

# **West Valley Feeder No. 1 Stage 3 Improvements Project**

## **Proposed Initial Study-Mitigated Negative Declaration**



**Appendices A through C**

**Metropolitan Report No. 1582**

**June 2024**

# **West Valley Feeder No. 1 Stage 3 Improvements Project**

## **Proposed Initial Study-Mitigated Negative Declaration**

**Appendices A through C**

**The Metropolitan Water District of Southern California**  
700 North Alameda Street  
Los Angeles, California 90012

Report No. 1582

June 2024

## APPENDICES

### **Appendix**

- A Metropolitan Standard Practices
- B CalEEMod Calculations
- C Updated Biological and Jurisdictional Waters Resources Assessment
- D Archaeological Inventory
- E Energy Analysis
- F Report of Geotechnical Study
- G Paleontological Records Search
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- I Hydrology and Hydraulic Analyses
- J Project Noise Calculations

**APPENDIX A**  
**METROPOLITAN STANDARD PRACTICES**

## METROPOLITAN STANDARD PRACTICES

The following are Metropolitan standard practices that are carried out by Metropolitan Environmental Planning or as part of Section 01065 (Environmental Requirements) and Section 01565 (Noise Control) of the construction contractor specifications for all projects (Metropolitan 2021).

### General

- The Contractor shall obtain necessary local, state and federal environmental permits and shall comply with the requirements of all such permits and laws, regulations, acts, codes and ordinances.
- The Contractor shall perform all construction activities only within the construction boundaries shown on the drawings. The construction boundaries shall be fenced, unless otherwise directed by the Engineer. Any request to use any area outside the construction boundaries for any activity will require review and approval by the Engineer.
- **Worker Environmental Awareness Protections Training.** Metropolitan routinely conducts pre-construction Worker Environmental Awareness Protections Training (WEAP) for both capital projects and operations and maintenance activities. WEAP trainings are project-specific and cover potential environmental concerns or considerations including, but not limited to, awareness of biological resources, special status species near project sites, jurisdictional waters, cultural resources, paleontological resources, environmentally sensitive areas, and/or avoidance areas.
- **Environmental Assessment.** As an internal practice, Metropolitan conducts Environmental Assessments or similar studies prior to project commencement to determine if any sensitive resources have the potential to be present at a project site. Resources assessed typically include biological, cultural paleontological resources, noise sensitivity, and sensitive receptors in the vicinity of the project area.

### Air Quality

- The Contractor shall not discharge smoke, dust, or other air contaminants into the atmosphere in a quantity that exceeds the legal limit.
- The Contractor shall use low sulfur fuels (0.5 percent by weight) for all construction vehicles and equipment.
- The Contractor shall shut-off all idling vehicles when not in use.

- Construction equipment shall be maintained, and properly tuned and operated in a manner so as to reduce peak emission levels.
- Construction methods shall include dust reduction activities, including the use of water trucks in construction areas. The Contractor shall spray water on all unpaved roads as often as required to minimize dust and particulates, and as determined by Engineer. Paved streets shall be swept if silt is carried over to these roads from construction activities.
- The Contractor shall use low emission mobile construction equipment during site preparation, grading, excavation, and construction of the project.
- The Contractor shall use existing on-site power sources (e.g., power poles) rather than portable generators when feasible and as directed by the Engineer; or clean fuel generators shall be used rather than temporary power generators when feasible.
- All off-road diesel-fueled construction equipment greater than 25 horsepower (hp) shall be compliant with federally mandated clean diesel engines (USEPA Tier 4), where available, in accordance with the California Air Resources Board's (CARB) In-use Off-road Diesel-fueled Fleet Regulation (Title 13 California Code of Regulations, Division 3, Chapter 9, Article 4.8). The Contractor shall provide a current copy of each unit's certified tier specifications, best available control technology documentation, and CARB Registrations or SCAQMD operating permit, or the CARB Certificate of Reported Compliance Validation, at the time of mobilization of each unit of equipment.
- The Contractor shall cover all trucks transporting earthen material or maintain at least two feet of freeboard.
- The Contractor shall implement the Best Available Control Measures listed in Table 1 of the SCAQMD Rule 403 (Fugitive Dust).
- When wind speeds, including instantaneous gusts, exceed 25 miles per hour, the Contractor shall implement and record Contingency Control Measures listed in Table 3 in SCAQMD Rule 403.

## **Biological Resources**

- **Trees.** As part of the project, the following procedures will be implemented to avoid adverse impacts to trees located within the project work limits:
  - Impacts to any trees located within the project work limits shall be avoided, when possible.
  - No trees within project work limits shall be removed, cut, or trimmed unless identified for removal on project drawings.

- If trees must be removed, cut or trimmed, this activity shall be conducted per any applicable local tree ordinances and any required permits must be obtained prior to any tree removal, cutting or trimming.
  - The Contractor shall avoid stockpiling of materials, and driving or parking vehicles and equipment under the canopy of existing trees to protect tree root systems and avoid damage to the trees.
- **Nesting Bird Surveys.** No physical disturbance of vegetation, operational structures, buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the federal Migratory Bird Treaty Act and California Fish and Game Code shall occur in the breeding season, except as necessary to respond to public health and safety concerns, or otherwise authorized by the Engineer. The breeding season extends from **February 15 through August 31 (edit as required)** for passerines and general nesting and from January 1 through August 31 for raptors.
  - If nesting habitat must be cleared or project activities must occur in the vicinity of nesting habitat within the breeding season as defined above, a qualified biologist shall perform a nesting bird survey no more than three days prior to clearing or removal of nesting habitat or start of project activities.
  - If active nests for sensitive species, raptors and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures, as appropriate, shall be established, as identified by a qualified biologist and approved by the Engineer. The buffer shall be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing shall not be conducted within this zone until the young have fledged and are no longer reliant on the nest.
  - A qualified biologist shall monitor active nests or nesting bird habitat within or immediately adjacent to project construction areas, and the Engineer shall provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds.
- **Desert Tortoise Awareness Training.** Metropolitan conducts Desert Tortoise Awareness Training for all Metropolitan staff and contractors working at Metropolitan's desert facilities or on the CRA. Desert Tortoise Awareness Training consists of a presentation and handout discussing the protected status of the desert tortoise and its habitat, predators, and avoidance measures. Avoidance measures include, but are not limited to the following:
  - Work areas shall be delineated with flagging if determined necessary by the qualified staff person.
  - Access to project sites shall be restricted to designated existing routes of travel.

- Workers shall inspect for tortoises under vehicles and equipment prior to use. If a tortoise is present, workers would only move the vehicle when the tortoise would not be injured by the vehicle or would wait for the tortoise to move out from under the vehicle.

## **Cultural Resources, Paleontological Resources, and Human Remains**

- If archaeological or paleontological resources are encountered at the project site, the Contractor shall not disturb the resources and shall immediately cease all work within 50 feet of the discovery, notify the Engineer, and protect the discovery area, as directed by the Engineer. The Engineer, with the qualified architectural historian, archaeologist and/or paleontologist, shall make a decision of validity of the discovery and designate an area surrounding the discovery as a restricted area. The Contractor shall not enter or work in the restricted area until the Engineer provides written authorization.
- In the event that human remains are discovered during excavation/construction activity, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5(e), and Public Resources Code (PRC) Section 5097.98 will apply. The Contractor shall notify the Engineer at once and not enter or work in the restricted area until the Engineer provides written authorization.

## **Hazardous Materials**

- The Contractor shall clean up all spills in accordance with all applicable environmental laws and regulations and notify the Engineer immediately in the event of a spill.
- Stationary equipment such as motors, pumps, and generators, shall be equipped with drip pans.
- The Contractor shall handle, store, apply, and dispose of chemicals and/or herbicides consistent with all applicable federal, state and local regulations.
- The Contractor shall dispose of all contaminated materials in a manner consistent with all applicable local, state and federal environmental laws and regulations.
- Hazardous materials shall be stored in covered, leak-proof containers when not in use, away from storm drains and heavy traffic areas, and shall be protected from rainfall infiltration. Hazardous materials shall be stored separately from non-hazardous materials on a surface that prevents spills from permeating the ground surface, and in an area secure from unauthorized entry at all times. Incompatible materials shall be stored separately from each other.



## **Hydrology and Water Quality**

- The Contractor shall not allow any equipment or vehicle storage within any drainage course or channels.
- Any material placed in areas where it could be washed into a drainage course or channel shall be removed prior to the rainy season.
- The Contractor shall not create a nuisance or pollution as defined in the California Water Code. The Contractor shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Quality Control Board or the SWRCB, as required by the Clean Water Act (CWA).
- Dewatering activities shall not affect any vegetation outside of the construction limits. The Contractor shall submit proposed dewatering plans to the Engineer for approval prior to any dewatering activities.

## **Lighting**

- The Contractor shall exercise special care to direct floodlights to shine downward. These floodlights shall also be shielded to avoid a nuisance to the surrounding areas. No lighting shall include a residence or native area in its direct beam. The Contractor shall correct lighting nuisance whenever it occurs.

## **Noise**

- The Contractor shall locate all noise-generating and stationary construction equipment as far as feasible from near-site residential and sensitive receivers and situated so that emitted noise is directed away from the sensitive receivers.
- To the extent feasible, noise-generating equipment shall be oriented such that the source of noise is facing away from the nearest sensitive receivers.
- Equipment idling time shall be reduced to five minutes on cranes and construction equipment.
- Areas where workers gather (e.g., break areas, shift-change areas, meeting areas, and sanitary stations) will be located a minimum of 100 feet away from any residence, if feasible.
- Parking areas shall be located a minimum of 150 feet from sensitive receivers. Parking areas within 500 feet of sensitive receivers will be posted with signs to prohibit workers from gathering during nighttime hours and to prohibit radios and music at any time.

- Fuel deliveries shall be a minimum of 500 feet from residences or to the greatest extent feasible.
- The Contractor shall perform all work without undue noise and shall make every effort to alleviate or prevent noise nuisances.
- The Contractor's construction vehicles and equipment shall have mufflers. The Contractor shall equip all construction equipment, fixed and mobile, with properly operating and maintained noise mufflers and intake silencers, consistent with the manufacturer standards. Equipment shall be maintained to a minimum standard that includes engine noise baffles and mufflers that meet or exceed the original manufacturer requirements.
- The Contractor shall utilize the following types of equipment whenever possible: electrical instead of diesel-powered equipment, hydraulic tools instead of pneumatic tools, and use of electric welders powered by remote generators.

## **Traffic**

- The Contractor shall prepare a traffic control plan. This plan shall address temporary traffic control for each construction site in public roadways. The requirements and procedures described in the California Department of Transportation (Caltrans) "Manual of Traffic Controls for Construction and Maintenance Work Zones" or local requirements and procedures that meet or exceed the Caltrans' Manual shall be used in the plan. If required, the Contractor shall submit the plan for review and approval by local and State traffic authorities, as appropriate.
- As appropriate, the Contractor shall provide flagmen at intersections to assist trucks entering/exiting the work limits.
- The Contractor shall provide appropriate advance warning signage to alert motorists or pedestrians to the potential for cross construction vehicle traffic from work limits in accordance with Caltrans standards.

## **Wildfire**

- Gasoline-powered or diesel-powered machinery used during construction shall be equipped with standard exhaust controls and muffling devices that shall also act as spark arrestors.
- Fire containment and extinguishing equipment shall be located on site and shall be accessible during construction activities. Construction workers shall be trained in use of the fire suppression equipment.

**APPENDIX B**  
**CALEEMOD CALCULATIONS**

MWD West Valley Feeder - Los Angeles-South Coast County, Winter

**MWD West Valley Feeder**  
**Los Angeles-South Coast County, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.00	1000sqft	0.16	7,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2020
<b>Utility Company</b>	Los Angeles Department of Water & Power				
<b>CO2 Intensity (lb/MW hr)</b>	1227.89	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - Asphalt Access Roads,

Construction Phase - .

Off-road Equipment - 1 excavator, 1 tractor, 1 crane

Off-road Equipment - 1 loader

Off-road Equipment - 1 tractor, 1 excavator, 1 grader, 1 crane

Off-road Equipment - 1 paver

Off-road Equipment - 1 excavator

Trips and VMT - .

Demolition - Tons based on truckload (1 truckload), 20 ton truck

Grading - Cubic yards based on truckloads, assuming 16 cy truck

Construction Off-road Equipment Mitigation - Rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	1.00	21.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	100.00	109.00
tblConstructionPhase	NumDays	5.00	22.00
tblGrading	MaterialExported	0.00	32.00
tblGrading	MaterialExported	0.00	144.00
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

## 2.0 Emissions Summary

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## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.8878	20.0834	11.1128	0.0211	0.6437	0.9956	1.3569	0.0874	0.9159	0.9267	0.0000	2,092.5587	2,092.5587	0.6280	0.0000	2,108.2580
2020	2.0387	21.2124	13.5571	0.0251	0.0863	1.0312	1.1175	0.0233	0.9488	0.9721	0.0000	2,443.5460	2,443.5460	0.7502	0.0000	2,462.3000
<b>Maximum</b>	<b>2.0387</b>	<b>21.2124</b>	<b>13.5571</b>	<b>0.0251</b>	<b>0.6437</b>	<b>1.0312</b>	<b>1.3569</b>	<b>0.0874</b>	<b>0.9488</b>	<b>0.9721</b>	<b>0.0000</b>	<b>2,443.5460</b>	<b>2,443.5460</b>	<b>0.7502</b>	<b>0.0000</b>	<b>2,462.3000</b>

### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.8878	20.0834	11.1128	0.0211	0.3520	0.9956	1.0652	0.0559	0.9159	0.9267	0.0000	2,092.5587	2,092.5587	0.6280	0.0000	2,108.2580
2020	2.0387	21.2124	13.5571	0.0251	0.0863	1.0312	1.1175	0.0233	0.9488	0.9721	0.0000	2,443.5460	2,443.5460	0.7502	0.0000	2,462.3000
<b>Maximum</b>	<b>2.0387</b>	<b>21.2124</b>	<b>13.5571</b>	<b>0.0251</b>	<b>0.3520</b>	<b>1.0312</b>	<b>1.1175</b>	<b>0.0559</b>	<b>0.9488</b>	<b>0.9721</b>	<b>0.0000</b>	<b>2,443.5460</b>	<b>2,443.5460</b>	<b>0.7502</b>	<b>0.0000</b>	<b>2,462.3000</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>39.96</b>	<b>0.00</b>	<b>11.79</b>	<b>28.47</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## 2.2 Overall Operational

### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6300e-003</b>

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6300e-003</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2019	8/30/2019	5	22	
2	Site Preparation	Site Preparation	9/1/2019	9/30/2019	5	21	
3	Grading	Grading	10/1/2019	11/30/2019	5	44	
4	Building Construction	Building Construction	12/1/2019	4/30/2020	5	109	
5	Paving	Paving	4/1/2020	4/30/2020	5	22	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 22**

**Acres of Paving: 0.16**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37



Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Rubber Tired Dozers	1	8.00	247	0.40

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	1	3.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	3.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	3.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	1	3.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

### 3.2 Demolition - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0195	0.0000	0.0195	2.9500e-003	0.0000	2.9500e-003			0.0000			0.0000
Off-Road	0.1746	1.7530	1.7270	2.3300e-003		0.1170	0.1170		0.1077	0.1077		230.6564	230.6564	0.0730		232.4808
<b>Total</b>	<b>0.1746</b>	<b>1.7530</b>	<b>1.7270</b>	<b>2.3300e-003</b>	<b>0.0195</b>	<b>0.1170</b>	<b>0.1365</b>	<b>2.9500e-003</b>	<b>0.1077</b>	<b>0.1106</b>		<b>230.6564</b>	<b>230.6564</b>	<b>0.0730</b>		<b>232.4808</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.8000e-004	0.0282	6.3400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.4000e-004		7.7259	7.7259	5.6000e-004		7.7400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0166	0.0122	0.1327	3.4000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		34.2639	34.2639	1.1800e-003		34.2934
<b>Total</b>	<b>0.0175</b>	<b>0.0404</b>	<b>0.1391</b>	<b>4.1000e-004</b>	<b>0.0351</b>	<b>3.9000e-004</b>	<b>0.0355</b>	<b>9.3300e-003</b>	<b>3.7000e-004</b>	<b>9.7000e-003</b>		<b>41.9898</b>	<b>41.9898</b>	<b>1.7400e-003</b>		<b>42.0333</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7500e-003	0.0000	8.7500e-003	1.3300e-003	0.0000	1.3300e-003			0.0000			0.0000
Off-Road	0.1746	1.7530	1.7270	2.3300e-003		0.1170	0.1170		0.1077	0.1077	0.0000	230.6564	230.6564	0.0730		232.4808
<b>Total</b>	<b>0.1746</b>	<b>1.7530</b>	<b>1.7270</b>	<b>2.3300e-003</b>	<b>8.7500e-003</b>	<b>0.1170</b>	<b>0.1258</b>	<b>1.3300e-003</b>	<b>0.1077</b>	<b>0.1090</b>	<b>0.0000</b>	<b>230.6564</b>	<b>230.6564</b>	<b>0.0730</b>		<b>232.4808</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Hauling	8.8000e-004	0.0282	6.3400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.4000e-004		7.7259	7.7259	5.6000e-004		7.7400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0166	0.0122	0.1327	3.4000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		34.2639	34.2639	1.1800e-003		34.2934
<b>Total</b>	<b>0.0175</b>	<b>0.0404</b>	<b>0.1391</b>	<b>4.1000e-004</b>	<b>0.0351</b>	<b>3.9000e-004</b>	<b>0.0355</b>	<b>9.3300e-003</b>	<b>3.7000e-004</b>	<b>9.7000e-003</b>		<b>41.9898</b>	<b>41.9898</b>	<b>1.7400e-003</b>		<b>42.0333</b>

### 3.3 Site Preparation - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.8000e-004	0.0000	7.8000e-004	1.2000e-004	0.0000	1.2000e-004			0.0000			0.0000
Off-Road	0.2607	2.6819	3.2632	5.1600e-003		0.1293	0.1293		0.1190	0.1190		511.1256	511.1256	0.1617		515.1684
<b>Total</b>	<b>0.2607</b>	<b>2.6819</b>	<b>3.2632</b>	<b>5.1600e-003</b>	<b>7.8000e-004</b>	<b>0.1293</b>	<b>0.1301</b>	<b>1.2000e-004</b>	<b>0.1190</b>	<b>0.1191</b>		<b>511.1256</b>	<b>511.1256</b>	<b>0.1617</b>		<b>515.1684</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.2600e-003	0.2660	0.0598	6.7000e-004	0.0150	9.8000e-004	0.0160	4.1100e-003	9.4000e-004	5.0500e-003		72.8443	72.8443	5.3000e-003		72.9767
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0166	0.0122	0.1327	3.4000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		34.2639	34.2639	1.1800e-003		34.2934

<b>Total</b>	<b>0.0249</b>	<b>0.2782</b>	<b>0.1925</b>	<b>1.0100e-003</b>	<b>0.0485</b>	<b>1.2700e-003</b>	<b>0.0498</b>	<b>0.0130</b>	<b>1.2100e-003</b>	<b>0.0142</b>		<b>107.1082</b>	<b>107.1082</b>	<b>6.4800e-003</b>		<b>107.2701</b>
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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
<b>Category</b>	<b>lb/day</b>										<b>lb/day</b>						
Fugitive Dust					3.5000e-004	0.0000	3.5000e-004	5.0000e-005	0.0000	5.0000e-005			0.0000				0.0000
Off-Road	0.2607	2.6819	3.2632	5.1600e-003		0.1293	0.1293		0.1190	0.1190	0.0000	511.1256	511.1256	0.1617			515.1684
<b>Total</b>	<b>0.2607</b>	<b>2.6819</b>	<b>3.2632</b>	<b>5.1600e-003</b>	<b>3.5000e-004</b>	<b>0.1293</b>	<b>0.1297</b>	<b>5.0000e-005</b>	<b>0.1190</b>	<b>0.1190</b>	<b>0.0000</b>	<b>511.1256</b>	<b>511.1256</b>	<b>0.1617</b>			<b>515.1684</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
<b>Category</b>	<b>lb/day</b>										<b>lb/day</b>						
Hauling	8.2600e-003	0.2660	0.0598	6.7000e-004	0.0150	9.8000e-004	0.0160	4.1100e-003	9.4000e-004	5.0500e-003		72.8443	72.8443	5.3000e-003			72.9767
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0166	0.0122	0.1327	3.4000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		34.2639	34.2639	1.1800e-003			34.2934
<b>Total</b>	<b>0.0249</b>	<b>0.2782</b>	<b>0.1925</b>	<b>1.0100e-003</b>	<b>0.0485</b>	<b>1.2700e-003</b>	<b>0.0498</b>	<b>0.0130</b>	<b>1.2100e-003</b>	<b>0.0142</b>		<b>107.1082</b>	<b>107.1082</b>	<b>6.4800e-003</b>			<b>107.2701</b>

**3.4 Grading - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.4261	17.0215	9.1213	0.0199		0.7122	0.7122		0.6552	0.6552		1,970.6197	1,970.6197	0.6235		1,986.2068
<b>Total</b>	<b>1.4261</b>	<b>17.0215</b>	<b>9.1213</b>	<b>0.0199</b>	<b>0.5303</b>	<b>0.7122</b>	<b>1.2425</b>	<b>0.0573</b>	<b>0.6552</b>	<b>0.7125</b>		<b>1,970.6197</b>	<b>1,970.6197</b>	<b>0.6235</b>		<b>1,986.2068</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.8000e-004	0.0282	6.3400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.4000e-004		7.7259	7.7259	5.6000e-004		7.7400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
<b>Total</b>	<b>0.0563</b>	<b>0.0689</b>	<b>0.4488</b>	<b>1.2200e-003</b>	<b>0.1134</b>	<b>1.0600e-003</b>	<b>0.1144</b>	<b>0.0301</b>	<b>9.9000e-004</b>	<b>0.0311</b>		<b>121.9390</b>	<b>121.9390</b>	<b>4.4900e-003</b>		<b>122.0513</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.2387	0.0000	0.2387	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	1.4261	17.0215	9.1213	0.0199		0.7122	0.7122		0.6552	0.6552	0.0000	1,970.6197	1,970.6197	0.6235		1,986.2068
<b>Total</b>	<b>1.4261</b>	<b>17.0215</b>	<b>9.1213</b>	<b>0.0199</b>	<b>0.2387</b>	<b>0.7122</b>	<b>0.9508</b>	<b>0.0258</b>	<b>0.6552</b>	<b>0.6810</b>	<b>0.0000</b>	<b>1,970.6197</b>	<b>1,970.6197</b>	<b>0.6235</b>		<b>1,986.2068</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.8000e-004	0.0282	6.3400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.4000e-004		7.7259	7.7259	5.6000e-004		7.7400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
<b>Total</b>	<b>0.0563</b>	<b>0.0689</b>	<b>0.4488</b>	<b>1.2200e-003</b>	<b>0.1134</b>	<b>1.0600e-003</b>	<b>0.1144</b>	<b>0.0301</b>	<b>9.9000e-004</b>	<b>0.0311</b>		<b>121.9390</b>	<b>121.9390</b>	<b>4.4900e-003</b>		<b>122.0513</b>

**3.5 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8668	19.9553	10.9462	0.0196		0.9945	0.9945		0.9150	0.9150		1,939.7674	1,939.7674	0.6137		1,955.1105
<b>Total</b>	<b>1.8668</b>	<b>19.9553</b>	<b>10.9462</b>	<b>0.0196</b>		<b>0.9945</b>	<b>0.9945</b>		<b>0.9150</b>	<b>0.9150</b>		<b>1,939.7674</b>	<b>1,939.7674</b>	<b>0.6137</b>		<b>1,955.1105</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.3300e-003	0.1159	0.0339	2.5000e-004	6.4000e-003	7.5000e-004	7.1500e-003	1.8400e-003	7.2000e-004	2.5600e-003		27.1277	27.1277	1.9100e-003		27.1754
Worker	0.0166	0.0122	0.1327	3.4000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		34.2639	34.2639	1.1800e-003		34.2934
<b>Total</b>	<b>0.0209</b>	<b>0.1281</b>	<b>0.1666</b>	<b>5.9000e-004</b>	<b>0.0399</b>	<b>1.0400e-003</b>	<b>0.0410</b>	<b>0.0107</b>	<b>9.9000e-004</b>	<b>0.0117</b>		<b>61.3916</b>	<b>61.3916</b>	<b>3.0900e-003</b>		<b>61.4687</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8668	19.9553	10.9462	0.0196		0.9945	0.9945		0.9150	0.9150	0.0000	1,939.7674	1,939.7674	0.6137		1,955.1105
<b>Total</b>	<b>1.8668</b>	<b>19.9553</b>	<b>10.9462</b>	<b>0.0196</b>		<b>0.9945</b>	<b>0.9945</b>		<b>0.9150</b>	<b>0.9150</b>	<b>0.0000</b>	<b>1,939.7674</b>	<b>1,939.7674</b>	<b>0.6137</b>		<b>1,955.1105</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.3300e-003	0.1159	0.0339	2.5000e-004	6.4000e-003	7.5000e-004	7.1500e-003	1.8400e-003	7.2000e-004	2.5600e-003		27.1277	27.1277	1.9100e-003		27.1754
Worker	0.0166	0.0122	0.1327	3.4000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		34.2639	34.2639	1.1800e-003		34.2934
<b>Total</b>	<b>0.0209</b>	<b>0.1281</b>	<b>0.1666</b>	<b>5.9000e-004</b>	<b>0.0399</b>	<b>1.0400e-003</b>	<b>0.0410</b>	<b>0.0107</b>	<b>9.9000e-004</b>	<b>0.0117</b>		<b>61.3916</b>	<b>61.3916</b>	<b>3.0900e-003</b>		<b>61.4687</b>

### 3.5 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7480	18.4126	10.6883	0.0196		0.9096	0.9096		0.8368	0.8368		1,897.9030	1,897.9030	0.6138		1,913.2485
<b>Total</b>	<b>1.7480</b>	<b>18.4126</b>	<b>10.6883</b>	<b>0.0196</b>		<b>0.9096</b>	<b>0.9096</b>		<b>0.8368</b>	<b>0.8368</b>		<b>1,897.9030</b>	<b>1,897.9030</b>	<b>0.6138</b>		<b>1,913.2485</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7200e-003	0.1064	0.0307	2.5000e-004	6.4000e-003	5.1000e-004	6.9100e-003	1.8400e-003	4.9000e-004	2.3300e-003		26.9449	26.9449	1.8000e-003		26.9900
Worker	0.0153	0.0109	0.1203	3.3000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		33.2226	33.2226	1.0500e-003		33.2488



<b>Total</b>	<b>0.0191</b>	<b>0.1172</b>	<b>0.1510</b>	<b>5.8000e-004</b>	<b>0.0399</b>	<b>7.9000e-004</b>	<b>0.0407</b>	<b>0.0107</b>	<b>7.5000e-004</b>	<b>0.0115</b>		<b>60.1675</b>	<b>60.1675</b>	<b>2.8500e-003</b>		<b>60.2387</b>
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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Category</b>	<b>lb/day</b>										<b>lb/day</b>					
Off-Road	1.7480	18.4126	10.6883	0.0196		0.9096	0.9096		0.8368	0.8368	0.0000	1,897.9030	1,897.9030	0.6138		1,913.2485
<b>Total</b>	<b>1.7480</b>	<b>18.4126</b>	<b>10.6883</b>	<b>0.0196</b>		<b>0.9096</b>	<b>0.9096</b>		<b>0.8368</b>	<b>0.8368</b>	<b>0.0000</b>	<b>1,897.9030</b>	<b>1,897.9030</b>	<b>0.6138</b>		<b>1,913.2485</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Category</b>	<b>lb/day</b>										<b>lb/day</b>					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7200e-003	0.1064	0.0307	2.5000e-004	6.4000e-003	5.1000e-004	6.9100e-003	1.8400e-003	4.9000e-004	2.3300e-003		26.9449	26.9449	1.8000e-003		26.9900
Worker	0.0153	0.0109	0.1203	3.3000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		33.2226	33.2226	1.0500e-003		33.2488
<b>Total</b>	<b>0.0191</b>	<b>0.1172</b>	<b>0.1510</b>	<b>5.8000e-004</b>	<b>0.0399</b>	<b>7.9000e-004</b>	<b>0.0407</b>	<b>0.0107</b>	<b>7.5000e-004</b>	<b>0.0115</b>		<b>60.1675</b>	<b>60.1675</b>	<b>2.8500e-003</b>		<b>60.2387</b>

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2298	2.4590	2.5360	4.1100e-003		0.1195	0.1195		0.1100	0.1100		398.3631	398.3631	0.1288		401.5841
Paving	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.2489</b>	<b>2.4590</b>	<b>2.5360</b>	<b>4.1100e-003</b>		<b>0.1195</b>	<b>0.1195</b>		<b>0.1100</b>	<b>0.1100</b>		<b>398.3631</b>	<b>398.3631</b>	<b>0.1288</b>		<b>401.5841</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4400e-003	0.2127	0.0615	5.0000e-004	0.0128	1.0200e-003	0.0138	3.6900e-003	9.7000e-004	4.6600e-003		53.8898	53.8898	3.6000e-003		53.9799
Worker	0.0153	0.0109	0.1203	3.3000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		33.2226	33.2226	1.0500e-003		33.2488
<b>Total</b>	<b>0.0228</b>	<b>0.2236</b>	<b>0.1818</b>	<b>8.3000e-004</b>	<b>0.0463</b>	<b>1.3000e-003</b>	<b>0.0476</b>	<b>0.0126</b>	<b>1.2300e-003</b>	<b>0.0138</b>		<b>87.1124</b>	<b>87.1124</b>	<b>4.6500e-003</b>		<b>87.2287</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.2298	2.4590	2.5360	4.1100e-003		0.1195	0.1195		0.1100	0.1100	0.0000	398.3631	398.3631	0.1288		401.5841
Paving	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.2489</b>	<b>2.4590</b>	<b>2.5360</b>	<b>4.1100e-003</b>		<b>0.1195</b>	<b>0.1195</b>		<b>0.1100</b>	<b>0.1100</b>	<b>0.0000</b>	<b>398.3631</b>	<b>398.3631</b>	<b>0.1288</b>		<b>401.5841</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4400e-003	0.2127	0.0615	5.0000e-004	0.0128	1.0200e-003	0.0138	3.6900e-003	9.7000e-004	4.6600e-003		53.8898	53.8898	3.6000e-003		53.9799
Worker	0.0153	0.0109	0.1203	3.3000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		33.2226	33.2226	1.0500e-003		33.2488
<b>Total</b>	<b>0.0228</b>	<b>0.2236</b>	<b>0.1818</b>	<b>8.3000e-004</b>	<b>0.0463</b>	<b>1.3000e-003</b>	<b>0.0476</b>	<b>0.0126</b>	<b>1.2300e-003</b>	<b>0.0138</b>		<b>87.1124</b>	<b>87.1124</b>	<b>4.6500e-003</b>		<b>87.2287</b>

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

#### 5.0 Energy Detail

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day											lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
Unmitigated	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003

## 6.2 Area by SubCategory

### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>		<b>1.6300e-003</b>

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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SubCategory	lb/day										lb/day					
	Architectural Coating	5.3000e-004					0.0000	0.0000		0.0000	0.0000			0.0000		
Consumer Products	2.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>		<b>1.6300e-003</b>

## 7.0 Water Detail

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### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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MWD West Valley Feeder - Los Angeles-South Coast County, Summer

**MWD West Valley Feeder**  
**Los Angeles-South Coast County, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.00	1000sqft	0.16	7,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2020
<b>Utility Company</b>	Los Angeles Department of Water & Power				
<b>CO2 Intensity (lb/MW hr)</b>	1227.89	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -  
 Land Use - Asphalt Access Roads,  
 Construction Phase - .  
 Off-road Equipment - 1 excavator, 1 tractor, 1 crane  
 Off-road Equipment - 1 loader  
 Off-road Equipment - 1 tractor, 1 excavator, 1 grader, 1 crane  
 Off-road Equipment - 1 paver  
 Off-road Equipment - 1 excavator  
 Trips and VMT - .



