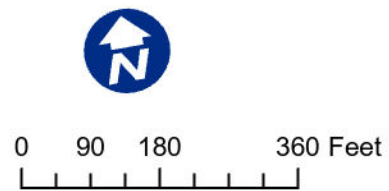
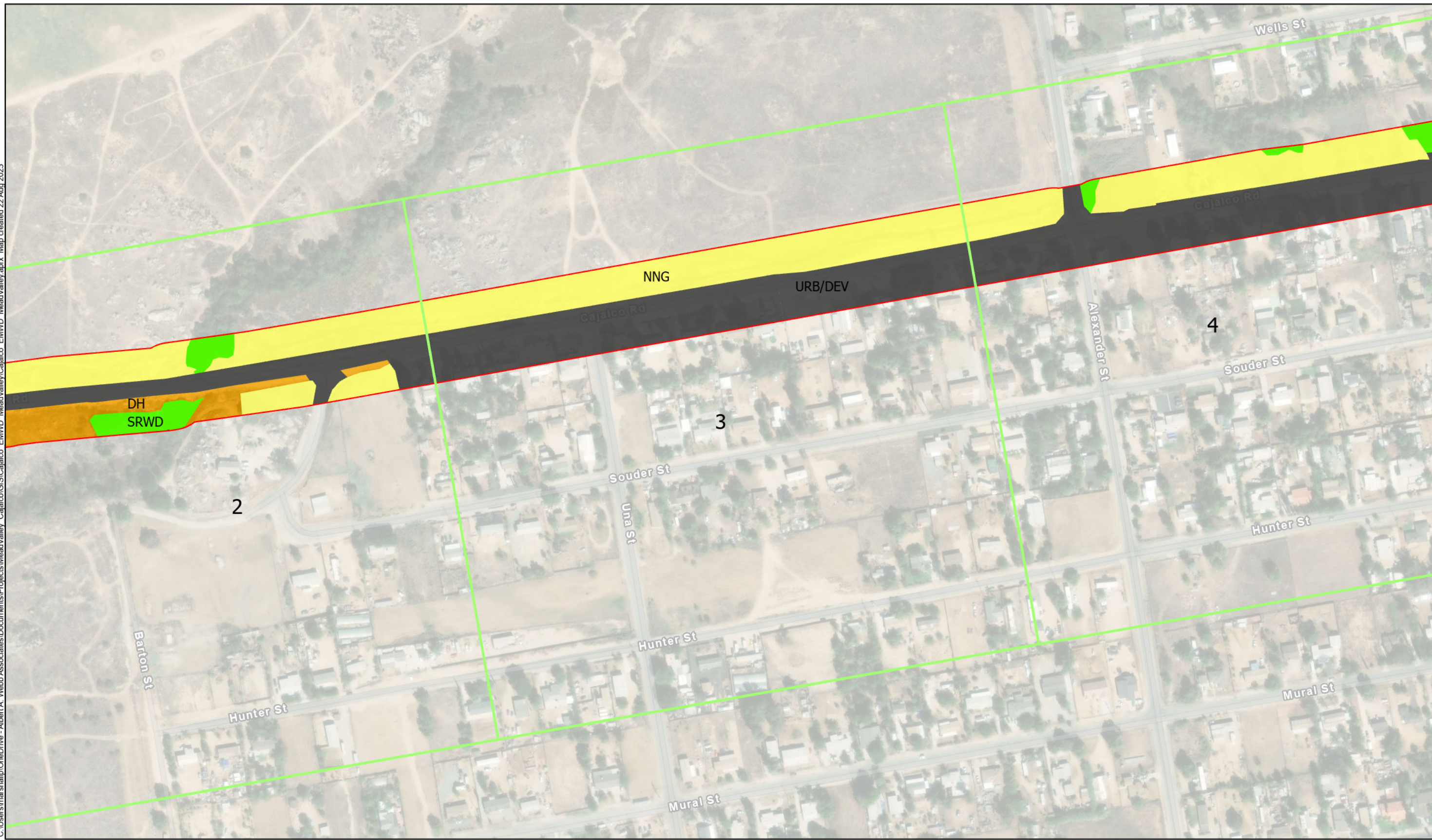
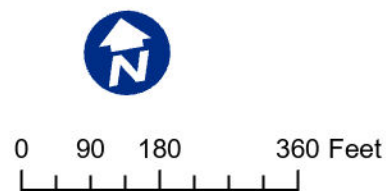


Figure 4B- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project

C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD_MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016



Legend	
	Biological Study Area (BSA)
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

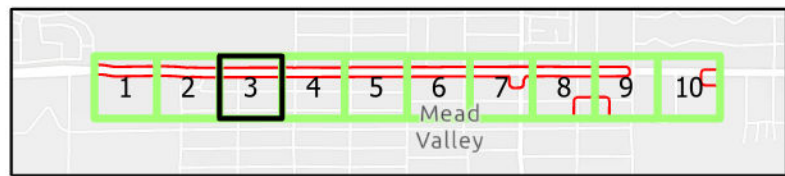
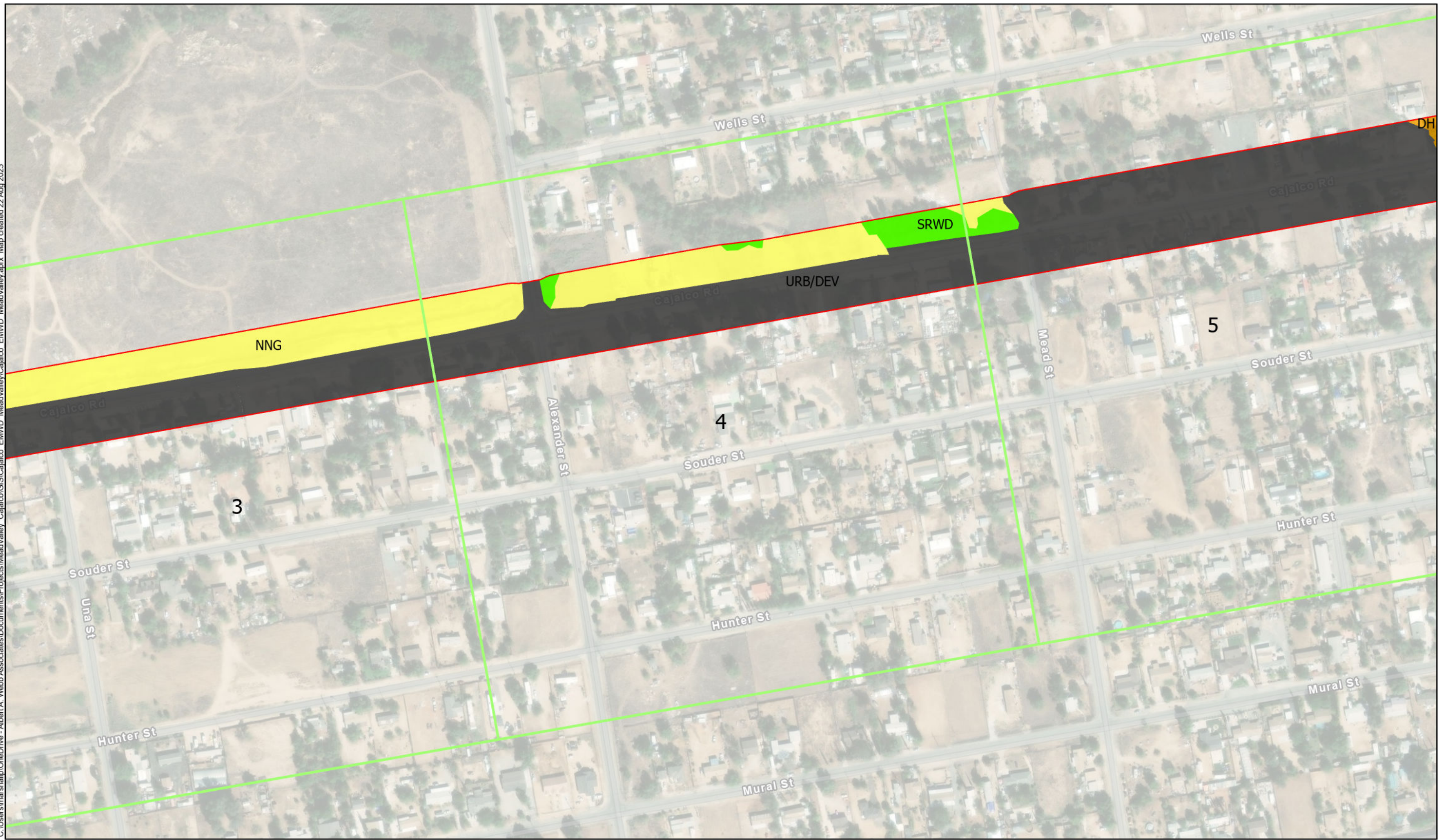


Figure 4C- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project



C:\Users\marshal\p\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley\Cajalco\GIS\Cajalco EMWD MeadValley\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

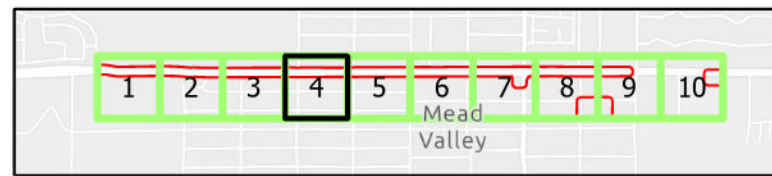
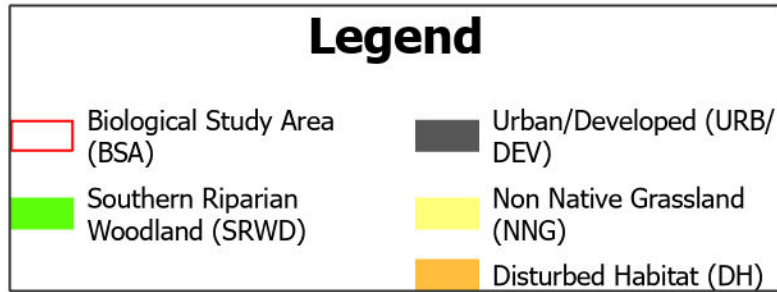
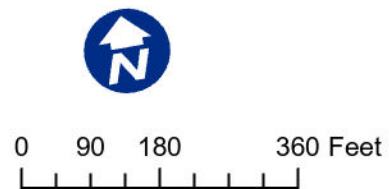
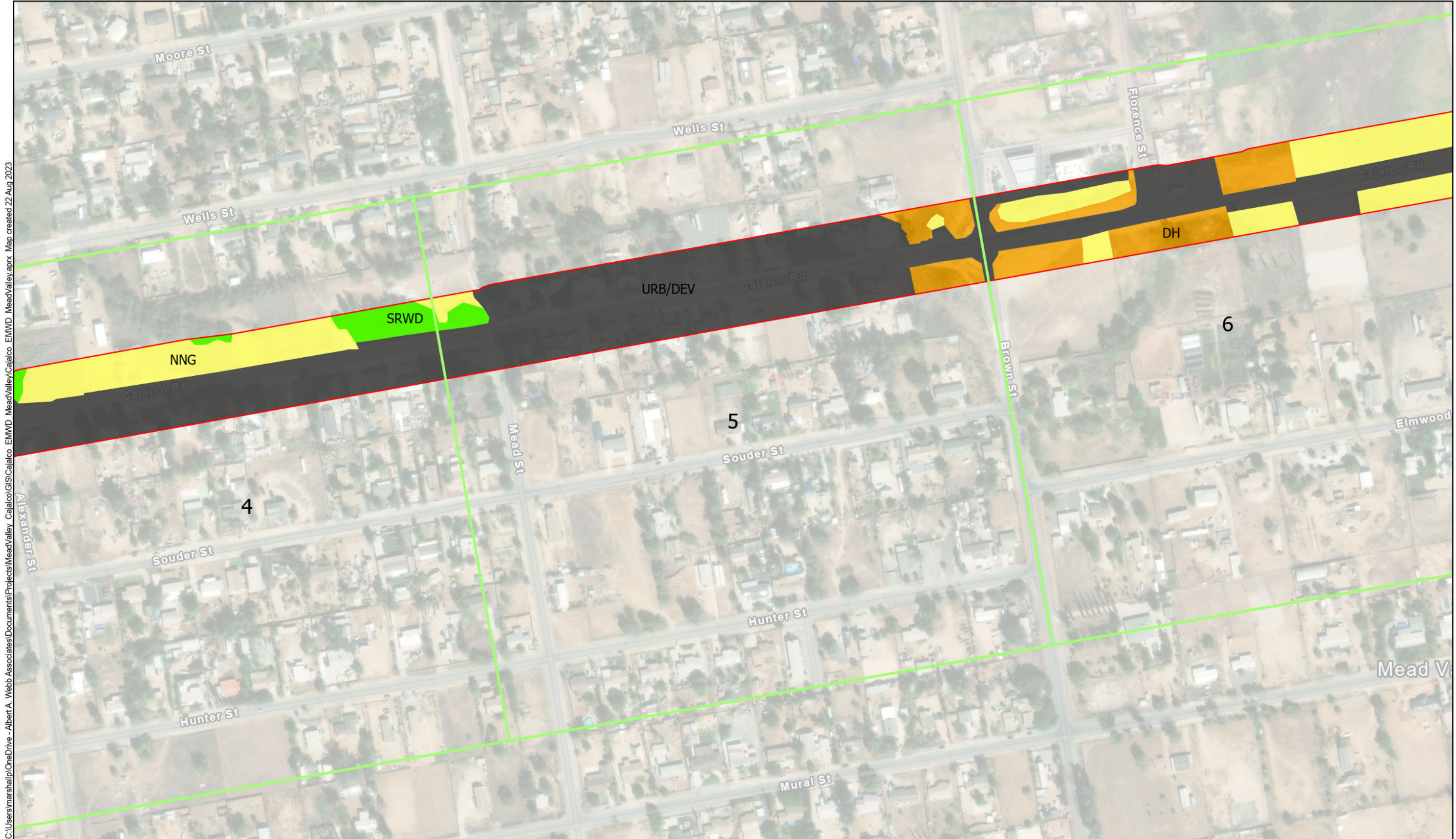
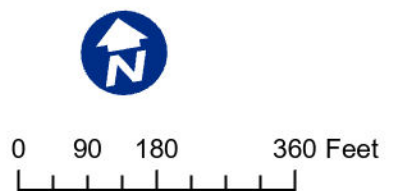


Figure 4D- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMW MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016



Legend	
	Biological Study Area (BSA)
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

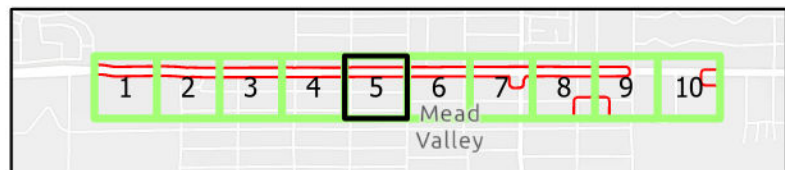
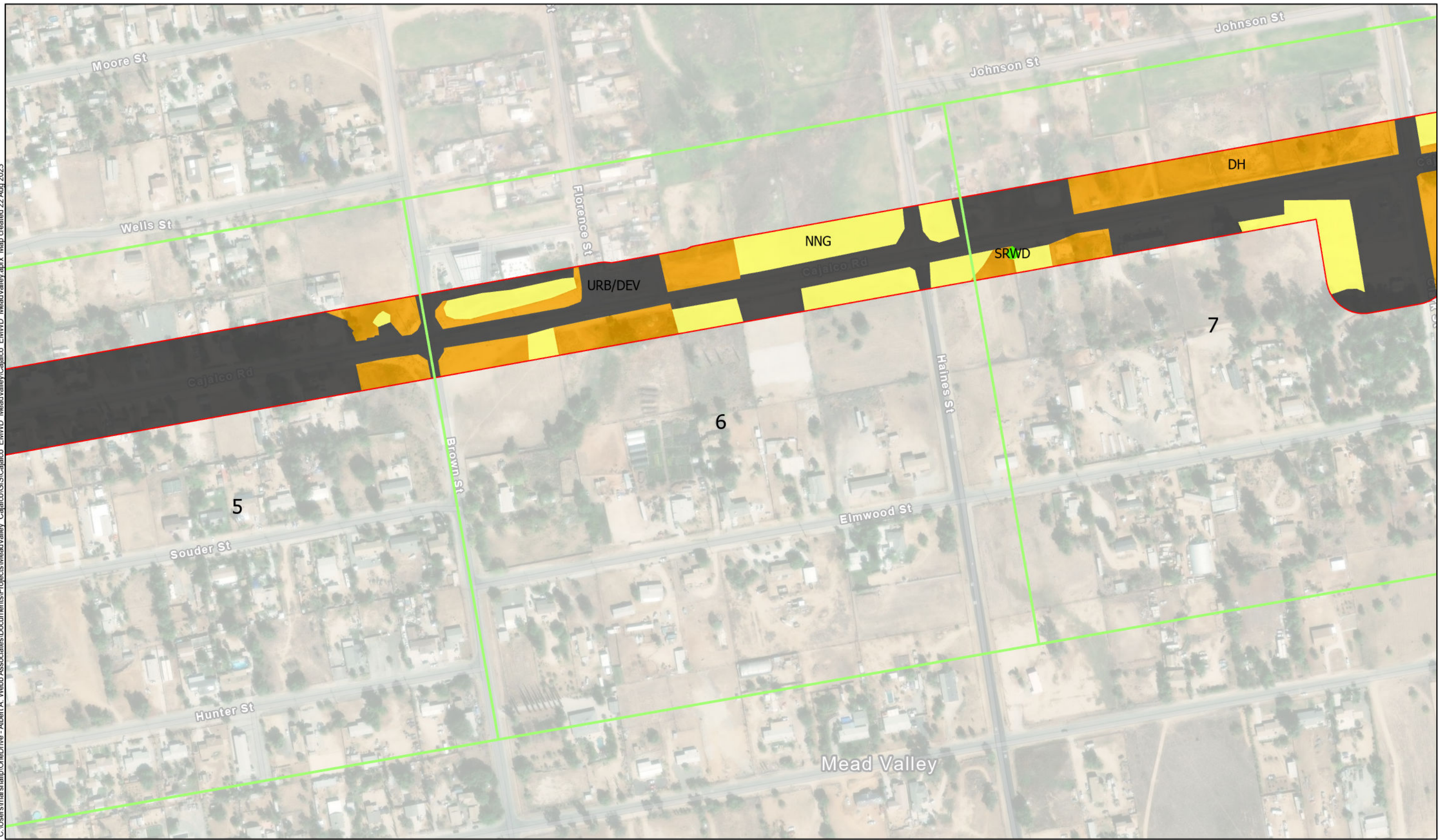


Figure 4E- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley\Cajalco\GIS\Cajalco EMWD MeadValley\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016



0 90 180 360 Feet

Legend

- Biological Study Area (BSA)
- Southern Riparian Woodland (SRWD)
- Urban/Developed (URB/DEV)
- Non Native Grassland (NNG)
- Disturbed Habitat (DH)

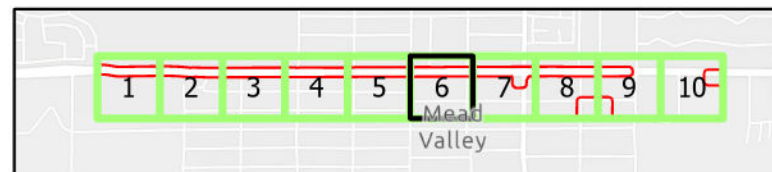
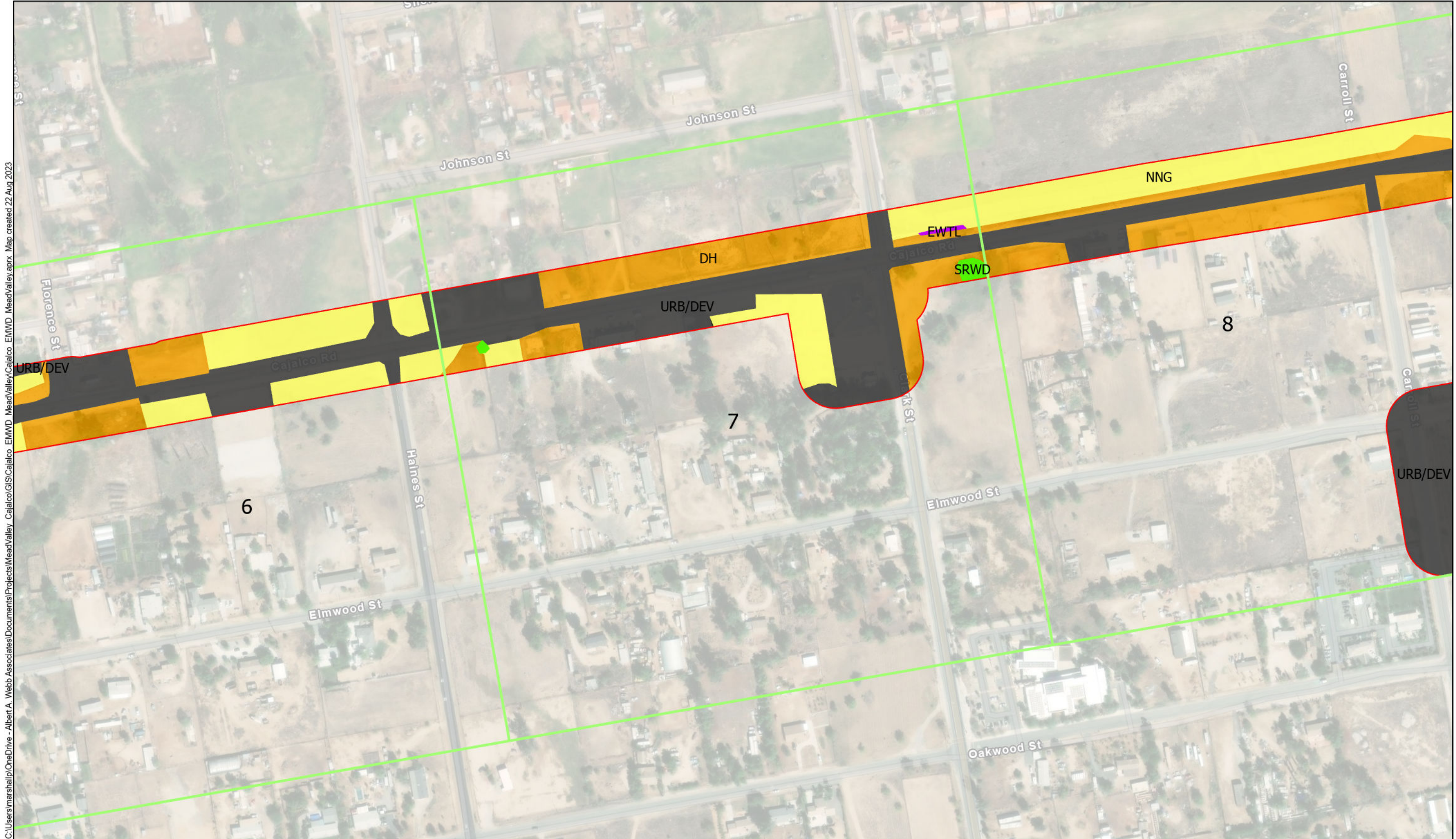
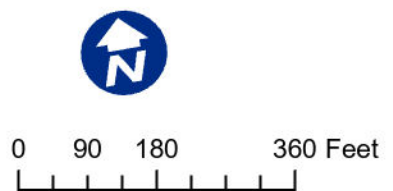


