



## Draft Initial Study / Proposed Mitigated Negative Declaration

### Llano Road Trunk Rehabilitation Project

City of Santa Rosa, California



**Prepared for:**

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## List of Acronyms and Abbreviations

<b>AB</b>	Assembly Bill
<b>APN</b>	Assessor’s Parcel Number
<b>BAAQMD</b>	Bay Area Air Quality Management District
<b>BMPs</b>	best management practices
<b>BRTR</b>	Biological Resources Technical Report
<b>CAAQS</b>	California Ambient Air Quality Standards
<b>CAL FIRE</b>	California Department of Forestry and Fire Protection
<b>Caltrans</b>	California Department of Transportation
<b>Cal/OSHA</b>	California Division of Occupational Safety and Health
<b>CAP</b>	Clean Air Plan
<b>CARB</b>	California Air Resources Board
<b>CCAP</b>	Community-wide Climate Action Plan
<b>CCTV</b>	closed-circuit television
<b>CDC</b>	California Department of Conservation
<b>CDFW</b>	California Department of Fish and Wildlife
<b>CEQA</b>	California Environmental Quality Act
<b>CESA</b>	California Endangered Species Act
<b>CFGC</b>	California Fish and Game Code
<b>CFR</b>	Code of Federal Regulations
<b>CGS</b>	California Geological Survey
<b>City</b>	City of Santa Rosa
<b>CIPP</b>	cured-in-place pipe
<b>CNDDDB</b>	California Natural Diversity Database
<b>CNEL</b>	Community Noise Equivalent Level
<b>CNPS</b>	California Native Plant Society
<b>CO</b>	carbon monoxide



<b>CO<sub>2</sub></b>	carbon dioxide
<b>CO<sub>2</sub>e</b>	CO <sub>2</sub> equivalent
<b>Corps</b>	United States Army Corps of Engineers
<b>CTS</b>	California tiger salamander
<b>C&amp;D</b>	construction and demolition
<b>dB</b>	decibel
<b>dBA</b>	A-weighted sound level
<b>DBH</b>	diameter at breast height
<b>DPM</b>	diesel particulate matter
<b>DTSC</b>	Department of Toxic Substances Control
<b>EPA</b>	Environmental Protection Agency
<b>ESA</b>	Endangered Species Act
<b>FEMA</b>	Federal Emergency Management Agency
<b>FHSZ</b>	Fire Hazard Severity Zone
<b>FTA</b>	Federal Transit Administration
<b>GHG</b>	greenhouse gas
<b>HDPE</b>	high-density polyethylene
<b>IS/MND</b>	Initial Study/Mitigated Negative Declaration
<b>L<sub>dn</sub></b>	day-night average noise level
<b>L<sub>eq</sub></b>	energy-equivalent noise level
<b>LF</b>	linear feet
<b>LHMP</b>	Local Hazard Mitigation Plan
<b>L<sub>max</sub></b>	maximum noise level
<b>LRA</b>	Local Responsibility Area
<b>LSAA</b>	Lake and Streambed Alteration Agreement
<b>LUST</b>	leaking underground storage tank
<b>MBTA</b>	Migratory Bird Treaty Act
<b>MT</b>	metric tons
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NAHC</b>	Native American Heritage Commission
<b>NCCP</b>	Natural Community Conservation Plan
<b>NHPA</b>	National Historic Preservation Act
<b>NMFS</b>	National Marine Fisheries Service
<b>NO<sub>x</sub></b>	nitrogen oxides
<b>NPDES</b>	National Pollution Discharge Elimination System
<b>NPT</b>	northwestern pond turtle
<b>NRCS</b>	Natural Resource Conservation Service
<b>OHWM</b>	Ordinary High Water Mark
<b>Origer</b>	Tom Origer & Associates
<b>OTH</b>	over-the-hole
<b>PBO</b>	Programmatic Biological Opinion
<b>PG&amp;E</b>	Pacific Gas and Electric Company
<b>PM<sub>2.5</sub></b>	fine particulate matter
<b>PM<sub>10</sub></b>	course particulate matter
<b>POTW</b>	publicly owned treatment works
<b>PPV</b>	peak particle velocity
<b>PRC</b>	Public Resources Code
<b>RCP</b>	reinforced concrete pipe
<b>RCRA</b>	Resource Conservation and Recovery Act



<b>RMS</b>	root mean square
<b>ROG</b>	reactive organic gas
<b>RWQCB</b>	Regional Water Quality Control Board
<b>SB</b>	Senate Bill
<b>SFBAAB</b>	San Francisco Bay Area Air Basin
<b>SRA</b>	State Responsibility Area
<b>SRFD</b>	Santa Rosa Fire Department
<b>SWPPP</b>	Stormwater Pollution Prevention Plan
<b>SWRCB</b>	State Water Resources Control Board
<b>TAC</b>	toxic air contaminant
<b>TCP</b>	Traffic Control Plan
<b>USDA</b>	United States Department of Agriculture
<b>USFWS</b>	United States Fish and Wildlife Service
<b>USGS</b>	United States Geological Survey
<b>UV</b>	ultraviolet
<b>VdB</b>	vibration decibels
<b>VOH</b>	Valley Oak Habitat
<b>WBWG</b>	Western Bat Working Group
<b>WEF</b>	wildlife exclusion fencing
<b>WRA</b>	WRA, Inc.
<b>WTP</b>	Wastewater Treatment Plant



## 1.0 INTRODUCTION AND PURPOSE

This Initial Study/Mitigated Negative Declaration (IS/MND) is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et. seq.), and the regulations and policies of the City of Santa Rosa (City). This IS/MND evaluates the potential environmental impacts which might reasonably be anticipated to result from implementation of the Llano Road Trunk Rehabilitation Project (Project, proposed Project).