Demolition - Tons based on truckload (1 truckload), 20 ton truck

Grading - Cubic yards based on truckloads, assuming 16 cy truck

Construction Off-road Equipment Mitigation - Rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	1.00	21.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	100.00	109.00
tblConstructionPhase	NumDays	5.00	22.00
tblGrading	MaterialExported	0.00	32.00
tblGrading	MaterialExported	0.00	144.00
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

## 2.0 Emissions Summary

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## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.8860	20.0820	11.1215	0.0212	0.6437	0.9955	1.3569	0.0874	0.9159	0.9267	0.0000	2,099.774 2	2,099.7742	0.6282	0.0000	2,115.479 0
2020	2.0352	21.2104	13.5706	0.0252	0.0863	1.0312	1.1175	0.0233	0.9487	0.9720	0.0000	2,449.940 3	2,449.9403	0.7500	0.0000	2,468.689 1
<b>Maximum</b>	<b>2.0352</b>	<b>21.2104</b>	<b>13.5706</b>	<b>0.0252</b>	<b>0.6437</b>	<b>1.0312</b>	<b>1.3569</b>	<b>0.0874</b>	<b>0.9487</b>	<b>0.9720</b>	<b>0.0000</b>	<b>2,449.940 3</b>	<b>2,449.9403</b>	<b>0.7500</b>	<b>0.0000</b>	<b>2,468.689 1</b>

### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.8860	20.0820	11.1215	0.0212	0.3520	0.9955	1.0652	0.0559	0.9159	0.9267	0.0000	2,099.774 2	2,099.7742	0.6282	0.0000	2,115.479 0
2020	2.0352	21.2104	13.5706	0.0252	0.0863	1.0312	1.1175	0.0233	0.9487	0.9720	0.0000	2,449.940 3	2,449.9403	0.7500	0.0000	2,468.689 1
<b>Maximum</b>	<b>2.0352</b>	<b>21.2104</b>	<b>13.5706</b>	<b>0.0252</b>	<b>0.3520</b>	<b>1.0312</b>	<b>1.1175</b>	<b>0.0559</b>	<b>0.9487</b>	<b>0.9720</b>	<b>0.0000</b>	<b>2,449.940 3</b>	<b>2,449.9403</b>	<b>0.7500</b>	<b>0.0000</b>	<b>2,468.689 1</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>39.96</b>	<b>0.00</b>	<b>11.79</b>	<b>28.47</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## 2.2 Overall Operational

### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6300e-003</b>

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.6300e-003</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2019	8/30/2019	5	22	
2	Site Preparation	Site Preparation	9/1/2019	9/30/2019	5	21	
3	Grading	Grading	10/1/2019	11/30/2019	5	44	
4	Building Construction	Building Construction	12/1/2019	4/30/2020	5	109	
5	Paving	Paving	4/1/2020	4/30/2020	5	22	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 22**

**Acres of Paving: 0.16**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Rubber Tired Dozers	1	8.00	247	0.40

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	1	3.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	3.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	3.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	1	3.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

### 3.2 Demolition - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0195	0.0000	0.0195	2.9500e-003	0.0000	2.9500e-003			0.0000			0.0000
Off-Road	0.1746	1.7530	1.7270	2.3300e-003		0.1170	0.1170		0.1077	0.1077		230.6564	230.6564	0.0730		232.4808
<b>Total</b>	<b>0.1746</b>	<b>1.7530</b>	<b>1.7270</b>	<b>2.3300e-003</b>	<b>0.0195</b>	<b>0.1170</b>	<b>0.1365</b>	<b>2.9500e-003</b>	<b>0.1077</b>	<b>0.1106</b>		<b>230.6564</b>	<b>230.6564</b>	<b>0.0730</b>		<b>232.4808</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.5000e-004	0.0278	5.9400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.3000e-004		7.8592	7.8592	5.4000e-004		7.8727
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0110	0.1447	3.7000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		36.3886	36.3886	1.2500e-003		36.4198
<b>Total</b>	<b>0.0158</b>	<b>0.0389</b>	<b>0.1506</b>	<b>4.4000e-004</b>	<b>0.0351</b>	<b>3.9000e-004</b>	<b>0.0355</b>	<b>9.3300e-003</b>	<b>3.7000e-004</b>	<b>9.6900e-003</b>		<b>44.2478</b>	<b>44.2478</b>	<b>1.7900e-003</b>		<b>44.2926</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7500e-003	0.0000	8.7500e-003	1.3300e-003	0.0000	1.3300e-003			0.0000			0.0000
Off-Road	0.1746	1.7530	1.7270	2.3300e-003		0.1170	0.1170		0.1077	0.1077	0.0000	230.6564	230.6564	0.0730		232.4808
<b>Total</b>	<b>0.1746</b>	<b>1.7530</b>	<b>1.7270</b>	<b>2.3300e-003</b>	<b>8.7500e-003</b>	<b>0.1170</b>	<b>0.1258</b>	<b>1.3300e-003</b>	<b>0.1077</b>	<b>0.1090</b>	<b>0.0000</b>	<b>230.6564</b>	<b>230.6564</b>	<b>0.0730</b>		<b>232.4808</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day				
	Hauling	8.5000e-004	0.0278	5.9400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.3000e-004		7.8592	7.8592	5.4000e-004
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000
Worker	0.0150	0.0110	0.1447	3.7000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		36.3886	36.3886	1.2500e-003	36.4198
<b>Total</b>	<b>0.0158</b>	<b>0.0389</b>	<b>0.1506</b>	<b>4.4000e-004</b>	<b>0.0351</b>	<b>3.9000e-004</b>	<b>0.0355</b>	<b>9.3300e-003</b>	<b>3.7000e-004</b>	<b>9.6900e-003</b>		<b>44.2478</b>	<b>44.2478</b>	<b>1.7900e-003</b>	<b>44.2926</b>

### 3.3 Site Preparation - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.8000e-004	0.0000	7.8000e-004	1.2000e-004	0.0000	1.2000e-004			0.0000			0.0000
Off-Road	0.2607	2.6819	3.2632	5.1600e-003		0.1293	0.1293		0.1190	0.1190		511.1256	511.1256	0.1617		515.1684
<b>Total</b>	<b>0.2607</b>	<b>2.6819</b>	<b>3.2632</b>	<b>5.1600e-003</b>	<b>7.8000e-004</b>	<b>0.1293</b>	<b>0.1301</b>	<b>1.2000e-004</b>	<b>0.1190</b>	<b>0.1191</b>		<b>511.1256</b>	<b>511.1256</b>	<b>0.1617</b>		<b>515.1684</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.0500e-003	0.2625	0.0560	6.8000e-004	0.0150	9.6000e-004	0.0160	4.1100e-003	9.2000e-004	5.0300e-003		74.1010	74.1010	5.1000e-003		74.2286
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0150	0.0110	0.1447	3.7000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		36.3886	36.3886	1.2500e-003		36.4198

<b>Total</b>	<b>0.0230</b>	<b>0.2735</b>	<b>0.2006</b>	<b>1.0500e-003</b>	<b>0.0485</b>	<b>1.2500e-003</b>	<b>0.0498</b>	<b>0.0130</b>	<b>1.1900e-003</b>	<b>0.0142</b>		<b>110.4896</b>	<b>110.4896</b>	<b>6.3500e-003</b>		<b>110.6484</b>
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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					3.5000e-004	0.0000	3.5000e-004	5.0000e-005	0.0000	5.0000e-005			0.0000				0.0000
Off-Road	0.2607	2.6819	3.2632	5.1600e-003		0.1293	0.1293		0.1190	0.1190	0.0000	511.1256	511.1256	0.1617			515.1684
<b>Total</b>	<b>0.2607</b>	<b>2.6819</b>	<b>3.2632</b>	<b>5.1600e-003</b>	<b>3.5000e-004</b>	<b>0.1293</b>	<b>0.1297</b>	<b>5.0000e-005</b>	<b>0.1190</b>	<b>0.1190</b>	<b>0.0000</b>	<b>511.1256</b>	<b>511.1256</b>	<b>0.1617</b>			<b>515.1684</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	8.0500e-003	0.2625	0.0560	6.8000e-004	0.0150	9.6000e-004	0.0160	4.1100e-003	9.2000e-004	5.0300e-003		74.1010	74.1010	5.1000e-003			74.2286
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0150	0.0110	0.1447	3.7000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		36.3886	36.3886	1.2500e-003			36.4198
<b>Total</b>	<b>0.0230</b>	<b>0.2735</b>	<b>0.2006</b>	<b>1.0500e-003</b>	<b>0.0485</b>	<b>1.2500e-003</b>	<b>0.0498</b>	<b>0.0130</b>	<b>1.1900e-003</b>	<b>0.0142</b>		<b>110.4896</b>	<b>110.4896</b>	<b>6.3500e-003</b>			<b>110.6484</b>

**3.4 Grading - 2019**

**Unmitigated Construction On-Site**



	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.4261	17.0215	9.1213	0.0199		0.7122	0.7122		0.6552	0.6552		1,970.6197	1,970.6197	0.6235		1,986.2068
<b>Total</b>	<b>1.4261</b>	<b>17.0215</b>	<b>9.1213</b>	<b>0.0199</b>	<b>0.5303</b>	<b>0.7122</b>	<b>1.2425</b>	<b>0.0573</b>	<b>0.6552</b>	<b>0.7125</b>		<b>1,970.6197</b>	<b>1,970.6197</b>	<b>0.6235</b>		<b>1,986.2068</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.5000e-004	0.0278	5.9400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.3000e-004		7.8592	7.8592	5.4000e-004		7.8727
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
<b>Total</b>	<b>0.0508</b>	<b>0.0646</b>	<b>0.4881</b>	<b>1.2900e-003</b>	<b>0.1134</b>	<b>1.0600e-003</b>	<b>0.1144</b>	<b>0.0301</b>	<b>9.9000e-004</b>	<b>0.0311</b>		<b>129.1545</b>	<b>129.1545</b>	<b>4.7100e-003</b>		<b>129.2722</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.2387	0.0000	0.2387	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	1.4261	17.0215	9.1213	0.0199		0.7122	0.7122		0.6552	0.6552	0.0000	1,970.6197	1,970.6197	0.6235		1,986.2068
<b>Total</b>	<b>1.4261</b>	<b>17.0215</b>	<b>9.1213</b>	<b>0.0199</b>	<b>0.2387</b>	<b>0.7122</b>	<b>0.9508</b>	<b>0.0258</b>	<b>0.6552</b>	<b>0.6810</b>	<b>0.0000</b>	<b>1,970.6197</b>	<b>1,970.6197</b>	<b>0.6235</b>		<b>1,986.2068</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.5000e-004	0.0278	5.9400e-003	7.0000e-005	1.5900e-003	1.0000e-004	1.6900e-003	4.4000e-004	1.0000e-004	5.3000e-004		7.8592	7.8592	5.4000e-004		7.8727
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
<b>Total</b>	<b>0.0508</b>	<b>0.0646</b>	<b>0.4881</b>	<b>1.2900e-003</b>	<b>0.1134</b>	<b>1.0600e-003</b>	<b>0.1144</b>	<b>0.0301</b>	<b>9.9000e-004</b>	<b>0.0311</b>		<b>129.1545</b>	<b>129.1545</b>	<b>4.7100e-003</b>		<b>129.2722</b>

### 3.5 Building Construction - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8668	19.9553	10.9462	0.0196		0.9945	0.9945		0.9150	0.9150		1,939.7674	1,939.7674	0.6137		1,955.1105
<b>Total</b>	<b>1.8668</b>	<b>19.9553</b>	<b>10.9462</b>	<b>0.0196</b>		<b>0.9945</b>	<b>0.9945</b>		<b>0.9150</b>	<b>0.9150</b>		<b>1,939.7674</b>	<b>1,939.7674</b>	<b>0.6137</b>		<b>1,955.1105</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	4.1600e-003	0.1157	0.0307	2.6000e-004	6.4000e-003	7.4000e-004	7.1400e-003	1.8400e-003	7.1000e-004	2.5500e-003		27.8815	27.8815	1.7900e-003			27.9261
Worker	0.0150	0.0110	0.1447	3.7000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		36.3886	36.3886	1.2500e-003			36.4198
<b>Total</b>	<b>0.0192</b>	<b>0.1267</b>	<b>0.1754</b>	<b>6.3000e-004</b>	<b>0.0399</b>	<b>1.0300e-003</b>	<b>0.0410</b>	<b>0.0107</b>	<b>9.8000e-004</b>	<b>0.0117</b>		<b>64.2701</b>	<b>64.2701</b>	<b>3.0400e-003</b>			<b>64.3460</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.8668	19.9553	10.9462	0.0196		0.9945	0.9945		0.9150	0.9150	0.0000	1,939.7674	1,939.7674	0.6137			1,955.1105
<b>Total</b>	<b>1.8668</b>	<b>19.9553</b>	<b>10.9462</b>	<b>0.0196</b>		<b>0.9945</b>	<b>0.9945</b>		<b>0.9150</b>	<b>0.9150</b>	<b>0.0000</b>	<b>1,939.7674</b>	<b>1,939.7674</b>	<b>0.6137</b>			<b>1,955.1105</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1600e-003	0.1157	0.0307	2.6000e-004	6.4000e-003	7.4000e-004	7.1400e-003	1.8400e-003	7.1000e-004	2.5500e-003		27.8815	27.8815	1.7900e-003		27.9261
Worker	0.0150	0.0110	0.1447	3.7000e-004	0.0335	2.9000e-004	0.0338	8.8900e-003	2.7000e-004	9.1600e-003		36.3886	36.3886	1.2500e-003		36.4198
<b>Total</b>	<b>0.0192</b>	<b>0.1267</b>	<b>0.1754</b>	<b>6.3000e-004</b>	<b>0.0399</b>	<b>1.0300e-003</b>	<b>0.0410</b>	<b>0.0107</b>	<b>9.8000e-004</b>	<b>0.0117</b>		<b>64.2701</b>	<b>64.2701</b>	<b>3.0400e-003</b>		<b>64.3460</b>

### 3.5 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7480	18.4126	10.6883	0.0196		0.9096	0.9096		0.8368	0.8368		1,897.9030	1,897.9030	0.6138		1,913.2485
<b>Total</b>	<b>1.7480</b>	<b>18.4126</b>	<b>10.6883</b>	<b>0.0196</b>		<b>0.9096</b>	<b>0.9096</b>		<b>0.8368</b>	<b>0.8368</b>		<b>1,897.9030</b>	<b>1,897.9030</b>	<b>0.6138</b>		<b>1,913.2485</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5600e-003	0.1064	0.0279	2.6000e-004	6.4000e-003	5.0000e-004	6.9000e-003	1.8400e-003	4.8000e-004	2.3200e-003		27.7025	27.7025	1.6900e-003		27.7447
Worker	0.0138	9.8200e-003	0.1314	3.5000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		35.2834	35.2834	1.1100e-003		35.3112

<b>Total</b>	<b>0.0174</b>	<b>0.1162</b>	<b>0.1592</b>	<b>6.1000e-004</b>	<b>0.0399</b>	<b>7.8000e-004</b>	<b>0.0407</b>	<b>0.0107</b>	<b>7.4000e-004</b>	<b>0.0115</b>		<b>62.9859</b>	<b>62.9859</b>	<b>2.8000e-003</b>		<b>63.0559</b>
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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Category</b>	<b>lb/day</b>										<b>lb/day</b>					
Off-Road	1.7480	18.4126	10.6883	0.0196		0.9096	0.9096		0.8368	0.8368	0.0000	1,897.9030	1,897.9030	0.6138		1,913.2485
<b>Total</b>	<b>1.7480</b>	<b>18.4126</b>	<b>10.6883</b>	<b>0.0196</b>		<b>0.9096</b>	<b>0.9096</b>		<b>0.8368</b>	<b>0.8368</b>	<b>0.0000</b>	<b>1,897.9030</b>	<b>1,897.9030</b>	<b>0.6138</b>		<b>1,913.2485</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Category</b>	<b>lb/day</b>										<b>lb/day</b>					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5600e-003	0.1064	0.0279	2.6000e-004	6.4000e-003	5.0000e-004	6.9000e-003	1.8400e-003	4.8000e-004	2.3200e-003		27.7025	27.7025	1.6900e-003		27.7447
Worker	0.0138	9.8200e-003	0.1314	3.5000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		35.2834	35.2834	1.1100e-003		35.3112
<b>Total</b>	<b>0.0174</b>	<b>0.1162</b>	<b>0.1592</b>	<b>6.1000e-004</b>	<b>0.0399</b>	<b>7.8000e-004</b>	<b>0.0407</b>	<b>0.0107</b>	<b>7.4000e-004</b>	<b>0.0115</b>		<b>62.9859</b>	<b>62.9859</b>	<b>2.8000e-003</b>		<b>63.0559</b>

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2298	2.4590	2.5360	4.1100e-003		0.1195	0.1195		0.1100	0.1100		398.3631	398.3631	0.1288		401.5841
Paving	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.2489</b>	<b>2.4590</b>	<b>2.5360</b>	<b>4.1100e-003</b>		<b>0.1195</b>	<b>0.1195</b>		<b>0.1100</b>	<b>0.1100</b>		<b>398.3631</b>	<b>398.3631</b>	<b>0.1288</b>		<b>401.5841</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.1100e-003	0.2127	0.0557	5.2000e-004	0.0128	1.0000e-003	0.0138	3.6900e-003	9.6000e-004	4.6400e-003		55.4049	55.4049	3.3800e-003		55.4895
Worker	0.0138	9.8200e-003	0.1314	3.5000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		35.2834	35.2834	1.1100e-003		35.3112
<b>Total</b>	<b>0.0209</b>	<b>0.2226</b>	<b>0.1871</b>	<b>8.7000e-004</b>	<b>0.0463</b>	<b>1.2800e-003</b>	<b>0.0476</b>	<b>0.0126</b>	<b>1.2200e-003</b>	<b>0.0138</b>		<b>90.6883</b>	<b>90.6883</b>	<b>4.4900e-003</b>		<b>90.8007</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	0.2298	2.4590	2.5360	4.1100e-003		0.1195	0.1195		0.1100	0.1100	0.0000	398.3631	398.3631	0.1288		401.5841
Paving	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.2489</b>	<b>2.4590</b>	<b>2.5360</b>	<b>4.1100e-003</b>		<b>0.1195</b>	<b>0.1195</b>		<b>0.1100</b>	<b>0.1100</b>	<b>0.0000</b>	<b>398.3631</b>	<b>398.3631</b>	<b>0.1288</b>		<b>401.5841</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.1100e-003	0.2127	0.0557	5.2000e-004	0.0128	1.0000e-003	0.0138	3.6900e-003	9.6000e-004	4.6400e-003		55.4049	55.4049	3.3800e-003		55.4895
Worker	0.0138	9.8200e-003	0.1314	3.5000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		35.2834	35.2834	1.1100e-003		35.3112
<b>Total</b>	<b>0.0209</b>	<b>0.2226</b>	<b>0.1871</b>	<b>8.7000e-004</b>	<b>0.0463</b>	<b>1.2800e-003</b>	<b>0.0476</b>	<b>0.0126</b>	<b>1.2200e-003</b>	<b>0.0138</b>		<b>90.6883</b>	<b>90.6883</b>	<b>4.4900e-003</b>		<b>90.8007</b>

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907

#### 5.0 Energy Detail

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day											lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000



NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
Unmitigated	3.0800e-003	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003

## 6.2 Area by SubCategory

### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>		<b>1.6300e-003</b>

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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SubCategory	lb/day										lb/day					
	Architectural Coating	5.3000e-004					0.0000	0.0000		0.0000	0.0000			0.0000		
Consumer Products	2.4800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.5300e-003	1.5300e-003	0.0000		1.6300e-003
<b>Total</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.5300e-003</b>	<b>1.5300e-003</b>	<b>0.0000</b>		<b>1.6300e-003</b>

## 7.0 Water Detail

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### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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MWD West Valley Feeder - Los Angeles-South Coast County, Annual

**MWD West Valley Feeder**  
**Los Angeles-South Coast County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.00	1000sqft	0.16	7,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2020
<b>Utility Company</b>	Los Angeles Department of Water & Power				
<b>CO2 Intensity (lb/MW hr)</b>	1227.89	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -  
 Land Use - Asphalt Access Roads,  
 Construction Phase - .  
 Off-road Equipment - 1 excavator, 1 tractor, 1 crane  
 Off-road Equipment - 1 loader  
 Off-road Equipment - 1 tractor, 1 excavator, 1 grader, 1 crane  
 Off-road Equipment - 1 paver  
 Off-road Equipment - 1 excavator  
 Trips and VMT - .

Demolition - Tons based on truckload (1 truckload), 20 ton truck

Grading - Cubic yards based on truckloads, assuming 16 cy truck

Construction Off-road Equipment Mitigation - Rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	1.00	21.00
tblConstructionPhase	NumDays	2.00	44.00
tblConstructionPhase	NumDays	100.00	109.00
tblConstructionPhase	NumDays	5.00	22.00
tblGrading	MaterialExported	0.00	32.00
tblGrading	MaterialExported	0.00	144.00
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

## 2.0 Emissions Summary

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## 2.1 Overall Construction

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0583	0.6479	0.3899	7.8000e-004	0.0156	0.0293	0.0450	2.2900e-003	0.0270	0.0293	0.0000	70.4111	70.4111	0.0210	0.0000	70.9370
2020	0.0798	0.8357	0.5015	9.3000e-004	2.2000e-003	0.0409	0.0431	5.9000e-004	0.0377	0.0383	0.0000	82.1684	82.1684	0.0257	0.0000	82.8101
<b>Maximum</b>	<b>0.0798</b>	<b>0.8357</b>	<b>0.5015</b>	<b>9.3000e-004</b>	<b>0.0156</b>	<b>0.0409</b>	<b>0.0450</b>	<b>2.2900e-003</b>	<b>0.0377</b>	<b>0.0383</b>	<b>0.0000</b>	<b>82.1684</b>	<b>82.1684</b>	<b>0.0257</b>	<b>0.0000</b>	<b>82.8101</b>

### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0583	0.6479	0.3899	7.8000e-004	9.1000e-003	0.0293	0.0384	1.5800e-003	0.0270	0.0285	0.0000	70.4110	70.4110	0.0210	0.0000	70.9369
2020	0.0798	0.8357	0.5015	9.3000e-004	2.2000e-003	0.0409	0.0431	5.9000e-004	0.0377	0.0383	0.0000	82.1684	82.1684	0.0257	0.0000	82.8100
<b>Maximum</b>	<b>0.0798</b>	<b>0.8357</b>	<b>0.5015</b>	<b>9.3000e-004</b>	<b>9.1000e-003</b>	<b>0.0409</b>	<b>0.0431</b>	<b>1.5800e-003</b>	<b>0.0377</b>	<b>0.0383</b>	<b>0.0000</b>	<b>82.1684</b>	<b>82.1684</b>	<b>0.0257</b>	<b>0.0000</b>	<b>82.8100</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>36.66</b>	<b>0.00</b>	<b>7.43</b>	<b>24.65</b>	<b>0.00</b>	<b>1.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2019	10-31-2019	0.2616	0.2616
2	11-1-2019	1-31-2020	0.6670	0.6670



Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.9000e-004</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2019	8/30/2019	5	22	
2	Site Preparation	Site Preparation	9/1/2019	9/30/2019	5	21	
3	Grading	Grading	10/1/2019	11/30/2019	5	44	
4	Building Construction	Building Construction	12/1/2019	4/30/2020	5	109	
5	Paving	Paving	4/1/2020	4/30/2020	5	22	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 22**

**Acres of Paving: 0.16**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0**

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Graders	0	8.00	187	0.41



Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	0	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Rubber Tired Dozers	1	8.00	247	0.40

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	1	3.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	3.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	3.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	1	3.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

### 3.2 Demolition - 2019

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1000e-004	0.0000	2.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0193	0.0190	3.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	2.3017	2.3017	7.3000e-004	0.0000	2.3199
<b>Total</b>	<b>1.9200e-003</b>	<b>0.0193</b>	<b>0.0190</b>	<b>3.0000e-005</b>	<b>2.1000e-004</b>	<b>1.2900e-003</b>	<b>1.5000e-003</b>	<b>3.0000e-005</b>	<b>1.1800e-003</b>	<b>1.2100e-003</b>	<b>0.0000</b>	<b>2.3017</b>	<b>2.3017</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>2.3199</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.2000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0779	0.0779	1.0000e-005	0.0000	0.0780
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3476	0.3476	1.0000e-005	0.0000	0.3479
<b>Total</b>	<b>1.8000e-004</b>	<b>4.6000e-004</b>	<b>1.5700e-003</b>	<b>0.0000</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>3.8000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.4255</b>	<b>0.4255</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.4259</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0193	0.0190	3.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	2.3017	2.3017	7.3000e-004	0.0000	2.3199
<b>Total</b>	<b>1.9200e-003</b>	<b>0.0193</b>	<b>0.0190</b>	<b>3.0000e-005</b>	<b>1.0000e-004</b>	<b>1.2900e-003</b>	<b>1.3900e-003</b>	<b>1.0000e-005</b>	<b>1.1800e-003</b>	<b>1.1900e-003</b>	<b>0.0000</b>	<b>2.3017</b>	<b>2.3017</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>2.3199</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.2000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0779	0.0779	1.0000e-005	0.0000	0.0780
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3476	0.3476	1.0000e-005	0.0000	0.3479
<b>Total</b>	<b>1.8000e-004</b>	<b>4.6000e-004</b>	<b>1.5700e-003</b>	<b>0.0000</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>3.8000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.4255</b>	<b>0.4255</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.4259</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7400e-003	0.0282	0.0343	5.0000e-005		1.3600e-003	1.3600e-003		1.2500e-003	1.2500e-003	0.0000	4.8687	4.8687	1.5400e-003	0.0000	4.9072