Figure 4F- Vegetation and Land Cover Types Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016



Legend	
	Biological Study Area (BSA)
	Emergent Wetland (EWTL)
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

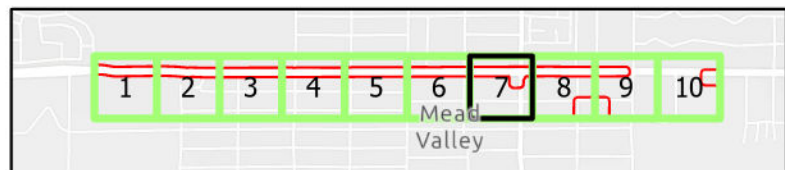


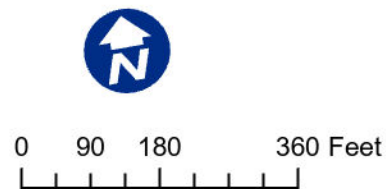
Figure 4G- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016



Legend	
	Biological Study Area (BSA)
	Emergent Wetland (EWTL)
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

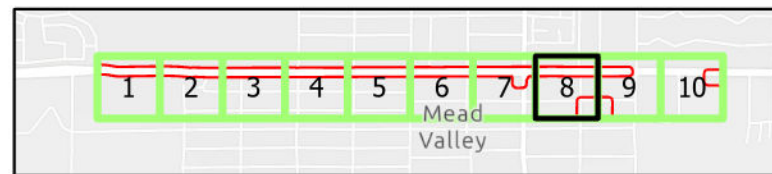


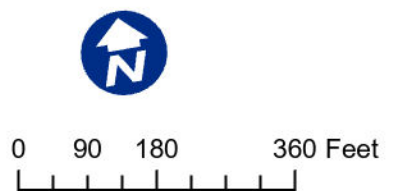
Figure 4H- Vegetation and Land Cover Types
Mead Valley Cajalco Sewer Project



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMD MeadValley\Cajalco EMMD MeadValley.aprx Map created 22 Aug 2023

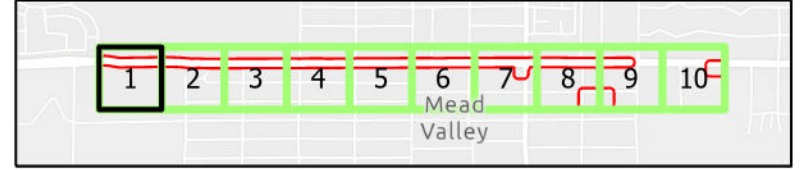
Source: Riverside County 2016

Figure 5A- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project



Legend

- Biological Study Area (BSA)
- Aquatic Features
- Culverts



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley\Cajalco\GIS\Cajalco EMWD MeadValley\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

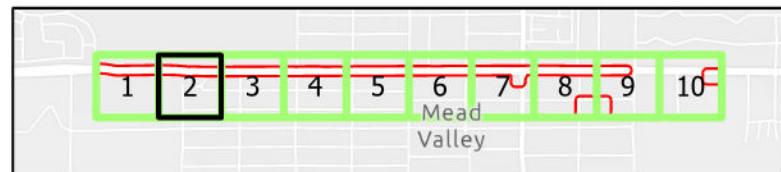
Figure 5B- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project



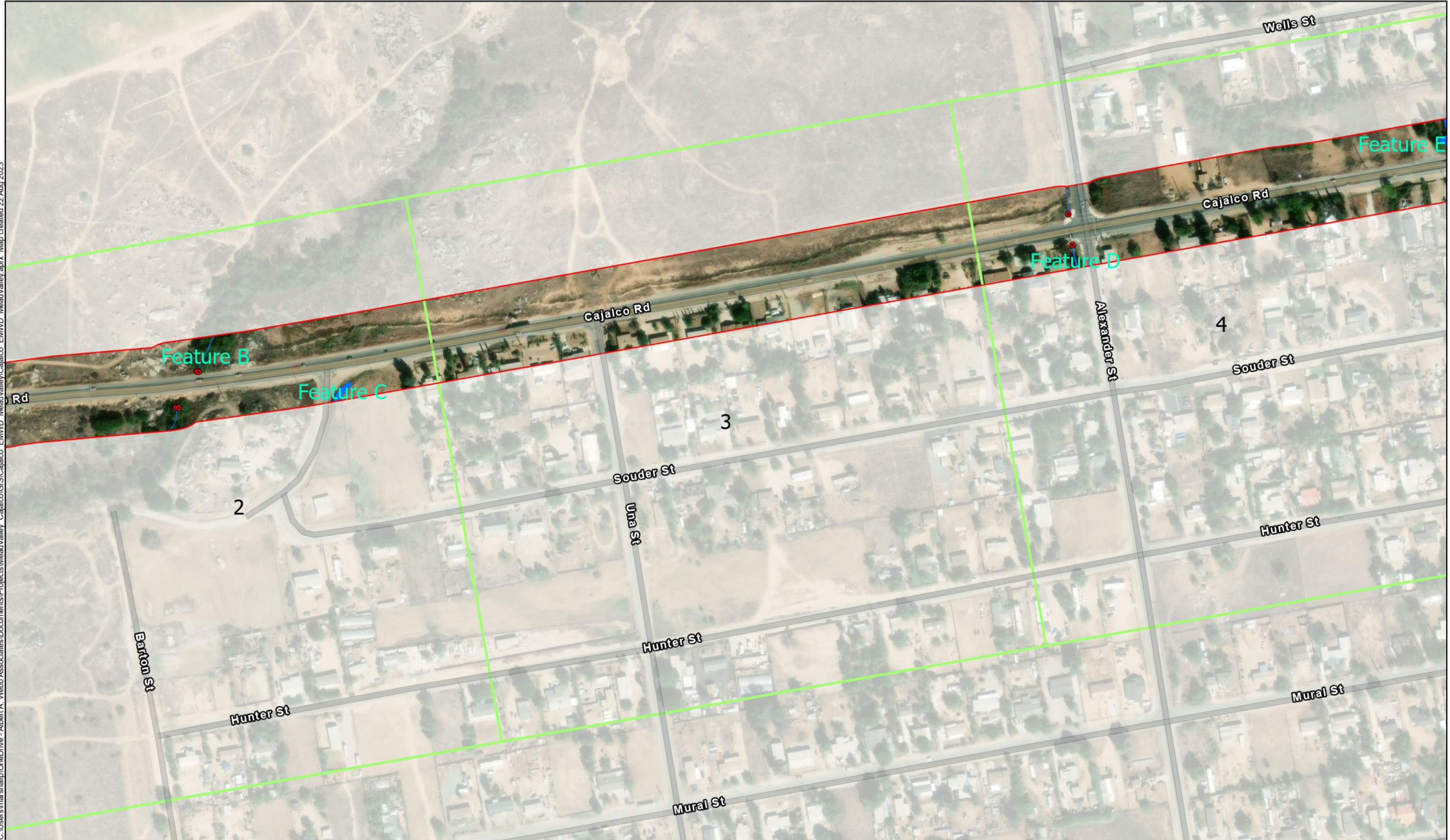
0 90 180 360 Feet

Legend

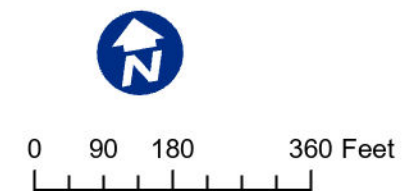
- Biological Study Area (BSA)
- Aquatic Features
- Culverts



C:\Users\marshal\p\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016



Legend

- Biological Study Area (BSA)
- Aquatic Features
- Culverts

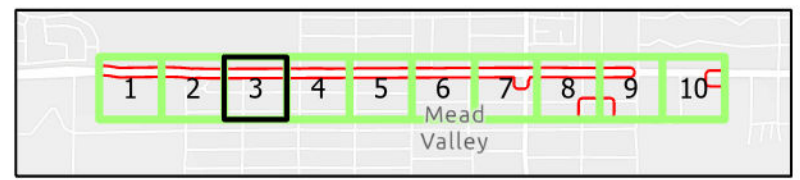


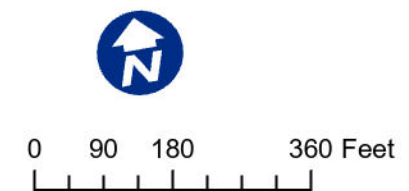
Figure 5C- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco_EMWD_MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016



Legend

- Biological Study Area (BSA)
- Aquatic Features
- Culverts

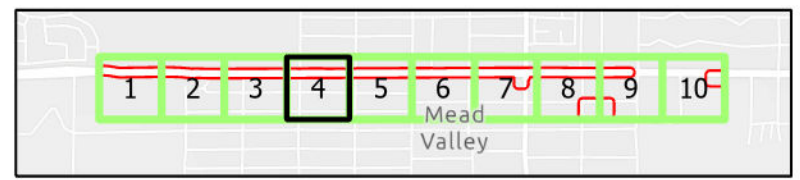


Figure 5D- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project





C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco_EI\MWD_MeadValley\Cajalco_EI\MWD_MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016

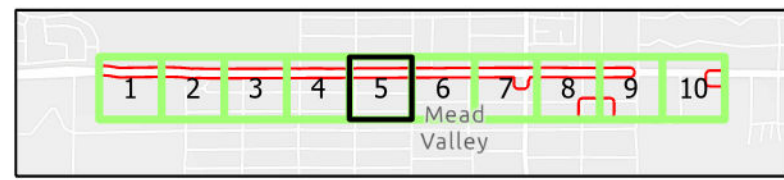
Figure 5E- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project



0 90 180 360 Feet

Legend

- Biological Study Area (BSA)
- Aquatic Features
- Culverts

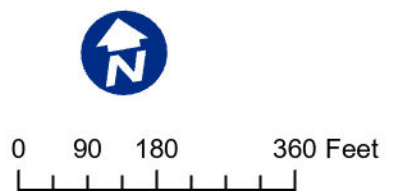




C:\Users\marshal\p\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco_EI\MWD_MeadValley\Cajalco_EI\MWD_MeadValley.aprx Map created 22 Aug 2023

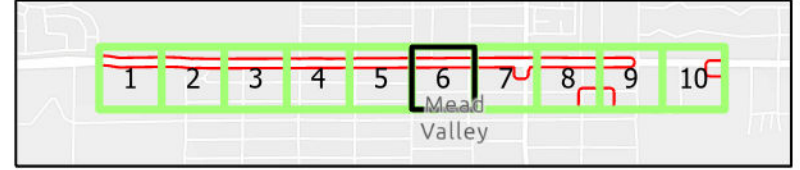
Source: Riverside County 2016

Figure 5F- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project



Legend

- Biological Study Area (BSA)
- Aquatic Features
- Culverts



C:\Users\marshal\p\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco_EIMWD_MeadValley\Cajalco_EIMWD_MeadValley.aprx Map created 22 Aug 2023




Source: Riverside County 2016

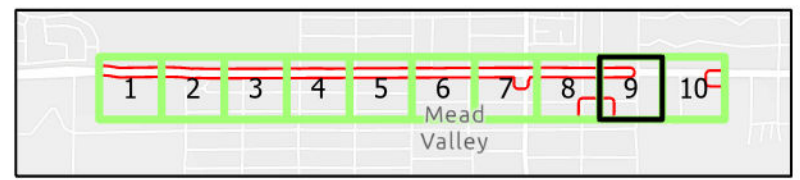
Figure 5I- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project



0 90 180 360 Feet

Legend

 Biological Study Area (BSA)





C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016

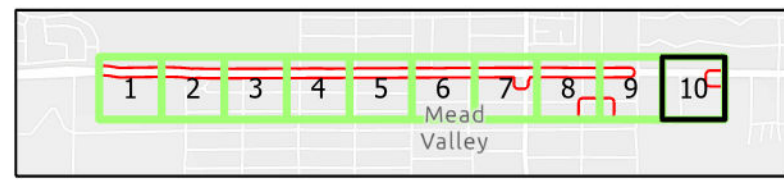
Figure 5J- Potentially Jurisdictional Aquatic Resources
Mead Valley Cajalco Sewer Project

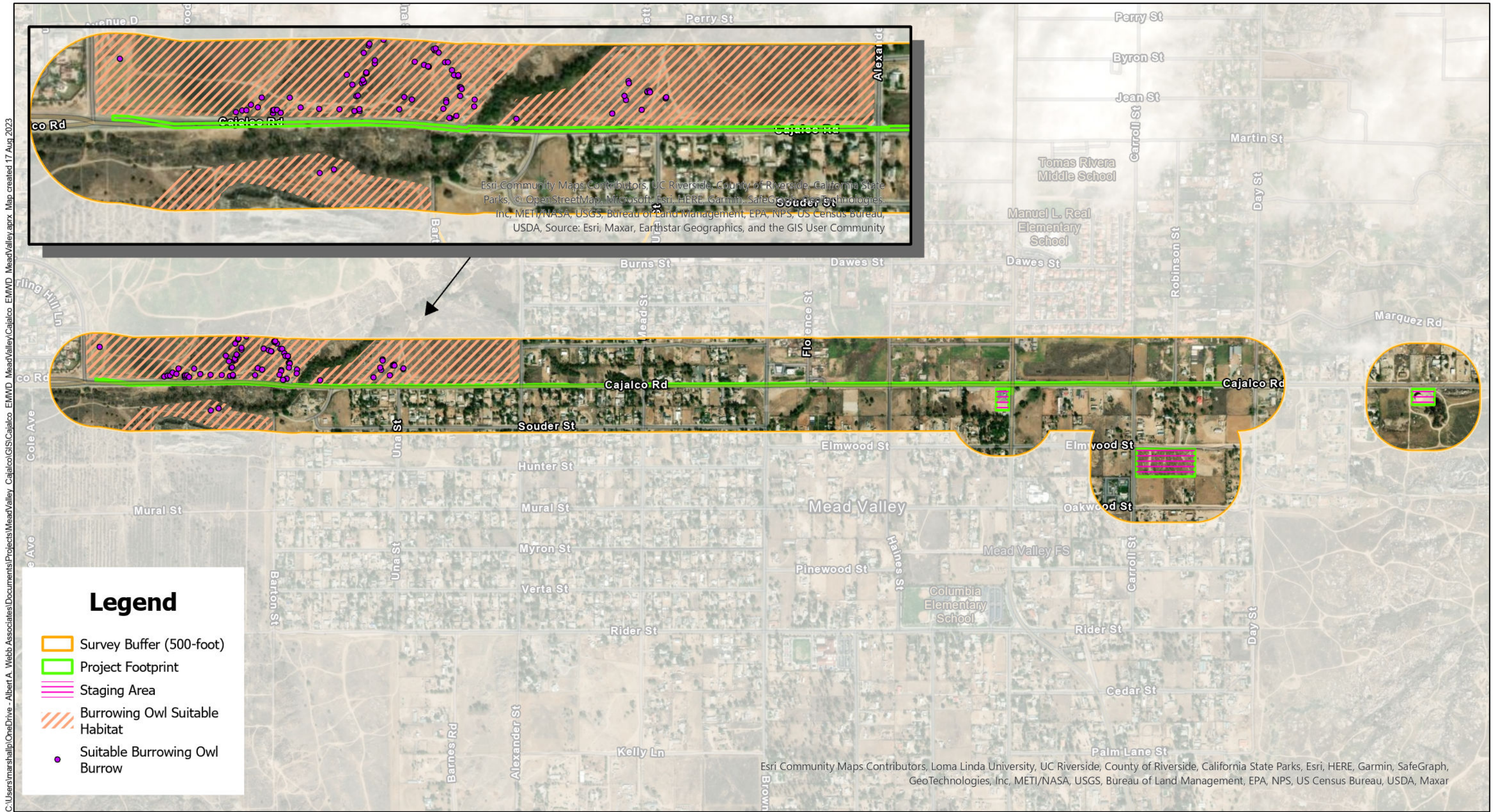


0 90 180 360 Feet

Legend

Biological Study Area (BSA)





C:\Users\marshali\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EIMWD_MeadValley.aprx Map created 17 Aug 2023

Esri Community Maps Contributors, UC Riverside, County of Riverside, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Esri Community Maps Contributors, Loma Linda University, UC Riverside, County of Riverside, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, Maxar

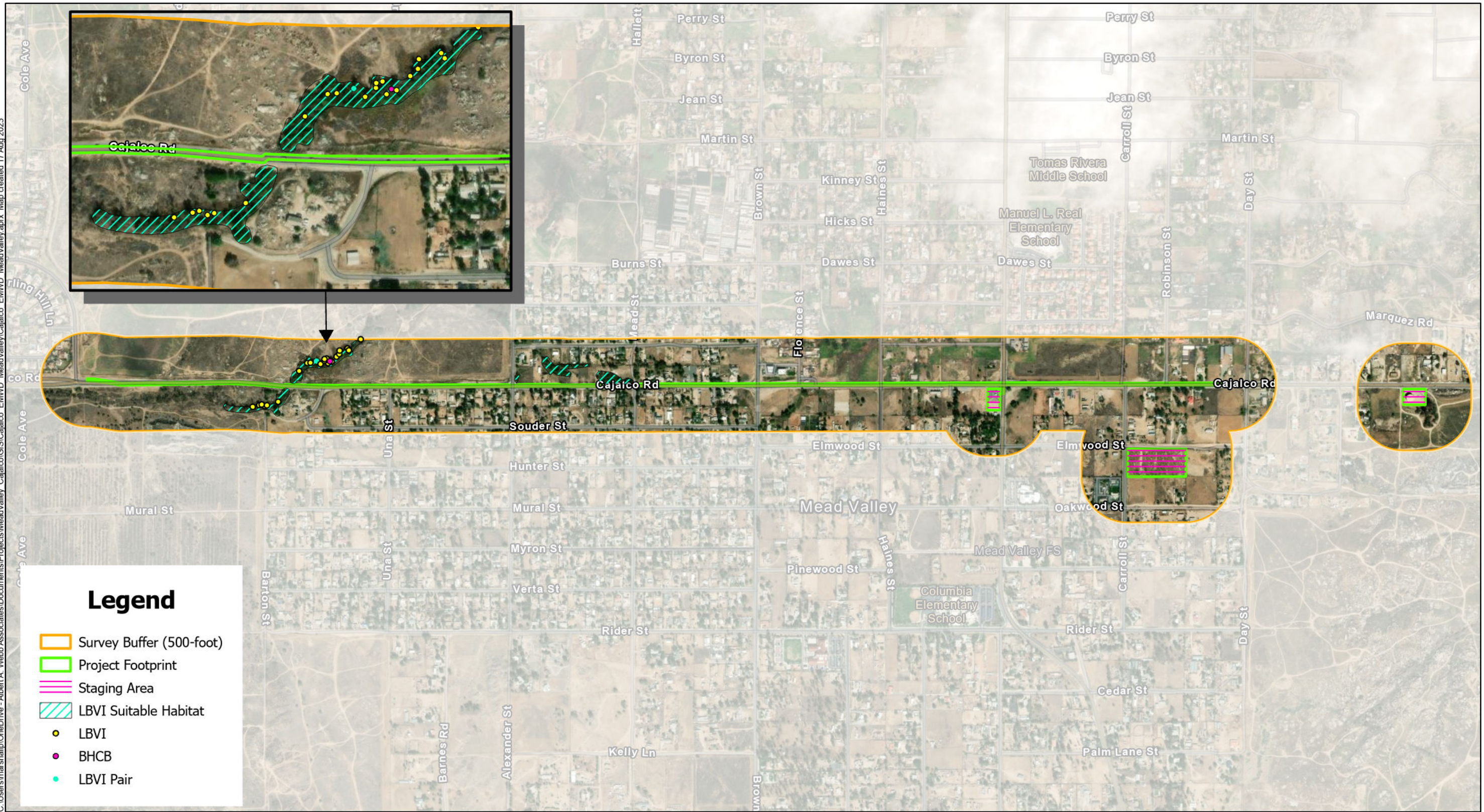
Figure 6- Burrowing Owl Survey Results
Mead Valley Cajalco Sewer Project



0 375 750 1,500 Feet



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EIMWD_MeadValleyCajalco EIMWD_MeadValleyCajalco.aprx Map created 17 Aug 2023



Legend

- Survey Buffer (500-foot)
- Project Footprint
- Staging Area
- LBVI Suitable Habitat
- LBVI
- BHCB
- LBVI Pair