The City is the Lead Agency under CEQA and has prepared this IS/MND to address the impacts of implementing the proposed Project. The purpose of the Project is to rehabilitate the Llano Road Trunk wastewater line to prevent failure of the system and/or more impactful actions that would be associated with replacement of the system.

## 2.0 PROJECT INFORMATION

### 2.1 Project Title

Llano Road Trunk Rehabilitation Project

### 2.2 Lead Agency Name and Address

#### City of Santa Rosa

*Transportation and Public Works Department*

69 Stony Circle

Santa Rosa, CA 95404

### 2.3 Contact Person and Phone Number

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City of Santa Rosa

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### 2.4 Project Location

The Project site is located along the western border of the City of Santa Rosa and the County of Sonoma (County) (Figure 1). The Project site encompasses approximately 5.72 acres spanning across the entirety of the parcels of Assessor's Parcel Numbers (APNs) 060-060-051, 060-060-053, 060-060-030, 063-180-001, 063-180-025, 063-180-033, 063-180-036, 063-180-040, 063-180-042, 063-180-045, 063-180-046, and 063-240-025. The majority of the Project site is developed and non-native grassland immediately adjacent to Llano Road and Meadow Lane, as well as within developed areas of the Laguna Wastewater Treatment Plant (WTP) site (Figure 2). The site is generally surrounded by agricultural and rural residential land uses.

### 2.5 Existing General Plan Designation and Zoning District

The Project site is situated in unincorporated Sonoma County near the southwestern portion of the City of Santa Rosa and is surrounded by agricultural and public institutional land uses (City



of Santa Rosa 2021a). Areas surrounding the project site are within the Sonoma County Diverse Agriculture zoning district and Land Extensive Agriculture zoning district (Sonoma County “Zoning and Land Use”). Areas within the City’s boundaries are within the Rural Residential zoning district (City of Santa Rosa “Planning”).

## **2.6 Surrounding Land Uses and Setting**

The Project site includes Llano Road, a two-lane road, and buffer areas outside of the road. The Project site is bordered by private agricultural lands, low density residential dwellings and associated structures (outbuildings, equipment sheds, etc.), and the Santa Rosa Utility Treatment and Industrial Waste Center.



Path: L:\Acad 2000 Files\330000\330204\GIS\ArcMap\330204Base.aprx Layout Name:Location CEQA