<b>Total</b>	<b>2.7400e-003</b>	<b>0.0282</b>	<b>0.0343</b>	<b>5.0000e-005</b>	<b>1.0000e-005</b>	<b>1.3600e-003</b>	<b>1.3700e-003</b>	<b>0.0000</b>	<b>1.2500e-003</b>	<b>1.2500e-003</b>	<b>0.0000</b>	<b>4.8687</b>	<b>4.8687</b>	<b>1.5400e-003</b>	<b>0.0000</b>	<b>4.9072</b>
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**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	2.8500e-003	6.1000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7008	0.7008	5.0000e-005	0.0000	0.7021
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.3000e-004	1.4300e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3318	0.3318	1.0000e-005	0.0000	0.3321
<b>Total</b>	<b>2.5000e-004</b>	<b>2.9800e-003</b>	<b>2.0400e-003</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>1.0000e-005</b>	<b>5.1000e-004</b>	<b>1.3000e-004</b>	<b>1.0000e-005</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.0326</b>	<b>1.0326</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.0341</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7400e-003	0.0282	0.0343	5.0000e-005		1.3600e-003	1.3600e-003		1.2500e-003	1.2500e-003	0.0000	4.8687	4.8687	1.5400e-003	0.0000	4.9072
<b>Total</b>	<b>2.7400e-003</b>	<b>0.0282</b>	<b>0.0343</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.3600e-003</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>1.2500e-003</b>	<b>1.2500e-003</b>	<b>0.0000</b>	<b>4.8687</b>	<b>4.8687</b>	<b>1.5400e-003</b>	<b>0.0000</b>	<b>4.9072</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	2.8500e-003	6.1000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7008	0.7008	5.0000e-005	0.0000	0.7021
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.3000e-004	1.4300e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3318	0.3318	1.0000e-005	0.0000	0.3321
<b>Total</b>	<b>2.5000e-004</b>	<b>2.9800e-003</b>	<b>2.0400e-003</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>1.0000e-005</b>	<b>5.1000e-004</b>	<b>1.3000e-004</b>	<b>1.0000e-005</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.0326</b>	<b>1.0326</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.0341</b>

### 3.4 Grading - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0117	0.0000	0.0117	1.2600e-003	0.0000	1.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.3745	0.2007	4.4000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	39.3298	39.3298	0.0124	0.0000	39.6408
<b>Total</b>	<b>0.0314</b>	<b>0.3745</b>	<b>0.2007</b>	<b>4.4000e-004</b>	<b>0.0117</b>	<b>0.0157</b>	<b>0.0273</b>	<b>1.2600e-003</b>	<b>0.0144</b>	<b>0.0157</b>	<b>0.0000</b>	<b>39.3298</b>	<b>39.3298</b>	<b>0.0124</b>	<b>0.0000</b>	<b>39.6408</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	2.0000e-005	6.3000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1557	0.1557	1.0000e-005	0.0000	0.1560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	9.2000e-004	9.9900e-003	3.0000e-005	2.4100e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.3174	2.3174	8.0000e-005	0.0000	2.3194
<b>Total</b>	<b>1.1200e-003</b>	<b>1.5500e-003</b>	<b>0.0101</b>	<b>3.0000e-005</b>	<b>2.4400e-003</b>	<b>2.0000e-005</b>	<b>2.4700e-003</b>	<b>6.5000e-004</b>	<b>2.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>2.4731</b>	<b>2.4731</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.4754</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.2500e-003	0.0000	5.2500e-003	5.7000e-004	0.0000	5.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0314	0.3745	0.2007	4.4000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	39.3297	39.3297	0.0124	0.0000	39.6408
<b>Total</b>	<b>0.0314</b>	<b>0.3745</b>	<b>0.2007</b>	<b>4.4000e-004</b>	<b>5.2500e-003</b>	<b>0.0157</b>	<b>0.0209</b>	<b>5.7000e-004</b>	<b>0.0144</b>	<b>0.0150</b>	<b>0.0000</b>	<b>39.3297</b>	<b>39.3297</b>	<b>0.0124</b>	<b>0.0000</b>	<b>39.6408</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	6.3000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1557	0.1557	1.0000e-005	0.0000	0.1560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	9.2000e-004	9.9900e-003	3.0000e-005	2.4100e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.3174	2.3174	8.0000e-005	0.0000	2.3194
<b>Total</b>	<b>1.1200e-003</b>	<b>1.5500e-003</b>	<b>0.0101</b>	<b>3.0000e-005</b>	<b>2.4400e-003</b>	<b>2.0000e-005</b>	<b>2.4700e-003</b>	<b>6.5000e-004</b>	<b>2.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>2.4731</b>	<b>2.4731</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.4754</b>

### 3.5 Building Construction - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0205	0.2195	0.1204	2.2000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	19.3570	19.3570	6.1200e-003	0.0000	19.5101
<b>Total</b>	<b>0.0205</b>	<b>0.2195</b>	<b>0.1204</b>	<b>2.2000e-004</b>		<b>0.0109</b>	<b>0.0109</b>		<b>0.0101</b>	<b>0.0101</b>	<b>0.0000</b>	<b>19.3570</b>	<b>19.3570</b>	<b>6.1200e-003</b>	<b>0.0000</b>	<b>19.5101</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.3000e-003	3.6000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2751	0.2751	2.0000e-005	0.0000	0.2755
Worker	1.7000e-004	1.4000e-004	1.5000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3476	0.3476	1.0000e-005	0.0000	0.3479
<b>Total</b>	<b>2.2000e-004</b>	<b>1.4400e-003</b>	<b>1.8600e-003</b>	<b>0.0000</b>	<b>4.3000e-004</b>	<b>1.0000e-005</b>	<b>4.4000e-004</b>	<b>1.2000e-004</b>	<b>1.0000e-005</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.6227</b>	<b>0.6227</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.6234</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0205	0.2195	0.1204	2.2000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	19.3570	19.3570	6.1200e-003	0.0000	19.5101
<b>Total</b>	<b>0.0205</b>	<b>0.2195</b>	<b>0.1204</b>	<b>2.2000e-004</b>		<b>0.0109</b>	<b>0.0109</b>		<b>0.0101</b>	<b>0.0101</b>	<b>0.0000</b>	<b>19.3570</b>	<b>19.3570</b>	<b>6.1200e-003</b>	<b>0.0000</b>	<b>19.5101</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.3000e-003	3.6000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2751	0.2751	2.0000e-005	0.0000	0.2755
Worker	1.7000e-004	1.4000e-004	1.5000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3476	0.3476	1.0000e-005	0.0000	0.3479
<b>Total</b>	<b>2.2000e-004</b>	<b>1.4400e-003</b>	<b>1.8600e-003</b>	<b>0.0000</b>	<b>4.3000e-004</b>	<b>1.0000e-005</b>	<b>4.4000e-004</b>	<b>1.2000e-004</b>	<b>1.0000e-005</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.6227</b>	<b>0.6227</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.6234</b>

### **3.5 Building Construction - 2020**

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0760	0.8010	0.4649	8.5000e-004		0.0396	0.0396		0.0364	0.0364	0.0000	74.8961	74.8961	0.0242	0.0000	75.5016



<b>Total</b>	<b>0.0760</b>	<b>0.8010</b>	<b>0.4649</b>	<b>8.5000e-004</b>		<b>0.0396</b>	<b>0.0396</b>		<b>0.0364</b>	<b>0.0364</b>	<b>0.0000</b>	<b>74.8961</b>	<b>74.8961</b>	<b>0.0242</b>	<b>0.0000</b>	<b>75.5016</b>
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**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	4.7100e-003	1.2800e-003	1.0000e-005	2.7000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0807	1.0807	7.0000e-005	0.0000	1.0824
Worker	6.0000e-004	4.9000e-004	5.3700e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3329	1.3329	4.0000e-005	0.0000	1.3339
<b>Total</b>	<b>7.6000e-004</b>	<b>5.2000e-003</b>	<b>6.6500e-003</b>	<b>2.0000e-005</b>	<b>1.7000e-003</b>	<b>3.0000e-005</b>	<b>1.7400e-003</b>	<b>4.6000e-004</b>	<b>3.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>2.4135</b>	<b>2.4135</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>2.4163</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0760	0.8010	0.4649	8.5000e-004		0.0396	0.0396		0.0364	0.0364	0.0000	74.8960	74.8960	0.0242	0.0000	75.5016
<b>Total</b>	<b>0.0760</b>	<b>0.8010</b>	<b>0.4649</b>	<b>8.5000e-004</b>		<b>0.0396</b>	<b>0.0396</b>		<b>0.0364</b>	<b>0.0364</b>	<b>0.0000</b>	<b>74.8960</b>	<b>74.8960</b>	<b>0.0242</b>	<b>0.0000</b>	<b>75.5016</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	4.7100e-003	1.2800e-003	1.0000e-005	2.7000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0807	1.0807	7.0000e-005	0.0000	1.0824
Worker	6.0000e-004	4.9000e-004	5.3700e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3329	1.3329	4.0000e-005	0.0000	1.3339
<b>Total</b>	<b>7.6000e-004</b>	<b>5.2000e-003</b>	<b>6.6500e-003</b>	<b>2.0000e-005</b>	<b>1.7000e-003</b>	<b>3.0000e-005</b>	<b>1.7400e-003</b>	<b>4.6000e-004</b>	<b>3.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>2.4135</b>	<b>2.4135</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>2.4163</b>

### 3.6 Paving - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5300e-003	0.0271	0.0279	5.0000e-005		1.3100e-003	1.3100e-003		1.2100e-003	1.2100e-003	0.0000	3.9753	3.9753	1.2900e-003	0.0000	4.0074
Paving	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.7400e-003</b>	<b>0.0271</b>	<b>0.0279</b>	<b>5.0000e-005</b>		<b>1.3100e-003</b>	<b>1.3100e-003</b>		<b>1.2100e-003</b>	<b>1.2100e-003</b>	<b>0.0000</b>	<b>3.9753</b>	<b>3.9753</b>	<b>1.2900e-003</b>	<b>0.0000</b>	<b>4.0074</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	2.3800e-003	6.5000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5465	0.5465	3.0000e-005	0.0000	0.5474
Worker	1.5000e-004	1.2000e-004	1.3600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3371	0.3371	1.0000e-005	0.0000	0.3373
<b>Total</b>	<b>2.3000e-004</b>	<b>2.5000e-003</b>	<b>2.0100e-003</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>1.0000e-005</b>	<b>5.1000e-004</b>	<b>1.4000e-004</b>	<b>1.0000e-005</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.8836</b>	<b>0.8836</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.8847</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5300e-003	0.0271	0.0279	5.0000e-005		1.3100e-003	1.3100e-003		1.2100e-003	1.2100e-003	0.0000	3.9753	3.9753	1.2900e-003	0.0000	4.0074
Paving	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.7400e-003</b>	<b>0.0271</b>	<b>0.0279</b>	<b>5.0000e-005</b>		<b>1.3100e-003</b>	<b>1.3100e-003</b>		<b>1.2100e-003</b>	<b>1.2100e-003</b>	<b>0.0000</b>	<b>3.9753</b>	<b>3.9753</b>	<b>1.2900e-003</b>	<b>0.0000</b>	<b>4.0074</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	2.3800e-003	6.5000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5465	0.5465	3.0000e-005	0.0000	0.5474
Worker	1.5000e-004	1.2000e-004	1.3600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3371	0.3371	1.0000e-005	0.0000	0.3373
<b>Total</b>	<b>2.3000e-004</b>	<b>2.5000e-003</b>	<b>2.0100e-003</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>1.0000e-005</b>	<b>5.1000e-004</b>	<b>1.4000e-004</b>	<b>1.0000e-005</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.8836</b>	<b>0.8836</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.8847</b>

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.547726	0.045437	0.201480	0.122768	0.016614	0.006090	0.019326	0.029174	0.002438	0.002359	0.005005	0.000677	0.000907



**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
--	-----------------	-----------	-----	-----	------



Consumer Products	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7000e-004	1.7000e-004	0.0000	0.0000	1.9000e-004
<b>Total</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.9000e-004</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7000e-004	1.7000e-004	0.0000	0.0000	1.9000e-004
<b>Total</b>	<b>5.6000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.9000e-004</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000



## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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**APPENDIX C**

**UPDATED BIOLOGICAL AND JURISDICTIONAL WATERS RESOURCES**

May 13, 2024

Michelle Morrison  
Senior Environmental Specialist, Environmental Planning Section  
The Metropolitan Water District of Southern California  
700 North Alameda Street  
Los Angeles, California 90012

**VIA EMAIL**  
**MMorrison@mwdh2o.com**

**Subject:** Updated Biological and Jurisdictional Waters Resources Assessment for the Metropolitan Water District West Valley Feeder No. 1 Stage 3 Improvements Project in the City of Los Angeles, California

Dear Michelle Morrison:

This Letter Report presents the updated conclusions of a biological and jurisdictional waters resources assessment for The Metropolitan Water District of Southern California (MWD) West Valley Feeder No. 1 (WVF1) Stage 3 Improvements project (hereinafter referred to as the “project”) located in the City of Los Angeles, Los Angeles County, California (Exhibit 1). The purpose of the field surveys was to evaluate the potential biological and jurisdictional constraints on the project; determine the presence or absence of special status species, identify potential impacts to biological and jurisdictional water resources that could result from implementation of the project; and provide recommendations to avoid, minimize, and/or mitigate significant impacts.

## **PROJECT DESCRIPTION AND LOCATION**

The project involves modification of the MWD WVF1 located northwest of Chatsworth Park South. Proposed project actions include construction of an approximately 500-foot access road including a vehicle turnaround area and various modifications to existing facilities including valve relocation, equipment replacement, and reconstruction of valve structures. Additionally, the project proposes the installation of new manholes, concrete vaults, and retaining walls along the WVF1. Project impacts would include both temporary impacts in areas associated with construction access, staging, and laydown areas as well as permanent impacts associated with the proposed access road. Except for those areas where impacts would be confined to existing structures and the surrounding paved areas, all other impact areas occurring would be subject to some degree of earth disturbance.

The project site is in the western portion of the San Fernando Valley in the City of Los Angeles (Exhibit 1). Surrounding land uses include undeveloped open space in the Santa Susana Pass State Historic Park to the west and Chatsworth Park South to the east, with urban development farther to the east. A Metrolink railroad alignment is located immediately north of the site. The project site occurs on the U.S. Geological Survey’s (USGS’) Oat Mountain 7.5-minute quadrangle at Township 2 North, Range 17 West, Sections 13 and 14 (Exhibit 2). Topography in the survey area includes slopes and eastward-draining canyons; elevations range from approximately 1,010 feet above mean sea level (msl) in the east to 1,160 feet above msl in the

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west. Soils in the survey area are mapped as rock outcrop–Gaviota complex, 30 to 75 percent slopes (Exhibit 3).

Thirteen vegetation types and other areas occur on the project site (Exhibit 4). Vegetation categories include California sagebrush–deerweed scrub, California sagebrush–bush mallow scrub, semi-natural herbaceous stand, wild oats grassland, bush mallow scrub, laurel sumac scrub, red willow/arroyo willow thicket, coast live oak woodland, coast live oak–California sycamore woodland, eucalyptus grove, disturbed, developed and ornamental.

### **Significant Ecological Areas**

The *County of Los Angeles General Plan* originally characterized Significant Ecological Areas (SEAs) as areas that contain unique, dwindling, or other rare plant and animal resources that need to be more specifically studied for the purpose of public education, research, and other non-disruptive outdoor uses (England and Nelson 1976). Thus, the SEA designation does not prohibit development of land but signals that further study is required.

The project is located partially within the Santa Susana Mountains/Simi Hills SEA, which was adopted pursuant to the Santa Clarita Valley Area Plan Update of 2011 and the Los Angeles County General Plan Update of 2015. As noted in the 2015 Los Angeles General Plan, the main purposes for establishing the Santa Susana Mountains/Simi Hills SEA was: (a) to protect core habitats of listed species including Braunton’s milk vetch (*Astragalus brauntonii*), coastal California gnatcatcher (*Polioptila californica californica*), and least Bell’s vireo (*Vireo bellii pusillus*); (b) for protection of biotic communities, vegetative associates, and habitat of plant and animal species that are restricted in distribution in the County and regionally; and (c) to act as an essential habitat linkage between the Santa Monica Mountains to the south, San Gabriel Mountains to the east, and the Los Padres National Forest to the north.

### **SURVEY METHODS**

Psomas Biologist Allison Rudalevige conducted an initial general plant and wildlife survey, mapped vegetation, and performed a jurisdictional delineation for the project on June 4, 2018. The general survey was repeated in 2022 and a number of focused protocol surveys were conducted including a rare plant focused protocol survey, least Bell’s vireo focused protocol survey, California gnatcatcher focused protocol survey, and a California red-legged frog focused protocol survey. A general survey and updated vegetation mapping survey were conducted in October 2023 due to the addition of previously unsurveyed project work areas. The survey area included a 100-foot buffer around all project impact areas. Representative photographs are provided in Appendix A.

### **Literature Review**

Prior to the survey, a literature review was conducted to identify special status plants, wildlife, and habitats that have been reported to occur in the vicinity of the survey area. The California Native Plant Society’s (CNPS’) Inventory of Rare and Endangered Plants (CNPS 2023) and the California Department of Fish and Wildlife’s (CDFW’s) California Natural Diversity Database (CDFW 2023b) were reviewed. Database searches included the USGS’ Simi Valley East (also called Santa Susana), Oat Mountain, Canoga Park, and Calabasas 7.5-minute quadrangles. Resources reviewed to assist in the delineation of jurisdictional features included the U.S. Department of Agriculture, Natural Resources Conservation Service’s (USDA NRCS’) Web Soil Survey, the USDA NRCS’ Hydric Soils List (USDA NRCS 2023), and the U.S. Fish and Wildlife Service’s (USFWS’) National Wetlands Inventory (NWI) Wetland Mapper (USFWS 2023).

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### **Vegetation Mapping and General Survey**

Vegetation was mapped on a 1-inch equals 100-foot (1"=100') scale color aerial. Nomenclature for vegetation types generally follows that of *A Manual of California Vegetation* (Sawyer et al. 2009). All plant species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Baldwin et al. (2012). Nomenclature of plant taxa conforms to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2023e) for special status species and the *Jepson eFlora* (Jepson Flora Project 2023) for all other taxa.

All wildlife species detected during the course of the surveys were documented in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic signs, including scat, footprints, scratch-outs, dust bowls, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows the *Special Animals List* (CDFW 2023d) for special status species and, for other species, Center for North American Herpetology (2015) for amphibians and reptiles, the American Ornithological Society (2023) for birds, and the Smithsonian National Museum of Natural History (2011) for mammals.

### **Jurisdictional Delineation**

Section 404 of the federal Clean Water Act (CWA) and Section 1602 of the *California Fish and Game Code* regulate activities affecting resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the CDFW, respectively. Waters of the United States under the jurisdiction of the USACE include navigable coastal and inland waters, lakes, rivers, streams, and their tributaries; interstate waters and their tributaries; wetlands adjacent to such waters; intermittent streams; and other waters that could affect interstate commerce. The CDFW has jurisdictional authority over resources associated with rivers, streams, and lakes. Section 401 of the CWA provides the Regional Water Quality Control Board (RWQCB) with the authority to regulate, through a Water Quality Certification, any proposed federally permitted activity that may affect water quality. The RWQCB also has jurisdiction over isolated wetlands and waters of the State under the Porter-Cologne Water Quality Control Act.

A delineation of jurisdictional water resource boundaries was conducted concurrently with vegetation mapping and general biological surveys in order to describe the type and extent of waters regulated by the USACE, the RWQCB, and/or the CDFW. Jurisdictional features were mapped on the aerial. Non-wetland waters of the United States under the jurisdiction of the USACE were assessed based on the presence of an Ordinary High Water Mark (OHWM). The presence of wetland waters of the United States was assessed using a three-parameter approach for wetland hydrology, hydrophytic vegetation, and hydric soils, as described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). It should be noted that the RWQCB shares USACE jurisdiction unless isolated conditions are present. If conditions indicating isolated waters are present, the RWQCB takes jurisdiction using the USACE's OHWM. CDFW generally asserts jurisdiction over the top of the bank of a river, stream, or lake or to the outer limit of riparian vegetation located within or immediately adjacent to the river, stream, or lake.

## **SURVEY RESULTS**

### **Vegetation Types and Other Landcovers**

Approximately 10.98 acres of vegetation and other landcovers occur in the survey area (Exhibit 4; Table 1). This consists of California sagebrush–deerweed scrub, California sagebrush–bush mallow scrub, semi-natural herbaceous stand, wild oats grassland, bush mallow scrub, bush mallow–laurel sumac scrub,

laurel sumac scrub, red willow/arroyo willow thicket, coast live oak woodland, coast live oak–California sycamore woodland, eucalyptus grove, disturbed, developed, and ornamental. These areas are described below.

**TABLE 1  
 VEGETATION TYPES AND OTHER LANDCOVER IN THE SURVEY AREA**

Vegetation Type or Other Landcover	Area (acres)	Special Status*
California sagebrush–deerweed scrub	4.01	no
California sagebrush–bush mallow scrub	0.21	no
semi-natural herbaceous stand	0.31	no
wild oats grassland	0.35	no
bush mallow scrub	0.02	no
laurel sumac scrub	1.72	no
red willow/arroyo willow thicket	0.21	yes
coast live oak woodland	0.82	no
coast live oak–California sycamore woodland	0.65	no
eucalyptus grove	0.07	no
disturbed	0.67	no
developed	1.12	no
ornamental	0.82	no
<b>Total</b>	<b>10.98</b>	

\* Sensitivity is based on the California Department of Fish and Wildlife’s *California Natural Community List* (CDFW 2022a).

***California Sagebrush–Deerweed Scrub***

California sagebrush–deerweed scrub occurs on slopes throughout the survey area. This vegetation type is dominated by deerweed (*Acmispon glaber*; formerly *Lotus scoparius*) and California sagebrush (*Artemisia californica*), with the relative cover of each varying across the site. Other drought-deciduous sage scrub species such as California buckwheat (*Eriogonum fasciculatum*) and saw-toothed goldenbush (*Hazardia squarrosa*) occur at lower cover. The area between shrubs is dominated by red brome (*Bromus madritensis* ssp. *rubens*), with scattered tocalote (*Centaurea melitensis*), crimson fountain grass (*Pennisetum setaceum*), and large-bracted morning-glory (*Calystegia macrostegia*). Deerweed often occurs in areas with recent disturbance, such as through clearing, fire, or intermittent flooding (Sawyer et al. 2009). The eastern portion of the site burned most recently during the 2008 Sesnon Fire, while the western portion of the site burned in the 2005 Topanga Fire (Los Angeles County 2017). Deerweed stands represent an early successional community that is replaced by longer-lived shrubs typically between five and ten years after a fire (Sawyer et al. 2009). The vegetation in the survey area may represent a transition between a post-fire community and a more “typical” coastal sage scrub community.

This vegetation type corresponds to the *Artemisia californica*–*Lotus scoparius* Association in Sawyer et al. (2009), which consists of mixed stands of California sagebrush with other shrubs sub-dominant. It is not considered a sensitive natural community by the CDFW.



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### ***California Sagebrush–Bush Mallow Scrub***

California sagebrush–bush mallow scrub occurs in the eastern portion of the survey area. This vegetation type is similar to the California sagebrush–deerweed scrub but is dominated by a mix of chaparral mallow (*Malacothamnus fasciculatus*) and California sagebrush. Bush mallow associations represent post-fire conditions, and individual shrubs are suppressed by longer-lived shrubs within a decade after a fire (Sawyer et al. 2009). Therefore, this area may also represent a transition between a post-fire community and a more “typical” coastal sage scrub or chaparral community.

This vegetation type does not correspond to a named alliance or association in Sawyer et al. (2009). Its composition is similar to the *Malacothamnus fasciculatus* Shrubland Alliance, though the cover of bush mallow is less than the required cover (i.e., 50 percent) for that alliance. Since neither the *Artemisia californica* Shrubland Alliance nor the *Malacothamnus fasciculatus* Shrubland Alliance are considered sensitive natural communities by the CDFW, the California sagebrush–bush mallow scrub in the survey area is not considered sensitive.

### ***Semi-natural Herbaceous Stand***

Semi-natural herbaceous stands occur adjacent to the access roads throughout the survey area. This vegetation consists of non-native, weedy species such as grayish shortpod mustard (*Hirschfeldia incana*), tocalote, red brome, and round-leaved filaree (*Erodium cicutarium*), with no single species dominant. These species are typical of disturbed areas. Scattered natives, such as deerweed, saw-toothed goldenbush, large-bracted morning-glory, fascicled tarplant (*Deinandra fasciculata*), and sapphire eriastrum (*Eriastrum saphirinum*) are also present.

This vegetation type corresponds to various semi-natural herbaceous stands in Sawyer et al. (2009). Being dominated by non-native species, it is not considered a sensitive natural community by the CDFW.

### ***Wild Oats Grassland***

Wild oats grassland occurs in a patch in the western portion of the survey area. This vegetation type is dominated by wild oat (*Avena* sp.). Scattered coastal sage scrub species, such as wishbone bush (*Mirabilis laevis* var. *crassifolia*) also occur.

This vegetation type corresponds to the *Avena (barbata, fatua)* semi-natural herbaceous stand in Sawyer et al. (2009). Being dominated by a non-native species, it is not considered a sensitive natural community by the CDFW.

### ***Bush Mallow Scrub***

Bush mallow scrub occurs in a few discrete patches in the survey area. This vegetation type is dominated by chaparral mallow at a cover greater than 50 percent. As discussed above, these areas may represent a transition between a post-fire community and a more “typical” coastal sage scrub or chaparral community.

This vegetation type corresponds to the *Malacothamnus fasciculatus* Shrubland Alliance in Sawyer et al. (2009). It is not considered a sensitive natural community by the CDFW.

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### ***Laurel Sumac Scrub***

Laurel sumac scrub occurs on slopes throughout the survey area. This vegetation type consists of large individuals or stands of laurel sumac (*Malosma laurina*).

This vegetation type corresponds to the *Malosma laurina* Shrubland Alliance in Sawyer et al. (2009). It is not considered a sensitive natural community by the CDFW.

### ***Red Willow/Arroyo Willow Thicket***

Red willow/arroyo willow thicket occurs along a portion of Drainage 1 in the western portion of the survey area. This vegetation type is dominated by a canopy of red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepis*). The understory is partly open with some areas containing western poison oak (*Toxicodendron diversilobum*) or cattail (*Typha* sp.).

This vegetation type corresponds to the *Salix laevigata*–*Salix lasiolepis* Association in Sawyer et al. (2009). It is considered a sensitive natural community by the CDFW. It is also associated with water resources under the jurisdiction of the USACE, the RWQCB, and/or the CDFW, as discussed below.

### ***Coast Live Oak Woodland***

Coast live oak woodland occurs on upland slopes of the survey area. This vegetation type consists of individual coast live oak (*Quercus agrifolia*) that are not associated with the on-site drainages.

This vegetation type corresponds to the *Quercus agrifolia* Woodland Alliance in Sawyer et al. (2009). It is not considered a sensitive natural community by the CDFW.

### ***Coast Live Oak–California Sycamore Woodland***

Coast live oak–California sycamore woodland occurs along the drainages in the survey area. This vegetation type consists of a closed canopy of coast live oaks with some western sycamore (*Platanus racemosa*). The lower canopy and understory contain blue elderberry (*Sambucus nigra* ssp. *caerulea*), laurel sumac, mugwort (*Artemisia douglasiana*), and western poison oak.

This vegetation type corresponds to the *Quercus agrifolia*–*Platanus racemosa*/*Toxicodendron diversilobum* Association in Sawyer et al. (2009). It is not considered a sensitive natural community by the CDFW. However, it is associated with water resources under the jurisdiction of the USACE, the RWQCB, and/or the CDFW, as discussed below.

### ***Eucalyptus Grove***

Eucalyptus grove occurs adjacent to the existing Calleguas Municipal Water District facility at the western end of the survey area. This vegetation type is dominated by non-native silver dollar gum (*Eucalyptus polyanthemos*) with pepper tree (*Schinus molle*).

This vegetation type corresponds to the *Eucalyptus (globulus, camaldulensis)* semi-natural woodland stand in Sawyer et al. (2009). Being dominated by non-native species, it is not considered a sensitive natural community by the CDFW.

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***Disturbed***

Disturbed landcover consists of graded, dirt access roads throughout the survey area. These areas are unvegetated or contain sparse weedy vegetation.

***Developed***

Developed landcover consists of paved roads in the survey area and the existing Calleguas Municipal Water District facility.

***Ornamental***

Ornamental landcover consists of landscaped areas containing non-native ornamental vegetation. On the project site, these areas consisted predominantly of turf grass as part of a park field near the entrance to Chatsworth Park South.

**Jurisdictional Resources**

Jurisdictional resources in the survey area includes one main drainage channel to the west (Drainage 1) with one tributary channel (Drainage 1A) and a second large drainage (Drainage 2) towards the center of the site (Exhibit 5; Table 2). The NWI maps Drainage 1 as a Riverine, intermittent streambed that is temporarily flooded. Soils in the survey area are not listed as hydric (USDA NRCS 2023).