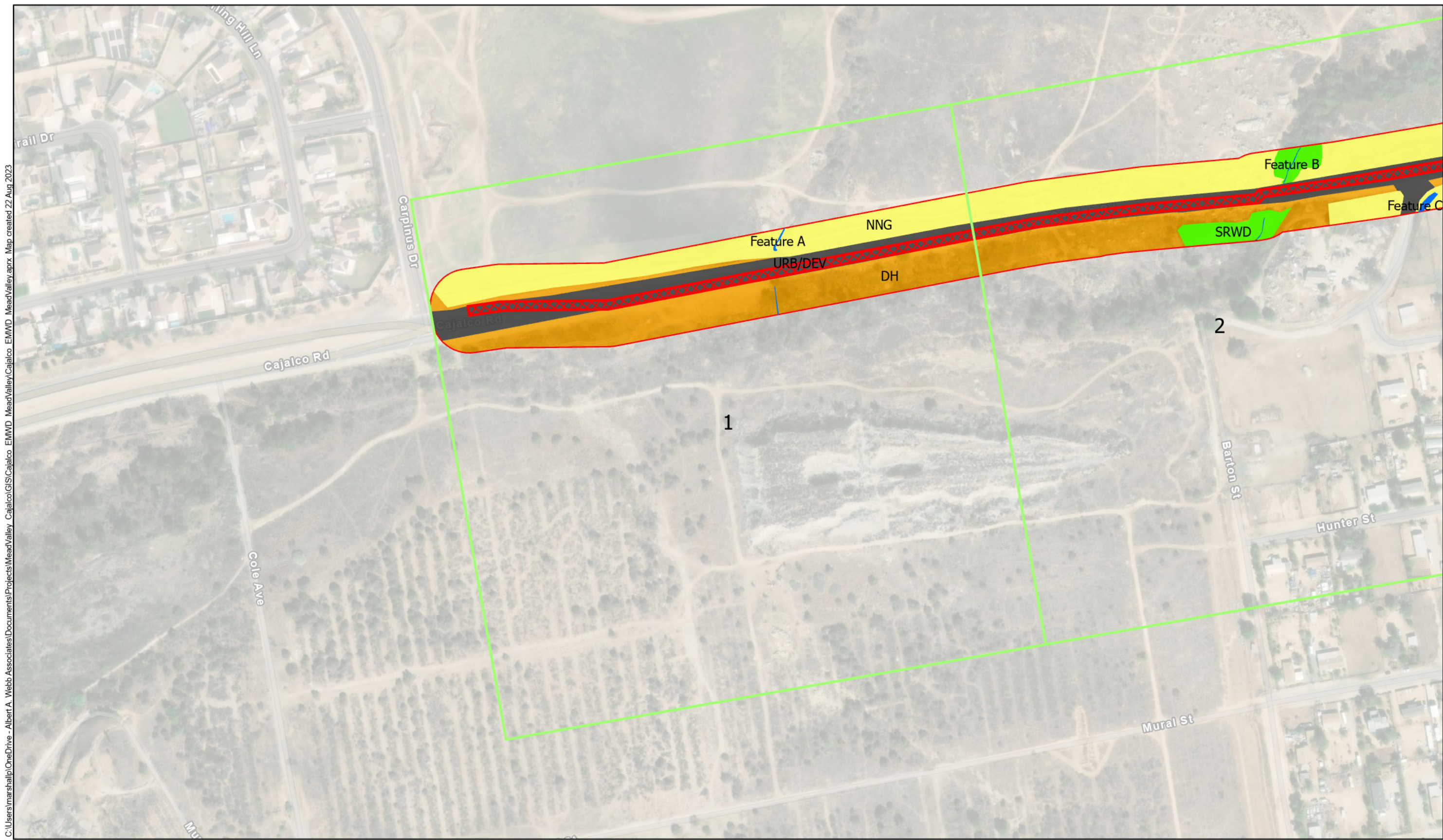
Source: Riverside County 2016

Figure 7- LBVI Survey Results
Mead Valley Cajalco Sewer Project



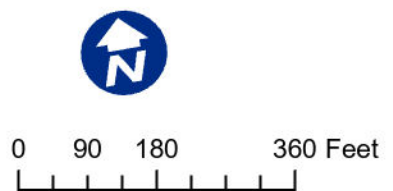
0 375 750 1,500 Feet





C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMWD MeadValley\Cajalco EMMWD MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016



Legend	
	Temporary Impacts
	Biological Study Area (BSA)
	Aquatic Features
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

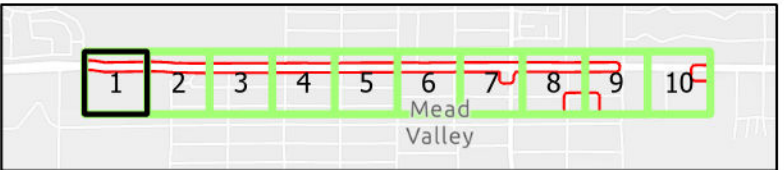
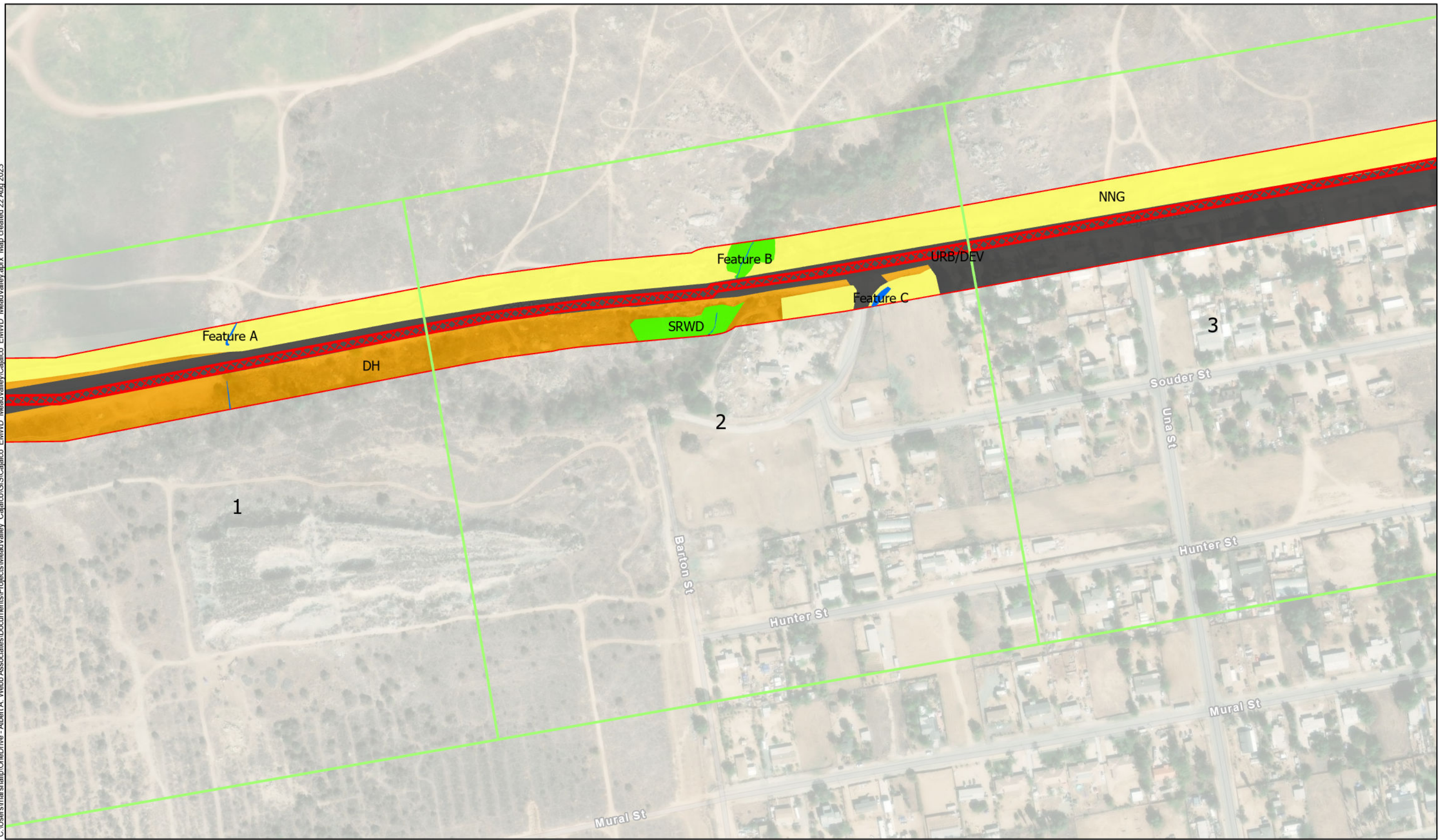


Figure 8A- Project Impacts
Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMD_MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

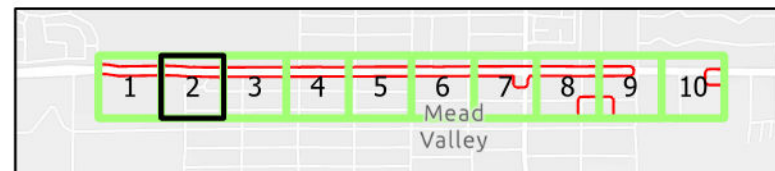
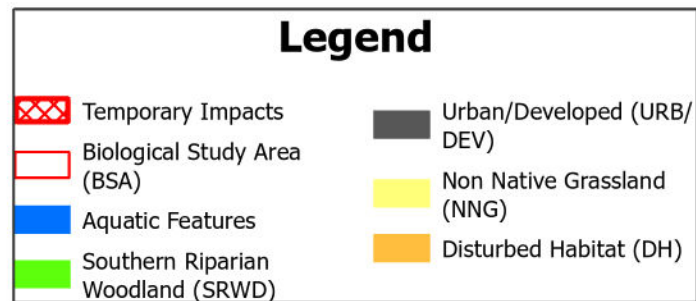
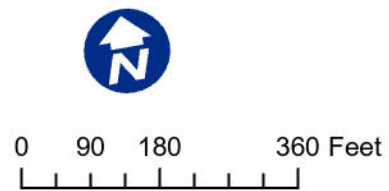
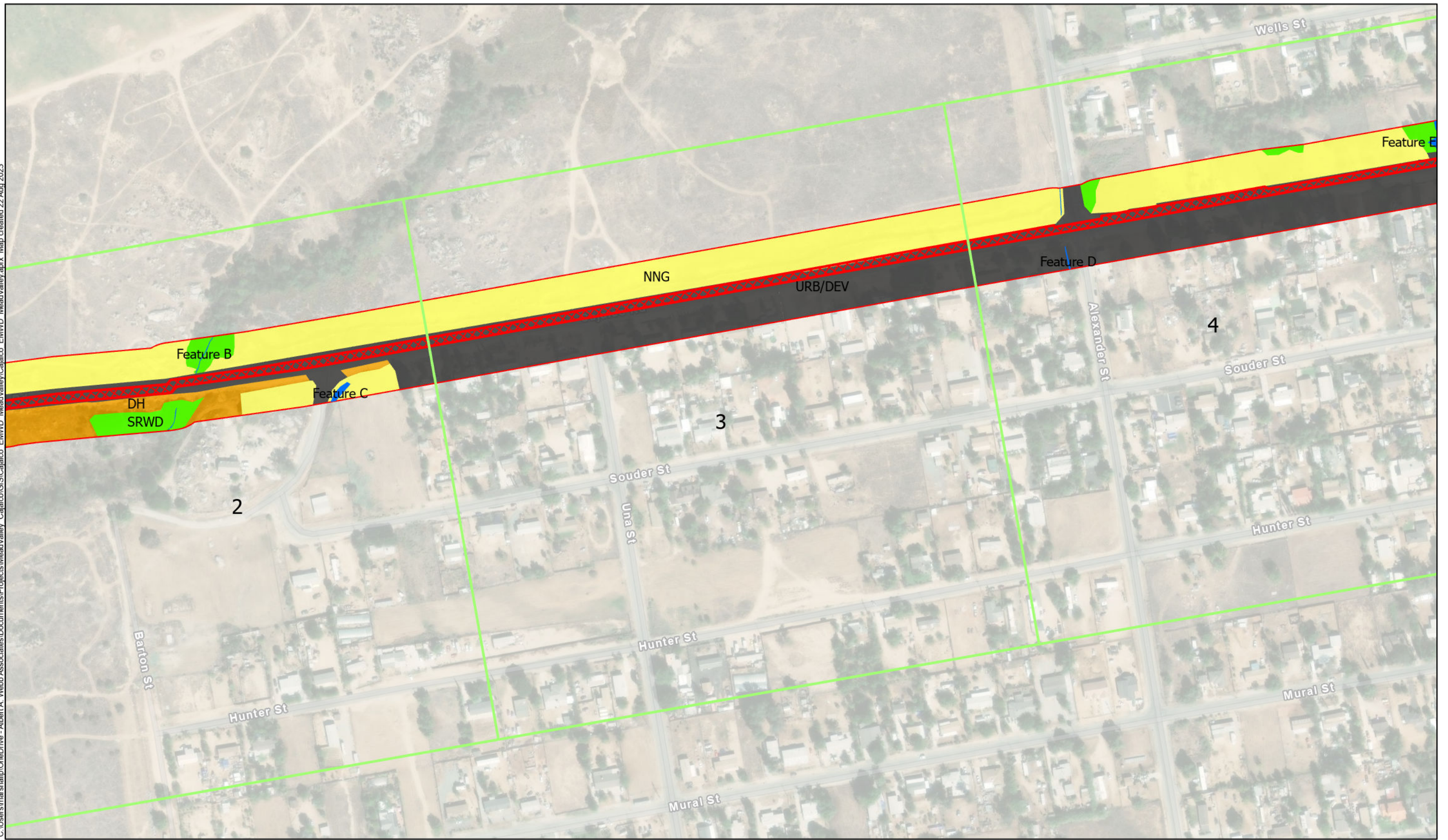


Figure 8B- Project Impacts
Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

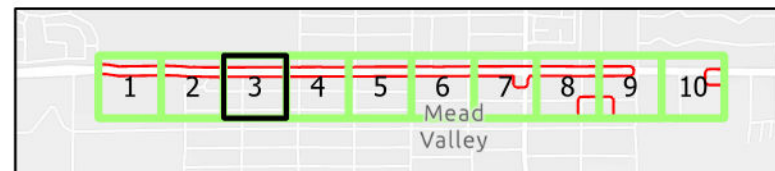
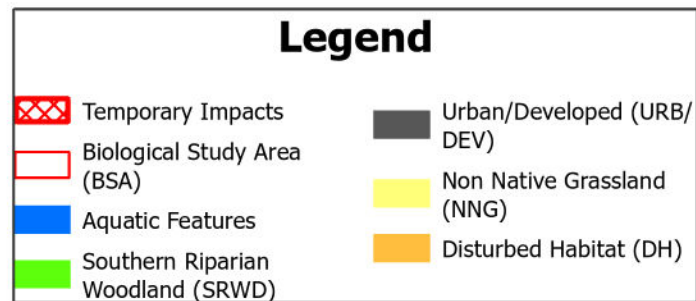
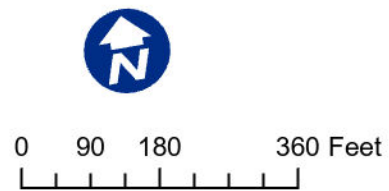
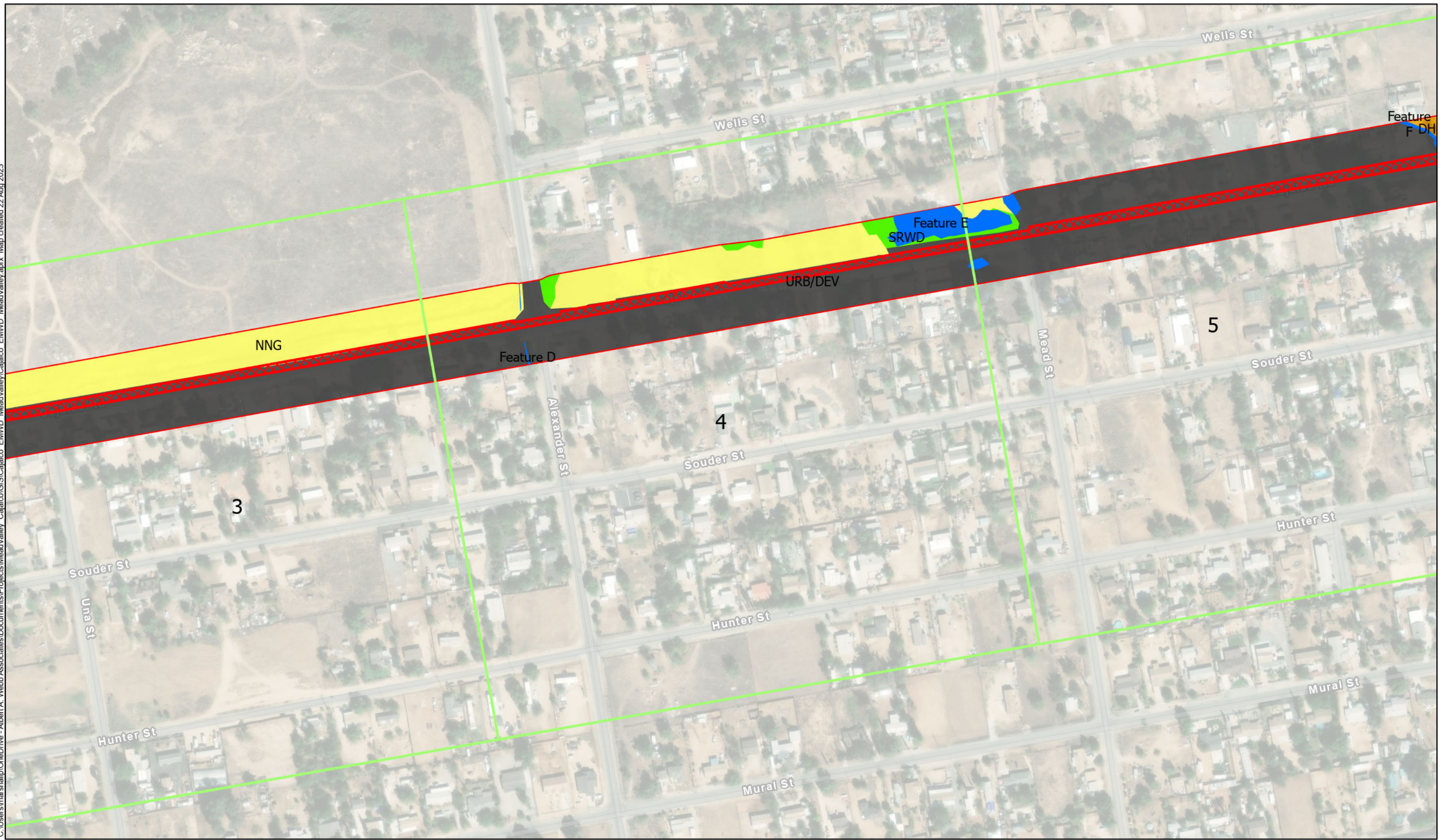


Figure 8C- Project Impacts
Mead Valley Cajalco Sewer Project



C:\Users\marshalj\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMW MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

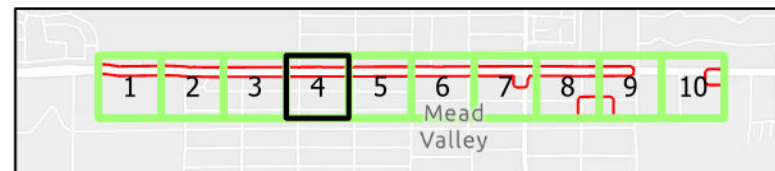
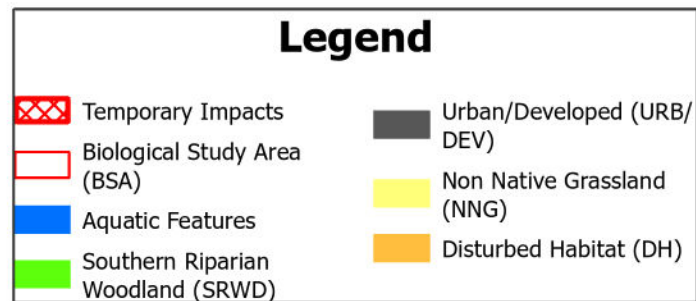
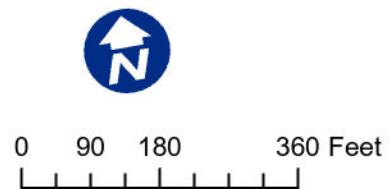
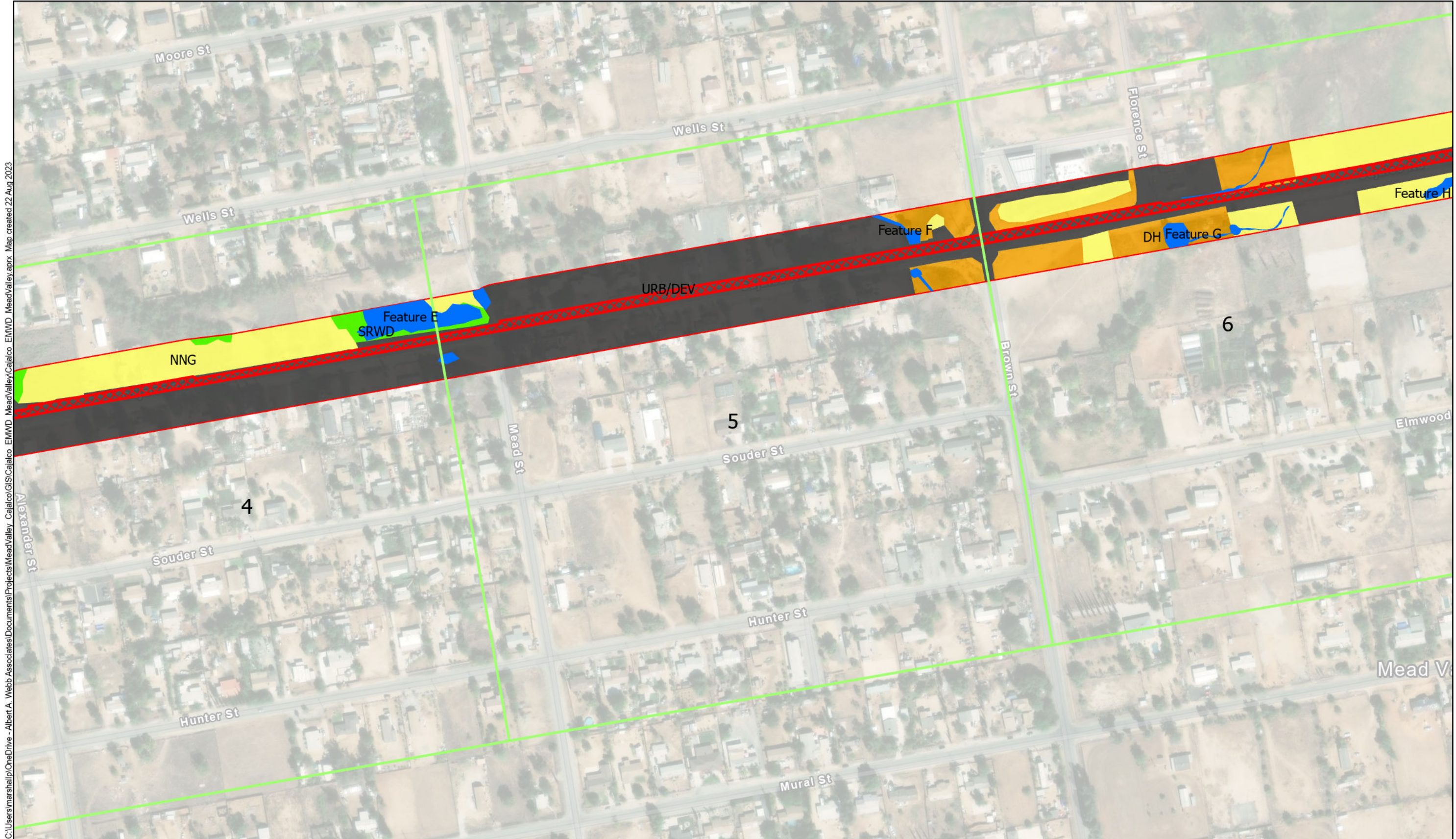