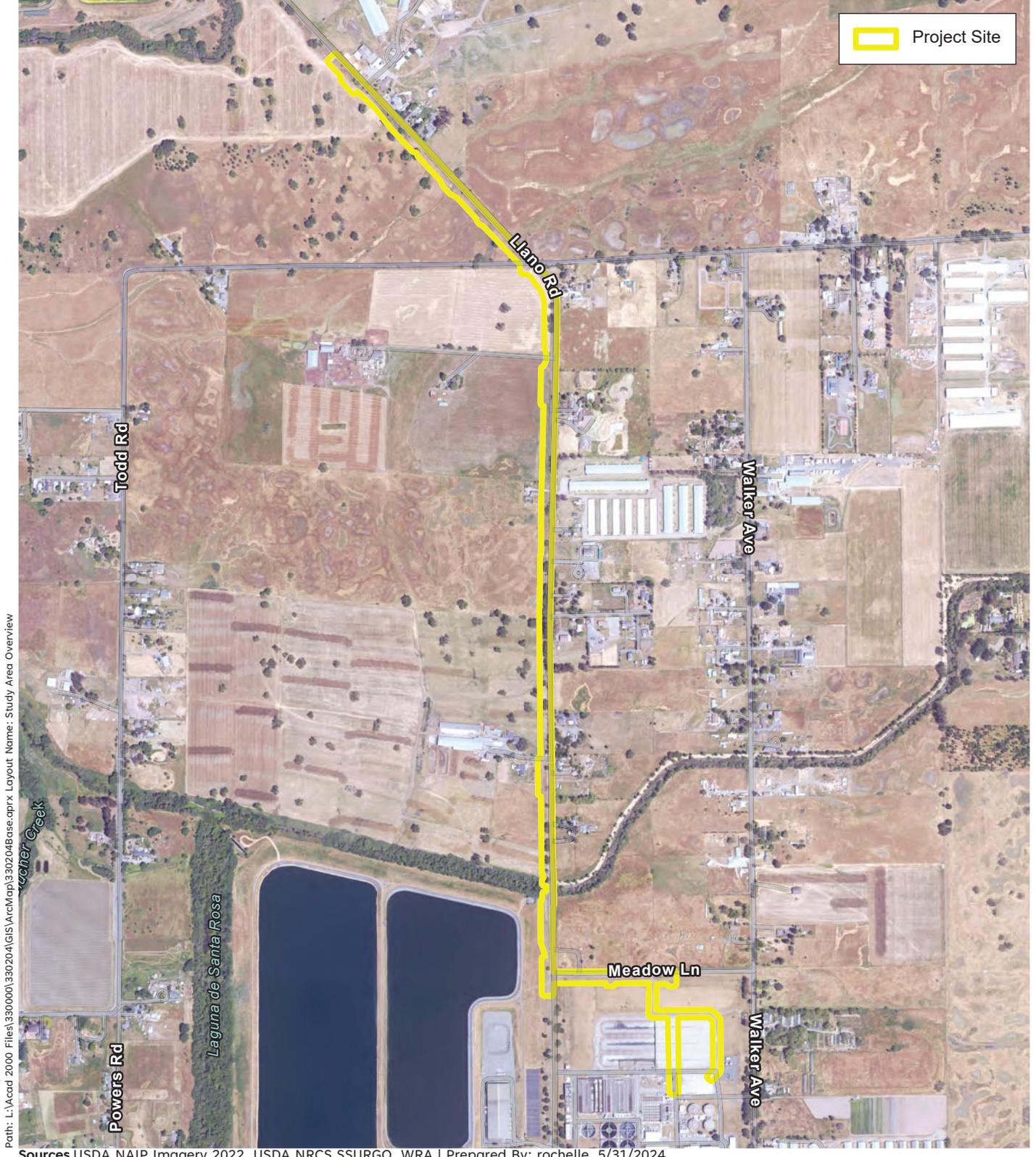


Sources: National Geographic, WRA | Prepared By: rochelle, 7/2/2024

Figure 1. Project Site Regional Location Map

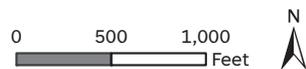
Llano Road Trunk Sewer Phase I Rehabilitation Project  
Santa Rosa, Sonoma County, California





**Figure 2. Aerial Photograph of the Project Site**

Llano Road Trunk Sewer Phase I Rehabilitation Project  
 Santa Rosa, California



## 3.0 PROJECT DESCRIPTION

### 3.1 Project Background and Purpose

The proposed Project includes the rehabilitation of the existing Llano Road Trunk pipeline, a critical wastewater collection facility, which carries approximately two thirds of the City's wastewater flow to the Laguna WTP. The existing pipeline is nearly 50 years old and must be rehabilitated to prevent failure of the system and/or more impactful actions that would be associated with replacement.

The scope of the Project includes rehabilitation of approximately 8,170 linear feet (LF) of the 66-inch reinforced concrete pipe (RCP) trunk sewer. It also includes a conditions assessment of the existing manholes along the alignment and rehabilitation of the manholes as recommended at the conclusion of the condition assessment field investigation.

### 3.2 Project Elements

#### 3.2.1 Project Implementation and Methodology

The existing Llano Trunk pipeline is located approximately 18 feet underground on average (with a maximum depth of 28 feet to top of pipe) and would be rehabilitated by means of trenchless cured-in-place pipe (CIPP) lining technology. This method was identified to be the least environmentally impactful approach for rehabilitating the existing pipeline because it would not involve extensive excavation and would be completed in the least amount of time relative to other alternatives. CIPP lining is a fully structural rehabilitation solution that involves the insertion of a resin impregnated synthetic fabric liner that is pulled or inverted into an existing host pipeline and then cured with hot water, steam, or high intensity ultraviolet (UV) light. For this Project, the curing method utilized would be hot water. When fully cured, the CIPP forms a strong new pipeline within the existing host pipeline, avoiding the need for excavation and replacement of the existing pipeline. Because the pipeline must be taken offline during rehabilitation, an above ground temporary sewer bypass would be constructed to allow continued flow of wastewater to the WTP while the existing pipeline is being rehabilitated in place.

The temporary bypass pipeline would include temporary bypass pumps, associated manifold and valving assemblies, and approximately 9,200 LF of triple barrel 18-inch diameter high-density polyethylene (HDPE) bypass pipelines. The HDPE pipelines would be installed in predominantly non-native grassland and developed areas adjacent to Llano Road and Meadow Lane. The Project components described in the following sections are shown in the 75% design plans (Appendix A).

#### 3.2.2 CIPP Pipeline Rehabilitation

The existing Llano Trunk pipeline would be rehabilitated via the CIPP pipeline rehabilitation method, which has been used for more than 50 years to rehabilitate deteriorated pipelines around the world. The CIPP method does not require major excavation of the existing pipeline for rehabilitation. This results in fewer excavations and surface disturbances, helping mitigate the environmental and social impact to local areas and communities.



The Project would include rehabilitation of approximately 8,170 LF of 66-inch diameter Llano Trunk pipeline. To accomplish this, a total of four CIPP install locations would be used, with an average CIPP install length of approximately 1,359 LF. These CIPP install locations would be situated over existing manholes (referred to as Over the Hole locations (OTH)). Two of the manholes are within the Llano Trunk easement just west of Llano Road, and two are within the Laguna WTP. Access would be maintained around all of the manholes along the Llano Trunk to perform ancillary work, including cleaning the pipe using hydrovac cleaning trucks, video inspection of the pipe using closed-circuit television (CCTV) trucks, access for CIPP crews to cut out the ends of the CIPP liner within manholes using light equipment, and access for the manhole rehab crews to perform their work using light trucks. All of the ancillary work requires access from Llano Road, using rubber-tired vehicles.