**TABLE 2  
 JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA**

<b>Jurisdiction</b>	<b>Drainage 1 (acres)</b>	<b>Drainage 2 (acres)</b>	<b>Total</b>
<b>USACE</b>	-	-	-
wetland waters of the United States	0.02	0.00	<b>0.02</b>
non-wetland waters of the United States	0.04	0.03	<b>0.07</b>
<b>RWQCB</b>	0.06	0.03	<b>0.09</b>
<b>CDFW</b>	0.74	0.50	<b>1.24</b>

USACE: U.S. Army Corps of Engineers; RWQCB: Regional Water Quality Control Board; CDFW: California Department of Fish and Wildlife

\* The riparian canopy extends over both Drainages 1 and 1A; acreage for both channels is included under Drainage 1.

***U.S. Army Corps of Engineers***

The on-site drainage channels connect with the City of Los Angeles’ subsurface municipal separate storm sewer system (MS4), which carries flow to the Los Angeles River. The Los Angeles River discharges into the Pacific Ocean, a Traditional Navigable Water (TNW). Drainage 1 had flowing water during the summer 2018 site visit and the spring and summer 2022 site visits. The presence of surface water during the dry season indicates that these drainages may be considered to be relatively permanent, non-navigable tributaries to a TNW. Therefore, Drainage 1 would be considered waters of the United States. It exhibited evidence of bed, bank, and OHWM. Indicators of an OHWM include a change in vegetation cover and composition, break in bank slope, and drift deposits.

Drainage 1A did not have flowing water at the time of the surveys or exhibit indicators of wetland hydrology. It had a bed and near vertical banks with an accumulation of leaf litter consistent with the surrounding hillsides. Drainage 1A exhibits the features of an ephemeral body. Ephemeral waters are no

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longer jurisdictional under Section 404 of the Clean Water Act due to the recent Sacket decision [*Sackett v. Environmental Protection Agency*, 598 U.S. \_\_\_\_ (2023)]. However, Drainage 1A remains under the jurisdiction of the RWQCB, an isolated water of the State, and CDFW.

Drainage 1 exhibited evidence of wetland hydrology (e.g., surface water, drift deposits, drainage patterns). The majority of the drainage was under a coast live oak canopy (an upland species) either lacking understory vegetation or with western poison oak (a facultative upland species) (Lichvar et al. 2016) and would not meet the hydrophytic vegetation criterion for wetlands. Therefore, the portion of Drainage 1 with an oak canopy would be considered non-wetland waters of the United States. A portion of Drainage 1 had a canopy of red willow and arroyo willow, with an understory containing western poison oak or cattail in small patches. Both willow species observed on-site are considered facultative wetland species and cattail is considered an obligate wetland species. A soil test pit was not dug due to inaccessibility of the channel in this area (i.e., the presence of poison oak and dense riparian vegetation as well as the steepness of the surrounding slopes prevented safe access); therefore, the presence of hydric soils could not be confirmed. However, given the presence of flowing water during the dry season and the dominance of facultative wetland species with a small amount of obligate wetland species present in the channel, the portion of the drainage containing willows can be inferred to be wetland waters of the United States. Drainage 2 similarly carries flow to the Los Angeles River and is considered jurisdictional waters of the United States because the Los Angeles River discharges into the Pacific Ocean, a TNW.

Approximately 0.09 acre of waters of the United States (0.02-acre wetland and 0.07-acre non-wetland) occur in the survey area (Exhibit 5; Table 2).

### ***Regional Water Quality Control Board***

Regional Water Quality Control Board extends to all waters of the U.S. on-site and one isolated drainage (Drainage 1A). Approximately 0.09 acre of waters of the State, including drainage 1A, occur in the survey area (Exhibit 5; Table 2).

### ***California Department of Fish and Wildlife***

CDFW jurisdiction in the survey area extends to the outer dripline of riparian vegetation (i.e., coast live oak–California sycamore woodland and red willow/arroyo willow thicket). Approximately 1.24 acres of jurisdictional resources under the regulatory authority of the CDFW occur in the survey area (Exhibit 5; Table 2). This includes 0.21 acre of red willow/arroyo willow thicket.

### **Wildlife Habitat**

The survey area provides moderate to high quality habitat for wildlife. The presence of human intrusion into the area on dirt access roads and trails and surrounding urban development decrease the wildlife value relative to undisturbed areas.

No fish species were observed during the 2022 focused surveys and the drainages in the survey area provide minimal habitat for fish due to the limited amount of surface water present and the isolated nature of the drainages in the survey area. Western mosquitofish (*Gambusia affinis*), a non-native species used for vector control, could potentially be present in the area if released.

During the 2022 focused surveys, the only amphibian species that was observed was the Northern Pacific treefrog (*Pseudacris regilla*). Common species that may also occur include black-bellied slender salamander (*Batrachoseps nigriventris*), western toad (*Anaxyrus boreas*), and Baja California treefrog (*Pseudacris hypochondriaca*).

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Reptile species observed during the 2022 focused surveys include: western fence lizard (*Sceloporus occidentalis*) and the common side-blotched lizard (*Uta stansburiana*). Other common species that may also occur include western skink (*Plestiodon skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), ring-necked snake (*Diadophis punctatus*), California kingsnake (*Lampropeltis californiae*), gopher snake (*Pituophis catenifer*), and southern Pacific rattlesnake (*Crotalus oreganus helleri*).

Bird species observed on or adjacent to the survey area during the 2022 focused surveys include: mallard (*Anas platyrhynchos*), California quail (*Callipepla californica*), rock pigeon (*Columba livia*), Eurasian collared-dove (*Streptopelia decaocto*), mourning dove (*Zenaida macroura*), common poorwill (*Phalaenoptilus nuttallii*), white-throated swift (*Aeronautes saxatalis*), Anna's hummingbird (*Calypte anna*), Allen's hummingbird (*Selasphorus sasin*), turkey vulture (*Cathartes aura*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttalli*), northern flicker (*Colaptes auratus*), Pacific-slope flycatcher (*Empidonax difficilis*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus cinerascens*), Cassin's kingbird (*Tyrannus vociferans*), California scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), northern rough-winged swallow (*Stelgidopteryx serripennis*), barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), white-breasted nuthatch (*Sitta carolinensis*), canyon wren (*Catherpes mexicanus*), Bewick's wren (*Thyromanes bewickii*), blue-gray gnatcatcher (*Polioptila caerulea*), wrenit (*Chamaea fasciata*), American robin (*Turdus migratorius*), western bluebird (*Sialia mexicana*), California thrasher (*Toxostoma redivivum*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), phainopepla (*Phainopepla nitens*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), dark-eyed junco (*Junco hyemalis*), song sparrow (*Melospiza melodia*), spotted towhee (*Pipilo maculatus*), California towhee (*Melospiza crissalis*), hooded oriole (*Icterus cucullatus*), brown-headed cowbird (*Molothrus ater*), red-winged blackbird (*Agelaius phoeniceus*), and yellow-rumped warbler (*Setophaga coronata*).

Mammal species observed during the 2022 focused surveys include: California ground squirrel (*Otospermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*) and coyote (*Canis latrans*). Other common species that may occur include Botta's pocket gopher (*Thomomys bottae*), common raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and bobcat (*Lynx rufus*). Common bat species with potential to forage in the survey area include canyon bat (*Parastrellus hesperus*).

### **Wildlife Movement**

Within large open space areas where few or no man-made or naturally occurring physical constraints to wildlife movement are present, wildlife corridors may not yet exist. However, once open space areas become constrained and/or fragmented as a result of urban development or the construction of physical obstacles (e.g., roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

The survey area is located at the urban-wildland interface, with urban development to the east, large tracts of undeveloped open space to the west, and Chatsworth Park South as a buffer between the two. The existing dirt roads in the survey area have extremely minimal vehicular traffic and represent a minor barrier to wildlife movement with most species minimally deterred from efficiently crossing. Generally, wildlife are expected to move freely throughout the survey area and surroundings under existing conditions.

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### **Special Status Vegetation Types**

The CDFW Vegetation Classification and Mapping Program provides a list of vegetation Alliances, Associations, and Special Stands that are considered to be “Sensitive Natural Communities” based on their rarity and threat (CDFW 2023c). Information on rarity is based on the range and distribution of a given type of vegetation, and the proportion of occurrences that are of good ecological integrity. Threats and trends are considered in categories like residential and commercial development, agriculture, energy production and mining, and invasive and other problematic species. One vegetation type in the survey area, red willow/arroyo willow thicket, is considered special status by the CDFW.

### **Special Status Plant and Wildlife Species**

Plants or wildlife may be considered “special status” due to declining populations, vulnerability to habitat change, or restricted distributions. Certain special status species have been listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts.

### ***Special Status Plants***

Twenty-five special status plant species have been reported in the vicinity of the survey area (CNPS 2023; CDFW 2023b). Table 3 summarizes their status and potential to occur in the survey area inclusive of 2022 rare plant survey results.

**TABLE 3**  
**SPECIAL STATUS PLANT SPECIES REPORTED FROM THE VICINITY**  
**OF THE SURVEY AREA**

Species	Common Name	Federal Status	State Status	CRPR Status	Potential to Occur in the Survey Area
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	FE	–	1B.1	Potentially suitable habitat present. Not observed during focused surveys.
<i>Calandrinia breweri</i>	Brewer's claudrinia	–	–	4.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Calochortus catalinae</i>	Catalina mariposa lily	–	–	4.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa lily	–	–	1B.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Calochortus fimbriatus</i>	late-flowered mariposa lily	–	–	1B.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Calochortus plummerae</i>	Plummer's mariposa lily	–	–	4.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Calystegia peirsonii</i>	Peirson's morning-glory	–	–	4.2	Not expected to occur; outside current known range. Not observed during focused surveys.
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	island mountain-mahogany	–	–	4.3	Not expected to occur; outside current known range. Not observed during focused surveys.
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	FC	SE	1B.1	Potentially suitable habitat present and historic occurrence from Chatsworth Park (CCH 2022; 1901 record). Not observed during focused surveys.
<i>Convolvulus simulans</i>	small-flowered morning-glory	–	–	4.2	Limited potential to occur; marginally suitable habitat. Not observed during focused surveys.
<i>Deinandra minthornii</i>	Santa Susana tarplant	–	SR	1B.2	Potentially suitable habitat present and reported just southwest of survey area (CCH 2022). Not observed during focused surveys.
<i>Dodecahema leptoceras</i>	slender-horned spineflower	FE	SE	1B.1	Limited potential to occur; marginally suitable habitat and at edge of current known range. Not observed during focused surveys.
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	–	–	1B.1	Not expected to occur; outside current known range. Not observed during focused surveys.
<i>Dudleya multicaulis</i>	many-stemmed dudleya	–	–	1B.2	Limited potential to occur; marginally suitable habitat and at edge of current known range. Not observed during focused surveys.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	–	–	4.2	Limited potential to occur; suitable habitat but at edge of current known range. Not observed during focused surveys.
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	–	–	1B.1	Potentially suitable habitat present. Not observed during focused surveys.

Species	Common Name	Federal Status	State Status	CRPR Status	Potential to Occur in the Survey Area
<i>Juglans californica</i>	Southern California black walnut	–	–	4.2	Not expected to occur; this species is visible year-round and would have been observed if present. Not observed during focused surveys.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	–	–	1B.1	Not expected to occur; no suitable habitat. Not observed during focused surveys.
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i>	ocellated Humboldt lily	–	–	4.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Lupinus paynei</i>	Payne's bush lupine	–	–	1B.1	Potentially suitable habitat present. Not observed during focused surveys.
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i>	white-veined monardella	–	–	1B.3	Not expected to occur; outside current known range. Not observed during focused.
<i>Navarretia ojaiensis</i>	Ojai navarretia	–	–	1B.1	Not expected to occur; no suitable habitat. Not observed during focused.
<i>Nolina cismontana</i>	chaparral nolina	–	–	1B.2	Potentially suitable habitat present. Not observed during focused surveys.
<i>Orcuttia californica</i>	California Orcutt grass	FE	SE	1B.1	Not expected to occur; no suitable habitat. Not observed during focused.

CRPR: California Rare Plant Rank

**LEGEND:**

<b>Federal (USFWS)</b>	<b>State (CDFW)</b>
FE Endangered	SE Endangered
FT Threatened SR	Rare
FC Candidate	

**CRPR**

- 1B Plants Rare, Threatened, or Endangered in California and elsewhere
- 3 Plants about which we need more information – a review list
- 4 Plants of limited distribution – a watch list

**CRPR Threat Code Extensions**

- .1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
- .2 Fairly threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)
- .3 Not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

Of the species reported from the literature review, five species are federally and/or State-listed Endangered, Threatened, or Rare or are candidates for listing: Braunton’s milk-vetch, San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), Santa Susana tarplant (*Deinandra minthornii*), slender-horned spineflower (*Dodecahema leptoceras*), and California Orcutt grass (*Orcuttia californica*). Suitable or marginally suitable habitat for Braunton’s milk-vetch, San Fernando Valley spineflower, Santa Susana tarplant, and slender-horned spineflower occur in the survey area. Results of rare plants surveys conducted in 2022 by Psomas Biologist Sarah Thomas were negative for all five of these species. The remaining species are not expected to occur in the survey area because the survey area does not support suitable habitat or soils for these species or the survey area is outside the known range of the species.

In addition to species formally listed by the resource agencies, ten species reported in the vicinity of the survey area have a California Rare Plant Rank (CRPR) of 1B. Six of these species—slender mariposa lily (*Calochortus clavatus* var. *gracilis*), late-flowered mariposa lily (*Calochortus fimbriatus*), many-stemmed dudleya (*Dudleya multicaulis*), mesa horkelia (*Horkelia cuneata* var. *puberula*), Payne’s bush lupine



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(*Lupinus paynei*), and chaparral nolina (*Nolina cismontana*)—have potential to occur in the survey area due to suitable or marginally suitable habitat present. Results of rare plants surveys conducted were negative for all six of these species. The remaining four species are not expected to occur in the survey area because the survey area does not support suitable habitat or soils for these species or the survey area is outside the known range of the species.

Several plant species with a CRPR of 3 or 4 are also known from the vicinity, however, none were detected during rare plant surveys.

**Special Status Wildlife**

Twenty-five special status wildlife species have been reported in the vicinity of the survey area (CDFW 2023b) and an additional four species may occur in the vicinity based on the biologist’s knowledge of the species. Table 4 summarizes their status and potential to occur in the survey area inclusive of 2022 focused survey results (see Appendix B).

**TABLE 4  
 SPECIAL STATUS WILDLIFE SPECIES REPORTED FROM  
 THE VICINITY OF THE SURVEY AREA**

Species	Common Name	Federal Status	State Status	Potential to Occur in the Survey Area
<b>Invertebrates</b>	-	-	-	-
<i>Bombus crotchii</i>	Crotch bumble bee	-	CE	May occur; potentially suitable habitat.
<i>Danaus plexippus</i> pop. 1	monarch (California overwintering population)	CF	-	Not expected to occur as an overwintering population; no suitable roosting habitat.
<i>Gonidea angulata</i>	western ridged mussel	-	S2	Not expected to occur; no suitable habitat or host species present.
<i>Socalchemmis gertschi</i>	Gertsch’s socialchemmis spider	-	S1	May occur; potentially suitable habitat.
<b>Amphibians</b>	-	-	-	-
<i>Anaxyrus californicus</i>	arroyo toad	FE	SSC	Not expected to occur; no suitable habitat.
<i>Rana draytonii</i>	California red-legged frog	FT	SSC	Not expected to occur; marginal potentially suitable habitat; not detected during focused surveys.
<i>Spea hammondi</i>	western spadefoot	-	SSC	May occur in uplands and limited potential to breed; marginally suitable habitat.

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Species	Common Name	Federal Status	State Status	Potential to Occur in the Survey Area
<i>Taricha torosa</i>	Coast Range newt	-	SSC	Not likely to occur due to lack of observation during surveys; marginally suitable habitat.
<b>Reptiles</b>	-	-	-	-
<i>Anniella</i> sp.	California legless lizard	-	SSC	May occur; potentially suitable habitat.
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	-	SSC	May occur; potentially suitable habitat.
<i>Emys marmorata</i>	western pond turtle	CF	SSC	Not expected to occur; no suitable habitat.
<i>Phrynosoma blainvillii</i>	coast horned lizard	-	SSC	May occur; potentially suitable habitat.
<i>Thamnophis hammondi</i>	two-striped garter snake	-	SSC	May occur; potentially suitable habitat.
<b>Birds</b>				
<i>Agelaius tricolor</i>	tricolored blackbird	-	ST, SSC	Not expected to occur; no suitable habitat.
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	-	WL	May occur; potentially suitable habitat.
<i>Aquila chrysaetos</i>	golden eagle	-	FP	May occur for foraging; potentially suitable foraging habitat. Not expected to occur for nesting; no suitable nesting habitat.
<i>Athene cunicularia</i>	burrowing owl	-	SSC	Not expected to occur; no suitable habitat.
<i>Buteo swainsoni</i>	Swainson's hawk	-	ST	May occur for foraging; potentially suitable foraging habitat. Not expected to occur for nesting; outside the known breeding range.
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	FT	SSC	Not expected to occur; potentially suitable habitat; not detected during focused surveys.

Species	Common Name	Federal Status	State Status	Potential to Occur in the Survey Area
<i>Riparia riparia</i>	bank swallow	–	ST	May occur for foraging during migration; potentially suitable foraging habitat. Not expected to occur for nesting; outside the known breeding range.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE	SE	Not expected to occur; marginal potentially suitable habitat; not detected during focused surveys.
<b>Mammals</b>				
<i>Antrozous pallidus</i>	pallid bat	–	SSC	May occur for foraging and roosting; potentially suitable foraging and roosting habitat.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	–	SSC	Limited potential to occur for foraging; marginally suitable foraging habitat. Not expected to occur for roosting; no suitable roosting habitat.
<i>Euderma maculatum</i>	spotted bat	–	SSC	Limited potential to occur for foraging; marginally suitable foraging habitat. Not expected to occur for roosting; no suitable roosting habitat.
<i>Eumops perotis californicus</i>	western mastiff bat	–	SSC	May occur for foraging; suitable foraging habitat. Not expected to occur for roosting; no suitable roosting habitat.
<i>Lasiurus blossevillii</i>	western red bat	–	SSC	May occur for foraging and roosting; suitable foraging and roosting habitat.
<i>Lasiurus xanthinus</i>	western yellow bat	–	SSC	Limited potential to occur for foraging and roosting; marginally suitable foraging and roosting habitat.
<i>Macrotus californicus</i>	California leaf-nosed bat	–	SSC	Not expected to occur; outside of current known range.

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Species	Common Name	Federal Status	State Status	Potential to Occur in the Survey Area
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	–	SSC	May occur; potentially suitable habitat.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife

**LEGEND:**

**Federal (USFWS)**

FE Endangered  
 FT Threatened  
 CF Federal Candidate

**State (CDFW)**

SE Endangered  
 ST Threatened  
 CE Candidate Endangered  
 FP Fully Protected  
 SSC Species of Special Concern  
 WL Watch List  
 S1 Critically Imperiled  
 S2 Imperiled

Of the species reported from the literature review, nine species are federally and/or State-listed Endangered or Threatened or are candidates for listing: Crotch bumble bee (*Bombus crotchii*), monarch (California overwintering population) (*Danaus plexippus* pop. 1), arroyo toad (*Anaxyrus californicus*), California red-legged frog (*Rana draytonii*), tricolored blackbird (*Agelaius tricolor*), Swainson’s hawk (*Buteo swainsoni*), coastal California gnatcatcher, bank swallow (*Riparia riparia*), and least Bell’s vireo. While marginal potentially suitable habitat for California red-legged frog, least Bell’s vireo, and coastal California gnatcatcher is present, focused protocol surveys conducted in 2022 were negative for all three species. Swainson’s hawk and bank swallow may forage in the survey area but are not expected to nest since their breeding range is outside the project region. Arroyo toad and tricolored blackbird are not expected to occur in the survey area due to lack of suitable habitat. Crotch bumble bee is not expected to occur due to lack of observation during repeated site surveys in 2022 and 2023 by qualified biologists throughout all habitat areas on site.

Golden eagle (*Aquila chrysaetos*), a State Fully Protected species, has been reported from the vicinity of the survey area and has potential to forage in the survey area.

In addition to species listed under the state and federal Endangered Species Acts, 16 Species of Special Concern (designated by CDFW) have been reported near the survey area. This number includes four bat species that may occur in the vicinity based on the Psomas biologist’s knowledge of the species. Thirteen of these species—coast range newt (*Taricha torosa*), western spadefoot (*Spea hammondi*), California legless lizard (*Anniella sp.*), coast horned lizard (*Phrynosoma blainvillii*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), two-striped garter snake (*Thamnophis hammondi*), spotted bat (*Euderma maculatum*), pallid bat (*Antrozous pallidus*), Townsend’s big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), and San Diego desert woodrat (*Neotoma lepida intermedia*)—have potential to occur in the survey area due to potentially suitable or marginally suitable habitat present. The remaining species are not expected to occur in the survey area because the survey area does not support suitable habitat for the species.

**Critical Habitat**

Critical Habitat is designated by the USFWS for the survival and recovery of species listed as Threatened or Endangered under the Federal Endangered Species Act (FESA). Areas designated as Critical Habitat include the physical or biological features that are essential to the survival and eventual recovery of that species. The survey area is not located in areas designated or proposed as Critical Habitat for any species.

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**PROJECT IMPACTS**

In order to evaluate the entire extent of potential impacts on biological and jurisdictional water resources, it is necessary to understand the various project components and whether they are direct or indirect. All reported impact areas below represent direct impact resulting from temporary disturbance (such as construction yards) or permanent disturbance including replacement of the existing resource with engineered and developed features such as roadways, infrastructure, and adjacent cut slopes.

**Vegetation Types and Other Areas**

Based on the construction design plans, the project would impact a total of 1.98-acres of vegetation and other landcover in the project area (Table 5; Exhibit 6). This includes a permanent impact of 0.17 acre on special status vegetation (i.e., red willow/arroyo willow thicket). In addition to being a special status vegetation type, the red willow/arroyo willow thicket in the survey area is also within the boundaries of CDFW jurisdiction and has the potential to support federally and State listed wildlife species. However, results of focused surveys for least Bell’s vireo and California red-legged frog conducted in 2022 indicate these species are absent from the project site. Impacts on red willow/arroyo willow thicket remain a potential constraint on development due to the status of the vegetation type as special status.

Impacts on vegetation within the boundaries of Chatsworth Park South are limited to the center two disturbance areas, one of which is a temporary construction yard. The impacted vegetation represents a minor percentage of the vegetation occurring within the approximately 50-acre park which encompasses nearly nine acres of oak woodland, eight acres of coastal sage scrub, six acres of chaparral, and 24 acres of landscaped/developed park areas.

**TABLE 5  
 VEGETATION TYPES AND OTHER LANDCOVER  
 IMPACTED BY THE PROJECT**

<b>Vegetation Type or Other Landcover</b>	<b>Temporary impact area (Acres)<sup>a</sup></b>	<b>Permanent impact area (Acres)<sup>a</sup></b>	<b>Total impact area (Acres)<sup>a</sup></b>
California sagebrush–deerweed scrub	0.02	0.83	0.85
California sagebrush–bush mallow scrub	0.00	0.00	0.00
semi-natural herbaceous stand	0.01	0.07	0.08
wild oats grassland	0.00	0.05	0.05
bush mallow scrub	0.00	0.02	0.02
laurel sumac scrub	0.15	0.15	0.29
red willow/arroyo willow thicket	0.00	0.17	0.17
coast live oak woodland	0.01	0.00	0.01
coast live oak–California sycamore woodland	0.00	0.22	0.22
eucalyptus grove	0.00	0.00	0.00
disturbed	0.03	0.00	0.03
developed	0.06	0.04	0.10
ornamental	0.14	0.00	0.14
<b>Total</b>	<b>0.43</b>	<b>1.55</b>	<b>1.98</b>

<sup>a</sup> Values based on total work limit footprints.  
 Note: Totals may not appear to add correctly due to rounding error.

**Jurisdictional Areas**

Based on project design plans, approximately 0.02 acre of ‘wetland’ waters of the United States and waters of the State, 0.01 acre of ‘non-wetland’ waters of the United States and waters of the State, and 0.41 acre of CDFW jurisdictional waters will be impacted by the project (Table 6; Exhibit 7). Of these impacts, all 0.03 acres of State and federal waters and 0.39 acres of CDFW jurisdictional waters are considered permanent impacts. Permanent impacts are associated with the project’s conversion of natural drainage to culverted roadway. All other jurisdictional impacts are considered temporary as they would revert to pre-project conditions following short term project disturbance.

**TABLE 6  
 JURISDICTIONAL WATER RESOURCES  
 IMPACTED BY THE PROJECT**

Jurisdiction	Drainage 1 Permanent (acres)	Drainage 1 Temporary (acres)	Drainage 2 Permanent (acres)	Drainage 2 Temporary (acres)	Total
<b>USACE</b>	-	-	-	-	-
wetland waters of the United States	0.02	0.00	0.00	0.00	<b>0.02</b>
non-wetland waters of the United States	0.01	0.00	0.00	0.00	<b>0.01</b>
<b>RWQCB</b>	0.03	0.00	0.00	0.00	<b>0.03</b>
<b>CDFW</b>	0.40	0.00	0.00	0.01	<b>0.41</b>

USACE: U.S. Army Corps of Engineers; RWQCB: Regional Water Quality Control Board; CDFW: California Department of Fish and Wildlife

\* The riparian canopy extends over both Drainages 1 and 1A; acreage for both channels is included under Drainage 1.

**Special Status Plant Species**

Results of rare plant focused surveys were negative for all special status species including federally and State listed species—Braunton’s milk-vetch, San Fernando Valley spineflower, Santa Susana tarplant, and slender-horned spineflower. Due to their absence from the project site, these species would not be a constraint to the project and would not require permitting with resource agencies.

**Special Status Wildlife Species**

Results of special status species focused protocol surveys were negative for all special status species including federally and State listed species—California red-legged frog, least Bell’s vireo, and coastal California gnatcatcher (see Appendix B). Due to their absence from the project site, these species would not be a constraint to the project and would not require permitting with resource agencies.

The project may impact the following species or their habitat: coast range newt, western spadefoot, California legless lizard, coast horned lizard, coastal whiptail, two-striped garter snake, spotted bat, pallid bat, Townsend’s big-eared bat, western mastiff bat, western red bat, western yellow bat, and San Diego desert woodrat. Impacts on a small amount of habitat for these species, relative to the availability of habitat in the region, are not expected to reduce the regional population below a self-sustaining level. Therefore, impacts would be considered adverse but would not represent a constraint to the project.

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## **OTHER CONSIDERATIONS**

### **Protected Trees**

The City of Los Angeles Municipal Code (LAMC, Article 6 Protected Tree and Shrub Regulations, Sections 46.00 to 46.06) provides for the protection of certain “protected” tree and shrubs, which include several Southern California indigenous species that measure at least four inches of cumulative trunk diameter, four and one-half feet above ground level. Species that are defined as protected species include all indigenous oak trees (*Quercus* spp., excluding scrub oak [*Quercus berberidifolia*]); southern California black walnut (*Juglans californica* var. *californica*); western sycamore (*Platanus racemosa*); California bay (*Umbellularia californica*); Mexican elderberry (*Sambucus mexicana*); and toyon (*Heteromeles arbutifolia*). No protected tree may be relocated or removed except as provided by the LAMC (Section 46.02), without a permit issued by the Board of Public Works. The term “removed” includes any act that will cause a protected tree or shrub to die, including but not limited to acts that inflict damage upon the root system or other parts of the tree by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the drip line area around the trunk.

While there are trees within the project work limits that may be protected under this ordinance, they may not be impacted because work would only occur on paved areas under the canopy. Protected shrubs are also present within the work limits and may require removal if avoidance is infeasible. If the protected trees or shrubs would be impacted by project activities, a removal permit from the City would be required.

### **Fish Passage**

In-stream structures and construction activities have the very low potential to disrupt fish passage permanently or temporarily in areas containing fish habitat. Neither special status species nor native fish species were observed in the on-site drainages during the plant and wildlife surveys in 2022. Fish habitat in the project area was seen to be relatively poor due to the limited amount of surface water present and the isolated nature of the drainages. Natural aboveground flow is limited to a distance of less than 1,000 feet. The drainages are isolated from downstream fish populations because they connect with the City of Los Angeles’ subsurface municipal separate storm sewer system (MS4). In addition, no special status fish species have been reported from the drainages in the survey area or in the project region (CDFW 2023b). Therefore, the project as designed is not expected to impact fish passage and would not likely effect fish passage even if fish were present.

### **Nesting Raptors**

Raptor species (i.e., birds of prey) have the potential to nest within mature trees in and adjacent to the survey area and their nests may be impacted by the project. If construction activities would occur during the raptor nesting season (i.e., generally February 1 to June 30), the loss of an active nest of any raptor species, including common raptor species, would be considered a violation of Sections 3503, 3503.5, and 3513 of the *California Fish and Game Code*.