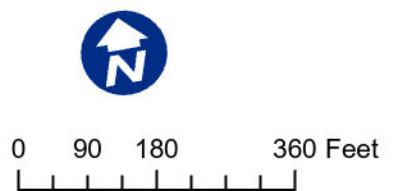
Figure 8D- Project Impacts
Mead Valley Cajalco Sewer Project





C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMD_MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016



Legend	
	Temporary Impacts
	Biological Study Area (BSA)
	Aquatic Features
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

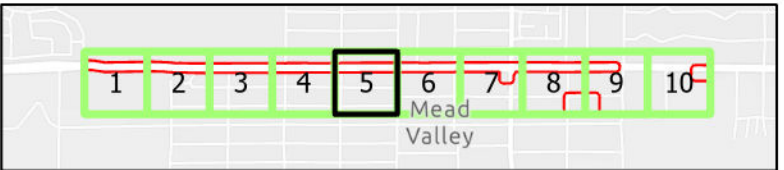
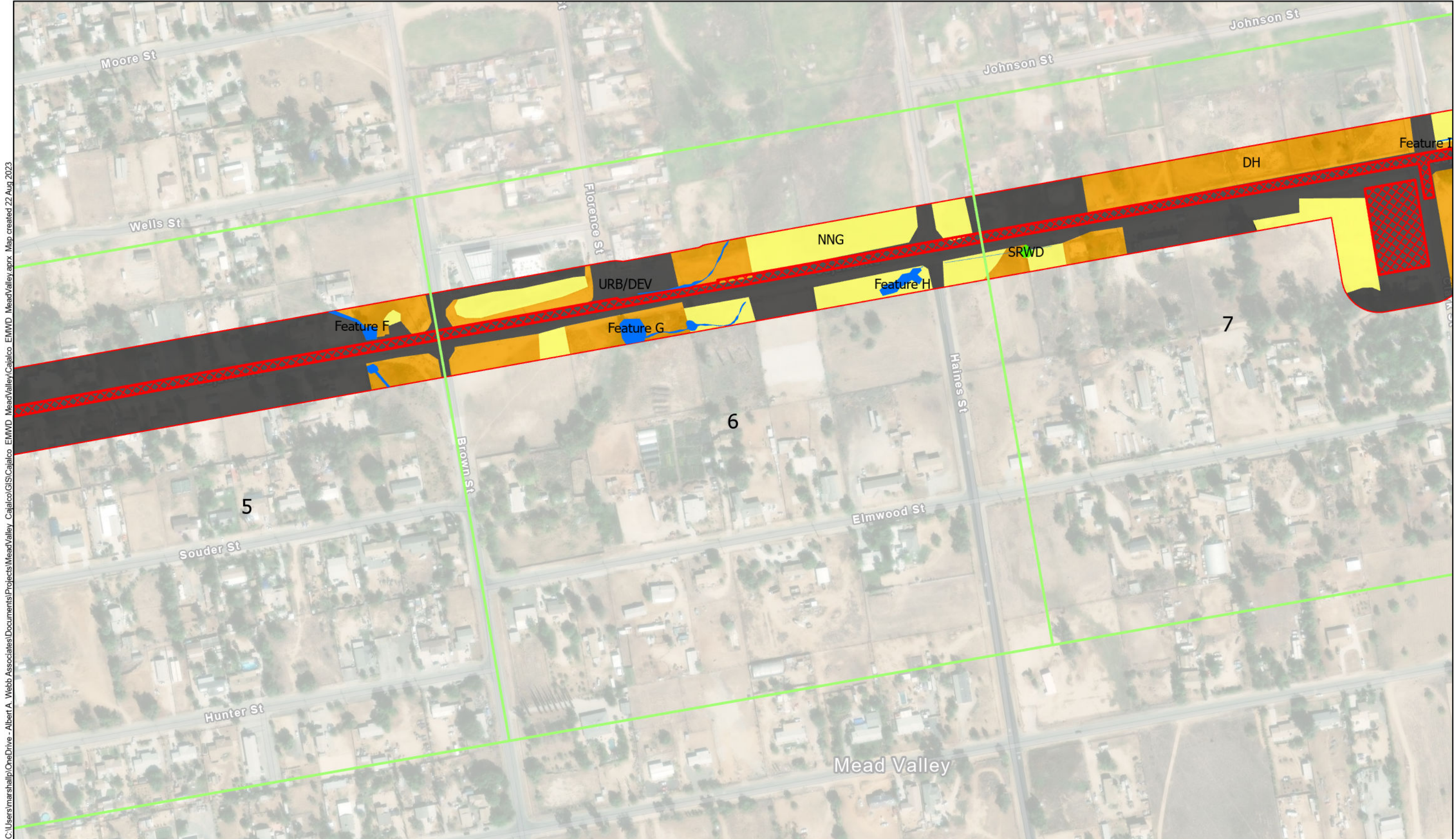


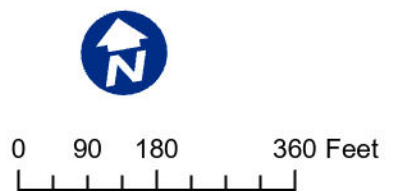
Figure 8E- Project Impacts
Mead Valley Cajalco Sewer Project





C:\Users\marshal\p\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMWD MeadValleyCajalco EMMWD MeadValleyCajalco Map created 22 Aug 2023

Source: Riverside County 2016



Legend	
	Temporary Impacts
	Biological Study Area (BSA)
	Aquatic Features
	Southern Riparian Woodland (SRWD)
	Urban/Developed (URB/DEV)
	Non Native Grassland (NNG)
	Disturbed Habitat (DH)

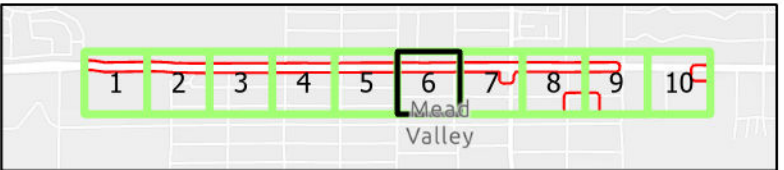
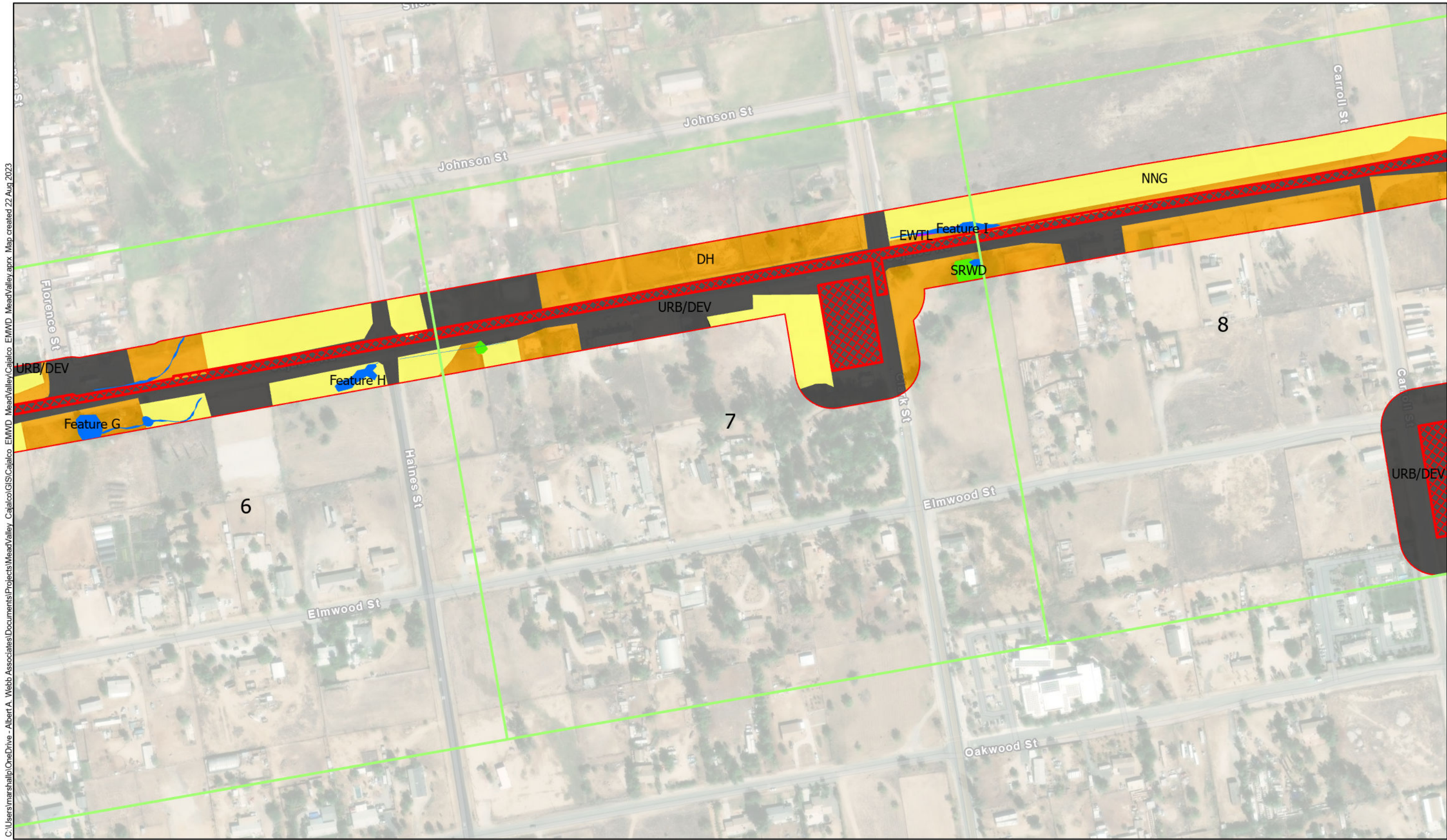


Figure 8F- Project Impacts
Mead Valley Cajalco Sewer Project





C:\Users\marshal\p\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016



0 90 180 360 Feet

Legend

Temporary Impacts	Emergent Wetland	Non Native Grassland (NNG)
Biological Study Area (BSA)	Southern Riparian Woodland (SRWD)	Disturbed Habitat (DH)
Aquatic Features	Urban/Developed (URB/DEV)	

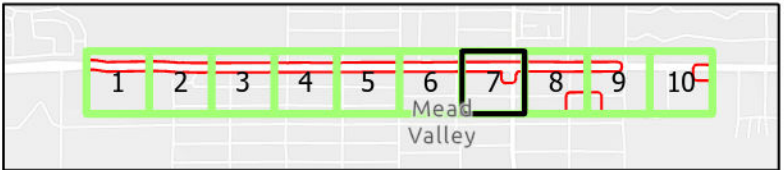
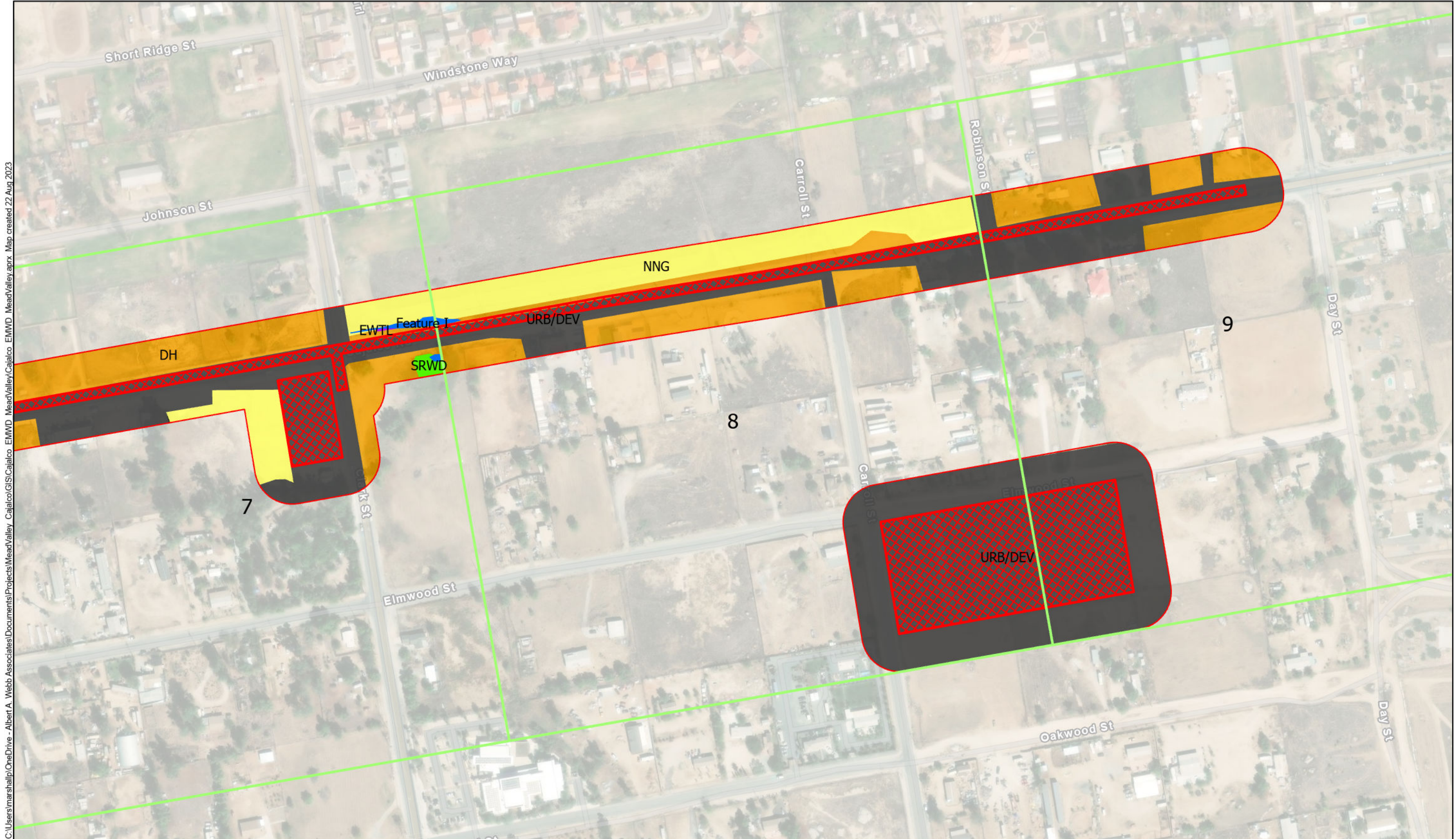


Figure 8G- Project Impacts
Mead Valley Cajalco Sewer Project

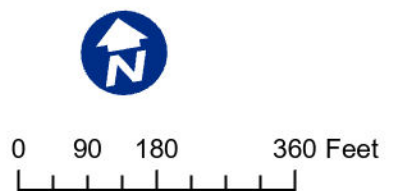




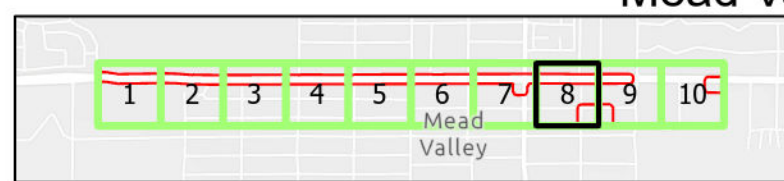
C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016

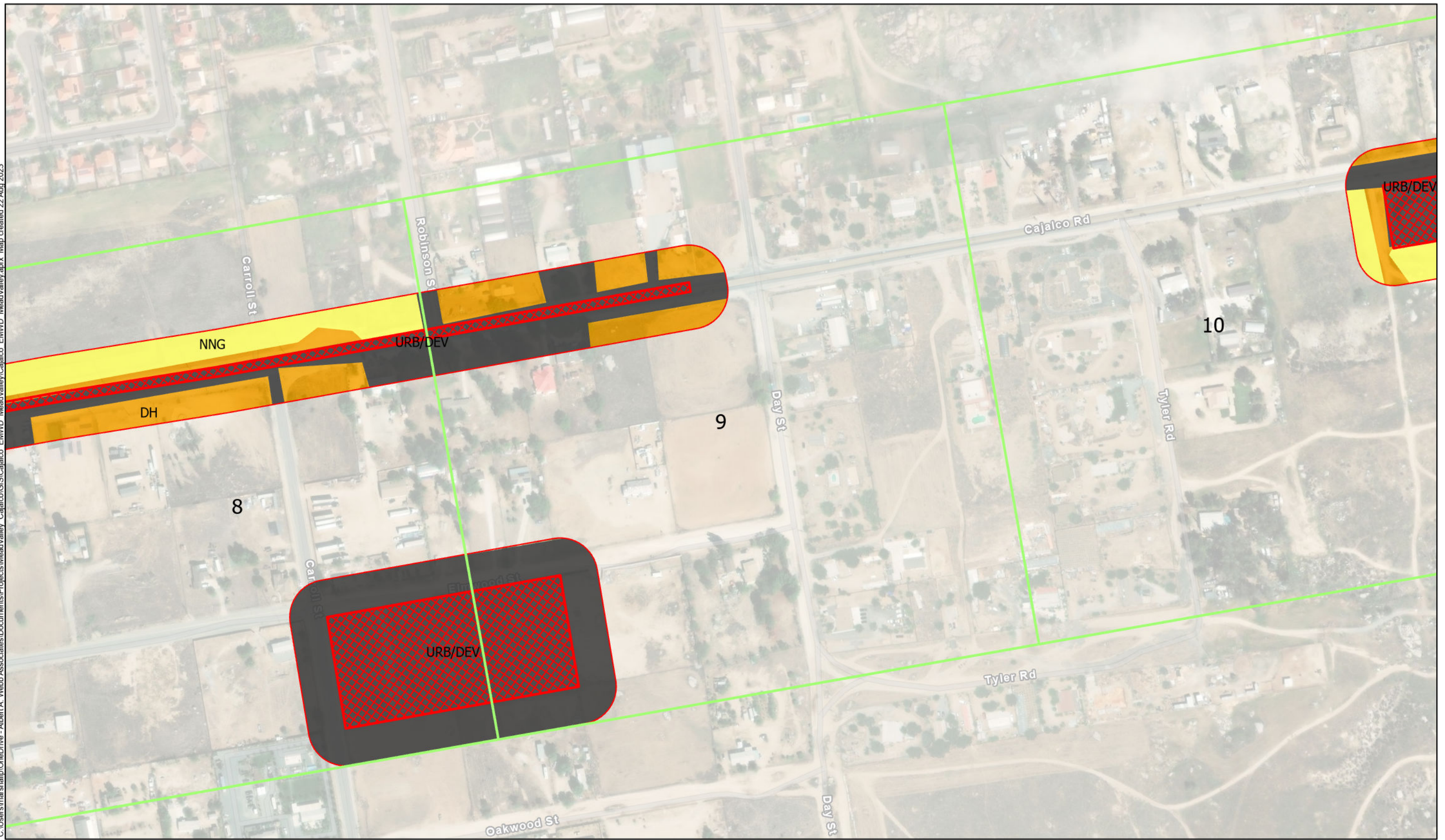
Figure 8H- Project Impacts
Mead Valley Cajalco Sewer Project



Legend			
	Temporary Impacts		Non Native Grassland (NNG)
	Biological Study Area (BSA)		Disturbed Habitat (DH)
	Aquatic Features		Emergent Wetland
	Southern Riparian Woodland (SRWD)		Urban/Developed (URB/DEV)



C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMD_MeadValley_Cajalco EMMD_MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016