At the CIPP liner insertion OTH locations, the thermoset polyester resin impregnation of the custom-made CIPP polyester felt liners would occur under a temperature-controlled tent to protect it from ambient temperatures, sunlight, and adverse weather. Using inline roller beds under the tent, a conveyor at the end of the tent, and scaffolding over the insertion OTH manhole, hydrostatic pressure would be applied, causing the liner to invert down an existing insertion OTH manhole (where the ring, cover and cone would be removed and then restored after), then directed into the deteriorated 66-inch Llano Trunk pipeline, from the insertion OTH manhole, through intermediate manhole(s), until it reaches the termination manhole. The hydrostatic pressure ensures the CIPP liner sizes up to the interior diameter of the host pipeline throughout the length. The resin impregnated felt liner would then be cured, using boilers to heat the inversion water, while circulating the heated water using lay flat hoses throughout the pipeline length, until the resin in the CIPP liner is fully cured throughout the install length. Any existing cracks in the pipeline would be pre-grouted to prevent leakage or frac-out of resin from the pipeline liner. These CIPP process steps create a fully structural and independent “pipe-within-a-pipe,” for a minimum 50-year design life.

### **3.2.3 Bypass Pipeline**

The temporary bypass pumping system would include a system of pumps, pipelines, and hoses that would be used to temporarily divert flow from the section of the existing Llano Trunk pipeline being rehabilitated. Additional equipment would include manifold valves and air release valves. A wheeled lift tractor would be used to deliver pipeline segments to their locations, and a fusion machine would be used to join sections together.

The bypass piping would be brought to the Project site on a flatbed semi-trailer. The HDPE pipeline material, typically 40-to-50-foot segments, would be brought in on flatbed trucks, unloaded from the semi-trailer with a forklift and brought to their respective place on the site. Once the pipeline is in its correct location, it would then be propped up and the ends aligned square for joint fusion of the pipe. The fused pipeline would then be set flush to the ground. The bypass pipelines would be propped up every 50 to 100 feet with wooden blocks to allow for wildlife crossing.

Manhole JJ2619MH005, located at the northernmost end of the Project site, would be the sewer bypass suction location. The suction pipelines would be placed directly into the manhole without excavation. At the suction location, there would be six aboveground suction pumps (three primary duty and three backup). The pumps would be brought to the site on a flatbed semi-trailer and placed at the suction location via crane or other lifting equipment. Each pump would be constructed with a fully contained enclosure to capture any fluids from the pump and engine.



Discharge piping would then be connected to the pump via manifold valves and run from the active-duty aboveground pump along the ground surface to the bypass discharge point into the Emergency Holding Basins at the Laguna WTP. Along the discharge piping, air release valves would be placed at high points. Air release valves would be placed within a containment to capture any drips.

Pumping equipment would be placed on top of spill containment systems to prevent drips, spills, and/or leaks. The pumps would only be turned on once the bypass system is fully connected and the existing Llano Trunk pipeline inflatable plugs are in place to prevent wastewater from flowing down the existing Llano Trunk pipeline below the suction manhole. The bypass pumping system would then be tested and approved for continuous operation without spills. The bypass pumping system would be manned and operational 24 hours per day, seven days per week until the rehabilitation work is completed. Inspections of the pipelines would be conducted on a continuous, ongoing basis, with inspections conducted on foot in the Low Traffic Areas to reduce vehicular traffic.

### **3.2.4 Manhole Rehabilitation**

Manholes would be accessed via light vehicle and repaired using a spray applied polymer rehabilitation process, using epoxies or polyurethane. After setting up the site equipment, crews would use a pressure washer to blast all loose debris and deteriorated concrete inside the manhole and capture debris from entering the collection system mainline. If any manhole steps are present, they would be removed. Next, the manhole shelves and interior would be rebuilt to the original dimensions using a mix of both concrete and mortar. At this point, grout injections would be used to eliminate any active water infiltration. Once the materials are cured, a coating/lining system would be applied. The new infrastructure would be tested using manufacturer's testing recommendations prior to site cleanup.

## **3.3 Project Construction**

### **3.3.1 Site Work**

The section of the Llano Trunk pipeline to be rehabilitated is approximately 8,170 LF. The total Project site is approximately 5.72 acres including the bypass pump staging area, bypass pipeline alignment, CIPP staging areas, access routes and work area footprints (Figure 3). The rehabilitation consists of three primary components: Sewer bypass pumping facilities, CIPP lining, and the manhole rehabilitation.

The following is a high-level step-by-step outline of the CIPP lining process for the Project:

1. Set up demarcation of environmentally sensitive areas and Project work area boundaries for each manhole along existing Llano Trunk alignment.
2. Implement access road entrances to each manhole, for equipment access from Llano Road.
3. Construct working pads for bypass pumps at suction pit (120 ft by 70 ft), for CIPP OTH Equipment Setups (250 ft x 50 ft for OTH Setup Areas #1-3, 150 ft by 30 ft for OTH Setup Area #4), and for remainder of the manholes not used for CIPP installation (30 ft by 30 ft).