### **Nesting Birds**

The Migratory Bird Treaty Act (MBTA) protects migratory birds and their nests and eggs, both common and special status. Bird species protected under the provisions of the MBTA are identified by the List of Migratory Birds (50 *Code of Federal Regulations* [CFR] §10.13, as amended). In addition, Section 3503 of the California Fish and Game Code makes it unlawful to take, possess, or destroy any bird’s nest or

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any bird's eggs. Further, any birds in the orders Falconiformes or Strigiformes (birds of prey, such as hawks, eagles, and owls) and their nests and eggs are protected under Section 3503.5 of the California Fish and Game Code. Section 3513 of the California Fish and Game Code prohibits the take and possession of any migratory nongame bird, as designated in the MBTA. Birds have the potential to nest in the project survey area, and their nests may be impacted by the project. The loss of an active bird nest, including common species, would be considered a violation of the MBTA and Fish and Game Code.

### **Roosting Bats**

Pallid bat, western red bat, and western yellow bat may forage and roost in mature trees or rocky outcrops in the survey area. Impacts on roosting individuals can be a potential constraint on development, depending on the size of the impacted population.

### **Noise**

During active construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and/or denning activities for a variety of wildlife species. Construction noise could deter wildlife from using habitat adjacent to construction. This impact would be considered adverse but would not represent a constraint on the project because a substantial amount of similar habitat is present in the vicinity where the animals may disperse. Following construction, noise levels would be the same as current conditions.

## **RECOMMENDATIONS**

This section includes a list of recommendations designed to reduce potential Project impacts on biological resources. These recommendations are not based on a California Environmental Quality Act (CEQA) significance determination and may or may not be reflected within CEQA Mitigation Measures. Impacts on biological resources found to be potentially significant under the CEQA will require implementation of Mitigation Measures designed to avoid, minimize, restore, and or recreate impacted resources in order to offset loss in biological resource values.

### **Recommendations**

Based on the proposed Project's biological resource impact analysis outlined above, recommendations designed to avoid or minimize these impacts are listed below. In general, reduction of the Project's disturbance area and/reduction of impacts on special status or otherwise protected biological resources to the maximum extent feasible is recommended.

#### **Recommendation No. 1**

If more than two years have elapsed since the previous rare plant survey was conducted, it is recommended that focused surveys be reconducted to ensure that the Project avoids impacts to rare plant species. Surveys should be conducted to confirm absence within the proposed Project's disturbance areas previously determined to have the potential to support special status plant species. Surveys should be conducted in accordance with current California Native Plant Society (CNPS) protocol and will occur during the appropriate time of year.

If survey results are positive, it is recommended that efforts are made to redesign the Project to avoid indirect impacts on rare plants. If not feasible, it is recommended that



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efforts are made to redesign the Project to avoid direct impacts on rare plants. If not feasible, it is recommended that efforts are made to redesign the Project to minimize the number of individuals or acreage of population(s) directly impacted. If impacts on rare plants are unavoidable, it is recommended to prepare and implement a Special Status Plant Species Restoration Plan to reduce impacts on the impacted plant species. If the impacted rare plant is a State or federally listed species, consultation with applicable resources agencies (CDFW and/or USFWS) is recommended to determine if permitting will be required. Permit conditions, if applicable, would provide additional measures to avoid and and/or minimize impacts on State and federally threatened and endangered wildlife species.

Recommendation No. 2

If more than two years have elapsed since the previously conducted focused wildlife surveys for least Bell's vireo or California gnatcatcher, it is recommended that focused protocol surveys be repeated to ensure that the Project avoids impacts to these species. All surveys should be conducted to confirm absence within proposed Project disturbance areas that may support these species. Surveys should be conducted in accordance with the approved CDFW or U.S. Fish and Wildlife Species (USFWS) protocol guidelines for each species.

If survey results are positive, it is recommended that efforts are made to redesign the Project to avoid indirect impacts on the impacted species. If not feasible, it is recommended that efforts are made to redesign the Project to avoid direct impacts on the impacted species. If not feasible, it is recommended that efforts are made to redesign the Project to minimize the number of individuals or acreage of occupied habitat directly impacted. If impacts are unavoidable, consultation with applicable resources agencies (CDFW and/or USFWS) is recommended to determine if permitting will be required. Permit conditions, if applicable, would provide additional measures to avoid and and/or minimize impacts on State and federally threatened and endangered wildlife species.

Recommendation No. 3

In an effort to reduce potential impacts on non-listed special status wildlife species, it is recommended that a qualified biologist monitor all vegetation removal and grading to ensure that incidental construction impacts on non-listed special status and common wildlife species are avoided or minimized. Where feasible, the biological monitor will attempt to ensure wildlife are not directly impacted. It is recommended that the Biologist employ salvage methods and relocate wildlife species that can be moved that would otherwise be destroyed or adversely affected by construction and/or site-preparation activities. If wildlife is in harm's way and has not moved on its own, the Biologist will attempt to scatter them away from the area.

Recommendation No. 4

To avoid unanticipated impacts on biological resources in the immediate area, it is recommended that the designated disturbance limits are visibly marked in the field to ensure that no inadvertent impacts occur outside the approved disturbance limits.

Recommendation No. 5

To avoid take of nesting birds or their eggs, in compliance with applicable State and federal laws pertaining to the protection of nesting birds, it is recommended that construction activities (including, but not limited to, staging and disturbances to native and nonnative vegetation, structures, and substrates) should occur outside of the avian breeding season, if feasible, which generally runs from February 1–August 31 (as early as January 1 for some raptors. “Take” means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (*California Fish and Game Code*, Section 86), and includes take of eggs or young resulting from disturbances that cause abandonment of active nests. Depending on the avian species present, a qualified Biologist may determine that a change in the breeding season dates is warranted.

If avoidance of the avian breeding season is not feasible, it is recommended that a qualified Biologist with experience in conducting breeding bird surveys should conduct weekly bird surveys beginning 30 days prior to the initiation of Project activities, to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 500 feet of the disturbance area. The surveys should continue on a weekly basis with the last survey being conducted no more than three days prior to the initiation of Project activities. If a protected native bird is found, it is recommended that the Project activities are delayed within 300 feet of on- and off-site suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, a qualified Biologist could continue the surveys in order to locate any nests. If an active nest is located, Project activities within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biologist, should be postponed until the nest is vacated; the juveniles have fledged; and there is no evidence of a second attempt at nesting. Flagging, stakes, or construction fencing should be used to demarcate the inside boundary of the buffer of 300 feet (or 500 feet) between the Project activities and the nest. Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area.

If the qualified biologist determines that a narrower buffer between the Project activities and observed active nests is warranted (based on species-specific information; ambient conditions and birds’ habituation to them; and the terrain, vegetation, and birds’ lines of sight between the Project activities and the nest and foraging areas), the modified buffer may be used.

It is recommended that the qualified biologist be present on site during all grubbing and clearing of vegetation to ensure that these activities remain within the Project footprint to minimize the likelihood that active nests are abandoned or fail due to Project activities.

Recommendation No. 6

To avoid and or minimize impacts on bats, it is recommended that a qualified biologist conduct a field survey no earlier than 20 days prior to any grading activity that would occur during the breeding season (i.e., April 1 through August 31) of native bat species that potentially utilize the site. This should be done to determine if active maternity roosts of special status bats (such as pallid bat) are present in the applicable habitats on the site (e.g., woodlands). If active roosts are found, construction within 200 feet should be postponed or halted until the roost is vacated and juveniles are self-sufficient, as determined by the biologist.

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Recommendation No. 7

In an effort to avoid or reduce impacts special status vegetation types, it is recommended that attempts are made to avoid direct impacts. If not feasible, it is recommended that efforts are made to redesign the Project to minimize the acreage of special status vegetation types directly impacted. If impacts on special status vegetation types are unavoidable, it is recommended to prepare and implement a Habitat Restoration Plan to restore impacted habitat areas or increase acreage elsewhere in the vicinity to reduce impacts on the special status vegetation types of the region. If the impacted special status vegetation types are considered jurisdictional under the Clean Water Act and/or Fish and Game Code, consultation with applicable resources agencies is recommended to determine if permitting will be required. Permit conditions, if applicable, would provide additional measures to avoid and and/or minimize impacts on impacted vegetation types within these jurisdictions.

Recommendation No. 8

To avoid or reduce impacts to protected trees (as defined by City of Los Angeles Municipal Code), it is recommended that all protected trees in the Project area are identified and direct impacts are avoided. If not feasible, it is recommended that efforts are made to redesign the Project to minimize the number of protected trees impacted. If impacts on protected trees are unavoidable, compliance with the City of Los Angeles Municipal Code requirements is recommended.


Recommendation No. 9


Prior to any fill of or alteration to jurisdictional drainages, wetlands, and/or associated riparian vegetation on the Project site, it is recommended that attempts are made to redesign the Project to avoid all direct impacts. If not feasible, it is recommended that efforts are made to minimize the acreage of impacted jurisdictional area. If impacts on jurisdictional areas are unavoidable, it is recommended to prepare and implement a Habitat Restoration Plan to create, enhance, and/or restore acreage to ensure that net habitat values are at least equal to those lost from Project implementation to reduce impacts on the jurisdictional features of the region. Consultation with applicable resources agencies is recommended to determine if permitting will be required. If required, it is recommended that the appropriate regulatory agency permits and/or agreements from the USACE, the CDFW, and the applicable RWQCB are obtained. Permit conditions, if applicable, would provide additional measures to avoid and and/or minimize impacts on impacted jurisdictional resources within these jurisdictions.

If you have any questions or comments, please contact Marc Blain at (626) 351-2000.

Sincerely,

**P S O M A S**

  
Jennifer Y. Marks  
Senior Project Manager

  
Marc T. Blain  
Senior Biologist

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- Enclosures: Exhibits 1–7  
Appendix A – Representative Photographs  
Appendix B – Focused Survey Reports
- California Gnatcatcher Protocol Survey Report
  - Least Bell’s Vireo Protocol Survey Report
  - California Red-legged Frog Protocol Survey Report

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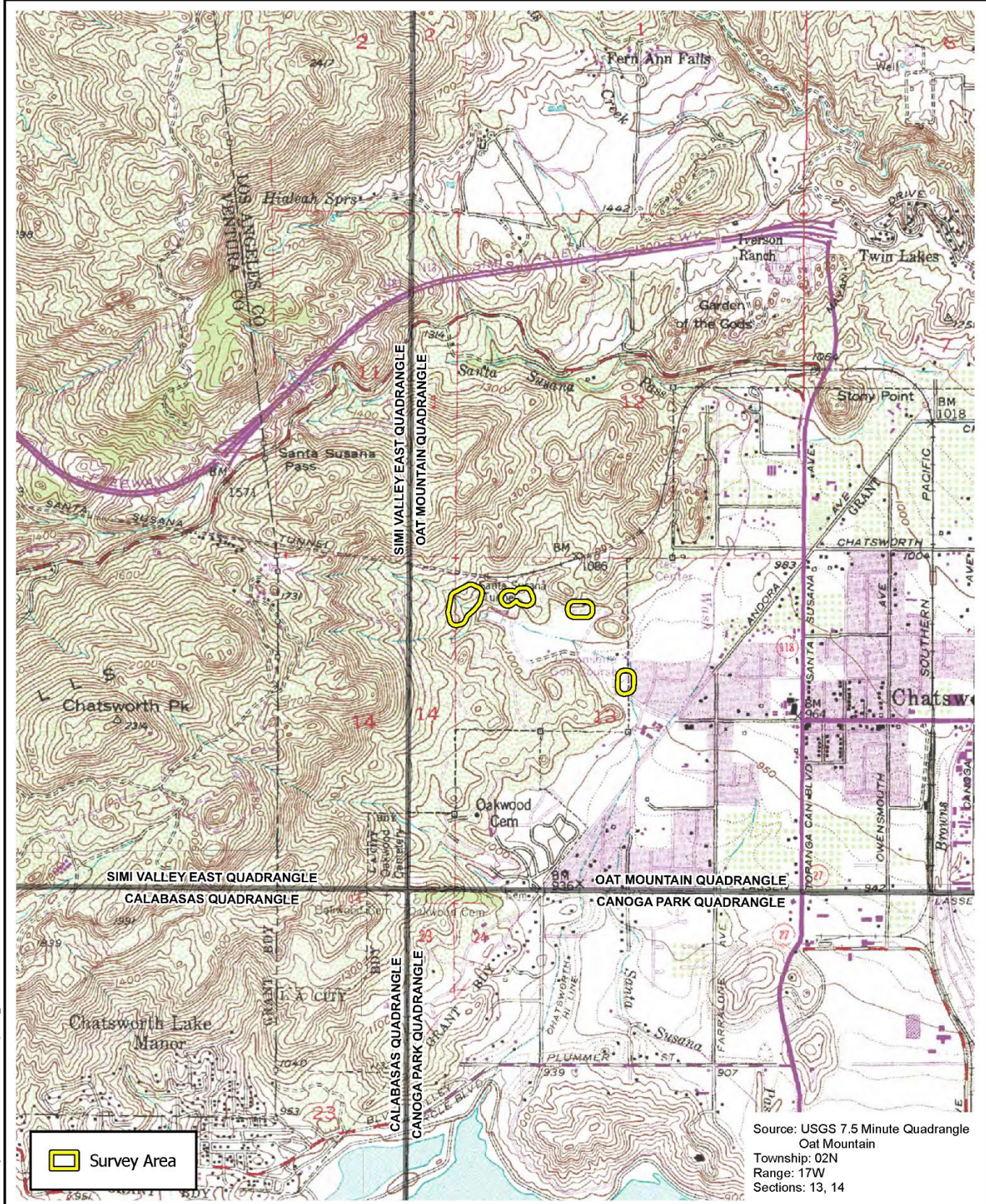
## Project Location

WVF No. 1 Stage 3 Improvements Project



## Exhibit 1





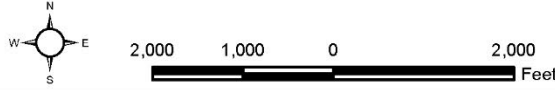
Source: USGS 7.5 Minute Quadrangle  
 Oat Mountain  
 Township: 02N  
 Range: 17W  
 Sections: 13, 14

 Survey Area

# USGS 7.5-Minute Digital Quadrangle

# Exhibit 2

WVF No. 1 Stage 3 Improvements Project



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**Survey Area**

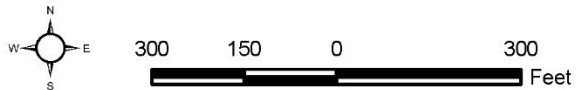
**Soil Types**

- 101 - Anacapa-Urban land complex, 0 to 2 percent slopes
- 126 - Rock outcrop-Gaviota complex, 30 to 75 percent slopes, warm MAAT, MLRA 20

Data Source: U.S. Department of Agriculture, Natural Resources Conservation Service  
Aerial Source: Nearmap, 2023

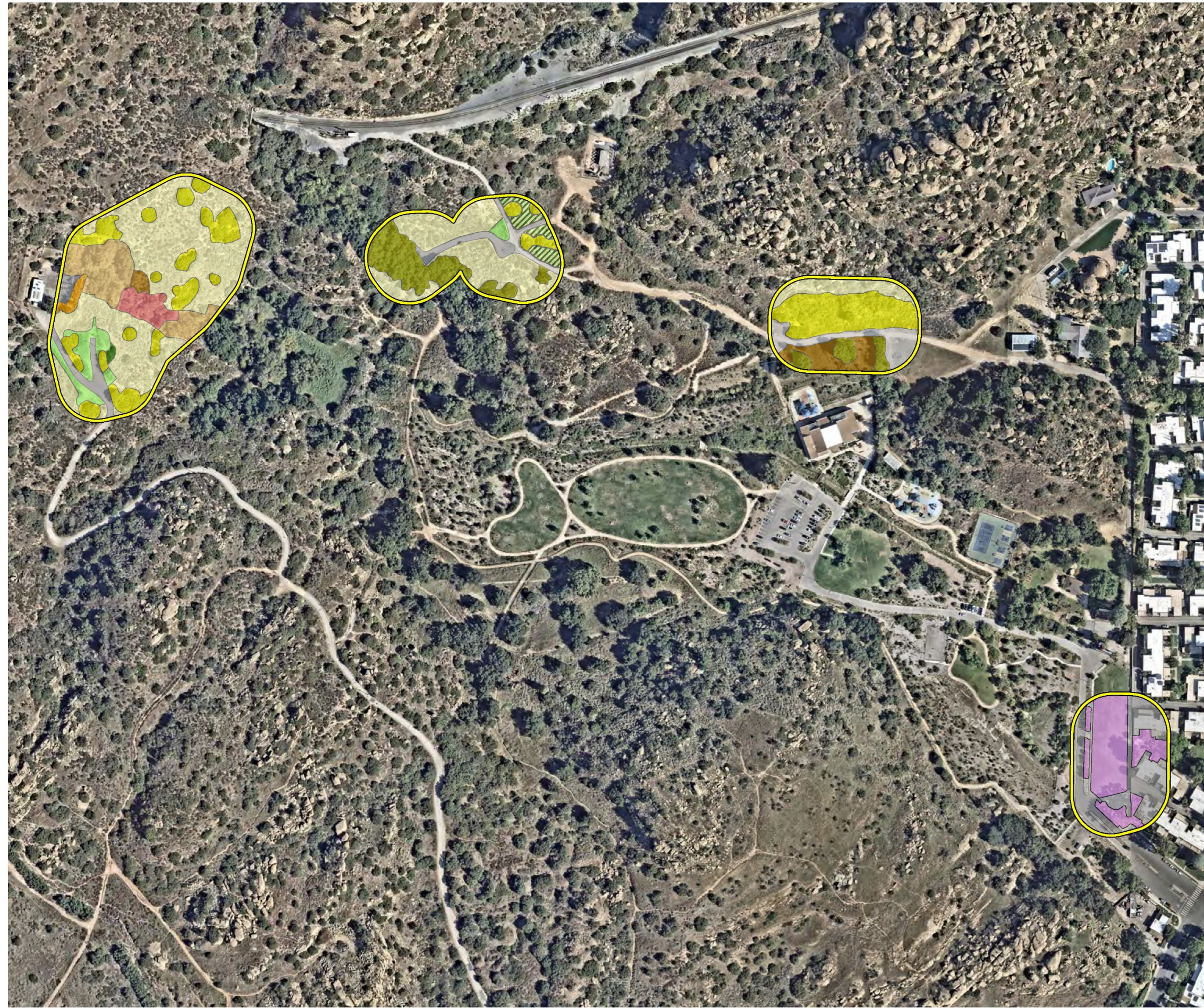
### Soil Types

WVF No. 1 Stage 3 Improvements Project

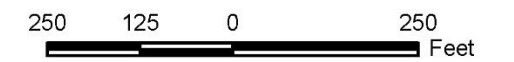
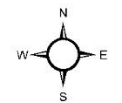


### Exhibit 3





- Survey Area
- Vegetation Types and Other Areas**
- California sagebrush–deerweed scrub
- California sagebrush–bush mallow scrub
- semi-natural herbaceous stand
- wild oats grassland
- bush mallow scrub
- laurel sumac scrub
- red willow/arroyo willow thicket
- coast live oak woodland
- coast live oak–California sycamore woodland
- eucalyptus grove
- disturbed
- developed
- ornamental



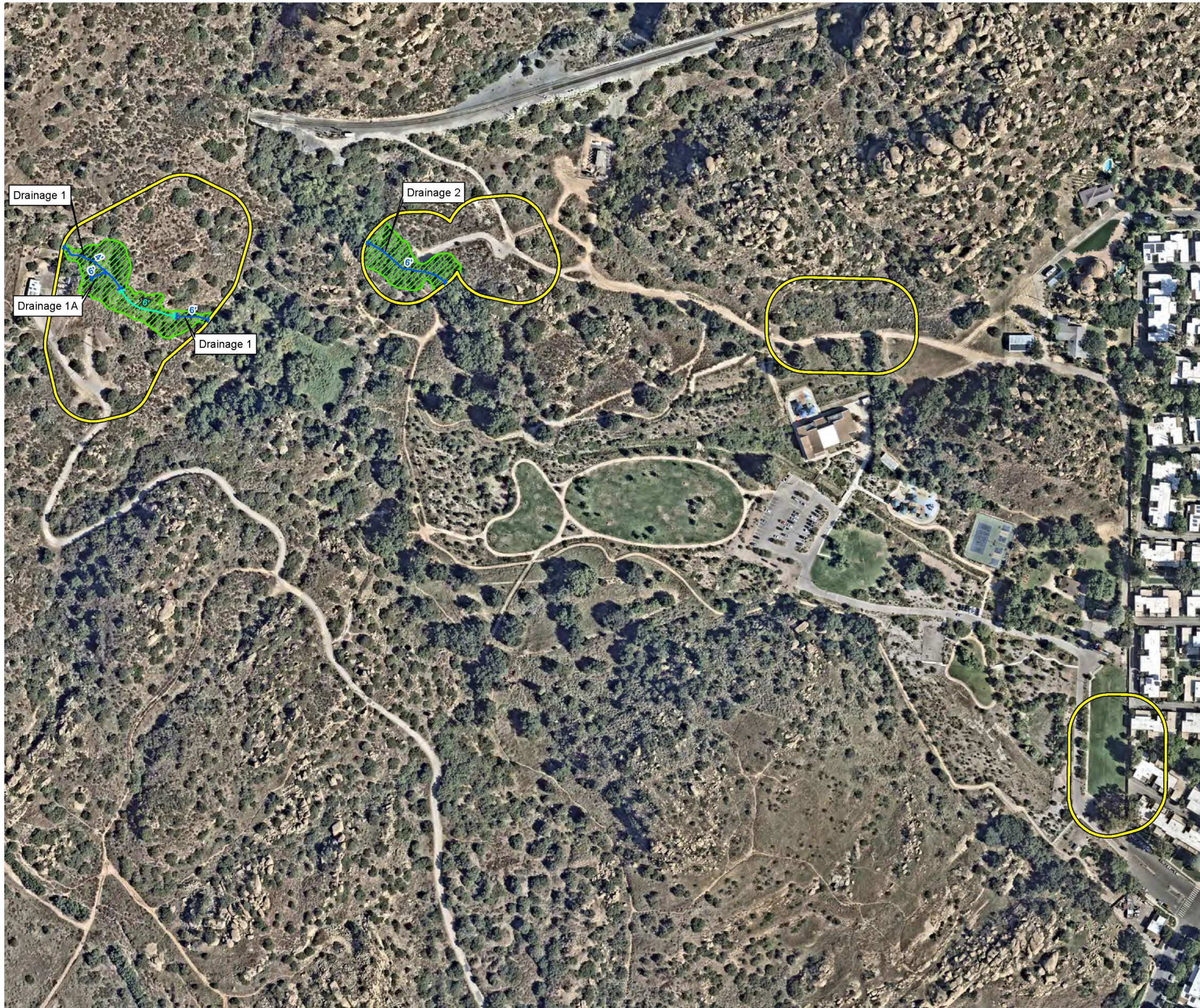
Aerial Source: Nearmap 09/2023

### Vegetation Types and Other Areas Exhibit 4

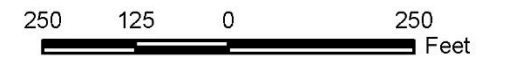
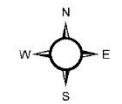
WVF No. 1 Stage 3 Improvements Project



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- Survey Area
- USACE/RWQCB Jurisdiction - non-wetland (width in feet)
- USACE/RWQCB Jurisdiction - wetland (width in feet)
- CDFW Jurisdiction



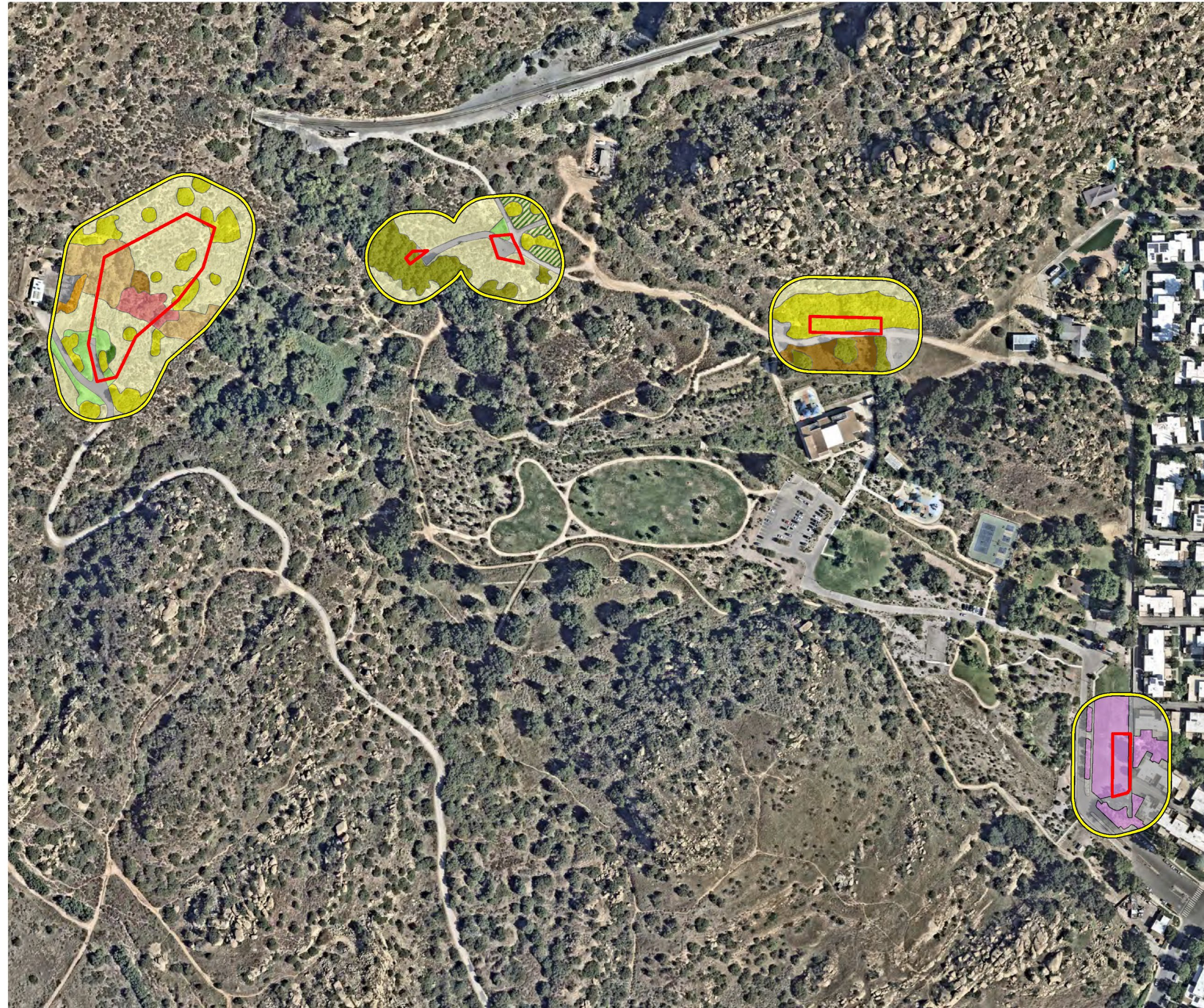
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


### Jurisdictional Resources Exhibit 5

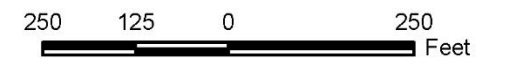
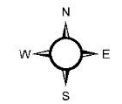
WV No. 1 Stage 3 Improvements Project



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-  Survey Area
-  Impact Areas
- Vegetation Types and Other Areas**
-  California sagebrush–deerweed scrub
-  California sagebrush–bush mallow scrub
-  semi-natural herbaceous stand
-  wild oats grassland
-  bush mallow scrub
-  laurel sumac scrub
-  red willow/arroyo willow thicket
-  coast live oak woodland
-  coast live oak–California sycamore woodland
-  eucalyptus grove
-  disturbed
-  developed
-  ornamental



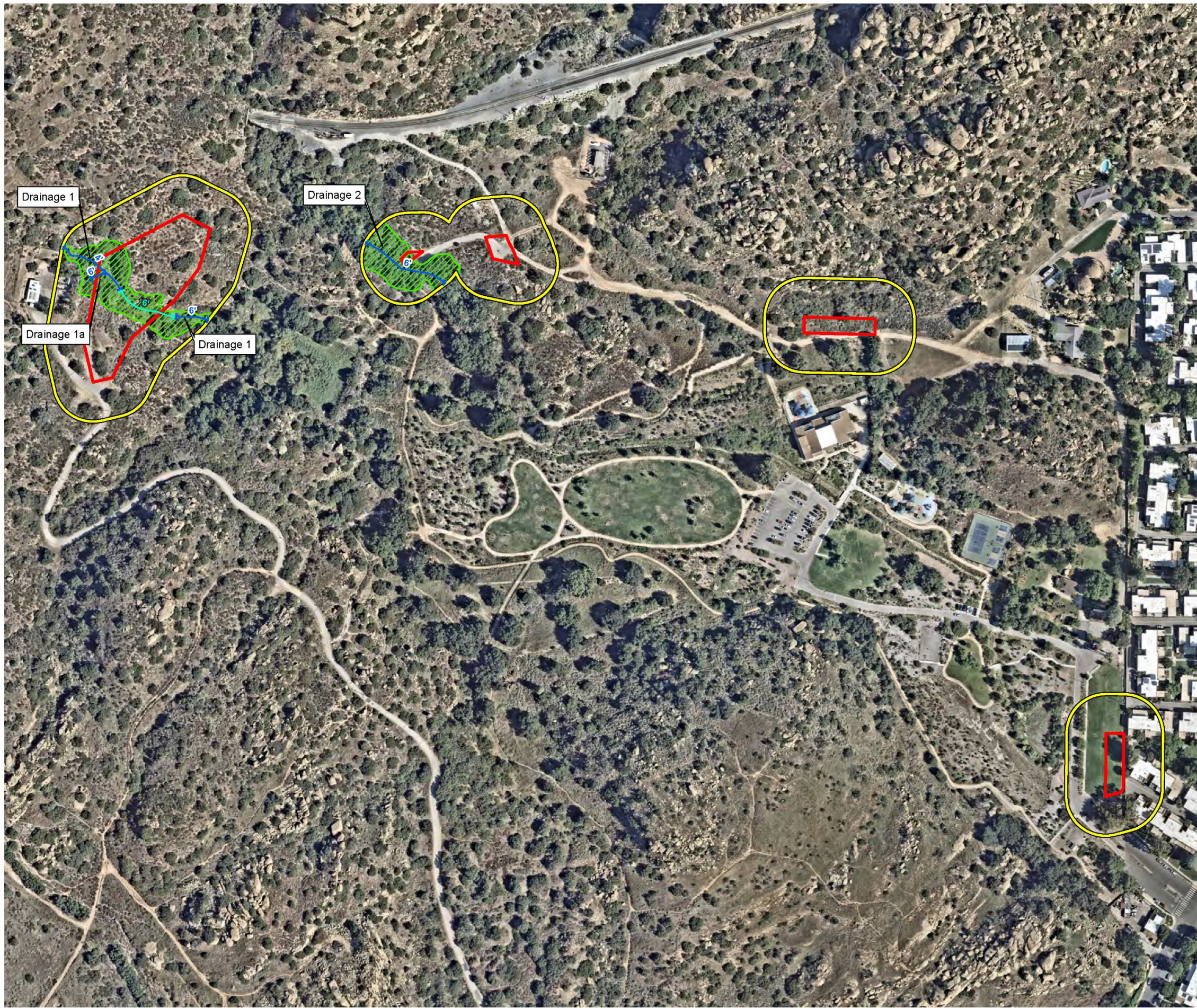
Aerial Source: Nearmap 09/2023






**Impacts to Vegetation Types and Other Areas**  
WVF No. 1 Stage 3 Improvements Project

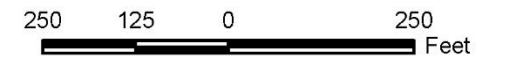
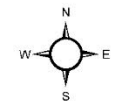
**Exhibit 6**



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-  Survey Area
-  Impact Areas
-  USACE/RWQCB Jurisdiction - non-wetland (width in feet)
-  USACE/RWQCB Jurisdiction - wetland (width in feet)
-  CDFW Jurisdiction



Aerial Source: Nearmap 09/2023

**Impacts to Jurisdictional Resources** **Exhibit 7**  
 WV No. 1 Stage 3 Improvements Project



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**APPENDIX A**  
**REPRESENTATIVE PHOTOGRAPHS**



California sagebrush–deerweed scrub in the western portion of the survey area.