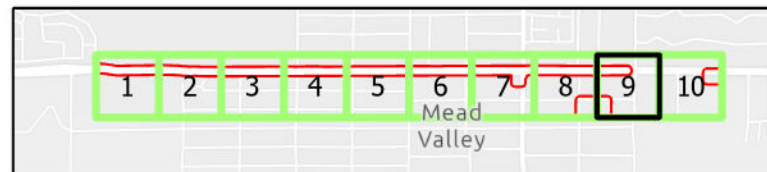
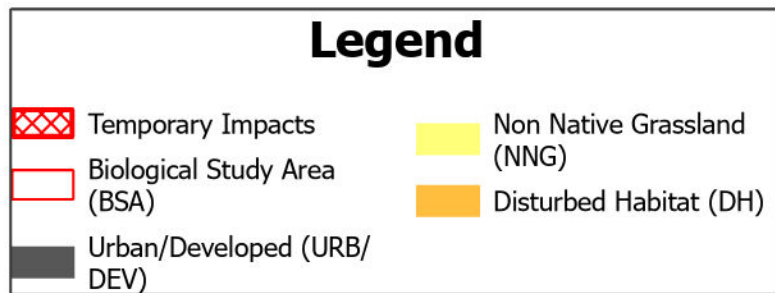
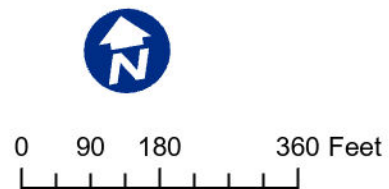
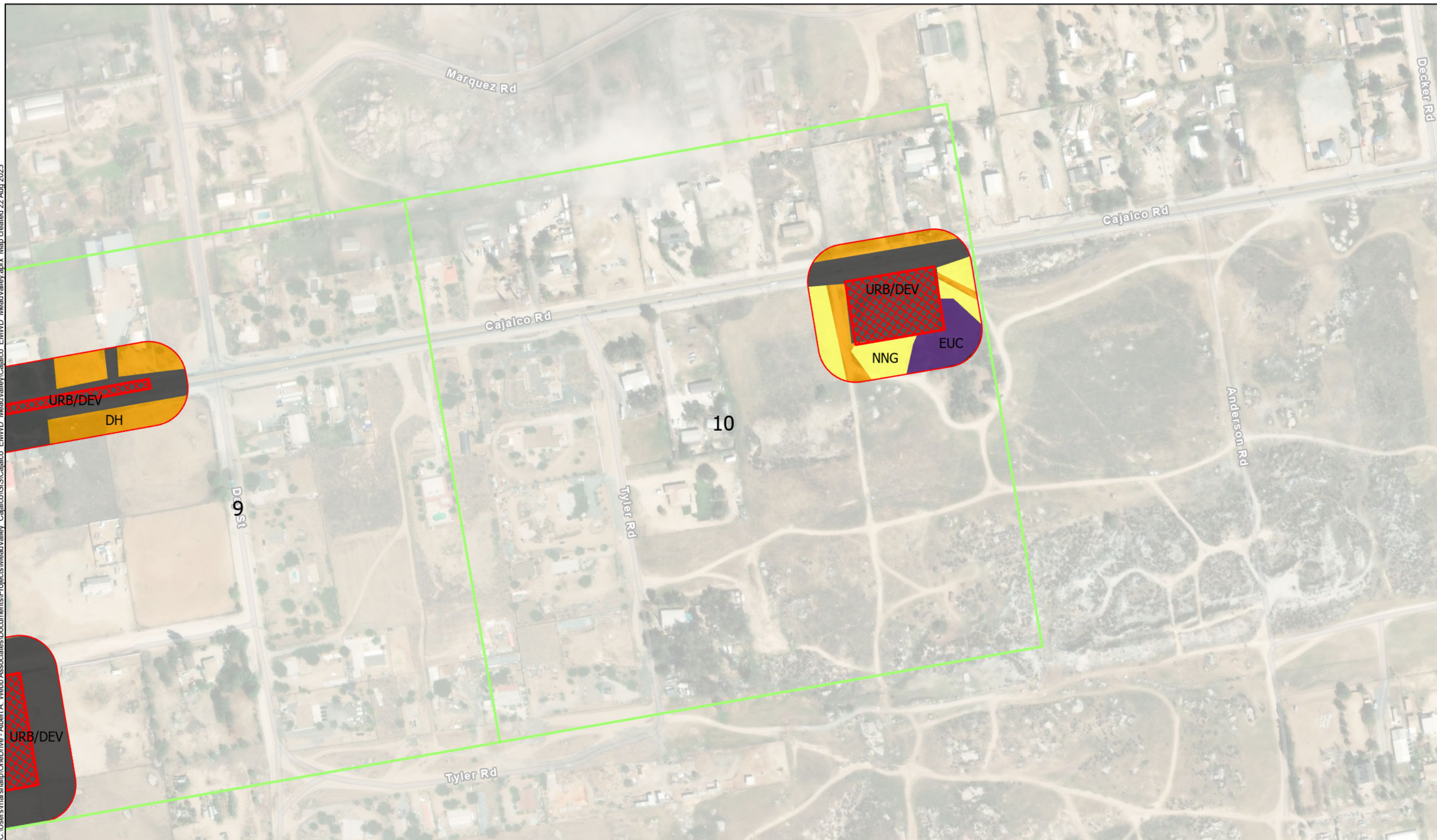


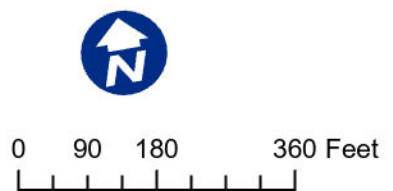
Figure 8I- Project Impacts
Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD MeadValley.aprx Map created 22 Aug 2023



Source: Riverside County 2016



Legend			
	Temporary Impacts		Urban/Developed (URB/DEV)
	Biological Study Area (BSA)		Non Native Grassland (NNG)
	Eucalyptus Woodland (EUC)		Disturbed Habitat (DH)

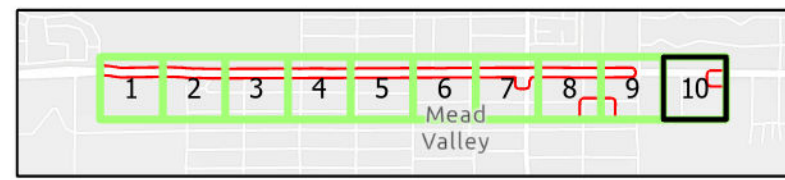
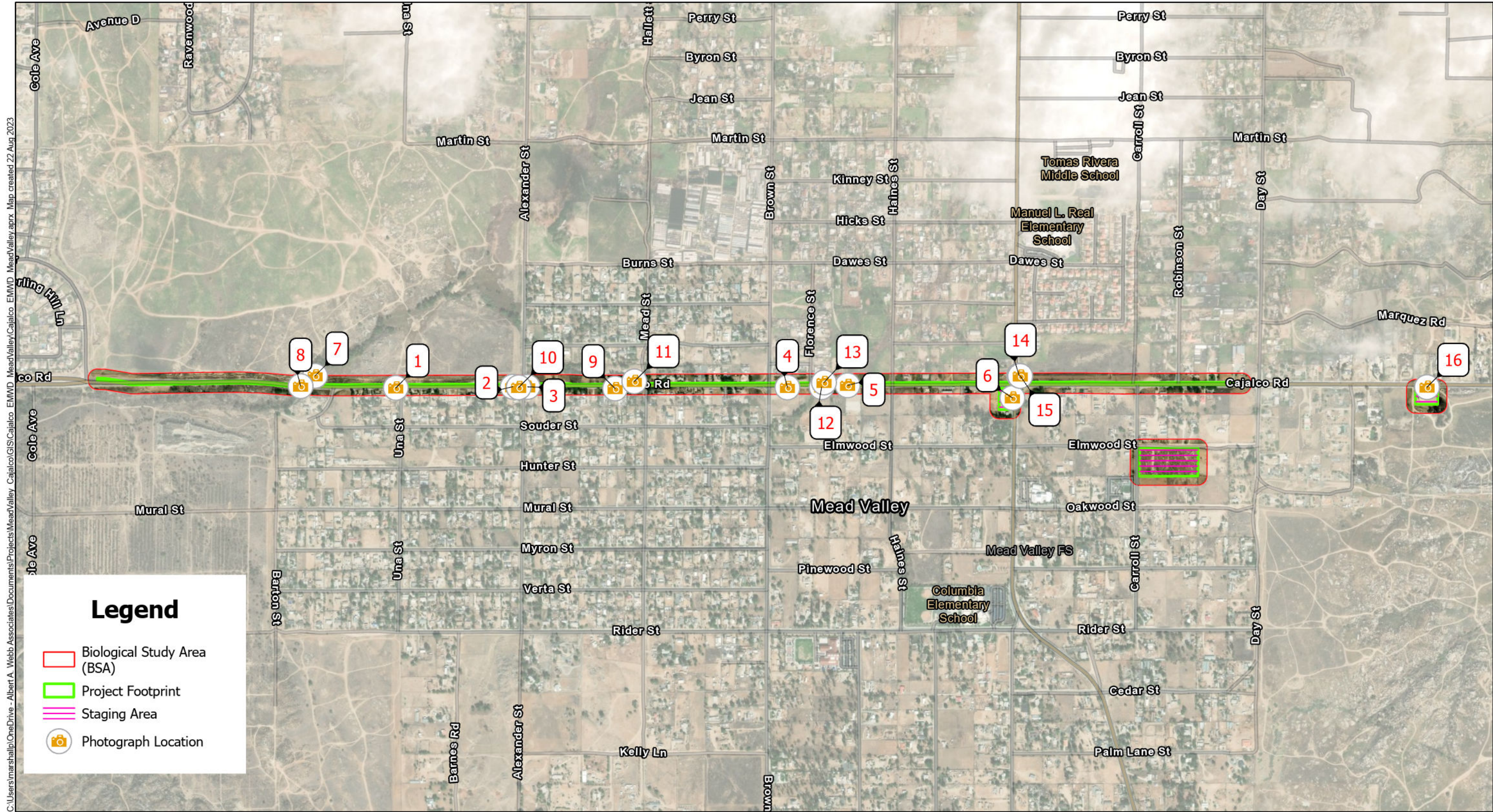


Figure 8J- Project Impacts
Mead Valley Cajalco Sewer Project



APPENDIX B

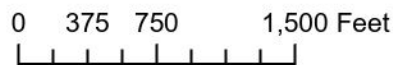


C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMWD_MeadValley.aprx Map created 22 Aug 2023

Source: Riverside County 2016

Appendix B- Photo Index

Mead Valley Cajalco Sewer Project



**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 1



Photo 1: Facing northeast in the BSA.

Photograph No. 2

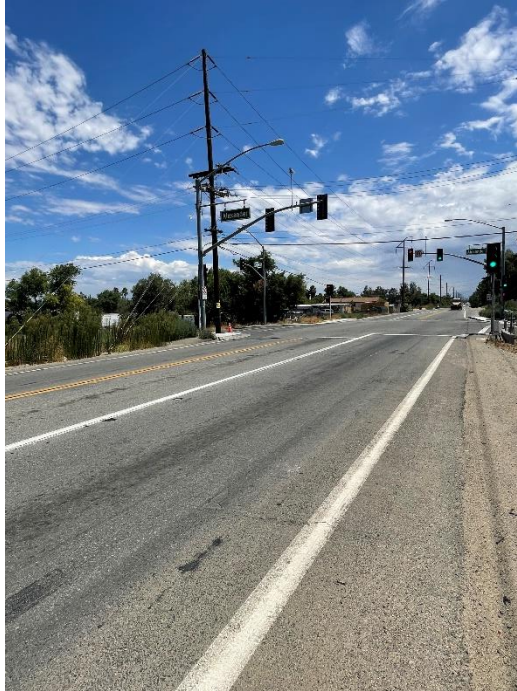


Photo 2: Facing east in the BSA.

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 3



Photo 3 Facing northeast in the BSA.

Photograph No. 4



Photo 4: Facing southwest in the BSA.

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 5



Photo 5: Facing northeast in the BSA.

Photograph No. 6



Photo 6: Facing southwest towards staging areas.

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 7



Photo 7: Facing north in the BSA.

Photograph No. 8



Photo 8: Facing south in the BSA.

Photograph No. 9



Photo 9: Facing northeast in staging area.

Photograph No. 10



Photo 10: Facing east in the BSA (Feature D)

Photograph No. 11



Photo11: Facing northeast in BSA (Feature E)

Photograph No. 12



Photo 12: Facing south (Feature G)

Photograph No. 13



Photo 13: Facing east (Feature G)

Photograph No. 14



Photo 14: Facing east (Feature I)

Photograph No. 15



Photo 15: Facing south (Feature I)

Photograph No. 16



Photo 16: Facing south (staging area)

APPENDIX C

APPENDIX C-Wildlife Species Potential to Occur Table

Species	Status: Federal/State/CDFW*	Habitat/Micro Habitat	Potential to Occur
Amphibians			
<i>Spea hammondi</i> western spadefoot	None/SSC	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland. Vernal pools are essential for breeding and egg-laying.	No suitable habitat is present.
Birds			
<i>Accipiter cooperii</i> cooper's hawk	None/WL	Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	No suitable habitat is present.
<i>Agelaius tricolor</i> <i>tricolored</i> blackbird	None/Threatened	Freshwater marsh, marsh & swamp, swamp, wetland. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	No suitable habitat is present.
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	None/WL	Chaparral, coastal scrub. frequents relatively steep, often rocky hillsides with grass and forb patches.	No suitable habitat is present.
<i>Aquila chrysaetos</i> golden eagle	None/FP	Broadleaved upland forest, cismontane woodland, coastal prairie, great basin grassland, great basin scrub, lower montane coniferous forest, pinon & juniper woodlands, upper montane coniferous forest, valley & foothill grassland. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	No suitable habitat is present.

APPENDIX C-Wildlife Species Potential to Occur Table

<p><i>Artemisospiza belli belli</i> Bell's sparrow</p>	<p>None/WL</p>	<p>Chaparral, coastal scrub.</p>	<p>No suitable habitat is present.</p>
<p><i>Asio otus</i> long-eared owl</p>	<p>None/SSC</p>	<p>Cismontane woodland, great basin scrub, riparian forest, riparian woodland, upper montane coniferous forest. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.</p>	<p>No suitable habitat is present.</p>
<p><i>Athene cunicularia</i> burrowing owl</p>	<p>None/SSC</p>	<p>Coastal prairie, coastal scrub, great basin grassland, great basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley & foothill grassland. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.</p>	<p>No suitable habitat is present in the Project footprint. Focused surveys conducted within 500-feet of Project. Species is absent.</p>
<p><i>Buteo regalis</i> ferruginous hawk</p>	<p>None/WL</p>	<p>Great Basin grassland, great basin scrub, pinon & juniper woodlands, valley & foothill grassland.</p>	<p>No suitable habitat is present.</p>
<p><i>Buteo swainsoni</i> Swainson's hawk</p>	<p>None/Threatened</p>	<p>Great Basin grassland, riparian forest, riparian woodland, valley & foothill grassland. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.</p>	<p>No suitable habitat is present.</p>
<p><i>Charadrius nivosus nivosus</i> western snowy plover</p>	<p>Threatened/SSC</p>	<p>Great Basin standing waters, Sand shore, Wetland. Needs sandy, gravelly or friable soils for nesting.</p>	<p>No suitable habitat is present.</p>

APPENDIX C-Wildlife Species Potential to Occur Table

<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	Threatened/Endangered	Riparian forest. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	No suitable habitat is present.
<i>Coturnicops noveboracensis</i> yellow rail	None/SSC	Freshwater marsh, meadow & seep. Freshwater marshlands.	No suitable nesting is habitat present.
<i>Elanus leucurus</i> white-tailed kite	None/FP	Cismontane woodland, marsh & swamp, Riparian woodland, valley & foothill grassland, wetland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	No suitable nesting is habitat present.
<i>Eremophila alpestris actia</i> California horned lark	None/WL	Marine intertidal & splash zone communities, meadow & seep. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	No suitable habitat is present.
<i>Haliaeetus leucocephalus</i> bald eagle	Delisted/Endangered,FP	Lower montane coniferous forest, old growth. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	No suitable habitat is present.
<i>Icteria virens</i> yellow-breasted chat	None/SSC	Riparian forest, riparian scrub, riparian woodland. nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	Not detected during focused LBVI Surveys. Presumed Absent.
<i>Lanius ludovicianus</i> loggerhead shrike	None/SSC	Broadleaved upland forest, desert wash, Joshua tree woodland, Mojavean desert scrub, pinon & juniper woodlands, riparian woodland, Sonoran desert scrub. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	No suitable habitat is present.

APPENDIX C-Wildlife Species Potential to Occur Table

<i>Laterallus jamaicensis coturniculus</i> California black rail	None/Threatened,FP	Brackish marsh, freshwater marsh, marsh & swamp, salt marsh, wetland. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	No suitable nesting is habitat present.
<i>Pandion haliaetus</i> osprey	None/ WL	Riparian forest. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	No suitable habitat is present.
<i>Plegadis chihi</i> white-faced ibis	None/WL	Marsh & swamp, wetland. Dense tule thickets for nesting, interspersed with areas of shallow water for foraging.	No suitable habitat is present.
<i>Polioptila californica californica</i> coastal California gnatcatcher	Threatened/SSC	Coastal bluff scrub, Coastal scrub. Low, coastal sage scrub in arid washes, on mesas and slopes.	No suitable habitat is present.
<i>Setophaga petechia</i> yellow warbler	None/SSC	Riparian forest, riparian scrub, riparian woodland. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Not detected during focused LBVI Surveys. Presumed Absent.
<i>Spinus lawrencei</i> Lawrence's goldfinch	None/None	Broadleaved upland forest, chaparral, Pinon & juniper woodlands, Riparian woodland. Closely associated with oaks.	Not detected during focused LBVI Surveys. Presumed Absent.
<i>Vireo bellii pusillus</i> least Bell's vireo	Endangered/Endangered	Riparian forest, riparian scrub, riparian woodland. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, <i>Baccharis</i> , mesquite.	Focused surveys conducted. LBVI is present outside of Project footprint.
Crustaceans			
<i>Streptocephalus woottoni</i> Riverside fairy shrimp	Endangered/None	Coastal scrub, valley & foothill grassland, vernal pool, wetland. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.	No suitable habitat is present.

APPENDIX C-Wildlife Species Potential to Occur Table

Fish			
<i>Catostomus santaanae</i> Santa Ana sucker	Threatened/None	Aquatic, south coast flowing waters. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	No suitable habitat is present.
<i>Gila orcuttii</i> arroyo chub	None/SSC	Aquatic, south coast flowing waters. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	No suitable habitat is present.
<i>Oncorhynchus mykiss irideus</i> pop 10 steelhead - southern California DPS	Endangered/Candidate Endangered	Aquatic, south coast flowing waters. Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	No suitable habitat is present.
<i>Rhinichthys osculus ssp.8</i> Santa Ana speckled dace	None/SSC	Aquatic, south coast flowing waters. Requires permanent flowing streams with summer water temps of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	No suitable habitat is present.
Insect			
<i>Bombus crotchii</i> Crotch bumble bee	None/Candidate Endangered	Grasslands, shrublands, and chapparal. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	No suitable habitat is present.
<i>Ceratochrysis longimala</i> Desert cuckoo wasp	None/None	Arid regions.	No suitable habitat is present.
<i>Cicindela senilis frosti</i> senile tiger beetle	None/None	Mud shore/flats, wetland. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone.	No suitable habitat is present.
<i>Eugnosta busckana</i> Busck's gallmoth	None/None	Coastal dunes, coastal scrub.	No suitable habitat is present.
<i>Euphydryas editha quino quino</i> checkerspot butterfly	Endangered/None	Chaparral, coastal scrub. Hills and mesas near the coast. Need high densities of food plants <i>Plantago erecta</i> , <i>P. insularis</i> , and <i>Orthocarpus purpurescens</i> .	No suitable habitat is present.

APPENDIX C-Wildlife Species Potential to Occur Table

<i>Neolarra alba</i> white cuckoo bee	None/None	(blank). Cleptoparasitic in the nests of perdita bees.	No suitable habitat is present.
Mammals			
<i>Chaetodipus californicus femoralis</i> Dulzura pocket mouse	None/ SSC	Chaparral, Coastal scrub, valley & foothill grassland. Attracted to grass-chaparral edges.	No suitable habitat is present.
<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	None/ SSC	Chaparral, coastal scrub. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	No suitable habitat is present.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	Endangered/ Candidate Endangered	Coastal scrub. Needs early to intermediate seral stages.	No suitable habitat is present.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	Threatened/Threatened	Coastal scrub, valley & foothill grassland. Prefers buckwheat, chamise, brome grass and filaree. Will burrow into firm soil.	No suitable habitat is present.
<i>Eumops perotis californicus</i> western mastiff bat	None /SSC	Chaparral, cismontane woodland, Coastal scrub, valley & foothill grassland. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	No suitable roosting is habitat present.
<i>Lasiurus xanthinus</i> western yellow bat	None /SSC	Desert wash. Roosts in trees, particularly palms. Forages over water and among trees.	No suitable roosting is habitat present.
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	None/None	Coastal scrub. Coastal sage scrub habitats in Southern California.	No suitable habitat is present.
<i>Myotis yumanensis</i> Yuma myotis	None/None	Lower montane coniferous forest, riparian forest, riparian woodland, Upper montane coniferous forest. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	No suitable habitat is present.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	None /SSC	Coastal scrub. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	No suitable habitat is present.

APPENDIX C-Wildlife Species Potential to Occur Table

<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	None/ SSC	Joshua tree woodland, Pinon & juniper woodlands, riparian scrub, Sonoran desert scrub. Rocky areas with high cliffs.	No suitable roosting is habitat present.
<i>Onychomys torridus ramona</i> southern grasshopper mouse	None/ SSC	Chenopod scrub.	No suitable habitat is present.
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	None /SSC	Coastal scrub. Open ground with fine, sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.	No suitable habitat is present.
<i>Taxidea taxus</i> American badger	None/SSC	Alkali marsh, broadleaved upland forest, chaparral, chenopod scrub, cismontane woodland, closed-cone coniferous forest, coastal prairie, coastal scrub, desert dunes, desert wash, freshwater marsh, grassland, lower montane coniferous forest, Mojavean desert scrub, Montane dwarf scrub, Pavement plain, Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	No suitable habitat is present.
Reptiles			
<i>Anniella stebbinsi</i> Southern California legless lizard	None /SSC	Broadleaved upland forest, chaparral, coastal dunes, coastal scrub. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	No suitable habitat is present.
<i>Arizona elegans occidentalis</i> California glossy snake	None /SSC	Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	No suitable habitat is present.