4. Setup, build, connect, test and monitor the bypass system, including placing bypass pumps around suction pit, building and connecting HDPE suction manifold, fusing and installing triple barrel 18-inch HDPE along the alignment, and then connecting, pressure testing, and operating the bypass pumping system (with continuous monitoring thereafter).
5. Setup OTH equipment working areas while providing equipment access from Llano Road.
6. Stage OTH equipment and CIPP materials within OTH working areas, including tent, roller beds, scaffolding, resin static mixer, dry CIPP liner on a flatbed trailer, resin tankers, reach lift, boiler truck and pumps, and other ancillary support equipment.
7. Excavate (approximately four feet deep) around each CIPP OTH insertion manhole, removing manhole ring, cover and cone, to provide clear open access for inverting CIPP liner down through manhole barrel sections.
8. Beginning cleaning and CCTV'ing pipeline with hydrovac cleaning truck(s) and CCTV truck(s), working sequentially from the north to the south of the pipeline alignment, from manhole to manhole.
9. Perform final pipeline cleaning and verify no lateral connections.
10. Begin OTH resin impregnation of CIPP liner to length with thermoset resin, per quality control procedures.
11. Install OTH CIPP, per quality control procedures.
12. Cure OTH CIPP, per quality control Procedures.
13. Cool down OTH cure process water to 100-degree F and then drain water from CIPP.
14. Cut CIPP ends within manholes.
15. Having prepared and cured previously, collect and test CIPP flat plate samples from CIPP installation.
16. Perform final post CCTV inspection of CIPP liner system.
17. Complete site restoration of the OTH CIPP sites.
18. Rehabilitate manholes with spray-on polymers and then test, moving manhole to manhole sequentially from north to south, immediately after CIPP activities for each CIPP installation are completed.
19. Repeat steps 5 through 14 for each OTH equipment setup location, while working sequentially from north to south along the Llano Trunk pipeline alignment.
20. Once all Llano Trunk manhole-to-manhole pipe segments are CIPP rehabilitated, and each of the manholes are rehabilitated and tested, shut down and dismantle the bypass pumping system.
21. Site restoration and clean-up.

For this Project, a corrosion-resistant, thermoset polyester resin would be used in conjunction with a custom-made polyester felt CIPP liner. Any existing cracks in the pipeline would be pre-grouted to prevent leakage or frac-out of resin from the pipeline liner. Plastic sheeting, in combination with other best management practices (BMPs), would be used around each CIPP OTH installation manhole to prevent drips or spills.



The bypass pipelines would be placed within a shallow trench when crossing a road from shoulder to shoulder to allow traffic passage, with a trench that is approximately five feet wide by total width of the existing road. Additionally, the bypass pipelines would be trenched across existing driveways for continuous access to the private properties, with a trench that is approximately five feet wide by total width of the existing driveway.

### SITE WORK AND STAGING AREAS

The location of work areas, access routes and staging areas are included on Figure 3 and in the 75% design plans (Appendix A). A description of the staging and work areas for the Project is provided in Table 1. All staging areas would occur within the described staging areas or on paved areas at the Laguna WTP.

**Table 1. Project Site Work Areas**

WORK AREA	DIMENSIONS
<b>STAGING AREA</b>	
<b>Bypass pumping staging area</b>	120 ft x 70 ft
<b>BYPASS DISCHARGE PIPELINE CROSSINGS UNDER ROADWAYS/DRIVEWAYS</b>	
<b>Llano Road</b>	5 ft x road width
<b>Todd Road</b>	5 ft x road width
<b>Private properties</b>	5 ft x road width
<b>OTH SETUP LOCATIONS</b>	
<b>OTH Setup #1</b>	250 ft x 50 ft
<b>OTH Setup #2</b>	250 ft by 50 ft
<b>OTH Setup #3</b>	250 ft x 50 ft
<b>OTH Setup #4</b>	150 ft x 30 ft
<b>Other manholes not described as OTH setup locations</b>	30 ft x 30 ft

### 3.3.2 Schedule and Equipment

Construction of the Project would begin in June of 2025 and last approximately four months, pending receiving all required permits and authorizations. The following equipment would be required for Project construction:

- Excavator
- Backhoe
- Loader
- Scraper
- Grader
- Roller
- Asphalt road paver
- Compactor
- Generator set
- Pneumatic tool
- Cement mixer
- Haul truck
- Water truck



- Hydrovac cleaning truck
- CCTV truck
- Tent
- Roller beds
- Scaffolding
- Resin static mixer
- Dry CCIP liner on a flatbed trailer
- Resin tankers
- Reach lift
- Boiler truck and pumps
- Bypass pumps
- HDPE pipe fusing machine
- Pneumatic equipment

Use of heavy equipment for construction in most of the Project site would be limited to between 7:00 a.m. and 6:00 p.m., however, some nighttime work would be required, which would be limited to CIPP installation (a 24/7 process lasting about five to six days at four locations) and operation of the bypass pipeline (which is necessary as long as the bypass is operational) and on-foot worker inspections of the bypass pipeline. Timing of construction activities are discussed in greater detail below.

Ground disturbance would occur only during daytime hours and would cease no less than 30 minutes before sunset and would not begin again prior to no less than 30 minutes after sunrise. Night lighting of environmentally sensitive areas would be avoided. Nighttime activities including surveys of the bypass pipeline and regular inspection and potential maintenance of the pumps would be necessary. However, foot traffic outside the OTH, staging, and work areas at night would only be lighted by handheld flashlights; no nighttime vehicle operation would be necessary along the bypass pipeline alignment and any off-road access areas.