California sagebrush–bush mallow scrub in the eastern portion of the survey area.

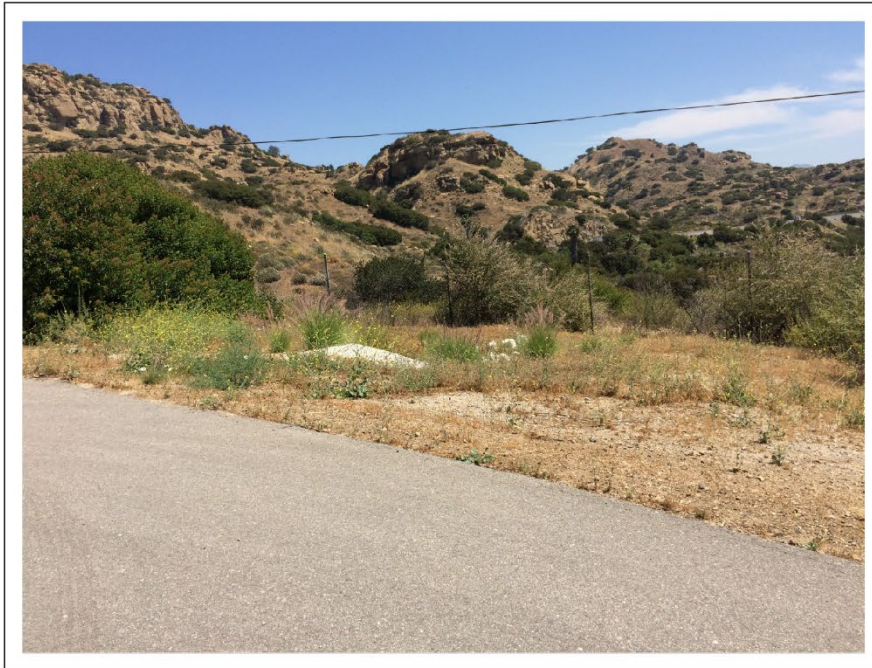
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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-1





Semi-natural herbaceous stand in the western portion of the survey area.



Laurel sumac scrub in the western portion of the survey area.

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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-2







Red willow/arroyo willow thicket in the western portion of the survey area.



Coast live oak–California sycamore woodland in the western portion of the survey area.

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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-3





Eucalyptus grove in the western portion of the survey area.



Disturbed area in eastern portion of the survey area.

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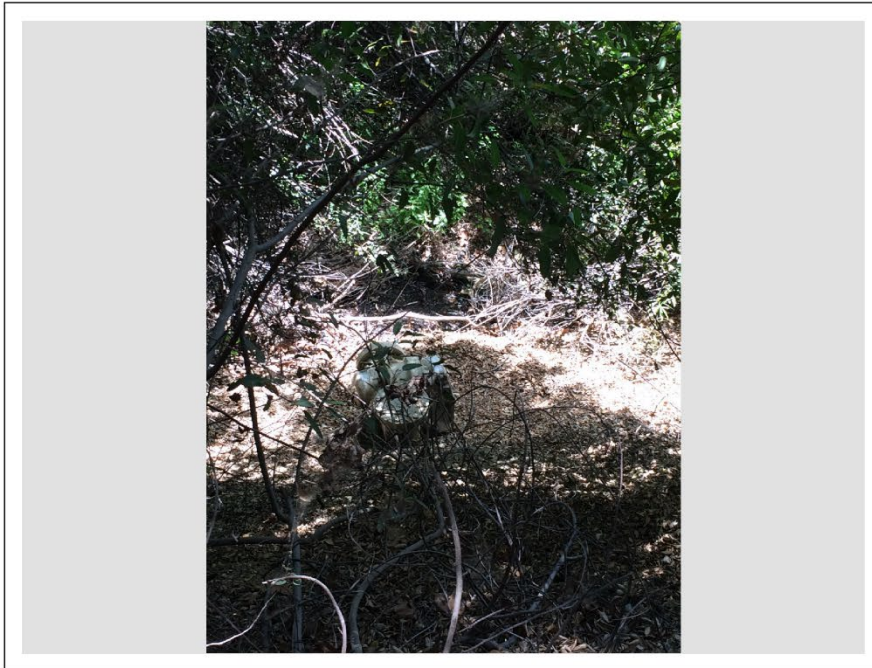
## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-4



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WWF1 STA 1416+33 existing blowoff (to be abandoned).



WWF1 STA 1407+45 existing blowoff.

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## Representative Photographs

*WWF No. 1 Stage 3 Improvements Project*

Attachment A-5





Along existing access trail to WWF1 STA 1415+42 proposed vault and pump well.



Contractor's laydown area in the western portion of the survey area.

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## Representative Photographs

*WWF No. 1 Stage 3 Improvements Project*

Attachment A-6



**APPENDIX B**  
**FOCUSED SURVEY REPORTS**

August 17, 2022

Mr. Chris Kofron  
Recovery Permit Coordinator  
U.S. Fish and Wildlife Service  
2493 Portola Road, Suite B  
Ventura, California 93003

**VIA EMAIL**  
**chris\_kofron@fws.gov**

**Subject:** Results of Focused Presence/Absence Surveys for the Coastal California Gnatcatcher for the Metropolitan Water District West Valley Feeder No. 1 Stage 3 Improvements Project in the City of Los Angeles, California

Dear Mr. Kofron:

This Letter Report presents the results of focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*) for the Metropolitan Water District West Valley Feeder No. 1 Stage 3 Improvements Project (hereinafter referred to as the “project site”) located in the City of Los Angeles in Los Angeles County, California. The purpose of the surveys was to determine the presence or absence of the coastal California gnatcatcher on or immediately adjacent to the project site. Surveys were conducted by Psomas Biologists who hold the necessary Federal Endangered Species Act (FESA) survey permit and were completed according to the guidelines established by the U.S. Fish and Wildlife Service (USFWS). Notification of the intent to conduct protocol-level surveys was submitted to the USFWS on May 11, 2022.

### **PROJECT DESCRIPTION AND LOCATION**

The project involves modification of the MWD WVF1 located northwest of Chatsworth Park South, in the City of Los Angeles. Proposed project actions include construction of an approximately 500-foot access road including a vehicle turnaround area and various modifications to existing facilities including valve relocation, equipment replacement, and reconstruction of valve structures. Additionally, the project proposes the installation of new manholes, concrete vaults, and retaining walls along the WVF1. Project impacts would include both temporary impacts in areas associated with construction access, staging, and laydown areas as well as permanent impacts associated with the proposed access road. Except for those areas where impacts would be confined to existing structures and the surrounding paved areas, all other impact areas occurring would be subject to some degree of earth disturbance.

The project site is in the western portion of the San Fernando Valley in the City of Los Angeles (Exhibit 1). Surrounding land uses include undeveloped open space in the Santa Susana Pass State Historic Park to the west and Chatsworth Park South to the east, with urban development farther to the east. The project site occurs on the U.S. Geological Survey’s (USGS’) Oat Mountain 7.5-minute quadrangle at Township 2 North, Range 17 West, Sections 13 and 14 (Exhibit 2). Topography in the survey area includes slopes and eastward-draining canyons; elevations range from approximately 1,010 feet above mean sea level (msl) in the east to 1,160 feet above msl in the west.

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August 17, 2022  
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Thirteen vegetation types and other areas occur on the project site (Exhibit 3). Vegetation categories include California sagebrush–deerweed scrub, California sagebrush–bush mallow scrub, semi-natural herbaceous stand, wild oats grassland, bush mallow scrub, bush mallow–laurel sumac scrub, laurel sumac scrub, red willow/arroyo willow thicket, coast live oak woodland, coast live oak–California sycamore woodland, eucalyptus grove, disturbed, and developed.

## **SURVEY AREA**

The coastal California gnatcatcher survey was conducted in all areas containing potentially suitable habitat (i.e., California sagebrush–deerweed scrub, and California sagebrush–bush mallow scrub) within the project site and within 500 feet of the project site. Photographs of representative habitat on the project site are provided in Attachment A.

## **BACKGROUND**

Recent taxonomic studies indicate that the California gnatcatcher consists of four subspecies that extend from southwestern California to southern Baja California, Mexico. The coastal California gnatcatcher, the northernmost gnatcatcher subspecies, is restricted to lowland areas from central Ventura County through Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties to the Baja California, Mexico border (Atwood and Lerman 2006; Mellink and Rea 1994). Previously, the coastal California gnatcatcher was common from the San Fernando Valley east along the base of the San Gabriel Mountains to Claremont (Atwood 1990). It is now rare in the northern part of its range, with a handful of sightings from Santa Clarita to Tujunga Wash, though a small population persists near Moorpark in Ventura County. The coastal California gnatcatcher has been recorded from sea level to approximately 3,000 feet above msl (USFWS 2003); however, more than 90 percent of gnatcatcher records are from elevations from sea level to 820 feet above msl along the coast (Atwood and Bolsinger 1992; MBA 1991) and between sea level and 1,800 feet above msl inland. USFWS estimates regarding the population size of the coastal California gnatcatcher in Southern California have been about 3,000 pairs (Atwood and Bontrager 2001).

The coastal California gnatcatcher typically occurs within coastal and inland sage scrub vegetation types. Sage scrub often occurs in a patchy distribution pattern throughout the gnatcatcher's range. Coastal California gnatcatchers also use chaparral, grassland, and riparian habitats that are near sage scrub. These non-sage scrub habitats are used for dispersal and foraging (Atwood et al. 1998; Campbell et al. 1998; USFWS 2003). Availability of these non-sage scrub areas is essential during certain times of the year, particularly during drought conditions or during dispersal, foraging, or nesting (USFWS 2003).

The coastal California gnatcatcher was designated as a Threatened species by the USFWS on March 25, 1993. A Special Rule was issued that would allow incidental take of coastal California gnatcatcher under Section 9 of the FESA if the take results from activities conducted in accordance with California's Natural Community Conservation Plan (NCCP) Act (USFWS 1993). For those not participating in the State's NCCP, any activity that may result in the take of coastal California gnatcatcher requires formal consultation with the USFWS under Sections 7 or 10 of the FESA.

On December 19, 2007, the USFWS published a Final Rule revising critical habitat for the coastal California gnatcatcher. The revised critical habitat designates 197,303 acres of land in San Diego, Orange, Riverside, San Bernardino, Los Angeles, and Ventura Counties as critical habitat for the coastal California gnatcatcher (USFWS 2007). The survey area is not located within the designated critical habitat for the coastal California gnatcatcher.

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**SURVEY METHODS**

The USFWS coastal California gnatcatcher survey protocol recommends six visits to all potentially occupied habitat areas for surveys conducted entirely within the breeding season, which extends from March 15 to June 30 (USFWS 1997a, 1997b). A total of six focused gnatcatcher surveys were conducted in the survey area with a team of two Biologists. The surveys followed USFWS guidelines for breeding season surveys and were conducted at least one week apart. All surveys were conducted during the morning hours, and no more than 80 acres of suitable habitat were surveyed per visit. Psomas Senior Biologist Lindsay Messett (USFWS Permit No. TE067064-5) and Psomas Senior Biologist Jonathan Aguayo (USFWS Permit No. TE96514A-3) conducted the focused survey visits. Surveys were conducted on May 25; and June 1, 9, 16, 23 and 30, 2022.

Weather conditions met the USFWS survey protocol requirements for optimal gnatcatcher detection. Weather conditions that were too cold (below 55 degrees Fahrenheit [°F]), too hot (above 95°F), or too windy (wind speed greater than 15 miles per hour) were avoided. Surveys were conducted by slowly walking through all appropriate habitats (i.e., coastal sage scrub) while listening and watching for gnatcatcher activity. A combination of taped recordings of gnatcatcher vocalizations and “pishing” sounds were used in an attempt to elicit responses from any gnatcatchers that might be present. The frequency of vocalization playback and “pishing” varied depending on conditions, such as habitat patch size and topography in each area. All bird species detected during the survey were recorded, including notable observations of special status birds or other wildlife species. All wildlife species detected during the surveys were recorded (Attachment B).

**TABLE 1  
 SUMMARY OF COASTAL CALIFORNIA GNATCATCHER SURVEY CONDITIONS**

<b>Survey Number</b>	<b>Date</b>	<b>Time (Start/End)</b>	<b>Surveyor</b>	<b>Temperature (°F) (Start/End)</b>	<b>Wind (mph) (Start/End)</b>	<b>Cloud Cover (%) (Start/End)</b>
1	May 26, 2022	8:30 AM–10:15 AM	Messett	73/80	0/1	Clear
2	June 2, 2022	9:25 AM–10:28 AM	Messett	72/78	3/5	25/Clear
3	June 9, 2022	6:48 AM–9:14 AM	Aguayo	64/72	2/3	Clear
4	June 16, 2022	7:28 AM–10:07 AM	Aguayo	69/77	1/2	Clear
5	June 23, 2022	6:13 AM–8:22 AM	Aguayo	71/77	4/2	40/10
6	June 30, 2022	8:08 AM–10:26 AM	Aguayo	72/81	4	Clear

°F: degrees Fahrenheit; mph: miles per hour; %: percent

**SURVEY RESULTS**

No coastal California gnatcatchers were observed or detected in the survey area during focused surveys. Photographs of representative habitat conditions on the project site are provided in Attachment A. All wildlife species detected during the surveys were recorded in field notes and are summarized in Attachment B.

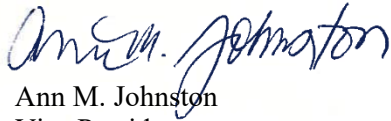


Mr. Chris Kofron  
August 17, 2022  
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Psomas appreciates the opportunity to assist on this Project. If you have any comments or questions, please contact Marc Blain at (626) 351-2000 or Marc.Blain@psomas.com.

Sincerely,

**P S O M A S**



Ann M. Johnston  
Vice President  
Resource Management



Marc T. Blain  
Senior Project Manager/Vice President  
Resource Management

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



Lindsay A. Messett, CWB®  
Senior Biologist  
(TE067064-5)



Jonathan Aguayo  
Senior Biologist  
(TE96514A-3)

Attachments: Exhibits 1, 2, and 3  
A – Site Photographs  
B – Wildlife Compendium

cc: Lilia Martinez, LiMartinez@mwdh2o.com

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 August 17, 2022  
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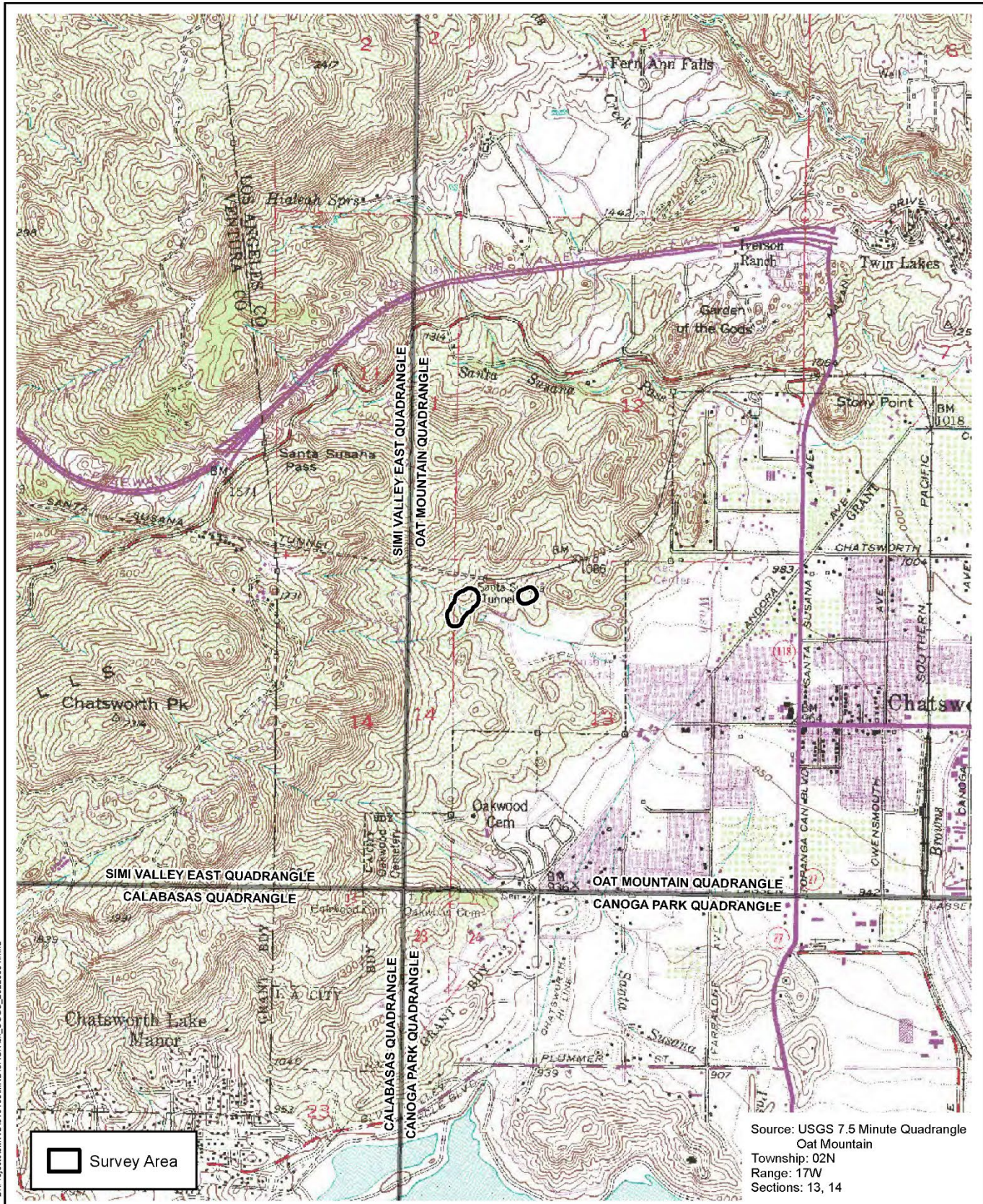
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## Project Location

## Exhibit 1

WVF No. 1 Stage 3 Improvements Project



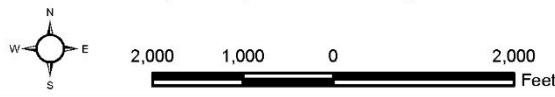


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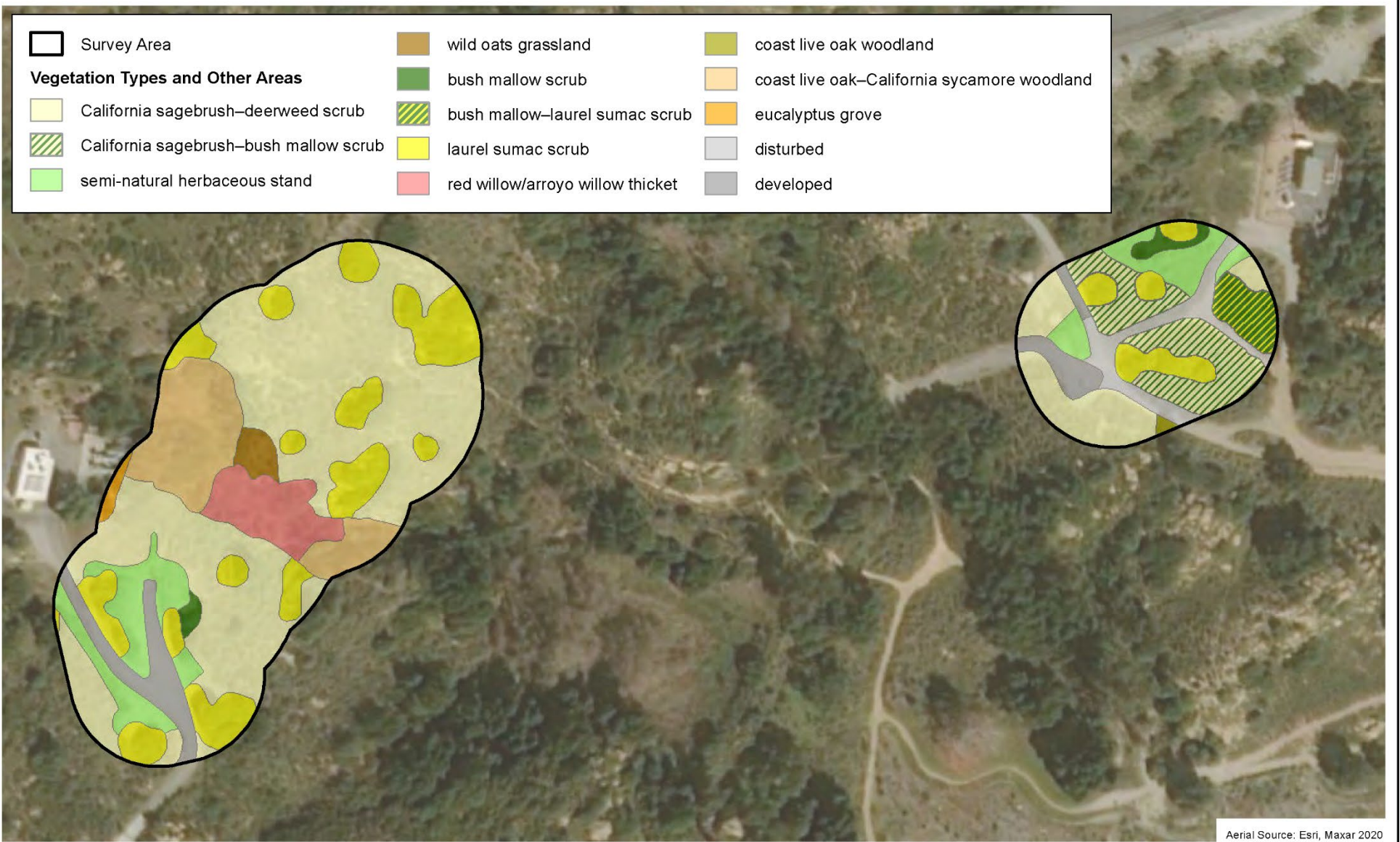
# USGS 7.5-Minute Digital Quadrangle

# Exhibit 2

WVF No. 1 Stage 3 Improvements Project



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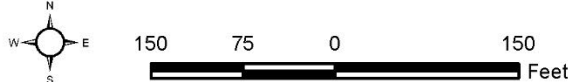


Aerial Source: Esri, Maxar 2020

### Biological Resources

### Exhibit 3

WVF No. 1 Stage 3 Improvements Project



**ATTACHMENT A**  
**SITE PHOTOGRAPHS**

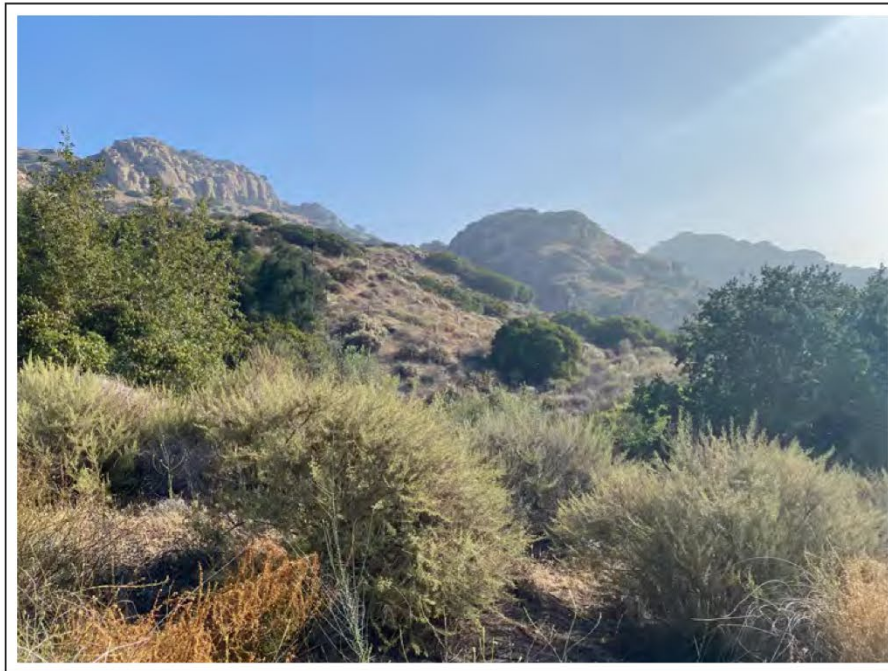


Photo 1 - June 9, 2022: View of potentially suitable habitat in the western portion of the project site, facing northeast. This area consists of California sagebrush–deerweed scrub and laurel sumac scrub dominated by laurel sumac, deerweed and California sagebrush.



Photo 2 - June 9, 2022: View of potentially suitable habitat in the middle portion of the project site, facing northwest. This area consists of California sagebrush–deerweed scrub dominated by deerweed and California sagebrush.

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## Site Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-1





Photo 3 - June 30, 2022: View of potentially suitable habitat in the southwestern portion of the project site, facing east. This area consists of California sagebrush–deerweed scrub dominated by deerweed, California buckwheat, and California sagebrush.



Photo 4 - June 30, 2022: View of potentially suitable habitat in the southeastern portion of the project site, facing west. This area consists of California sagebrush–deerweed scrub dominated by California sagebrush.