APPENDIX C-Wildlife Species Potential to Occur Table

<p><i>Aspidoscelis hyperythra</i> orange-throated whiptail</p>	<p>None /WL</p>	<p>Chaparral, cismontane woodland, coastal scrub. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food: termites.</p>	<p>No suitable habitat is present.</p>
<p><i>Aspidoscelis tigris stejnegeri</i> coastal whiptail</p>	<p>None /SSC</p>	<p>Ground may be firm soil, sandy, or rocky.</p>	<p>No suitable habitat is present.</p>
<p><i>Crotalus ruber</i> red-diamond rattlesnake</p>	<p>None /SSC</p>	<p>Chaparral, Mojavean desert scrub, Sonoran desert scrub. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.</p>	<p>No suitable habitat is present.</p>
<p><i>Diadophis punctatus modestus</i> San Bernardino ringneck snake</p>	<p>None/ None</p>	<p>Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous veg.</p>	<p>No suitable habitat is present.</p>
<p><i>Emys marmorata</i> western pond turtle</p>	<p>None/SSC</p>	<p>Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.</p>	<p>No suitable habitat is present.</p>
<p><i>Phrynosoma blainvillii</i> coast horned lizard</p>	<p>None/SSC</p>	<p>Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, desert wash, pinon & juniper woodlands, riparian scrub, riparian woodland, valley & foothill grassland. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.</p>	<p>No suitable habitat is present.</p>

APPENDIX C-Wildlife Species Potential to Occur Table

<p><i>Salvadora hexalepis virgulata</i> coast patch-nosed snake</p>	<p>None /SSC</p>	<p>Coastal scrub. Require small mammal burrows for refuge and overwintering sites.</p>	<p>No suitable habitat is present.</p>
<p>State/CDFW Classification</p> <ul style="list-style-type: none"> • FP: Fully Protected • S: Sensitive • SSC: Species of Special Concern • WL: Watch List 			

APPENDIX C-Special-Status Plants Evaluated for the Project Site

Scientific Name /Common Name	CRPR/CESA/FESA	Blooming Period/ Elevation Range (AMSL; in feet)	Habitat/Micro Habitat	Occurrence
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	1B.1/None/None	(Jan)Mar-Sep/ 245-5250	Chaparral, Coastal scrub, Desert dunes. Sandy substrates.	No suitable habitat. Not expected to occur.
<i>Allium marvinii</i> Yucaipa onion	1B.2/None/None	Apr-May/ 2495-3495	Chaparral (clay, openings).	No suitable habitat. Not expected to occur.
<i>Allium munzii</i> Munz's onion	1B.1/CT/FE	Mar-May/ 975-3510	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland. Clay, Mesic	No suitable habitat. Not expected to occur.
<i>Ambrosia pumila</i> San Diego ambrosia	1B.1/None/FE	Apr-Oct/ 65-1360	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools. Alkaline (sometimes), Clay (sometimes), Disturbed areas (often), Loam (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.
<i>Arctostaphylos rainbowensis</i> Rainbow manzanita	1B.1/None/None	Dec-Mar/ 675-2200	Chaparral.	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Arenaria paludicola</i> marsh sandwort	1B.1/CE/FE	May-Aug/ 10-560	Marshes and swamps (brackish, freshwater). Openings, Sandy	No suitable habitat. Not expected to occur.
<i>Artemisia palmeri</i> San Diego sagewort	4.2/None/None	(Feb)May-Sep/ 15-3000	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland. Mesic, Sandy	No suitable habitat. Not expected to occur.
<i>Asplenium vespertinum</i> western spleenwort	4.2/None/None	Feb-Jun/ 590-3280	Chaparral, Cismontane woodland, Coastal scrub. Rocky	No suitable habitat. Not expected to occur.
<i>Atriplex coronata var. notatior</i> San Jacinto Valley crownscale	1B.1/None/FE	Apr-Aug/ 455-1640	Playas, Valley and foothill grassland (mesic), Vernal pools. Alkaline	No suitable habitat. Not expected to occur.
<i>Atriplex parishii</i> Parish's brittle-scale	1B.1/None/None	Jun-Oct/ 80-6235	Chenopod scrub, Playas, Vernal pools. Alkaline	No suitable habitat. Not expected to occur.
<i>Atriplex serenana var. davidsonii</i> Davidson's salt-scale	1B.2/None/None	Apr-Oct/ 35-655	Coastal bluff scrub, Coastal scrub. Alkaline	No suitable habitat. Not expected to occur.
<i>Berberis nevini</i> Nevin's barberry	1B.1/CE/FE	(Feb)Mar-Jun/ 230-2705	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub. Gravelly (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Brodiaea filifolia</i> thread-leaved brodiaea	1B.1/CE/FT	Mar-Jun/ 80-3675	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools. Clay (often)	No suitable habitat. Not expected to occur.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	4.2/None/None	May-Jul/ 330-5580	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Granitic, Rocky	No suitable habitat. Not expected to occur.
<i>Calochortus weedii var. intermedius</i> intermediate mariposa-lily	1B.2/None/None	May-Jul/ 345-2805	Chaparral, Coastal scrub, Valley and foothill grassland. Rocky	No suitable habitat. Not expected to occur.
<i>Carex buxbaumii</i> Buxbaum's sedge	4.2/None/None	Mar-Aug/ 10-10825	Bogs and fens, Marshes and swamps, Meadows and seeps (mesic).	No suitable habitat. Not expected to occur.
<i>Caulanthus simulans</i> Payson's jewelflower	4.2/None/None	(Feb)Mar- May(Jun)/ 295-7220	Chaparral, Coastal scrub. Granitic, Sandy	No suitable habitat. Not expected to occur.
<i>Centromadia pungens ssp. laevis</i> smooth tarplant	1B.1/None/None	Apr-Sep/ 0-2100	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland. Alkaline	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Chloropyron maritimum ssp. maritimum</i> salt marsh bird's-beak	1B.2/CE/FE	May-Oct(Nov)/ 0-100	Coastal dunes, Marshes and swamps (coastal salt).	No suitable habitat. Not expected to occur.
<i>Chorizanthe leptotheca Peninsular</i> spineflower	4.2/None/None	May-Aug/ 985-6235	Chaparral, Coastal scrub, Lower montane coniferous forest. Granitic	No suitable habitat. Not expected to occur.
<i>Chorizanthe parryi var. parryi</i> Parry's spineflower	1B.1/None/None	Apr-Jun/ 900-4005	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. Openings, Rocky (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.
<i>Chorizanthe polygonoides var. longispina</i> long-spined spineflower	1B.2/None/None	Apr-Jul/ 100-5020	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools. Clay (often)	No suitable habitat. Not expected to occur.
<i>Chorizanthe xanti var. leucotheca</i> white-bracted spineflower	1B.2/None/None	Apr-Jun/ 985-3935	Coastal scrub (alluvial fans), Mojavean desert scrub, Pinyon and juniper woodland. Gravelly (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<p><i>Clinopodium chandleri</i> San Miguel savory</p>	<p>1B.2/None/None</p>	<p>Mar-Jul/ 395-3525</p>	<p>Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland. Gabbroic (sometimes), Rocky (sometimes)</p>	<p>No suitable habitat. Not expected to occur.</p>
<p><i>Convolvulus simulans</i> small-flowered morning-glory</p>	<p>4.2/None/None</p>	<p>Mar-Jul/ 100-2430</p>	<p>Chaparral (openings), Coastal scrub, Valley and foothill grassland. Clay, Seeps, Serpentine</p>	<p>No suitable habitat. Not expected to occur.</p>
<p><i>Deinandra paniculata</i> paniculate tarplant</p>	<p>4.2/None/None</p>	<p>(Mar)Apr-Nov/ 80-3085</p>	<p>Coastal scrub, Valley and foothill grassland, Vernal pools. Sandy (sometimes), Vernal Mesic (usually)</p>	<p>No suitable habitat. Not expected to occur.</p>
<p><i>Diplacus clevelandii</i> Cleveland's bush monkeyflower</p>	<p>4.2/None/None</p>	<p>Apr-Jul/ 1475-6560</p>	<p>Chaparral, Cismontane woodland, Lower montane coniferous forest. Disturbed areas (often), Gabbroic, Openings, Rocky</p>	<p>No suitable habitat. Not expected to occur.</p>
<p><i>Dodecahema leptoceras</i> slender-horned spineflower</p>	<p>1B.1/CE/FE</p>	<p>Apr-Jun/ 655-2495</p>	<p>Chaparral, Cismontane woodland, Coastal scrub (alluvial fans). Sandy</p>	<p>No suitable habitat. Not expected to occur.</p>

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Dudleya multicaulis</i> many-stemmed dudleya	1B.2/None/None	Apr-Jul/ 50-2590	Chaparral, Coastal scrub, Valley and foothill grassland. Clay (often)	No suitable habitat. Not expected to occur.
<i>Dudleya viscida</i> sticky dudleya	1B.2/None/None	May-Jun/ 35-1805	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub. Rocky	No suitable habitat. Not expected to occur.
<i>Eriastrum densifolium ssp. sanctorum</i> Santa Ana River woollystar	1B.1/CE/FE	Apr-Sep/ 300-2000	Chaparral, Coastal scrub (alluvial fans). Gravelly (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.
<i>Erythranthe diffusa</i> Palomar monkeyflower	4.3/None/None	Apr-Jun/ 4005-6005	Chaparral, Lower montane coniferous forest. Gravelly (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.
<i>Harpagonella palmeri</i> Palmer's grapplinghook	4.2/None/None	Mar-May/ 65-3135	Chaparral, Coastal scrub, Valley and foothill grassland. Clay, Openings	No suitable habitat. Not expected to occur.
<i>Hesperocypris forbesii</i> Tecate cypress	1B.1/None/None	/ 260-4920	Chaparral, Closed-cone coniferous forest. Clay, Gabbroic (sometimes)	No suitable habitat. Not expected to occur.
<i>Hordeum intercedens</i> vernal barley	3.2/None/None	Mar-Jun/ 15-3280	Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools.	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Horkelia cuneata var. puberula</i> mesa horkelia	1B.1/None/None	Feb-Jul(Sep)/ 230-2660	Chaparral (maritime), Cismontane woodland, Coastal scrub. Gravelly (sometimes), Sandy (sometimes)	No suitable habitat. Not expected to occur.
<i>Juglans californica</i> Southern California black walnut	4.2/None/None	Mar-Aug/ 165-2955	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland.	No suitable habitat. Not expected to occur.
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	1B.1/None/None	Feb-Jun/ 5-4005	Marshes and swamps (coastal salt), Playas, Vernal pools.	No suitable habitat. Not expected to occur.
<i>Lepechinia cardiophylla</i> heart-leaved pitcher sage	1B.2/None/None	Apr-Jul/ 1705-4495	Chaparral, Cismontane woodland, Closed-cone coniferous forest.	No suitable habitat. Not expected to occur.
<i>Lepidium virginicum var. robinsonii</i> Robinson's pepper-grass	4.3/None/None	Jan-Jul/ 5-2905	Chaparral, Coastal scrub.	No suitable habitat. Not expected to occur.
<i>Lilium humboldtii ssp. ocellatum</i> ocellated Humboldt lily	4.2/None/None	Mar-Jul(Aug)/ 100-5905	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland. Openings	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Microseris douglasii</i> ssp. <i>platycarpa</i> small-flowered microseris	4.2/None/None	Mar-May/ 50-3510	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools. Clay	No suitable habitat. Not expected to occur.
<i>Monardella hypoleuca</i> ssp. <i>intermedia</i> intermediate monardella	1B.3/None/None	Apr-Sep/ 1310-4100	Chaparral, Cismontane woodland, Lower montane coniferous forest (sometimes).	No suitable habitat. Not expected to occur.
<i>Monardella macrantha</i> ssp. <i>Hallii</i> Hall's monardella	1B.3/None/None	Jun-Oct/ 2395-7200	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland.	No suitable habitat. Not expected to occur.
<i>Myosurus minimus</i> ssp. <i>apus</i> little mousetail	3.1/None/None	Mar-Jun/ 65-2100	Valley and foothill grassland, Vernal pools (alkaline).	No suitable habitat. Not expected to occur.
<i>Navarretia fossalis</i> spreading navarretia	1B.1/None/FT	Apr-Jun/ 100-2150	Chenopod scrub, Marshes and swamps (shallow freshwater), Playas, Vernal pools.	No suitable habitat. Not expected to occur.
<i>Orcuttia californica</i> California Orcutt grass	1B.1/CE/FE	Apr-Aug/ 50-2165	Vernal pools.	No suitable habitat. Not expected to occur.
<i>Phacelia keckii</i> Santiago Peak phacelia	1B.3/None/None	May-Jul/ 1790-5250	Chaparral, Closed-cone coniferous forest.	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Phacelia stellaris</i> Brand's star phacelia	1B.1/None/None	Mar-Jun/ 5-1310	Coastal dunes, Coastal scrub.	No suitable habitat. Not expected to occur.
<i>Polygala cornuta var. fishiae</i> Fish's milkwort	4.3/None/None	May-Aug/ 330-3280	Chaparral, Cismontane woodland, Riparian woodland.	No suitable habitat. Not expected to occur.
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	2B.2/None/None	(Jul)Aug- Nov(Dec)/ 0-6890	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland. Gravelly, Sandy	No suitable habitat. Not expected to occur.
<i>Quercus engelmannii</i> Engelmann oak	4.2/None/None	Mar-Jun/ 165-4265	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland.	No suitable habitat. Not expected to occur.
<i>Romneya coulteri</i> Coulter's matilija poppy	4.2/None/None	Mar-Jul(Aug)/ 65-3935	Chaparral, Coastal scrub. Burned areas (often)	No suitable habitat. Not expected to occur.
<i>Senecio aphanactis</i> chaparral ragwort	2B.2/None/None	Jan-Apr(May)/ 50-2625	Chaparral, Cismontane woodland, Coastal scrub. Alkaline (sometimes)	No suitable habitat. Not expected to occur.
<i>Symphyotrichum defoliatum</i> San Bernardino aster	1B.2/None/None	Jul-Nov/ 5-6695	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland (vernally mesic). Streambanks	No suitable habitat. Not expected to occur.
<i>Texosporium sancti-jacobi</i> woven-spored lichen	3/None/None	na/na 195-2165	Chaparral (openings).	No suitable habitat. Not expected to occur.

APPENDIX C-Special-Status Plants Evaluated for the Project Site

<i>Tortula californica</i> California screw moss	1B.2/None/None	na/na 35-4790	Chenopod scrub, Valley and foothill grassland. Sandy	No suitable habitat. Not expected to occur.
<i>Trichocoronis wrightii var. wrightii</i> Wright's trichocoronis	2B.1/None/None	May-Sep/ 15-1425	Marshes and swamps, Meadows and seeps, Riparian forest, Vernal pools. Alkaline	No suitable habitat. Not expected to occur.
<i>Viguiera laciniata</i> San Diego County viguiera	4.3/None/None	Feb-Jun (Aug)/ 195-2460	Chaparral, Coastal scrub.	No suitable habitat. Not expected to occur.
<p>CRPR-CALIFORNIA RARE PLANT RANK</p> <p>1A- Plants presumed extirpated in California and either rare or extinct elsewhere</p> <p>1B- Plants rare, threatened, or endangered in California and elsewhere</p> <p>2A- Plants presumed extirpated in California but common elsewhere</p> <p>2B- Plants rare, threatened, or endangered in California but more common elsewhere</p> <p>3- Review List: Plants about which more information is needed</p> <p>4- Watch List: Plants of limited distribution</p> <p>0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)</p> <p>0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)</p> <p>0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)</p> <p>STATE DESIGNATIONS</p> <p>CE-STATE ENDANGERED</p> <p>FEDERAL DESIGNATION</p>				

APPENDIX C-Special-Status Plants Evaluated for the Project Site

FE-FEDERALLY ENDANGERED

FT- FEDERALLY THREATENED

APPENDIX D

Focused Burrowing Owl Survey Report

For:

Mead Valley Cajalco Sewer Project

Prepared By:

ALBERT A. WEBB ASSOCIATES

September 2023

Contents

Introduction	3
Project Site Location	3
Project Site Description	3
Burrowing Owl Biology	4
Methods	4
Results	5
Conclusion	6
References	6

Appendices

Appendix A – Figure References

Appendix B – Photo Log

Introduction

This report presents the findings of focused burrowing owl survey(s) conducted by Albert A. Webb Associates (WEBB) for the Mead Valley Cajalco Sewer Project (Project) proposed by the Eastern Municipal Water District (EMWD) located in the County of Riverside, California. The purpose of this report is to provide the EMWD, resource agencies, and the public with the methods and results of the focused burrowing owl surveys conducted for the Project, as well as to ensure compliance with state and local regulations.

The proposed Project entails the construction of approximately 12,600 linear feet of 8-inch to 15-inch diameter polyvinyl chloride (PVC) or vitrified clay pipe (VCP) gravity trunk sewer pipeline as well as 4-to-5-foot manholes along Cajalco Road. The Project gravity sewer line will be located entirely within the existing right of way of Cajalco Road. Once the sewer line is completed, EWMD will then demolish and decommission the existing Clark Street Sewer Lift Station located at the intersection of Clark Street and Cajalco Road. The existing roadway is paved.

Project Site Location

The proposed Project is located in the County of Riverside, California (Figure-1 Regional Map; all figures are provided in Appendix A). The Project is primarily sited along Cajalco Expressway, approximately 2 miles west of I-215 and 5 miles east of Lake Mathews (Figure 2- Project Vicinity). The Project site falls within Sections 8, 9, 10, and 11 of Township 4 South, Range 4 West, as depicted in the Steele Peak 7.5-minute quadrangle map. Cajalco Expressway does not have Assessor Parcel Numbers (APNs) associated with it, three staging areas related to the Project can be identified by the following APNs: 318-140-030, 317-060-043, 318-120-039, and 318-120-038.

Throughout this report, the Project alignment, including the staging areas, will collectively be referred to as the "Project," unless otherwise specified.

Project Site Description

The Project site covers an area of approximately 12.81 acres and comprises three distinct land cover types and vegetation communities: urban/developed lands, disturbed habitat, and non-native grasslands. Among these communities, only one vegetation type, non-native grasslands, was found within suitable burrowing owl (BUOW) habitat located within the BUOW study area, which is defined as the Project footprint, including all areas within 500-feet of the Project footprint (Figure 3 – Burrowing Owl Survey Results). The non-native grasslands is primarily composed of species such as red-stemmed filaree (*Erodium cicutarium*), foxtail barley, London rocket (*Sisymbrium irio*), and stinknet (*Oncosiphon piluliferis*). Additionally, there are occasional patches at low percent cover of *Amsinckia spp.* and *Plagiobothrys spp.* Representative photographs of the Project are provided in Appendix B.

Burrowing Owl Biology

The burrowing owl, a small bird of prey and is primarily found in arid and open habitats. It prefers areas with short vegetation, bare ground, sloping terrain, and well-drained soils. The range of suitable burrowing owl habitats is extensive and includes diverse environments such as grasslands, deserts, and human-altered landscapes like agricultural fields, vacant lots, pastures, fallow fields, and golf courses (Klute et al., 2003). However, habitats with tall or dense cover are generally unsuitable for burrowing owls, as they require good visibility at their nest sites, likely as a protective measure against predators.

The key criterion for suitable habitat is the presence of appropriate burrows. Burrowing owls rely on underground burrows that are typically created by burrowing mammals such as California ground squirrels (*Spermophilus beecheyi*), coyotes (*Canis latrans*), and American badgers (*Taxidea taxus*) for nesting and roosting. They may also use other natural or man-made cavities like rock piles, pipes, culverts, refuse piles, or artificial burrows. Burrowing owls show a preference for nesting in areas with a high density of suitable burrows, which likely serve as escape routes for both adult and young owls (Poulin et al., 2011). Many adult burrowing owls exhibit strong fidelity to their nesting sites, returning year after year (CDFG, 2012). They have a semi-colonial behavior, often gathering with other owls in winter and forming loose colonies for nesting. The density of nests can vary depending on the availability of suitable burrows and prey resources.

Methods

The habitat assessment and focused surveys were conducted in accordance with the survey guidelines as outlined in Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFG 2012). Prior to conducting the BUOW habitat assessment, WEBB consulted the California Natural Diversity Database (CNDDDB) to determine the nearest BUOW occurrence(s).

Following the CNDDDB search, on February 22nd, 2023, WEBB Senior Biologist, Marshall Paymard and Environmental Analyst, Virginia Waters, conducted a habitat assessment within the BUOW study area to determine whether the Project site supports suitable BUOW habitat. The surveyors slowly walked transects no greater than 20 meters apart through all areas of potentially suitable habitat located in the BUOW study area, visually searching for suitable burrows or burrow surrogates (dimensions of >11 centimeters in diameter and >150 centimeters in depth), burrowing owl sign (i.e., pellets with regurgitated fur, bones, and insect parts; whitewash; or feathers), and burrowing owl individuals, with the aid of binoculars. All potentially suitable burrows observed were documented, and suitable habitat was identified. Post completion of the habitat assessment, suitable burrowing owl habitat areas were refined so that the subsequent surveys were conducted within the identified suitable habitat.

As shown in Table 1, following the habitat assessment, four subsequent surveys were conducted using the methods as described above, with at least one site visit being conducted between February 15th and April 15th, and a minimum of three survey visits being conducted at least three weeks apart, between April 15th and July 15th, with at least one visit conducted after June 15th.

Table 1. Schedule of Burrowing Owl Habitat Assessments and Focused Surveys

Date/Time	Surveyor	Type	Climatic Conditions
February 22 nd 2023/ 0630-1308	Marshall Paymard, Virginia Waters	Habitat Assessment	Air Temperature: 45-60°F; Wind:0-1 miles per hour (MPH); Cloud Cover:10%
March 8 th . 2023/ 0630-1006	Marshall Paymard, Virginia Waters	Focused Survey #1	Air Temperature: 48-52°F; Wind:0-1 MPH; Cloud Cover: 0%
April 20 th . 2023/ 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #2	Air Temperature: 50-63°F; Wind:0-1 MPH; Cloud Cover: 0%
May 24 th . 2023/ 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #3	Air Temperature: 52-66°F; Wind:0-1 MPH; Cloud Cover: 0%
June 27 th . 2023/ 0630-0900	Marshall Paymard, Virginia Waters	Focused Survey #4	Air Temperature: 70°F; Wind:2- 5 MPH; Cloud Cover: 0%

Results

A total of approximately 55-acres of habitat suitable for BUOW was identified within the BUOW study area (Figure 3- Burrowing Owl Survey Results). No suitable BUOW habitat, BUOW, or BUOW sign was identified within the Project footprint. Further, as shown in Table 2, no BUOW or BUOW sign was observed in the BUOW study area. A total of 79 suitable burrows were recorded within the BUOW study area (Figure 3- Burrowing Owl Survey Results), with the primary host fossorial mammal being the California ground squirrel, and several surrogate burrows being identified within crevices granitic boulder outcrops.

There are no CNDDDB records of BUOW within the Project footprint or BUOW study area. The nearest BUOW record is from June 6th, 2006 (Occurrence No.882) and is located approximately 400-feet from the edge of the north-eastern BUOW study area. This record describes an observation of 14 adults and 3 or more juveniles.

Table 2. Burrowing Owl Survey Results

Date/Time	Surveyor	Type	Results
February 22 nd 2023/ 0630-1308	Marshall Paymard, Virginia Waters	Habitat Assessment	Suitable habitat identified.
March 8 th . 2023/ 0630-1006	Marshall Paymard, Virginia Waters	Focused Survey #1	No burrowing owl or sign detected.