**Figure 3-1. Site Work Detail (Overview)**



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Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

**Figure 3-2. Site Work Detail (Sheet 1)**



**Figure 3-3. Site Work Detail (Sheet 2)**



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Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

Figure 3-4. Site Work Detail (Sheet 3)



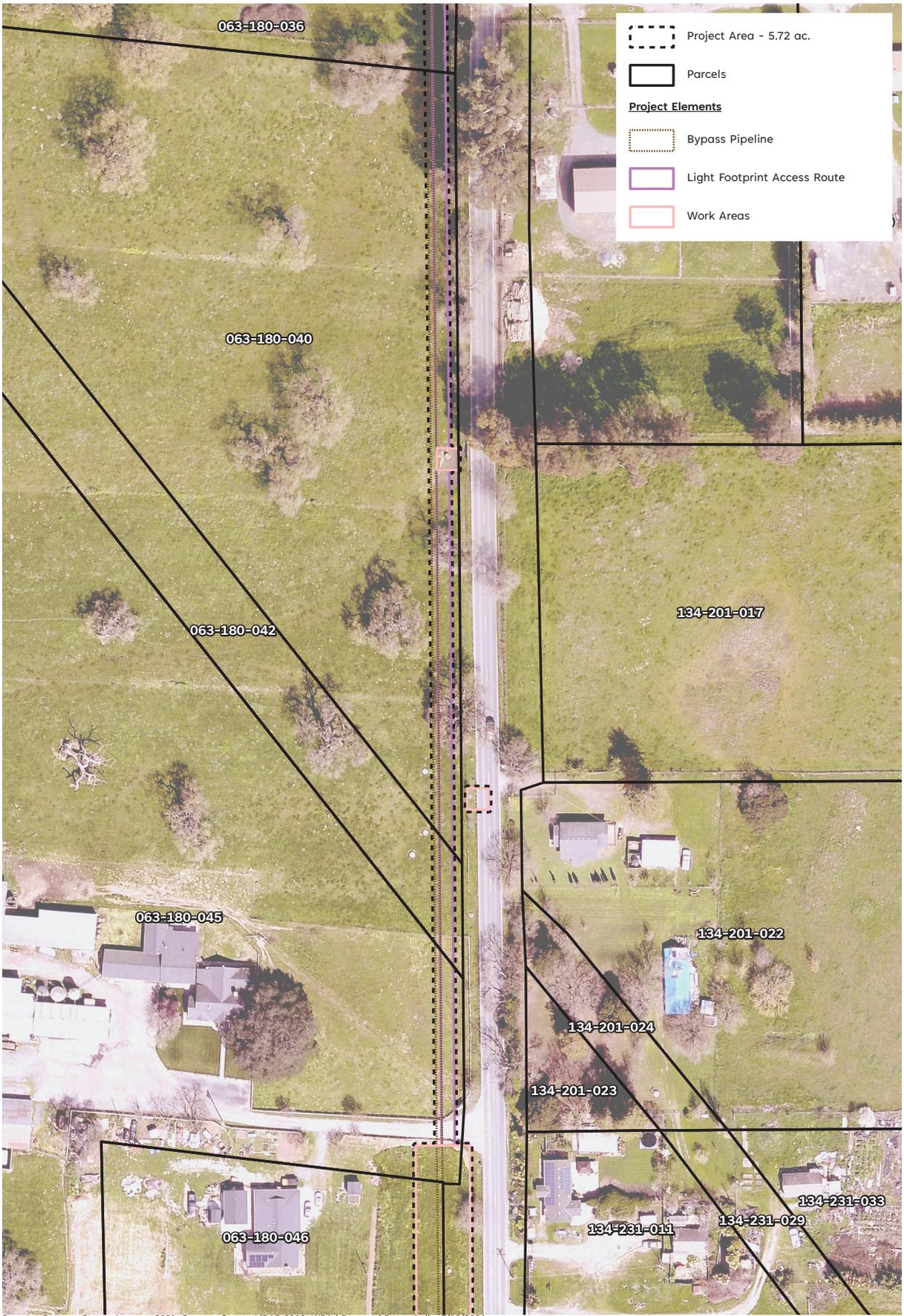


Figure 3-6. Site Work Detail (Sheet 5)