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## Site Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-2





**ATTACHMENT B**  
**WILDLIFE COMPENDIUM**

## WILDLIFE COMPENDIUM

Scientific Name	Common Name
<b>LIZARDS</b>	-
PHRYNOSOMATIDAE – SPINY LIZARD FAMILY	-
<i>Sceloporus occidentalis</i>	western fence lizard
<b>BIRDS</b>	-
ODONTOPHORIDAE – NEW WORLD QUAIL FAMILY	-
<i>Callipepla californica</i>	California quail
COLUMBIDAE – PIGEON AND DOVE FAMILY	-
<i>Streptopelia decaocto*</i>	Eurasian collared-dove
<i>Zenaida macroura</i>	mourning dove
APODIDAE – SWIFT FAMILY	-
<i>Aeronautes saxatalis</i>	white-throated swift
TROCHILIDAE – HUMMINGBIRD FAMILY	-
<i>Calypte anna</i>	Anna's hummingbird
<i>Selasphorus sasin</i>	Allen's hummingbird
ACCIPITRIDAE – HAWK FAMILY	-
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Buteo jamaicensis</i>	red-tailed hawk
PICIDAE – WOODPECKER FAMILY	-
<i>Melanerpes formicivorus</i>	acorn woodpecker
TYRANNIDAE – TYRANT FLYCATCHER FAMILY	-
<i>Empidonax difficilis</i>	Pacific-slope flycatcher
<i>Myiarchus cinerascens</i>	ash-throated flycatcher
CORVIDAE – JAY AND CROW FAMILY	-
<i>Aphelocoma californica</i>	California scrub-jay
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	common raven
PARIDAE – TITMOUSE FAMILY	-
<i>Baeolophus inornatus</i>	oak titmouse
AEGITHALIDAE – BUSHTIT FAMILY	-
<i>Psaltriparus minimus</i>	bushtit
SITTIDAE – NUTHATCH FAMILY	-
<i>Sitta carolinensis</i>	white-breasted nuthatch
TROGLODYTIDAE – WREN FAMILY	-
<i>Thryomanes bewickii</i>	Bewick's wren
POLIOPTILIDAE – GNATCATCHER FAMILY	-
<i>Polioptila caerulea</i>	blue-gray gnatcatcher
SYLVIIDAE – SILVIID WARBLERS FAMILY	-
<i>Chamaea fasciata</i>	wrentit
TURDIDAE – THRUSH FAMILY	-
<i>Turdus migratorius</i>	American robin
MIMIDAE – MOCKINGBIRD AND THRASHER FAMILY	-
<i>Toxostoma redivivum</i>	California thrasher
<i>Mimus polyglottos</i>	northern mockingbird

Scientific Name	Common Name
FRINGILLIDAE – FINCH FAMILY	-
<i>Haemorhous mexicanus</i>	house finch
<i>Spinus psaltria</i>	lesser goldfinch
PASSERELLIDAE – NEW WORLD SPARROW FAMILY	-
<i>Melospiza crissalis</i>	California towhee
<i>Pipilo maculatus</i>	spotted towhee
ICTERIDAE – BLACKBIRDS AND ORIOLES	-
<i>Icterus cucullatus</i>	hooded oriole
<i>Molothrus ater</i>	brown-headed cowbird
<b>MAMMALS</b>	-
SCIURIDAE – SQUIRREL FAMILY	-
<i>Otospermophilus beecheyi</i>	California ground squirrel
LEPORIDAE – HARE AND RABBIT FAMILY	-
<i>Sylvilagus audubonii</i>	desert cottontail

\* Non-native species

October 4, 2022

Mr. Chris Kofron  
Recovery Permit Coordinator  
U.S. Fish and Wildlife Service  
2493 Portola Road, Suite B  
Ventura, California 93003

VIA EMAIL  
chris\_kofron@fws.gov

Subject: Results of Least Bell's Vireo Focus Surveys for the Metropolitan Water District West Valley Feeder No. 1 Stage 3 Improvements Project, Los Angeles County, California

Dear Mr. Kofron:

This Letter Report presents the results of focused surveys to determine the presence or absence of the least Bell's vireo (*Vireo bellii pusillus*) for the Metropolitan Water District West Valley Feeder No. 1 Stage 3 Improvements Project (hereinafter referred to as the "proposed Project") located in Los Angeles County, California (Exhibit 1).

### PROJECT DESCRIPTION AND LOCATION

The Project involves modification of the MWD WVF1 located northwest of Chatsworth Park South, in the City of Los Angeles. Proposed Project actions include construction of an approximately 500-foot access road including a vehicle turnaround area and various modifications to existing facilities including valve relocation, equipment replacement, and reconstruction of valve structures. Additionally, the project proposes the installation of new manholes, concrete vaults, and retaining walls along the WVF1. Project impacts would include both temporary impacts in areas associated with construction access, staging, and laydown areas as well as permanent impacts associated with the proposed access road. Except for those areas where impacts would be confined to existing structures and the surrounding paved areas, all other impact areas occurring would be subject to some degree of earth disturbance.

The Project site is in the western portion of the San Fernando Valley in the City of Los Angeles (Exhibit 1). Surrounding land uses include undeveloped open space in the Santa Susana Pass State Historic Park to the west and Chatsworth Park South to the east, with urban development farther to the east. The Project site occurs on the U.S. Geological Survey's (USGS') Oat Mountain 7.5-minute quadrangle at Township 2 North, Range 17 West, Sections 13 and 14 (Exhibit 2). Topography in the survey area includes slopes and eastward-draining canyons; elevations range from approximately 1,010 feet above mean sea level (msl) in the east to 1,160 feet above msl in the west.

Thirteen vegetation types and other areas occur on the project site (Exhibit 3). Vegetation categories include California sagebrush–deerweed scrub, California sagebrush–bush mallow scrub, semi-natural herbaceous stand, wild oats grassland, bush mallow scrub, bush mallow–laurel sumac scrub, laurel sumac scrub, red willow/arroyo willow thicket, coast live oak woodland, coast live oak–California sycamore woodland, eucalyptus grove, disturbed, and developed.

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October 3, 2022  
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## SPECIES BACKGROUND

The least Bell's vireo was formerly more common and widespread but became rare and local summer resident of Southern California's lowland riparian woodlands (Grinnell and Miller 1944; Garrett and Dunn 1981). The substantial population decline over the latter half of the twentieth century is attributable to the loss and degradation of riparian habitats and brood parasitism by the brown headed cowbird (*Molothrus ater*). As a result, the least Bell's vireo was listed by the California Department of Fish and Game (CDFG) as Endangered on October 2, 1980, and by the USFWS as Endangered on May 2, 1986 (CDFG 2011)

Bell's vireo is a Neotropical migrant that breeds in central and southwestern North America from northern Mexico to Southern California, Nevada, and Utah; east to Louisiana; and north to North Dakota, Wisconsin, and Indiana in the central United States (AOU 1998). Although not well known, the winter range of the Bell's vireo is believed to be the western coast of Central America from southern Sonora south to northwestern Nicaragua, including the cape region of Baja California, Mexico (Brown 1993). Of the four Bell's vireo subspecies, only two breed in California: the least Bell's vireo and the Arizona Bell's vireo (*V. b. arizonae*), which breeds in the Colorado River Valley (Garrett and Dunn 1981; Rosenberg et al. 1991). Though the least Bell's vireo was formerly considered a common breeder in riparian habitats throughout the Central Valley and other low-elevation riverine systems in California and Baja California, Mexico (Franzreb 1989), presently, the least Bell's vireo has been eliminated from much of its historical range (Franzreb 1989; Brown 1993).

The breeding habitat of the least Bell's vireo is primarily riparian dominated by willows with dense understory vegetation; shrubs such as mule fat (*Baccharis salicifolia*) and California rose (*Rosa californica*) are often a component of the understory (Goldwasser 1981). The least Bell's vireo is often found in areas that include trees such as willow (*Salix* sp.), western sycamore (*Platanus racemosa*) or cottonwood (*Populus* sp.), particularly where the canopy is within or immediately adjacent to an understory layer of vegetation (Salata 1983). The least Bell's vireo generally nests in early successional stages of riparian habitats, with nest sites frequently located in willows that are between four and ten feet high (Franzreb 1989). The most critical factor in habitat structure is the presence of a dense understory shrub layer from approximately two to ten feet above ground (Goldwasser 1981; Salata 1983; Franzreb 1989).

The least Bell's vireo population has increased tenfold from 291 territories in the early 1980s to an estimated 2,968 territories 20 years later (USFWS 2006). After a decade or more of absence in Los Angeles County, the least Bell's vireo returned by the mid-1980s with a pair reported from Whittier Narrows in 1985 and 1986 (Long 1993). Numbers of least Bell's vireo have continued to increase since that time, and it is now known to occur at several other locations in Los Angeles County such as the San Fernando (Van Norman) Dam; the San Gabriel River at Fish Canyon and Van Tassel Canyon; the Sepulveda Basin Wildlife Area; and the Castaic Lagoon Recreation Area (CDFW 2022). The two largest populations in the county are at Hansen Dam in the northeastern corner of the San Fernando Valley where 44 least Bell's vireo territories were present in 2009 (Griffith Wildlife Biology 2009) and on the Santa Clara River from I-5 downstream to the Las Brisas Bridge where 56 least Bell's vireo territories were present in 2007 (Bloom Biological, Inc. 2007).

Mr. Chris Kofron  
 October 3, 2022  
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On February 2, 1994, the USFWS issued their final designation of Critical Habitat for the least Bell’s vireo (USFWS 1994), identifying approximately 37,560 acres as Critical Habitat in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. The survey area is not located in the designated Critical Habitat area for this species.

**SURVEY METHODS**

A total of eight surveys for the least Bell’s vireo were conducted on April 22; May 4, 16; June 6, 17, 28; and July 8, 18, 2022. Updated guidelines for least Bell’s vireo surveys were issued on April 8, 1999, and require that at least eight surveys be conducted from April 10 to July 31 with a ten-day interval between each site visit. All surveys followed the recommended USFWS guidelines and were conducted by Psomas Biologist Sarah Thomas. The riparian habitat (approximately 0.21-acre) was systematically surveyed by walking slowly and methodically wherever feasible depending on streambed bank slope (Exhibits 3 and 4). Any observations of least Bell’s vireo, including any pertinent behavior, would have been recorded and their locations mapped in the field. Surveys were conducted during the early morning hours and under optimal weather conditions for detection of birds. Survey dates, times, and weather data are shown in Table 1. Survey conditions and results were documented in field notes. An avian compendium recorded during these surveys is included in Attachment A.

**TABLE 1  
 SUMMARY OF SURVEY DATA AND CONDITIONS FOR  
 LEAST BELL’S VIREO SURVEYS**

Survey	Survey Date	Surveying Biologists	Start/End Time	Wind (miles/hour) Start	Wind (miles/hour) End	Tempe (°F) Start	Tempe (°F) End	Cloud Cover
1	4/22/2022	Thomas	0805/1015	1	1	62	69	95/75
2	5/4/2022	Thomas	0830/1000	1-2	1-2	68	73	50/Clear
3	5/16/2022	Thomas	0830/1030	2-3	1-2	67	75	Clear/Clear
4	6/6/2022	Thomas	0915/1100	1-2	1-2	70	76	25/10
5	6/17/2022	Thomas	0750/0930	0	0	63	63	100/100
6	6/28/2022	Thomas	0835/1040	1-2	1-2	79	90	25/Clear
7	7/8/2022	Thomas	0725/0910	0	1-2	66	71	Clear/Clear
8	7/18/2022	Thomas	0810/1000	1-2	1-2	76	82	50/25

**SURVEY RESULTS**

No least Bell’s vireo were detected during the surveys. Brown headed cowbirds (three males, two females) were observed approximately 200 feet southwest of the survey area<sup>1</sup> on April 22; May 4, 16; and June 17 and 28, 2022.

<sup>1</sup> UTM 11S 350757.44 mE, 3792409.75 mN.

Mr. Chris Kofron  
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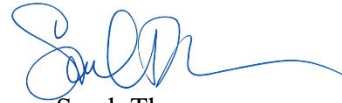
Psomas appreciates the opportunity to assist on this project. If you have any comments or questions, please call Marc Blain at (626) 351-2000.

Sincerely,

**P S O M A S**



Marc T. Blain  
Senior Project Manager



Sarah Thomas  
Biologist

Enclosures:    Exhibit 1 – Regional Location and Local Vicinity  
                    Exhibit 2 – USGS 7.5-Minute Digital Quadrangle  
                    Exhibit 3 – Vegetation Types and Other Areas  
                    Exhibit 4 – Survey Area  
                    Attachment A – Avian Compendium

Mr. Chris Kofron  
 October 3, 2022  
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**REFERENCES**

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October 3, 2022  
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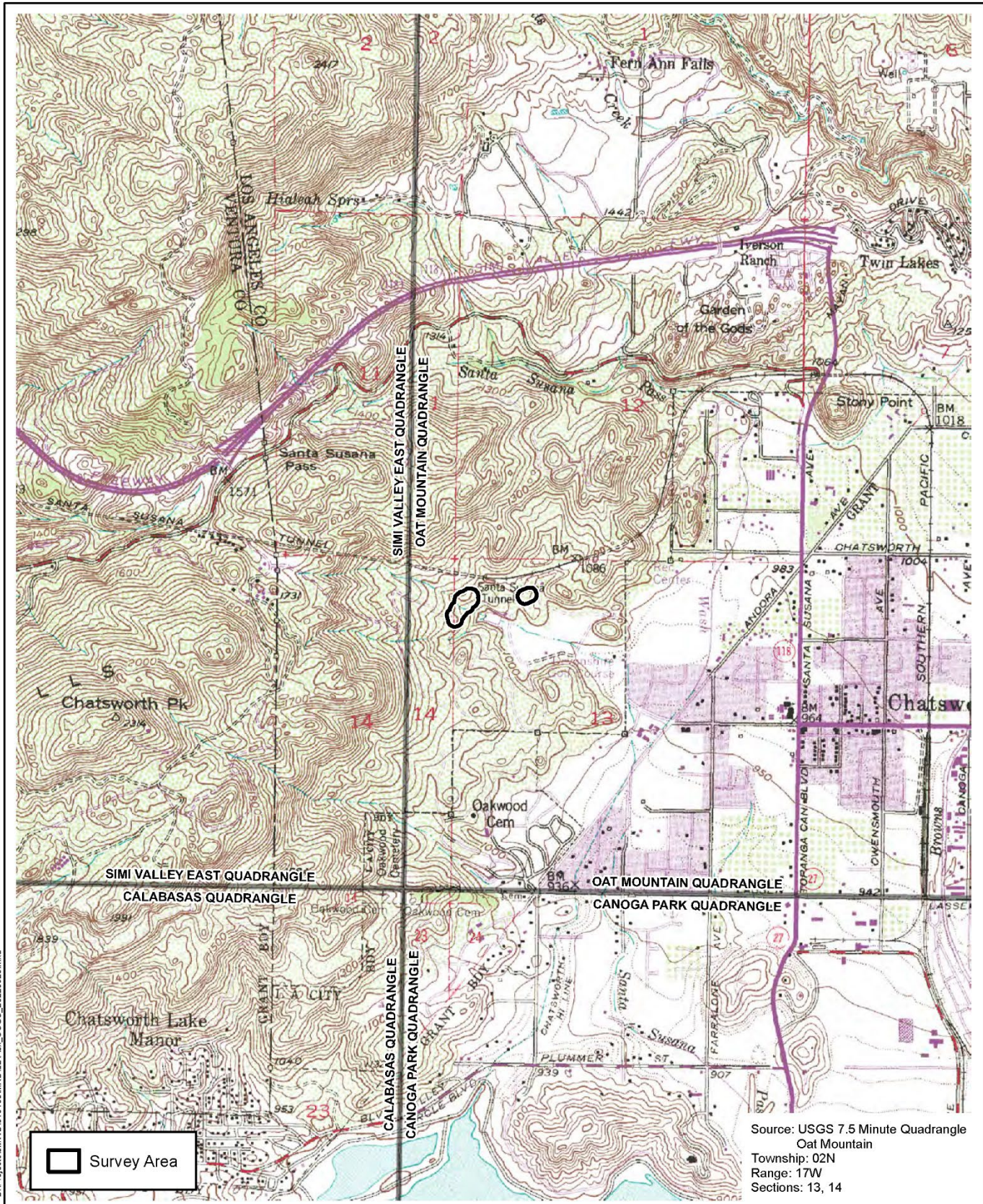
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## Project Location


## Exhibit 1

WVF No. 1 Stage 3 Improvements Project





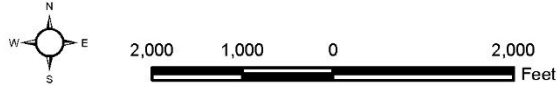
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 Oat Mountain  
 Township: 02N  
 Range: 17W  
 Sections: 13, 14

 Survey Area

# USGS 7.5-Minute Digital Quadrangle

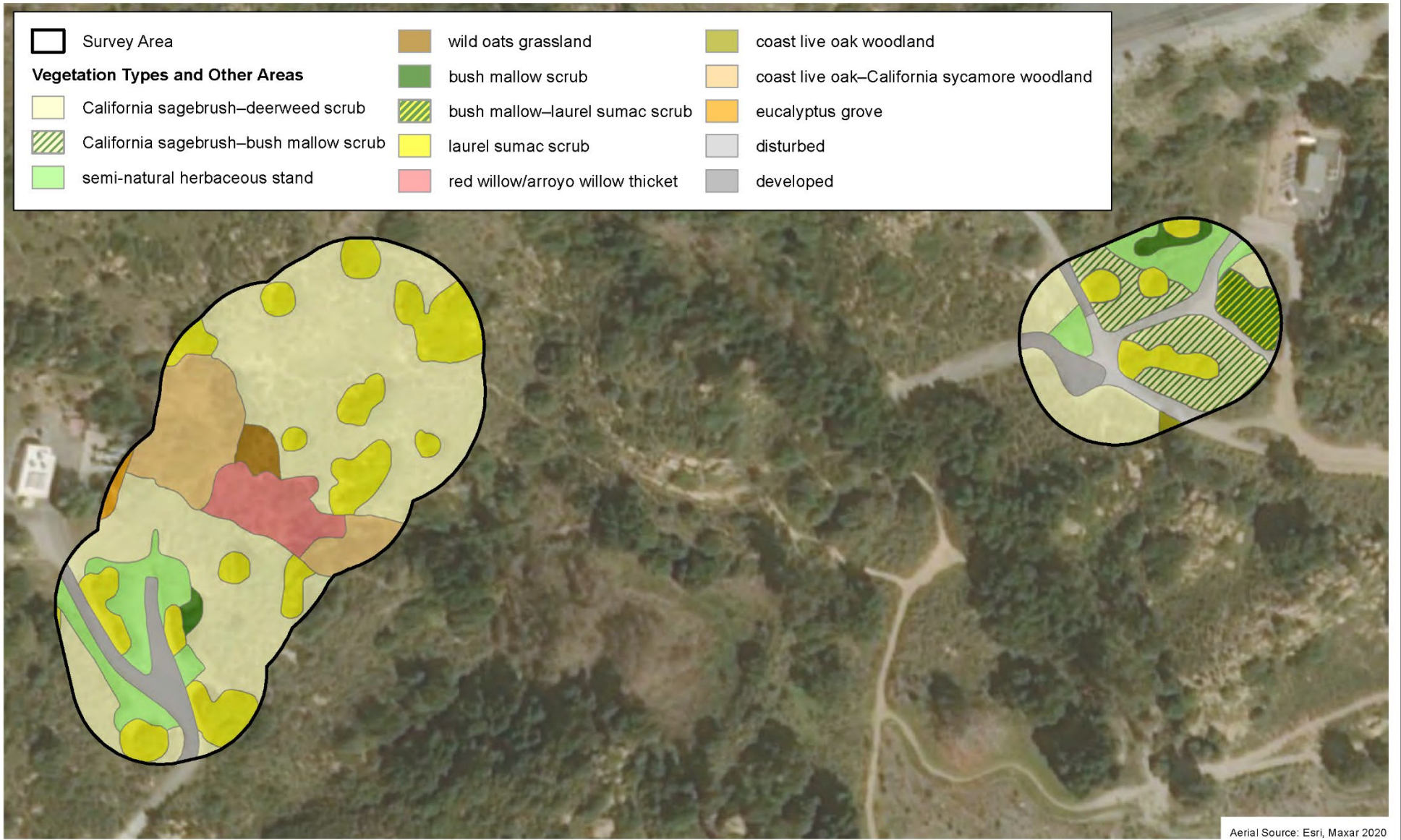
# Exhibit 2

WVF No. 1 Stage 3 Improvements Project



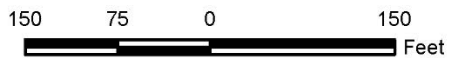
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### Vegetation Map and Other Areas

WVF No. 1 Stage 3 Improvements Project



### Exhibit 3



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Aerial Source: Esri, Maxar 2020

## Survey Area

*WWF No. 1 Stage 3 Improvements Project*



## Exhibit 4



**ATTACHMENT A**  
**AVIAN COMPENDIUM**

## AVIAN COMPENDIUM RECORDED DURING THESE SURVEYS

Scientific Name	Common Name
<b>BIRDS</b>	-
ODONTOPHORIDAE – NEW WORLD QUAIL FAMILY	-
<i>Callipepla californica</i>	California quail
COLUMBIDAE – PIGEON AND DOVE FAMILY	-
<i>Streptopelia decaocto</i> *	Eurasian collared-dove
<i>Zenaida macroura</i>	mourning dove
APODIDAE – SWIFT FAMILY	-
<i>Aeronautes saxatalis</i>	white-throated swift
TROCHILIDAE – HUMMINGBIRD FAMILY	-
<i>Calypte anna</i>	Anna's hummingbird
<i>Selasphorus sasin</i>	Allen's hummingbird
CATHARTIDAE – NEW WORLD VULTURE FAMILY	-
<i>Cathartes aura</i>	turkey vulture
ACCIPITRIDAE – HAWK FAMILY	-
<i>Buteo jamaicensis</i>	red-tailed hawk
PICIDAE – WOODPECKER FAMILY	-
<i>Melanerpes formicivorus</i>	acorn woodpecker
<i>Picoides nuttallii</i>	Nuttall's woodpecker
<i>Colaptes auratus</i>	northern flicker
TYRANNIDAE – TYRANT FLYCATCHER FAMILY	-
<i>Empidonax difficilis</i>	Pacific-slope flycatcher
<i>Sayornis nigricans</i>	black phoebe
<i>Myiarchus cinerascens</i>	ash-throated flycatcher
<i>Tyrannus vociferans</i>	Cassin's kingbird
CORVIDAE – JAY AND CROW FAMILY	-
<i>Aphelocoma californica</i>	California scrub-jay
<i>Corvus corax</i>	common raven
HIRUNDINIDAE – SWALLOW FAMILY	-
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow
<i>Hirundo rustica</i>	barn swallow
<i>Petrochelidon pyrrhonota</i>	cliff swallow
PARIDAE – TITMOUSE FAMILY	-
<i>Baeolophus inornatus</i>	oak titmouse
AEGITHALIDAE – BUSHTIT FAMILY	-
<i>Psaltriparus minimus</i>	Bushtit
TROGLODYTIDAE – WREN FAMILY	-
<i>Troglodytes aedon</i>	house wren
<i>Thryomanes bewickii</i>	Bewick's wren
POLIOPTILIDAE – GNATCATCHER FAMILY	-
<i>Poliioptila caerulea</i>	blue-gray gnatcatcher
SYLVIIDAE – SILVIID WARBLERS FAMILY	-
<i>Chamaea fasciata</i>	Wrentit

Scientific Name	Common Name
MIMIDAE – MOCKINGBIRD AND THRASHER FAMILY	-
<i>Toxostoma redivivum</i>	California thrasher
<i>Mimus polyglottos</i>	northern mockingbird
STURNIDAE – STARLING FAMILY	-
<i>Sturnus vulgaris</i> *	European starling*
PTILOGONATIDAE – SILKY-FLYCATCHER FAMILY	-
<i>Phainopepla nitens</i>	Phainopepla
FRINGILLIDAE – FINCH FAMILY	-
<i>Haemorhous mexicanus</i>	house finch
<i>Spinus psaltria</i>	lesser goldfinch
PASSERELLIDAE – NEW WORLD SPARROW FAMILY	-
<i>Junco hyemalis</i>	dark-eyed junco
<i>Melospiza melodia</i>	song sparrow
<i>Melospiza crissalis</i>	California towhee
<i>Pipilo maculatus</i>	spotted towhee
ICTERIDAE – BLACKBIRDS AND ORIOLES	-
<i>Icterus cucullatus</i>	hooded oriole
<i>Molothrus ater</i>	brown-headed cowbird

\* Non-native species



October 25, 2022

Lilia Martinez  
Environmental Specialist, Environmental Planning Section  
The Metropolitan Water District of Southern California  
700 North Alameda Street  
Los Angeles, California 90012

VIA EMAIL  
[LiMartinez@mwdh2o.com](mailto:LiMartinez@mwdh2o.com)

Subject: Results of 2022 Focused Surveys for the California red-legged frog (*Rana draytonii*) for the Metropolitan Water District of Southern California, West Valley Feeder No 1 Project, Los Angeles, California.

Dear Ms. Martinez:

This Letter Report presents the results of focused diurnal and nocturnal surveys to determine the presence or absence of the California red-legged frog (*Rana draytonii*), for the Metropolitan Water District (MWD) of Southern California, West Valley Feeder No 1 (WVF1) Project (hereinafter referred to as the “proposed project”) located in Los Angeles County, California (Exhibit 1). A qualified Biologist with the necessary experience and a California Department of Fish and Wildlife (CDFW) scientific collection permit conducted the surveys.

## PROJECT DESCRIPTION AND LOCATION

The project involves modification of the MWD WVF1 located approximately 1,500 feet northwest of Chatsworth Park South, in the City of Los Angeles. Proposed project actions include construction of an approximately 500-foot access road including a vehicle turnaround area and various modifications to existing facilities including valve relocation, equipment replacement, and reconstruction of valve structures. Additionally, the project proposes the installation of new manholes, concrete vaults, and retaining walls along the WVF1. Project impacts would include both temporary impacts in areas associated with construction access, staging, and laydown areas as well as permanent impacts associated with the proposed access road. Except for those areas where impacts would be confined to existing structures and the surrounding paved areas, all other impact areas occurring would be subject to some degree of earth disturbance.

The project site is in the western portion of the San Fernando Valley in the City of Los Angeles (Exhibit 1). Surrounding land uses include undeveloped open space in the Santa Susana Pass State Historic Park to the west and Chatsworth Park South to the east, with urban development farther to the east. A Metrolink railroad alignment is located immediately north of the site. The project site occurs on the U.S. Geological Survey’s (USGS’) Oat Mountain 7.5-minute quadrangle at Township 2 North, Range 17 West, Sections 13 and 14 (Exhibit 2). Topography in the survey area includes slopes and eastward-draining canyons; elevations range from approximately 1,010 feet above mean sea level (msl) in the east to 1,160 feet above msl in the west.

Representative site photos are included in Attachment A.

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## SPECIES BACKGROUND

### California Red-legged Frog

The California red-legged is federally Endangered species and a California Species of Special Concern. This frog has been extirpated from approximately 70 percent of its historic range (USFWS 2006a). At the time of listing, the red-legged frog (*Rana aurora*) comprised two subspecies, the California red-legged frog (*R. aurora draytonii*) and the northern red-legged frog (*R. aurora aurora*) until genetic studies (Shaffer et al. 2004) determined that *R. aurora* is actually two separate species, northern red-legged frog (*R. aurora*) and California red-legged frog (*R. draytonii*). The ranges of these two species overlap in Mendocino County. Only the California red-legged frog (*R. draytonii*) occurs within the project region.

The California red-legged frog ranges in size from 1.5 to 5.5 inches in length, making it the largest native frog in the western United States (Wright and Wright 1949). Adult females are significantly longer than males, with an average snout to vent length of 5.4 inches versus 4.5 inches for adult males (Hayes and Miyamoto 1984). The hind legs and lower abdomen of adult frogs are often characterized by a reddish or salmon pink color; and the back is brown, gray, olive, or reddish brown, marked with small black flecks and larger irregular dark blotches (USFWS 2002a; Stebbins 2018). Dorsal spots often have light centers and, in some individuals, form a network of black lines (Stebbins 2018). Dorsolateral folds are prominent. Tadpoles range in length from 0.6 to 3.2 inches, and are a dark brown or olive, marked with darker spots (Storer 1925).

This species is found in humid forests, woodlands, grasslands, streams, wetlands, ponds, and lakes from sea level to 8,000 feet msl (Stebbins 2018). Preferred breeding habitat includes deep ponds and slow-moving streams where emergent vegetation is found on the bank edges (Jennings and Hayes 1994a, Thomson et al. 2016). Although primarily aquatic, it has been recorded in damp terrestrial places up to 302 feet from water for up to 50 consecutive days (Tatarian 2008) using small mammal burrows and moist leaf litter as refugia during dry periods (Jennings and Hayes 1994b).