April 20 th . 2023/ 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #2	No burrowing owl or sign detected.
May 24 th . 2023/ 0545-1000	Marshall Paymard, Virginia Waters	Focused Survey #3	No burrowing owl or sign detected.
June 27 th . 2023/ 0630-0900	Marshall Paymard, Virginia Waters	Focused Survey #4	No burrowing owl or sign detected.

Conclusion

No BUOW or sign was detected during the 2023 focused survey effort for BUOW. However, suitable habitat is present in the BUOW study area. Although no BUOW was detected during the focused survey(s), BUOW may colonize the BUOW study area prior to the commencement of construction. As such, BUOW take avoidance survey(s) are recommended. The initial survey should be conducted in suitable habitat no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Staff Report on Burrowing Owl Mitigation. Additionally, a final BUOW survey shall be conducted in suitable habitat within 24 hours prior to any ground disturbance related activities. If active nests are identified within the burrowing owl survey area during the pre-construction survey, the nests should be avoided and an appropriate no-work buffer shall demarcated in the field at a defined distance deemed adequate by the Project biologist. If Project construction cannot avoid the active BUOW area, the CDFW shall be consulted, and the appropriate mitigation will need to be negotiated.

References

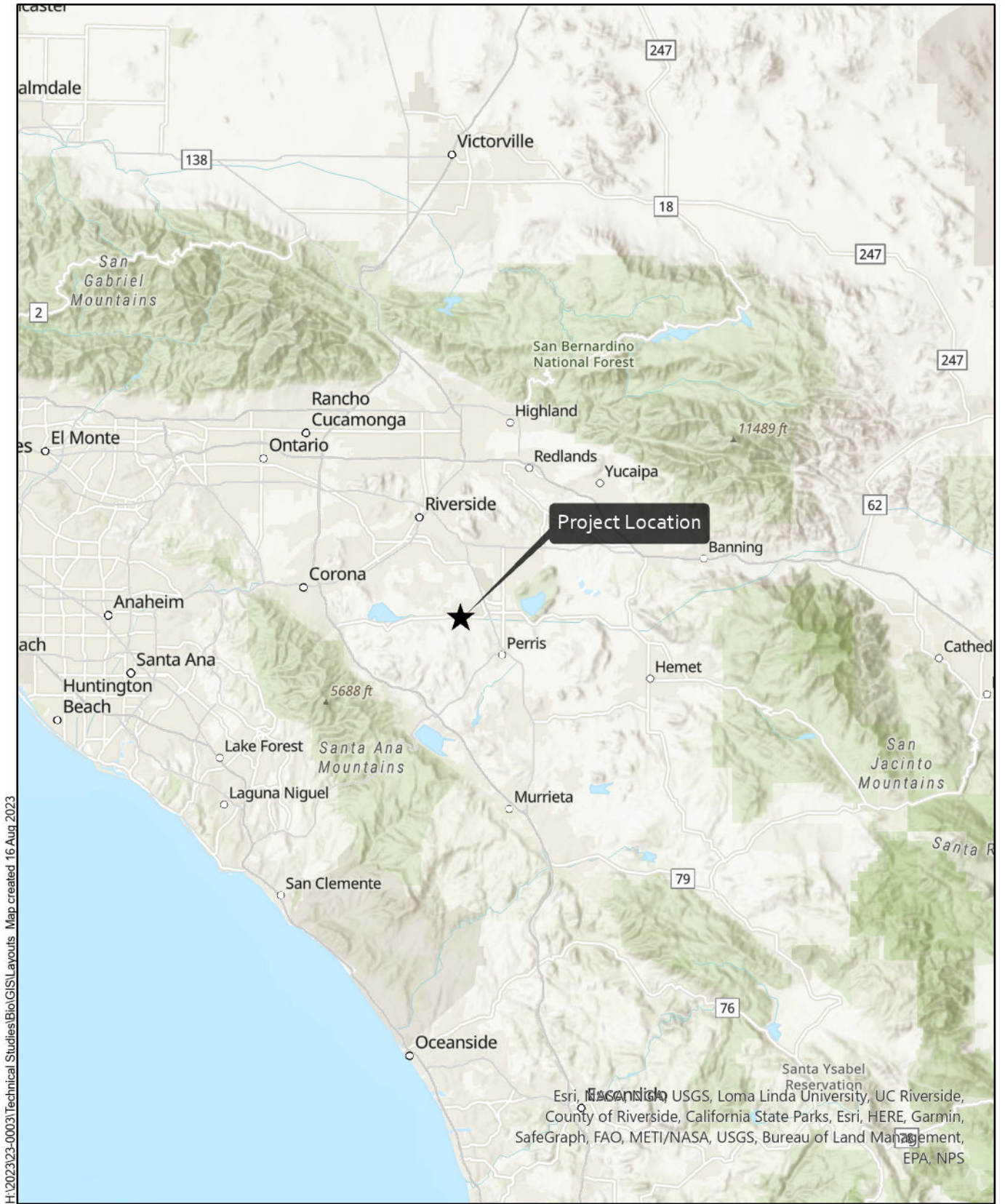
CDFW 2023. California Endangered Species Act. <https://wildlife.ca.gov/Conservation/CESA/Permitting> [accessed May 2023]

CNDDDB. 2023. California Natural Diversity Data Base RareFind 5. <https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx> [accessed May 2023].

CDFG. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency Department of Fish and Game

Klute, D.S., L.W. Ayers, M.T. Green, W.H. Howe, S.L. Jones, J.A. Shaffer, S.R. Sheffield, and T.S. Zimmerman. 2003. Status assessment and conservation plan for the western burrowing owl in the United States. Biological Technical Publication FWS/BTP-R6001-2003. U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C. 120 pp.

Poulin, Ray, L. Danielle Todd, E.A. Haug, B.A. Millsap and M.S. Martell. 2011. Burrowing owl (*Athene cunicularia*). The Birds of North America Online (A. Poole, editor). Cornell Lab of Ornithology, Ithaca, New York. Retrieved July 2, 2013, from: <http://bna.birds.cornell.edu/bna/species/061>.



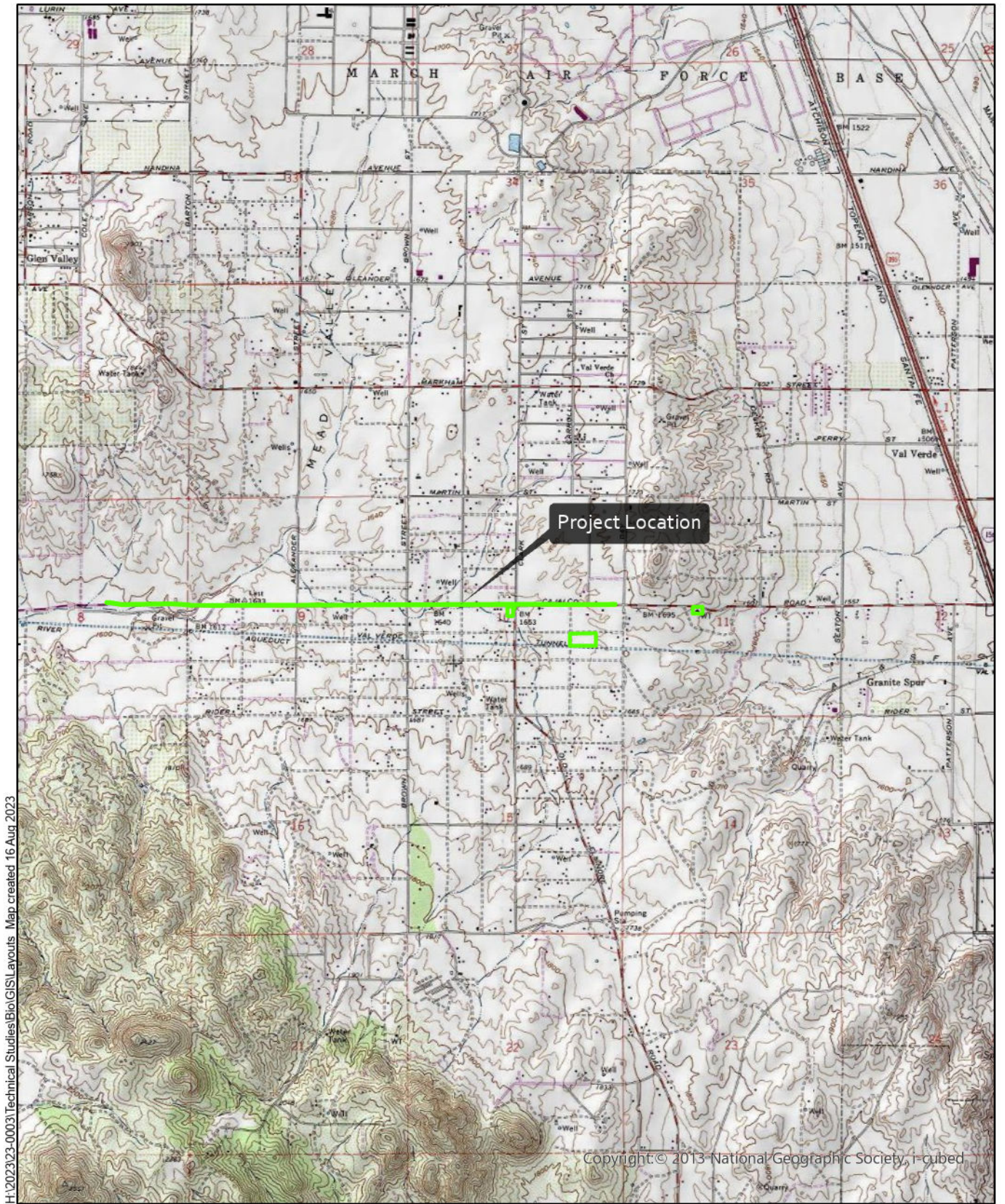
Source: ESRI



0 100 200 300 Feet

Figure 1- Regional Map
Mead Valley Cajalco Sewer Project





H:\2023\23-0003\Technical Studies\Bio\GIS\Layouts Map created 16 Aug 2023

Source: ESRI

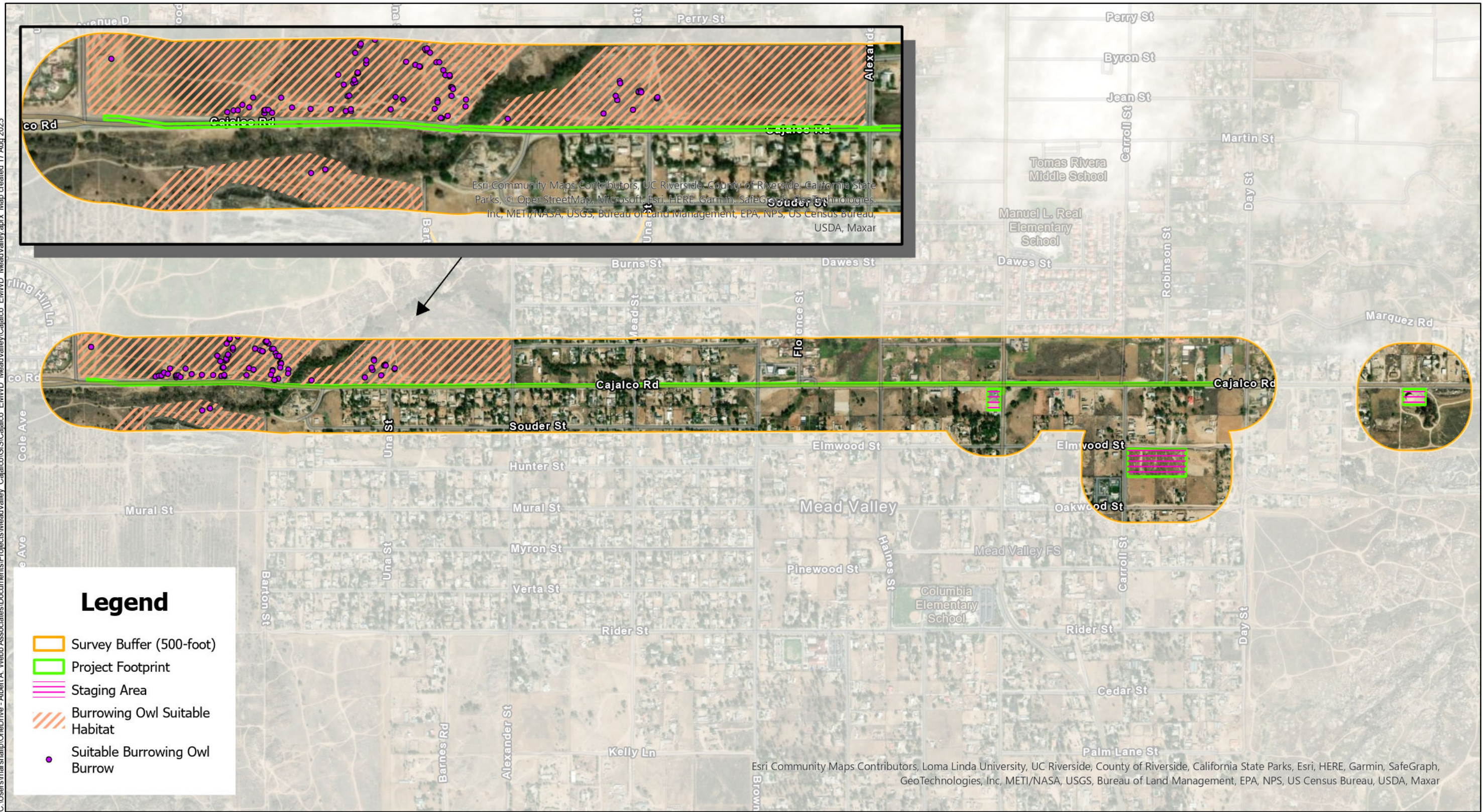
Figure 2- Vicinity Map
Mead Valley Cajalco Sewer Project



0 100 200 300
| Feet



C:\Users\marshali\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EIMWD MeadValley.aprx Map created 17 Aug 2023



Legend

- Survey Buffer (500-foot)
- Project Footprint
- Staging Area
- Burrowing Owl Suitable Habitat
- Suitable Burrowing Owl Burrow

Source: Riverside County 2016

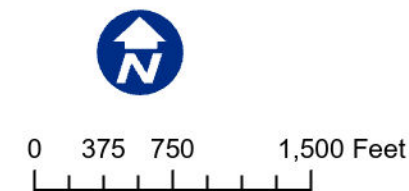


Figure 3- Burrowing Owl Survey Results
Mead Valley Cajalco Sewer Project



C:\Users\marshal\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMD_MeadValley.aprx Map created 22 Aug 2023



Legend

- Survey Buffer (500-foot)
- Project Footprint
- BUOW Photo Locations
- Staging Area
- Burrowing Owl Suitable Habitat
- Suitable Burrowing Owl Burrow

Source: Riverside County 2016



0 375 750 1,500 Feet

Appendix B- Photo Index

Mead Valley Cajalco Sewer Project



**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 1



Photo 1: Facing northeast in burrowing owl study area (north of Cajalco Expressway).

Photograph No. 2



Photo 2: Facing east in burrowing owl study area (north of Cajalco Expressway).

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 3



Photo 3 Facing west in burrowing owl study area (north of Cajalco Expressway).

Photograph No. 4



Photo 4: Facing east in burrowing owl study area (north of Cajalco Expressway).

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 5



Photo 5: Facing west in burrowing owl study area (north of Cajalco Expressway).

Photograph No. 6



Photo 6: Facing east in burrowing owl study area (north of Cajalco Expressway).

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: April 20, 2023

Photograph No. 7



Photo 7: Facing west in burrowing owl study area (north of Cajalco Expressway).

Photograph No. 8



Photo 8: Facing west in burrowing owl study area (north of Cajalco Expressway).

Photograph No. 9



Photo 9: Facing west in burrowing owl study area (north of Cajalco Expressway).

Photograph No. 10



Photo 10: Facing northeast in burrowing owl study area (north of Cajalco Expressway).



Memorandum

TO: Ms. Stacey Love, Recovery Permits Coordinator, Carlsbad Fish and Wildlife Office

FROM: Marshall Paymard, Senior Biologist, Albert A. Webb Associates

DATE: August 22, 2023

PROJECT: Mead Valley Cajalco Sewer Project

RE: 2023 Least Bell's Vireo Survey Summary Report for the Mead Valley Cajalco Sewer Project, Riverside County California

Ms. Love:

This letter report summarizes the results of the 2023 protocol-level presence/absence survey(s) for the federally and state listed endangered least Bell's vireo (*Vireo belli pusillus*), for the Mead Valley Cajalco Sewer Project (Project). Albert A. Webb Associates (WEBB) was contracted by Eastern Municipal Water District (EMWD) to evaluate the potential impacts of the proposed Project located in Riverside County, California.

Project Description and Location

The proposed Project is located in Riverside County, California, (Figure-1 Regional Map; all figures are provided in Attachment A). The Project is primarily sited along Cajalco Expressway, approximately 2 miles west of I-215 and 5 miles east of Lake Mathews (Figure 2- Project Vicinity). The Project site falls within Sections 8, 9, 10, and 11 of Township 4 South, Range 4 West, as depicted in the Steele Peak 7.5-minute quadrangle map. Although Cajalco Expressway does not have Assessor Parcel Numbers (APNs) assigned, three Project associated staging areas can be identified by the following APNs: 318-140-030, 317-060-043, 318-120-039, and 318-120-038. Throughout this report, the Project alignment, including the staging areas, will collectively be referred to as the "Project," unless otherwise specified.

Least Bell's Vireo Natural History

The least Bell's vireo (LBVI) was officially recognized as an endangered subspecies of Bell's vireo by the California Department of Fish and Game (CDFG) in 1980 and federally listed as endangered by the U.S. Fish and Wildlife Service (USFWS) in 1986. This subspecies is mainly found in coastal and inland regions of southern California and Baja California, Mexico, while its winter range extends along the Pacific coast from northern Mexico to northern Nicaragua.

The LBVI is a small, gray songbird with pale yellow hues on its sides, featuring two faint wing bars and a subtle eye ring. It prefers nesting in low, dense, scrubby vegetation found in early successional areas that heavily rely on riparian environments. Suitable habitats encompass willow woodlands, dense mule fat, scrub oak, coastal chaparral, and mesquite patches with dense understories in their early stages. The

LBVI constructs a suspended cup nest approximately 0.5 to 2.0 meters above the ground and typically lays four eggs per nest, often producing two broods in a single breeding season. Its primary diet on the breeding grounds consists of insects and small spiders.

The main contributing factors to the decline of LBVI populations are the loss and degradation of their habitats and nest parasitism by the brown-headed cowbird (*Molothrus ater*; BHCO). The destruction of habitat, especially along streams and rivers due to development, agriculture, flood control projects, logging, and intensive cattle grazing, poses the most significant threat to the survival of the LBVI. Additionally, BHCO parasitism significantly impacts population declines, as BHCO lay their eggs in unsuspecting LBVI nests, leading to the LBVI's raising the BHCO chick as their own. Due to the BHCO chick hatching earlier and growing much faster, it outcompetes the LBVI chicks, often leading to nest failure.

Despite historical population losses, recent trends indicate that populations are rebounding, with the LBVI returning to some of its former habitats and colonizing new areas.

Methods

Habitat Assessment

On February 27th, 2023, an initial habitat assessment was carried out by Webb Senior Biologist, Marshall Paynard, and WEBB Environmental Analyst, Virginia Waters, to evaluate potential suitable habitats for the LBVI within the Project footprint, including a 500-foot survey buffer (Figure 3-LBVI Survey Results). During this assessment, all vegetation communities in the area were carefully surveyed and analyzed for their suitability as habitat for the species. Specifically, the objective of the LBVI habitat assessment was to ascertain the suitability and spatial extent of vegetation communities and habitat types associated with LBVI within 500- feet of the proposed Project limits.

Focused Surveys

Following the habitat assessment, survey areas were refined to LBVI suitable habitat located within the 500-foot survey buffer. As shown on Table 1, between April 12, 2023 and July 31, 2023, LBVI habitat was surveyed on-foot during eight separate occasions, following the survey protocol suggested by the US Fish and Wildlife Service (USFWS 2001). The protocol recommends conducting surveys at intervals of at least 10 days, between April 10th -July 31st, allowing for the detection of various LBVI individuals, such as late and early arrivals, females, territorial males, non-vocal birds of both sexes, and nesting pairs. All surveys took place between dawn and 11:00 am, avoiding extreme weather conditions like abnormal temperatures, strong winds, and precipitation. Careful consideration was given to selecting appropriate survey stations and transects that provided the best chances of hearing or seeing LBVI without causing disturbances to any birds. No recorded vocalizations or playback was used by the biologist during any of the surveys.

The surveys were conducted by WEBB's qualified Senior Biologist, Marshall Paynard, who is familiar with LBVI songs, whisper songs, calls, scolds, and the distinguishment of characteristics between adult and juvenile plumages. All LBVI detections, including vocalizations, foraging behavior, nesting behavior, etc., were recorded using handheld GPS units. The collected information included details on the numbers and locations of paired or unpaired territorial males, the ages and sexes of all observed birds, and nesting behavior. Moreover, any observed brown-headed cowbirds and their numbers and locations were also documented during the surveys.