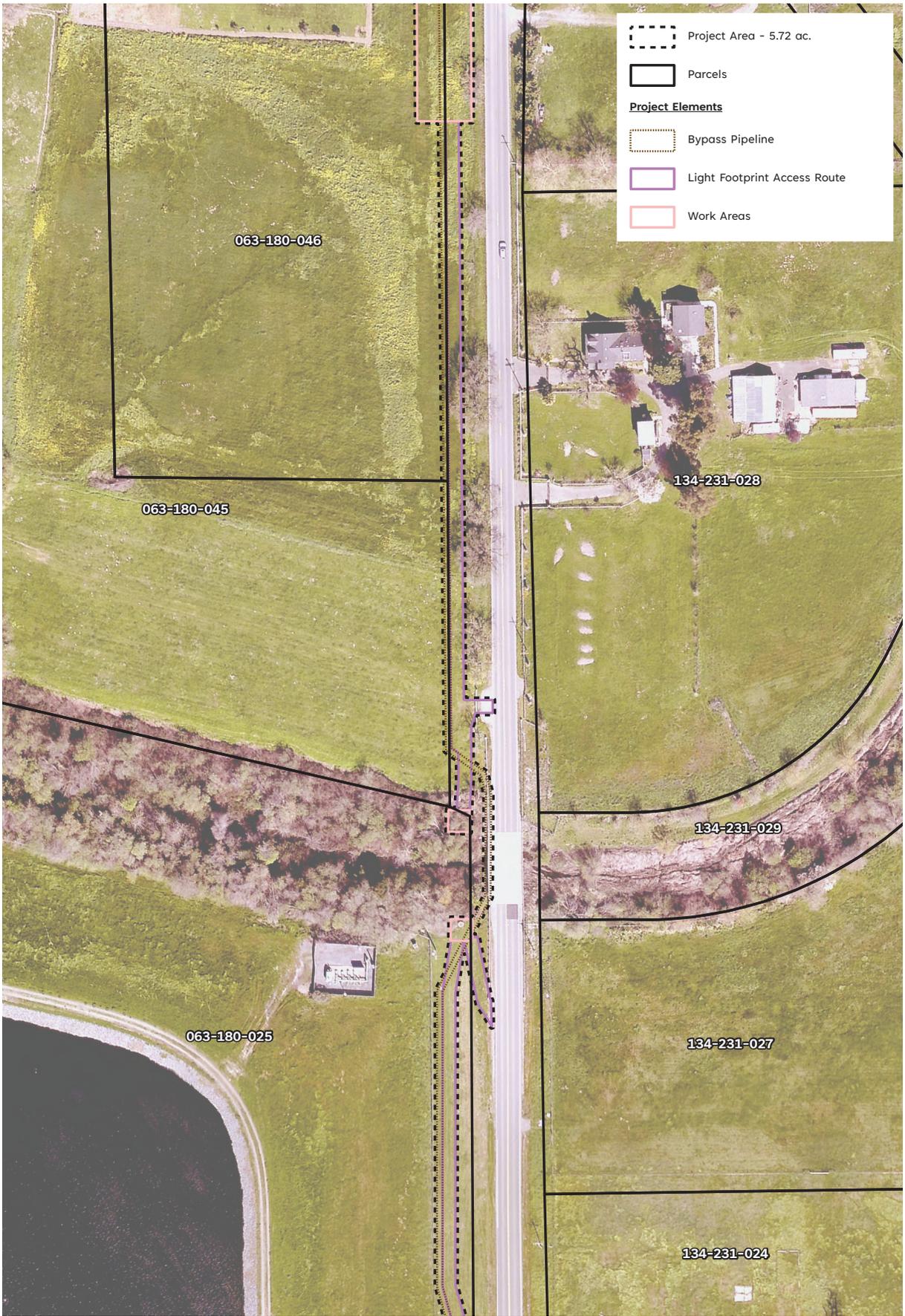


Figure 3-7. Site Work Detail (Sheet 6)



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Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

Figure 3-8. Site Work Detail (Sheet 7)



**Figure 3-9. Site Work Detail (Sheet 8)**

## **3.4 Project-Related Approvals, Agreements, and Permits**

The information contained in this Initial Study will be used by the City (the CEQA Lead Agency) as it considers whether or not to approve the proposed Project. If the Project is approved, the Initial Study would be used by the City and responsible and trustee agencies in conjunction with various approvals and permits. These actions include, but may not be limited to, the following approvals by the agencies indicated:

### **3.4.1 City of Santa Rosa**

- Approval by the Board of Public Utilities

### **3.4.2 Sonoma County**

- Encroachment Permit

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

- Clean Water Act Section 404 Nationwide Permit 58

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

- Clean Water Act Section 401 Water Quality Certification

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

- Incidental Take Permit
- Lake and Streambed Alteration Agreement (LSAA)

### **3.4.6 U.S Fish and Wildlife Service**

- Section 7 Consultation



## 4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> Public Services
<input type="checkbox"/> Agricultural Resources	<input checked="" type="checkbox"/> Hazards and Hazardous Materials	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Air Quality	<input type="checkbox"/> Hydrology and Water Quality	<input checked="" type="checkbox"/> Transportation
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Land Use/Planning	<input checked="" type="checkbox"/> Tribal Cultural Resources
<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Mineral Resources	<input checked="" type="checkbox"/> Utilities / Service Systems
<input type="checkbox"/> Energy	<input type="checkbox"/> Noise	<input checked="" type="checkbox"/> Wildfire
<input checked="" type="checkbox"/> Geology and Soils	<input type="checkbox"/> Population and Housing	<input checked="" type="checkbox"/> Mandatory Findings of Significance

### 4.1 Determination

On the basis of this initial evaluation:

- I find that the project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.
- I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the Project MAY have a “Potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

*Kristinae Toomians*

Signature

02/11/2025

Date

Name and Title:



## 4.2 Initial Study Checklist

This section describes the existing environmental conditions in and near the Project site and evaluates environmental impacts associated with the Project. The environmental checklist, as recommended in the CEQA Appendix G Guidelines, was used to identify environmental impacts that could occur if the Project is implemented.

Each of the environmental categories was fully evaluated, and one of the following four determinations was made for each checklist question:

- **“No Impact”** means that no impact to the resource would occur as a result of implementing the Project.
- **“Less than Significant Impact”** means that implementation of the Project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
- **“Less than Significant with Mitigation Incorporated”** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
- **“Potentially Significant Impact”** means that there is either substantial evidence that a Project-related effect may be significant, or, due to a lack of existing information, could have the potential to be significant.



**4.2.1 Aesthetics**

Would the project:	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Incorporated</i>	<i>Less-than-Significant Impact</i>	<i>No Impact</i>
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**ENVIRONMENTAL SETTING**

The Project site includes portions of the City of Santa Rosa and unincorporated Sonoma County and is surrounded by agricultural and public institutional land uses (City of Santa Rosa 2021a). Specifically, the Project site includes Llano Road, a two-lane road, and buffer areas outside of the road. The Project site is bordered by private agricultural lands, low density residential dwellings and associated structures (outbuildings, equipment sheds, etc.), and the Laguna WTP.