California red-legged frog adults tend to be primarily nocturnal, while juveniles can be active at any time of day (Hayes and Tennant 1985). Adults feed on a wide range of prey, having been recorded feeding on at least 42 different taxa in a single study (Hayes and Tennant 1985), the majority of which were terrestrial invertebrates but also included fish, other amphibians, and small rodents. The diet of red-legged frog tadpoles has not been studied but is expected to be similar to other ranid frogs that feed on algae, diatoms, and detritus by grazing the surface of rocks and vegetation (Kupferberg 1997).

During the breeding season, typically from November through April, males call to females from the margins of ponds and slow streams (Jennings and Hayes 1994a). Unlike northern red-legged frogs, which lack vocal sacs and call underwater, California red-legged frogs have paired vocal sacs and call above the water surface (Hayes and Krempels 1986), though vocalizations are relatively weak and difficult to detect. Actual mating most commonly occurs in March but can vary depending on seasonal climatic patterns. The female lays a jellylike mass of 2,000 to 5,000 reddish brown eggs attached to emergent vegetation, twigs, or other structures in still or slow-moving water. The resulting tadpoles typically require about 3 weeks to hatch and another 11 to 20 weeks to metamorphose into juvenile frogs. Metamorphosis typically occurs from July to September, although some tadpoles have been observed to delay metamorphosis until the following March or April (Bobzien et al. 2000; Fellers et al. 2001). Red-legged frogs typically reach sexual maturity approximately two years (for males) and three years (for females) from metamorphosis (Jennings and Hayes 1985).

On March 17, 2010, the USFWS published the Revised Critical Habitat for the California red-legged frog. The Revised Critical Habitat designated 1,636,609 acres of critical habitat for the arroyo toad in

Ms. Lilia Martinez

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27 counties in California; Southern California counties include Santa Barbara, Ventura, Los Angeles, and Riverside. The survey area is not located within designated or proposed Critical Habitat for this species.

The California red-legged frog occurred historically in The Santa Monica Mountains and the greater Los Angeles area in general. But since the early 1970s, this species had not been seen and in fact, this species was considered largely extirpated from these areas. In the early 2000's a population of California red-legged frog was found in Simi Hills and gave hope to a potential recovery effort. In 2014 that recovery effort was put into motion. The Santa Monica Mountains Conservancy, partnered with the National Parks Service, transferred approximately 950 eggs from the Simi Hills population to two undisclosed streams in the Santa Monica Mountains (Kuykendall 2014). In 2017 during a stream survey, researchers found 9 egg masses in the streams where the transplanted eggs were introduced in 2014 (Behrens 2017). More recently, night surveys of these reintroduction sites conducted post Woolsey fire resulted in a total of 28 adult California red-legged frog detections (Kuykendall 2014, Cholo 2019). These findings show evidence of a potentially successful reestablishment of California red-legged frogs in the Santa Monica Mountains.

## **SURVEY METHODS**

Surveys were completed in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog released in August 2005 (CDFW 2005). The protocol for California red-legged frog recommends a total of up to eight surveys conducted between January and September, with two daytime surveys and four nighttime surveys conducted during the breeding season, and one daytime and one nighttime survey conducted during the non-breeding season. Each survey must be conducted at least seven days apart, and the entire survey must be at least six weeks long. One survey should be conducted between February 25 and April 30, and at least one survey must be conducted between July 1 and September 30.

Psomas Senior Biologists Marc Blain, with the aid of Psomas Biologist Jack Underwood conducted the focused surveys in all potentially suitable habitat for California red-legged frog in the survey area. Consecutive diurnal and nocturnal surveys were conducted on April 28, June 17, and August 30, 2022, with two standalone nocturnal surveys being conducted on May 19, and June 24, 2022. Regarding the California red-legged frog protocol, the two day and four-night surveys conducted from April through June constituted the breeding season surveys; while the day and night survey on August 30, 2022, constituted the California red-legged frog non-breeding season survey.

The surveys included diurnal and nocturnal searches to determine the presence of eggs, tadpoles, and adults. Diurnal surveys were conducted from approximately 4:30 PM until dusk, and nocturnal surveys were conducted from one hour after dusk until approximately 10:00 PM. Surveys focused on detecting frogs by visual identification, listening for the advertising call of adult males, and checking potentially suitable breeding habitat for tadpoles and/or eggs. Biologists scanned pools for eggs, larvae, metamorphs, juveniles, and breeding and/or calling adults in potentially suitable breeding locations along the creek and for foraging individuals in the adjacent riparian and upland areas. Headlamps, flashlights, and binoculars were used to visually identify toads, frogs, and their larvae detected at night. Nocturnal surveys were conducted during appropriate environmental conditions conducive to the activity patterns of the California red-legged frog. Generally, these conditions are nighttime temperatures greater than 50 degrees Fahrenheit (°F) at dusk, with low winds (less than 10 miles per hour); nights with a full or nearly full moon were avoided. If any special status amphibians were found, the individual or population was documented, recorded with a Global Positioning System (GPS) unit, and mapped on an aerial photograph. Surveyor qualifications are presented in Attachment B of this Letter Report. California red-legged frog survey data sheets are provided in Attachment C. Survey dates, times, and weather data are shown in Table 1.

Ms. Lilia Martinez  
 October 25, 2022  
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**TABLE 1  
 SUMMARY OF SURVEY DATA AND CONDITIONS FOR CRLF SURVEYS**

Survey	Survey Date	Survey Type	Surveying Biologists	Start/End Time	Wind (mph) Start	Wind (mph) End	Temp Start (°F)	Temp End (°F)	Cloud Cover (%)
1	4/28/2022	Diurnal	Blain; Underwood	6:20 PM–7:30 PM	3-4	1-2	63	60	0
2	4/28/2022	Nocturnal	Blain; Underwood	7:45 PM–9:04 PM	1-2	0-1	60	57	0
3	5/19/2022	Nocturnal	Blain	7:30 PM–9:45 PM	1-2	0–1	61	57	25
4	6/17/2022	Diurnal	Blain	4:25 PM–6:15 PM	5-6	5-6	75	73	50
5	6/17/2022	Nocturnal	Blain	7:25 PM–10:15 PM	4	3	66	63	0
6	6/24/2022	Nocturnal	Blain	8:00 PM–10:20 PM	2–3	1–2	83	74	0
7	8/30/2022	Diurnal	Blain	5:20 PM–6:40 PM	4-5	3–4	95	90	0
8	8/30/2022	Nocturnal	Blain	8:10 PM–9:40 PM	3	2	85	81	0

°F: degrees Fahrenheit; mph: miles per hour; %: percent

**SURVEY RESULTS**


No California red-legged frogs were detected during the surveys. No special status species were observed during any of the surveys.


One amphibian species was detected during surveys, the northern pacific tree frog (*Pseudacris regilla*). A complete list of all wildlife species detected during the surveys is provided in Attachment D.

Psomas appreciates the opportunity to assist on this project. If you have any comments or questions, please call Marc Blain at (626) 351-2000.

Sincerely,

**P S O M A S**

  
 Jennifer Y. Marks  
 Senior Project Manager

  
 Marc T. Blain  
 Senior Biologist

- Enclosures: Exhibits 1–2  
 Attachment A – Site Photographs  
 Attachment B – Surveyor Qualifications  
 Attachment C – California Red-Legged Frog Survey Data Sheets  
 Attachment D – Wildlife Compendium

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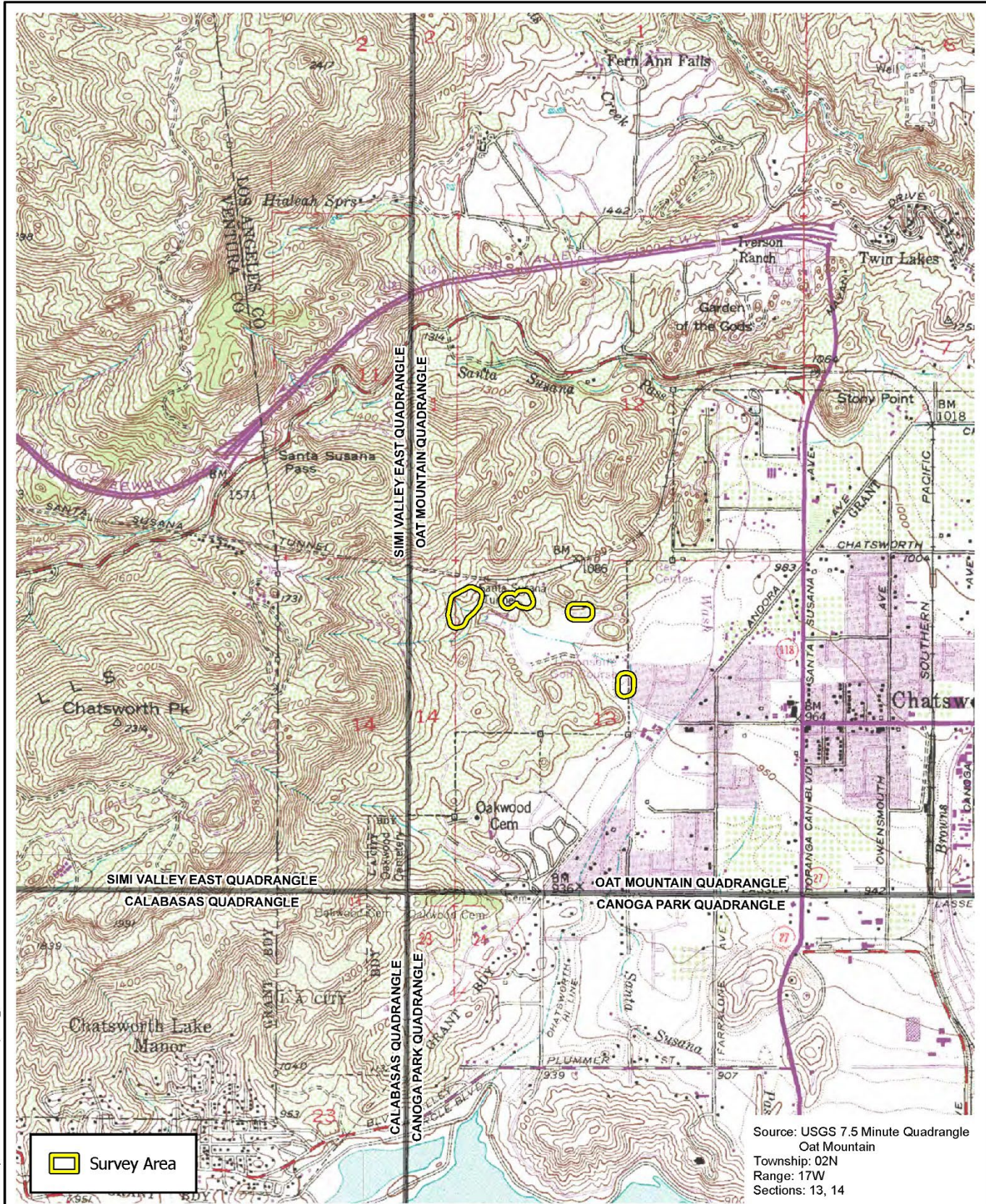
## Project Location

WVF No. 1 Stage 3 Improvements Project



## Exhibit 1





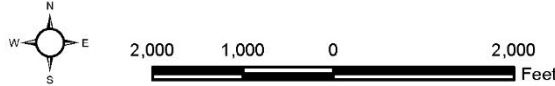
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 Oat Mountain  
 Township: 02N  
 Range: 17W  
 Sections: 13, 14

 Survey Area

# USGS 7.5-Minute Digital Quadrangle

# Exhibit 2

WVF No. 1 Stage 3 Improvements Project



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**ATTACHMENT A**  
**SITE PHOTOGRAPHS**



California sagebrush–deerweed scrub in the western portion of the survey area.



California sagebrush–bush mallow scrub in the eastern portion of the survey area.

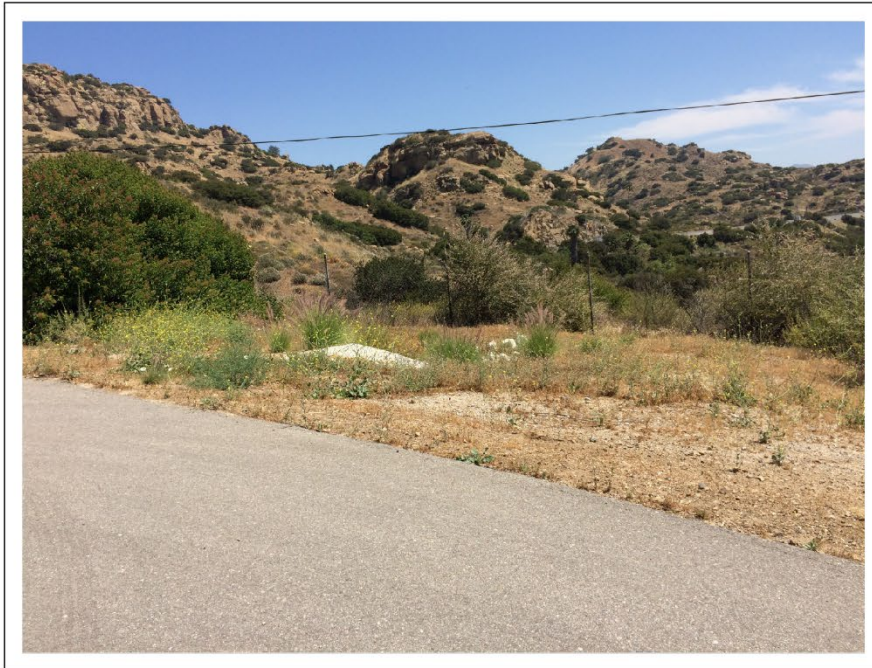
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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-1





Semi-natural herbaceous stand in the western portion of the survey area.



Laurel sumac scrub in the western portion of the survey area.

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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-2





Red willow/arroyo willow thicket in the western portion of the survey area.



Coast live oak–California sycamore woodland in the western portion of the survey area.

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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-3





Eucalyptus grove in the western portion of the survey area.



Disturbed area in eastern portion of the survey area.

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## Representative Photographs

*WVF No. 1 Stage 3 Improvements Project*

Attachment A-4



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WWF1 STA 1416+33 existing blowoff (to be abandoned).



WWF1 STA 1407+45 existing blowoff.

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## Representative Photographs

*WWF No. 1 Stage 3 Improvements Project*

Attachment A-5





Along existing access trail to WWF1 STA 1415+42 proposed vault and pump well.



Contractor's laydown area in the western portion of the survey area.

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## Representative Photographs

*WWF No. 1 Stage 3 Improvements Project*

Attachment A-6



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**ATTACHMENT B**  
**SURVEYOR QUALICATIONS**



**ATTACHMENT C**

**CALIFORNIA RED-LEGGED FROG SURVEY DATA SHEETS**

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(FWS Field Office) (date) (biologist)

Date of Survey: 04/28/2022 Survey Biologist: Blain, Marc  
(mm/dd/yyyy) (Last name) (first name)  
Survey Biologist: Underwood, Jack  
(Last name) (first name)

Site Location: LA County; Chatsworth; 34°15'42.3"N 118°37'21.2"W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

map within report

Proposed project name: MWD West Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF stub out point.

Type of Survey (circle one): DAY NIGHT BREEDING NON-BREEDING  
Survey number (circle one): 1 2 3 4 5 6 7 8  
Begin Time: 6:20 PM End Time: 7:30 PM  
Cloud cover: 0% Precipitation: 0  
Air Temperature: 63° F Water Temperature: 66° F  
Wind Speed: 2-3 MPH Visibility Conditions: Clear  
Moon phase: waning crescent Humidity: 66%

Description of weather conditions: Weather was clear with no clouds over head.

Brand name and model of light used to conduct surveys: Bercof - Rechargeable, zoomable tactical flashlight. Adjustable to water torch mode & candle mode.  
Were binoculars used for the surveys (circle one)? YES NO  
Brand, model, and power of binoculars: Mikon Monatch M7 8x42 8.3°

**Appendix E.**  
**California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: None observed.

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Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(FWS Field Office) (date) (biologist)

Date of Survey: 4/28/2022  
(mm/dd/yyyy)

Survey Biologist: Blain Marc  
(Last name) (first name)

Survey Biologist: Underwood Jack  
(Last name) (first name)

Site Location: LA County; Chatsworth; 34° 15' 42.3" N 118° 37' 21.2" W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD West Valley Feeder (WVF)  
 Brief description of proposed action:  
Road way access improvements & additions for WVF  
STUB OUT POINT.

Type of Survey (circle one): DAY NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 2 3 4 5 6 7 8

Begin Time: 7:45 PM End Time: 9:04 PM

Cloud cover: 0% Precipitation: 0%

Air Temperature: 60°F Water Temperature: 66°F

Wind Speed: 1-2 MPH Visibility Conditions: Clear

Moon phase: waning crescent Humidity: 70%

Description of weather conditions: weather was clear with no precipitation.

Brand name and model of light used to conduct surveys: Hercal - Rechargeable, zoomable, tactical flashlight. Adjustable to under 100,000 candle watts.

Were binoculars used for the surveys (circle one)? YES NO

Brand, model, and power of binoculars: Nikon Monarch M7 8x42 8.3°

**Appendix E.**  
**California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Northern Pacific Treefrog	N/A	H	adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: None observed

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Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(FWS Field Office) (date) (biologist)

Date of Survey: 05/19/2022 Survey Biologist: Blain MaRC  
(mm/dd/yyyy) (Last name) (first name)  
Survey Biologist: \_\_\_\_\_  
(Last name) (first name)

Site Location: LA County, Chatsworth, 34° 15' 42.3" N 118° 37' 21.2 W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD West Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF  
STUB OUT POINT.

Type of Survey (circle one): DAY NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 2 3 4 5 6 7 8

Begin Time: 7:30 PM End Time: 9:45 PM

Cloud cover: 25% Precipitation: 0

Air Temperature: 61° F Water Temperature: 66° F

Wind Speed: 1-2 MPH Visibility Conditions: Relatively clear

Moon phase: waning Gibbous Humidity: 81%

Description of weather conditions: weather was relatively clear with  
NO precipitation.

Brand name and model of light used to conduct surveys: Beacon - Rechargeable, zoomable, tactical  
Flashlight, adjustable to under 100,000 candle watts.

Were binoculars used for the surveys (circle one)? YES NO

Brand, model, and power of binoculars: Nikon Monarch M7 8x42 8.3°

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Northern Pacific Treefrog	1	0 3 H	adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NONE OBSERVED

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Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(RWS Field Office) (date) (biologist)

Date of Survey: 06/17/2022 Survey Biologist: Blain Marc  
(mm/dd/yyyy) (Last name) (first name)  
Survey Biologist: \_\_\_\_\_  
(Last name) (first name)

Site Location: LA COUNTY; Chatsworth 34° 15' 42.3" N 118° 37' 21.2" W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD WEST Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF  
STUB OUT POINT.

Type of Survey (circle one): DAY NIGHT BREEDING NON-BREEDING  
Survey number (circle one): 1 2 3 4 5 6 7 8  
Begin Time: 4:25 PM End Time: 6:15 PM  
Cloud cover: 50% Precipitation: 0%  
Air Temperature: 75° F Water Temperature: 66° F  
Wind Speed: 5-6 MPH Visibility Conditions: clear  
Moon phase: Waning gibbous Humidity: 57%

Description of weather conditions: Weather conditions were relatively clear with no precipitation

Brand name and model of light used to conduct surveys: Boreal - Rechargeable, Zoomable, Tactical Flashlight. Adjustable to under 10, 20, 40, 60 candle watts.

Were binoculars used for the surveys (circle one)? YES NO  
Brand, model, and power of binoculars: Nikon Monarch M7 8X42 8.3°



**Appendix E.**  
**California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: NONE observed

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Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(RWS Field Office) (date) (biologist)

Date of Survey: 06/17/2022 Survey Biologist: Blain Maic  
(mm/dd/yyyy) (Last name) (first name)

Survey Biologist: \_\_\_\_\_  
(Last name) (first name)

Site Location: LA County; Chatsworth; 34° 15' 42.3" N 118° 37' 21.2" W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD West Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF  
STUB OUT POINT.

Type of Survey (circle one): DAY  NIGHT  BREEDING  NON-BREEDING

Survey number (circle one): 1 2 3 4  5 6 7 8

Begin Time: 7:25 PM

End Time: 10:15 PM

Cloud cover: 0%

Precipitation: 0%

Air Temperature: 66°F

Water Temperature: 66°F

Wind Speed: 3-4 MPH

Visibility Conditions: clear

Moon phase: waning gibbous

Humidity: 73%

Description of weather conditions: weather conditions were clear with no precipitation

Brand name and model of light used to conduct surveys: Beal - Rechargeable, zoomable, tactical Flashlight. adjustable to under 100,000 candle watts.

Were binoculars used for the surveys (circle one)?  YES  NO

Brand, model, and power of binoculars: Nikon Monarch M7 8x42 8.3"

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Northern Pacific treefrog	N/A	H	adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: none observed

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Other notes, observations, comments, etc.

**Necessary Attachments:**

- 4. All field notes and other supporting documents
- 5. Site photographs
- 6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(FWS Field Office) (date) (biologist)

Date of Survey: 06/24/2022 Survey Biologist: Blain Marc  
(mm/dd/yyyy) (Last name) (first name)

Survey Biologist: \_\_\_\_\_  
(Last name) (first name)

Site Location: La COUNTY; Chatsworth; 34° 15' 42.3" N 118° 37' 26.2" W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD West Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF  
STUB OUT POINT.

Type of Survey (circle one): DAY NIGHT BREEDING NON-BREEDING  
Survey number (circle one): 1 2 3 4 5 6 7 8  
Begin Time: 8:00 PM End Time: 10:20 PM  
Cloud cover: 0% Precipitation: 0%  
Air Temperature: 83° F Water Temperature: 66° F  
Wind Speed: 2-3 MPH Visibility Conditions: clear  
Moon phase: Waning Crescent Humidity: 84%

Description of weather conditions: weather was relatively clear with NO precipitation

Brand name and model of light used to conduct surveys: Bercol - Rechargeable, Zoomable, Tactical Flashlight. Adjustable to under 100,000 candle watts.

Were binoculars used for the surveys (circle one)? YES NO  
Brand, model, and power of binoculars: Nikon Monarch M7 8x42 8.3°

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Northern Pacific tree frog	1-4	0 3 H	adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: None observed

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Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(RWS Field Office) (date) (biologist)

Date of Survey: 08/30/2022 Survey Biologist: Blain MARC  
(mm/dd/yyyy) (Last name) (first name)  
Survey Biologist: \_\_\_\_\_  
(Last name) (first name)

Site Location: LA COUNTY, CHATSWORTH; 34° 15' 42.3" N 118° 37' 21.2" W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD West Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF  
STUBOUT POINTS.

Type of Survey (circle one) DAY NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 2 3 4 5 6 7 8

Begin Time: 5:20 PM End Time: 6:40 PM

Cloud cover: 0% Precipitation: 0%

Air Temperature: 95°F Water Temperature: 68°F

Wind Speed: 3-4 Visibility Conditions: clear

Moon phase: waxing crescent Humidity: 80%

Description of weather conditions: weather conditions were clear  
with no precipitation

Brand name and model of light used to conduct surveys: Bergol - Rechargeable, zoomable, tactical  
Flashlight. Adjustable to under 100,000 candle watts.

Were binoculars used for the surveys (circle one)? YES NO

Brand, model, and power of binoculars: Nikon Monarch M7 8x42 8.3°

**Appendix E.**  
**California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: None observed

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Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**Appendix E.  
California Red-legged Frog Survey Data Sheet**

Survey results reviewed by \_\_\_\_\_  
(RWS Field Office) (date) (biologist)

Date of Survey: 08/30/2022  
(mm/dd/yyyy)

Survey Biologist: Blain Marc  
(Last name) (first name)

Survey Biologist: \_\_\_\_\_  
(Last name) (first name)

Site Location: LA County; Chatsworth; 34° 15' 42.3" N 118° 37' 21.2" W  
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

**\*\*ATTACH A MAP** (include habitat types, important features, and species locations)\*\*

Proposed project name: MWD West Valley Feeder (WVF)  
Brief description of proposed action:  
Roadway access improvements & additions for WVF  
STUBOUT POINTS

Type of Survey (circle one): DAY NIGHT BREEDING NON-BREEDING

Survey number (circle one): 1 2 3 4 5 6 7 8

Begin Time: 8:10 PM End Time: 9:40 PM

Cloud cover: 0 Precipitation: 0%

Air Temperature: 85°F Water Temperature: 65°F

Wind Speed: 2-3 MPH Visibility Conditions: clear

Moon phase: Waxing Crescent Humidity: 85%

Description of weather conditions: weather conditions were clear with no precipitation

Brand name and model of light used to conduct surveys: Beal - Rechargeable, 200mAh, red light  
Flashlight. Adjustable so under 100,000 candle watts.

Were binoculars used for the surveys (circle one)? YES NO

Brand, model, and power of binoculars: Nikon Monarch M7 8x42 8.3°



**Appendix E.  
California Red-legged Frog Survey Data Sheet**

**AMPHIBIAN OBSERVATIONS**

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Northern Pacific Tree Frog	3	H	adult	NA	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: none observed

Other notes, observations, comments, etc.

**Necessary Attachments:**

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

**ATTACHMENT D**  
**WILDLIFE COMPENDIUM**

## WILDLIFE SPECIES DETECTED DURING SURVEYS

Scientific Name	Common Name
<b>AMPHIBIANS</b>	
HYLIDAE – TREEFROG FAMILY	
<i>Pseudacris regilla</i>	Northern Pacific treefrog
<b>LIZARDS</b>	
PHRYNOSOMATIDAE – SPINY LIZARD FAMILY	
<i>Uta stansburiana</i>	common side-blotched lizard
<b>BIRDS</b>	
ANATIDAE – SWAN, GOOSE, AND DUCK FAMILY	
<i>Anas platyrhynchos</i>	mallard
COLUMBIDAE – PIGEON AND DOVE FAMILY	
<i>Columba livia*</i>	rock pigeon
<i>Zenaida macroura</i>	mourning dove
CAPRIMULGIDAE – NIGHTJAR FAMILY	
<i>Phalaenoptilus nuttallii</i>	common poorwill
APODIDAE – SWIFT FAMILY	
<i>Aeronautes saxatalis</i>	white-throated swift
TROCHILIDAE – HUMMINGBIRD FAMILY	
<i>Calypte anna</i>	Anna's hummingbird
ACCIPITRIDAE – HAWK FAMILY	
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Buteo jamaicensis</i>	red-tailed hawk
STRIGIDAE – TYPICAL OWL FAMILY	
<i>Bubo virginianus</i>	great horned owl
PICIDAE – WOODPECKER FAMILY	
<i>Melanerpes formicivorus</i>	acorn woodpecker
<i>Picoides nuttallii</i>	Nuttall's woodpecker
<i>Colaptes auratus</i>	northern flicker
CORVIDAE – JAY AND CROW FAMILY	
<i>Aphelocoma californica</i>	California scrub-jay
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	common raven
HIRUNDINIDAE – SWALLOW FAMILY	
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow
PARIDAE – TITMOUSE FAMILY	
<i>Baeolophus inornatus</i>	oak titmouse
AEGITHALIDAE – BUSHTIT FAMILY	
<i>Psaltriparus minimus</i>	bushtit
TROGLODYTIDAE – WREN FAMILY	
<i>Catherpes mexicanus</i>	canyon wren
<i>Thryomanes bewickii</i>	Bewick's wren
SYLVIIDAE – SILVIID WARBLERS FAMILY	
<i>Chamaea fasciata</i>	wrentit
TURDIDAE – THRUSH FAMILY	
<i>Sialia mexicana</i>	western bluebird

Scientific Name	Common Name
MIMIDAE – MOCKINGBIRD AND THRASHER FAMILY	
<i>Mimus polyglottos</i>	northern mockingbird
PTILOGONATIDAE – SILKY-FLYCATCHER FAMILY	
<i>Phainopepla nitens</i>	phainopepla
FRINGILLIDAE – FINCH FAMILY	
<i>Haemorhous mexicanus</i>	house finch
<i>Spinus psaltria</i>	lesser goldfinch
PASSERELLIDAE – NEW WORLD SPARROW FAMILY	
<i>Junco hyemalis</i>	dark-eyed junco
<i>Melospiza crissalis</i>	California towhee
<i>Pipilo maculatus</i>	spotted towhee
ICTERIDAE – BLACKBIRDS AND ORIOLES	
<i>Agelaius phoeniceus</i>	red-winged blackbird
PARULIDAE – WOOD-WARBLER FAMILY	
<i>Setophaga coronata</i>	yellow-rumped warbler
<b>MAMMALS</b>	
LEPORIDAE – HARE AND RABBIT FAMILY	
<i>Sylvilagus audubonii</i>	desert cottontail
CANIDAE – CANID FAMILY	
<i>Canis latrans</i>	Coyote

\* Non-native species