Table 1. Schedule of Least Belle's Vireo Survey(s)

Date/Time	Surveyor	Type and Survey #	Climatic Conditions
February 27 th , 2023/0800-1200	Marshall Paynard, Virginia Waters	Habitat Assessment	Not recorded.
April 12 th , 2023/ 0620-1100	Marshall Paynard, Virginia Waters	Focused Survey #1	Air Temperature: 56-64°F; Wind:0-1 MPH; Cloud Cover: 25%
May 3 ^d , 2023/ 0630-1006	Marshall Paynard, Virginia Waters	Focused Survey #2	Air Temperature: 48-55°F; Wind:0-1 MPH; Cloud Cover: 50%
May 22 nd , 2023/ 0632-1100	Marshall Paynard, Virginia Waters	Focused Survey #3	Air Temperature: 56-62°F; Wind:0-2 MPH; Cloud Cover: 0%
June 10 th , 2023/ 0633-1100	Marshall Paynard, Virginia Waters	Focused Survey #4	Air Temperature: 68-70°F; Wind:2-5 MPH; Cloud Cover: 0%
June 21 st , 2023/ 0615-1056	Marshall Paynard, Virginia Waters	Focused Survey #5	Air Temperature: 68-70°F; Wind:2-5 MPH; Cloud Cover: 0%
July 1 st , 2023/ 0632-1058	Marshall Paynard, Virginia Waters	Focused Survey #6	Air Temperature: 62-70°F; Wind:2-5 MPH; Cloud Cover: 0%
July 12 th , 2023/ 0638-1047	Marshall Paynard	Focused Survey #7	Air Temperature: 68-76°F; Wind:1-3 MPH; Cloud Cover: 0%
July 31 st , 2023/ 0630-1025	Marshall Paynard, Virginia Waters	Focused Survey #8	Air Temperature: 68-70°F; Wind:2-5 MPH; Cloud Cover: 0%

Results

Habitat Assessment

The habitat assessment resulted in approximately 5-acres of LBVI suitable habitat, represented by southern riparian woodland, being documented within 500-feet of the Project impact footprint (Figure 3- LBVI Survey Results). The suitable habitat is represented by a southern riparian woodland, primarily consisting of black willow (*Salix gooddingii*), with occasional stands of arroyo willow (*Salix lasiolepis*). Photographs are provided in Attachment B of this report.

Focused Surveys

As shown on Table 2, LBVI and BHCO were detected within suitable habitat located within 500- feet of the Project footprint during the 2023 survey efforts (Figure 3- LBVI Survey Results). In total, one LBVI pair was detected during several surveys within the southern riparian woodland located to the north of Cajalco

Expressway (Figure 3- LBVI Survey Results). Additionally, a single territorial adult male was heard vocalizing during several surveys within the southern riparian woodland habitat located to the south of Cajalco Expressway (Figure 3- LBVI Survey Results). The LBVI pair located on the northside of Cajalco Expressway was observed carrying nesting materials to and from an unknown location within the riparian corridor. A BHCO was observed once during the initial survey on April 12th 2023, vocalizing on a *Salix sp.* It should be noted that due to the density of the vegetation and intent of the LBVI survey, WEBB biologists did not actively pursue any LBVI and strictly utilized passive survey methods to ensure no LBVI were distracted or disturbed by their presence. No other sensitive species were observed during the 2023 LBVI surveys.

Table 2. Least Belle’s Vireo Focused Survey Results

Date/Time	LBVI/BHCO Detected	Behaviors Observed
April 12 th , 2023/ 0620-1006	YES/Yes	<p>North of Cajalco Exp: Single LBVI male observed vocalizing on <i>Salix sp.</i> Single BHCO observed vocalizing within male LBVI territory.</p> <p>South of Cajalco Exp: None.</p>
May 3 rd , 2023/ 0630-1006	Yes/No	<p>North of Cajalco Exp: Single Adult LBVI male observed vocalizing on <i>Salix sp.</i></p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>
May 22 nd , 2023/ 0632-1100	Yes/No	<p>North of Cajalco Exp: Adult LBVI pair observed with nesting material.</p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>
June 10 th , 2023/ 0633-1100	Yes/No	<p>North of Cajalco Exp: Adult pair observed within canopy. Male heard vocalizing.</p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>
June 21 st , 2023/ 0615-1056	Yes/No	<p>North of Cajalco Exp: Adult LBVI male heard vocalizing.</p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>
July 1 st , 2023/ 0632-1058	Yes/No	<p>North of Cajalco Exp: LBVI male heard vocalizing. Adult pair observed within canopy.</p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>

July 12 th , 2023/ 0638-1047	Yes/No	<p>North of Cajalco Exp: LBVI male heard vocalizing.</p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>
July 31 st , 2023/ 0630-1025	Yes/No	<p>North of Cajalco Exp: No LBVI detected.</p> <p>South of Cajalco Exp: Single unpaired LBVI male observed vocalizing on <i>Salix sp.</i></p>

Conclusions

The survey results indicate the presence of one breeding pair of LBVI within the southern riparian woodland habitat located north of Cajalco Road, within the designated 500-foot survey buffer (Figure 3-LBVI Survey Results). Additionally, a potentially solitary, adult territorial male has been identified in the southern riparian woodland south of Cajalco Expressway (Figure 3-LBVI Survey Results). Furthermore, it is worth noting that segments of riparian habitat in the survey area, specifically those south of Cajalco Expressway, have experienced disturbance due to fire and associated earth-moving activities within the last two years, leading to a decline in suitable LBVI habitat in the Project vicinity at the time of the 2023 surveys. No other sensitive species were observed during the 2023 LBVI surveys.

Should you have any questions regarding this report or require additional information, please do not hesitate to contact me at (951) 675-6699 or marshallpaymard@gmail.com

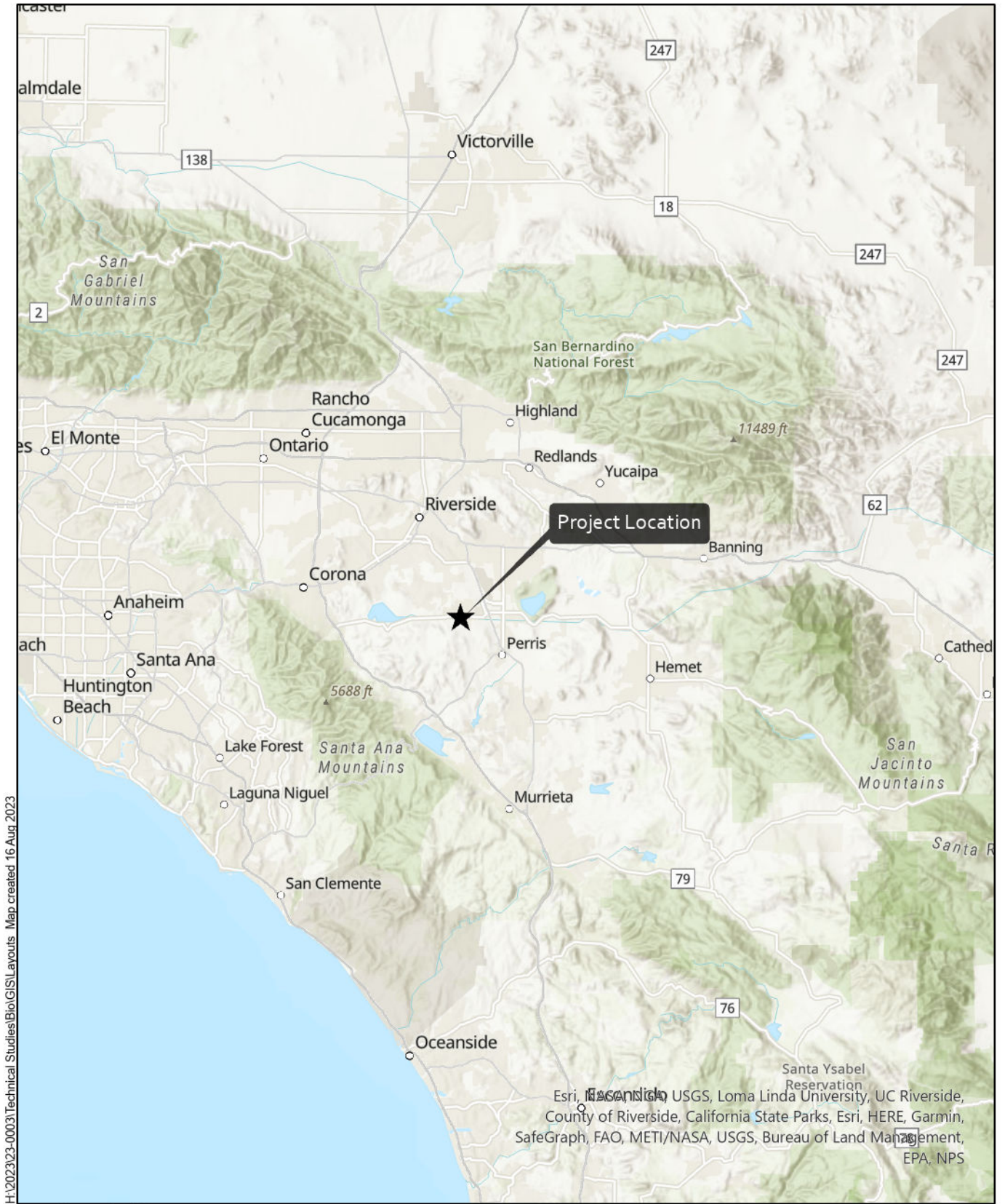
Sincerely,



Marshall Paymard
Senior Biologist
Albert A. Webb Associates

Citations

USFWS. 2001. Least Bell’s Survey Guidelines. U.S. Fish and Wildlife Service, Ecological Services, Carlsbad Fish and Wildlife Service, California



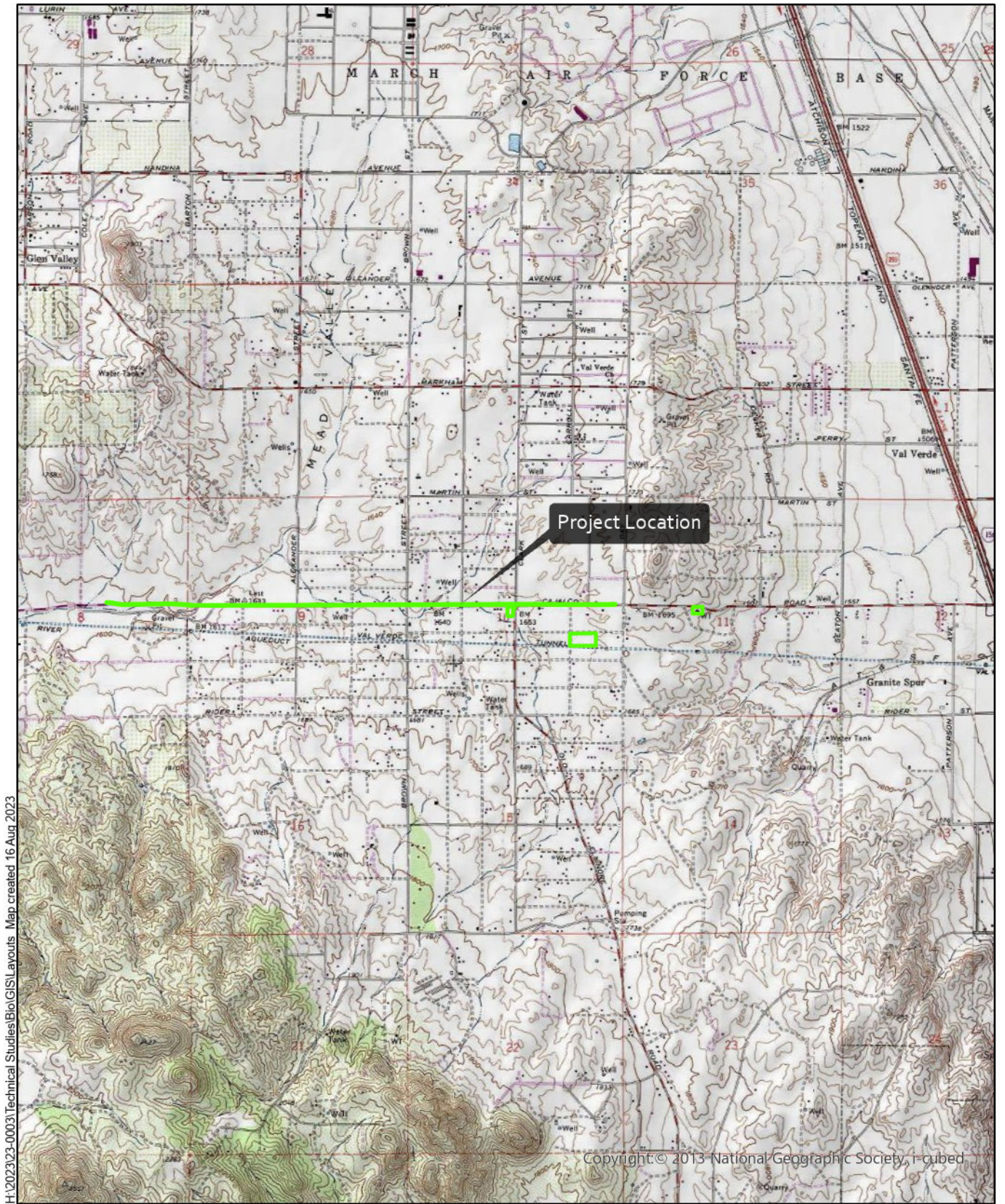
Source: ESRI



0 100 200 300 Feet

Figure 1- Regional Map
Mead Valley Cajalco Sewer Project





H:\2023\23-0003\Technical Studies\Bio\GIS\Layouts Map created 16 Aug 2023

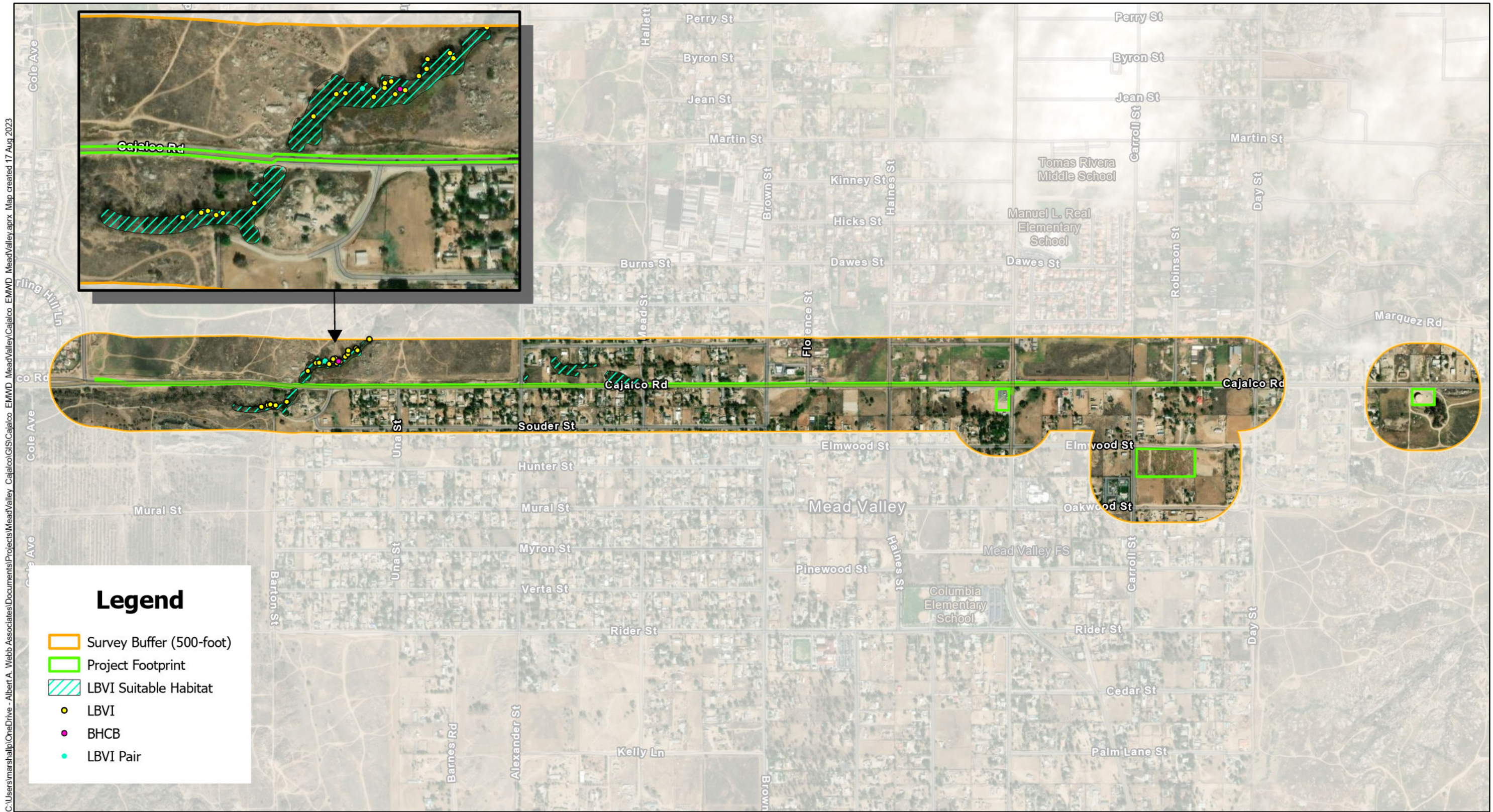
Source: ESRI

Figure 2- Vicinity Map
Mead Valley Cajalco Sewer Project



0 100 200 300
|-----|-----|-----|
Feet





C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EIMWD_MeadValleyCajalco EIMWD_MeadValleyCajalco.aprx Map created 17 Aug 2023

Source: Riverside County 2016

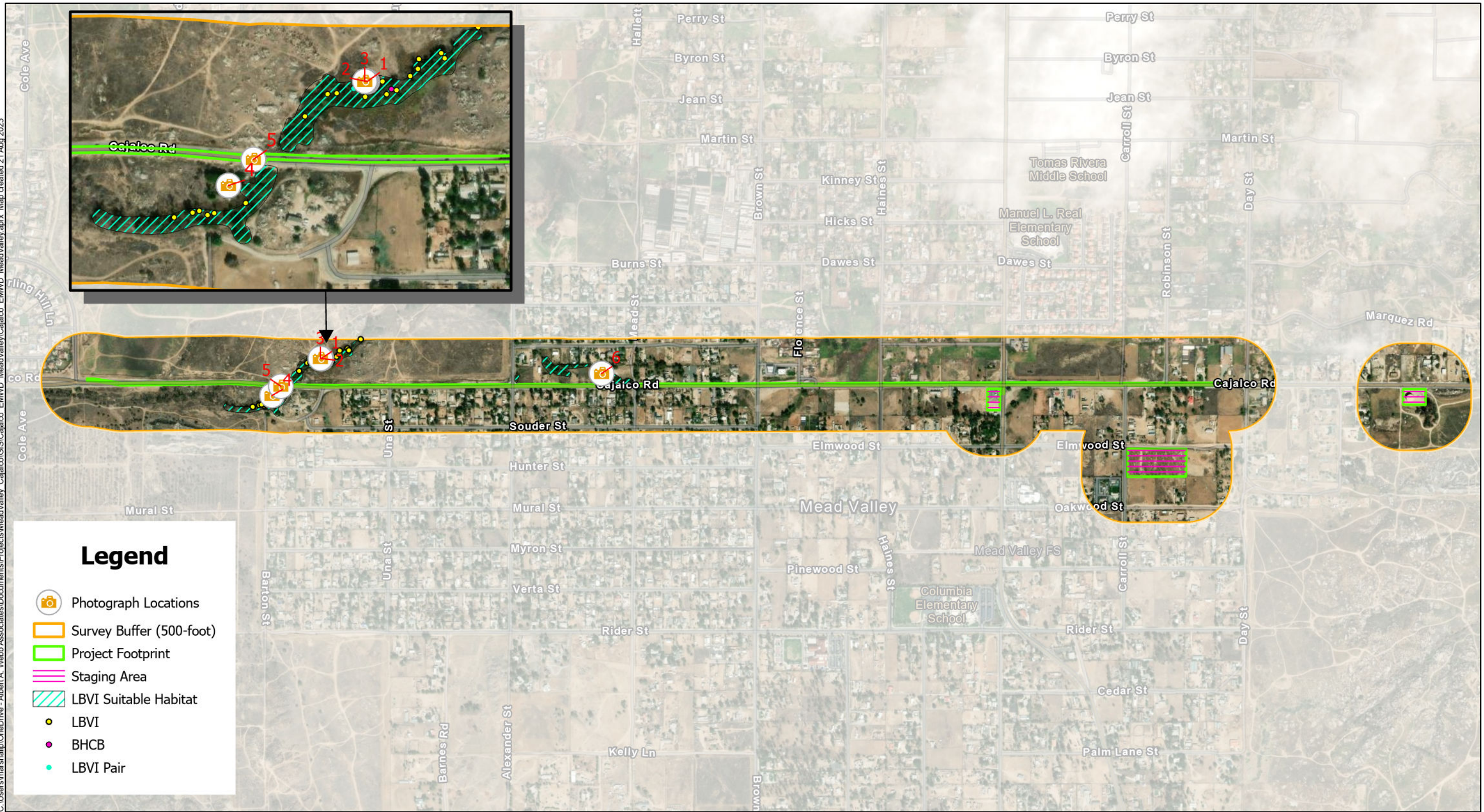
Figure 3- LBVI Survey Results
Mead Valley Cajalco Sewer Project



0 375 750 1,500 Feet



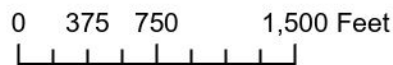
C:\Users\marshalp\OneDrive - Albert A. Webb Associates\Documents\Projects\MeadValley_Cajalco\GIS\Cajalco EMMD_MeadValley.aprx Map created 21 Aug 2023



Legend

- Photograph Locations
- Survey Buffer (500-foot)
- Project Footprint
- Staging Area
- LBVI Suitable Habitat
- LBVI
- BHCBS
- LBVI Pair

Source: Riverside County 2016



Appendix B- Photo Index

Mead Valley Cajalco Sewer Project



**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: June 2, 2023

Photograph No. 1



Photo 1: Facing northwest in southern riparian woodland habitat (north of Cajalco Expressway).

Photograph No. 2



Photo 2: Facing southeast, southern riparian woodland habitat (north of Cajalco Expressway).

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: June 2, 2023

Photograph No. 3



Photo 3: Facing north, southern riparian woodland habitat (north of Cajalco Expressway).

Photograph No. 4



Photo 4: Facing southeast, southern riparian woodland habitat (south of Cajalco Expressway).

**Albert A. Webb Associates
PHOTOGRAPHIC RECORD**

Client: EMWD

Job Number: 2022-0203

Site Name: Mead Valley Cajalco Sewer Project

Location: County of Riverside CA

Photographer: Marshall Paymard

Date: June 2, 2023

Photograph No. 5



Photo 5: Facing south, southern riparian woodland habitat (south of Cajalco Expressway).

Photograph No. 6



Photo 6: Facing southeast, southern riparian woodland habitat (north of Cajalco Expressway).

**APPENDIX C: CULTURAL RESOURCES ASSESSMENT
(CONFIDENTIAL)**