**DISCUSSION OF IMPACTS**

**a) *Have a substantial adverse effect on a scenic vista?***

***Less-than-Significant Impact***

The nearest designated scenic vista is located within the Laguna Uplands Preserve approximately 3.5 miles west of the Project site. Although construction work would temporarily degrade views of the Project site, the site would not be highly visible from this scenic vista due to the distance and regional topography. During operation, the view of the Project site would be similar to existing conditions because all new infrastructure would be located underground, and disturbed areas would be repaved and replanted with vegetation as necessary. Therefore, the Project would not cause a substantial change in the visual characteristics of the Project site as viewed from a scenic vista. The impact would be less than significant.



- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact**

There are no officially designated or eligible state scenic highways within the vicinity of the Project site. The closest eligible designated state scenic highway is California State Route (SR) 116 which is located approximately 0.85 miles west of the Project site. The Project site is not visible from SR-116 due to development in the area. Therefore, the Project would not damage scenic resources within a state scenic highway. No impact would occur.

- c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

**Less-than-Significant Impact**

The Project site is surrounded by agricultural and public institutional land uses in a relatively rural area. The Project would not conflict with any standards of the applicable zoning district. Construction of the proposed Project would temporarily degrade the visual character of the Project site due to the presence of construction equipment, vehicles, and materials. During operation, the Project site would appear similar to existing conditions because all new infrastructure would be located underground. Any disturbed areas would be restored to their original condition (i.e., repaved, revegetated) after construction is finished. Because impacts during construction would be minor and would be temporary, they would not be considered significant. Therefore, the Project would not substantially degrade the existing visual character or quality of public view of the site or conflict with applicable zoning regulations governing scenic quality. The impact would be less than significant.

- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Less-than-Significant Impact**

As described in Section 3.3, Project Construction, nighttime work would occur at four locations along the Project alignment. Nighttime construction work would be limited to operation of the bypass pipeline, liner installation and curing at OTH locations, and worker inspections of the bypass pipeline. Night lighting of sensitive habitats would be avoided. Nighttime activities would include surveys of the bypass pipeline and regular inspection and potential maintenance of the pumps. However, foot traffic outside the staging and OTH work areas at night would only be lighted by handheld flashlights; no nighttime vehicle operation would be necessary outside of these work areas. Any lights would be directed into the above-described work areas and not into the surrounding environment. The Project site is surrounded primarily by agricultural and public institutional development with some rural residences; therefore, the use of flashlights would not constitute a significant source of nighttime lighting that would disturb nighttime views in the area. Directional lighting would minimize lighting impacts to surrounding areas. The Project would not introduce any new permanent sources of light or glare because all new infrastructure would be located underground. Therefore, the Project would not create a new source of substantial light or glare which would adversely affect day or nighttime view in the area. The impact would be less than significant.



#### 4.2.2 Agricultural and Forestry Resources

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### ENVIRONMENTAL SETTING

The Project site is situated in an area that is primarily used for agricultural use (Sonoma County “Zoning and Land Use;” City of Santa Rosa 2021a). Nearby properties are in various types of agricultural uses by private landowners. The Project site and surrounding areas have been mapped as Urban Built-Up Land, Unique Farmland, Farmland of Local Importance, Farmland of Statewide Importance, and Other Land by the California Department of Conservation (CDC) (CDC 2024).

#### DISCUSSION OF IMPACTS

**a-e) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? Conflict with existing zoning for agricultural use, or a Williamson Act contract? Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section**



***51104(g))? Result in a loss of forest land or conversion of forest land to non-forest use? Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?***

***Less-than-Significant Impact***

The Project site and surrounding areas are mapped by the CDC as Urban Built-Up Land, Unique Farmland, Farmland of Local Importance, Farmland of Statewide Importance, and Other Land. The Project site includes portions of private agricultural parcels adjacent to Llano Road which would be used for the temporary bypass pipeline. The City has coordinated with property owners to obtain right of entry to affected properties. The bypass pipeline would primarily be set up flush with the ground, except for areas where the system would need to cross driveways. In these areas, the system would be set in a shallow trench approximately five feet wide by total width of the existing driveway. The trenches would be covered with a metal plate or a similar material to allow for continuous access to properties. The Project would not include any ground disturbing work on agricultural lands and would not convert any agricultural lands to another use. The Project would not include any work that would conflict with zoning for an agricultural use or a Williamson Act contract. There is no timberland in the Project area that would be affected by the Project. Therefore, the Project would not convert Farmland, forest land, or timber land to non-agricultural use, or conflict with an existing zoning for agricultural use or a Williamson Act contract. The impact would be less than significant.



### 4.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a)	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Result in other emissions (such as those leading to odors) affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### ENVIRONMENTAL SETTING

The Project site is located within the San Francisco Bay Area Air Basin (SFBAAB) which has natural characteristics that limit the ability of natural processes to either dilute or transport air pollutants. The major determinants of air pollution transport and dilution are climatic and topographic factors such as wind, atmospheric stability, terrain that influences air movement, and sunshine. Wind and terrain can combine to transport pollutants away from upwind areas, while solar energy can chemically transform pollutants in the air to create secondary photochemical pollutants such as ozone. The following discussion provides an overview of the environmental setting with regard to air quality in the SFBAAB.

#### *Ambient Air Quality and Climate*

The Bay Area has a Mediterranean climate characterized by wet winters and dry summers. During the summer, a high-pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly wind flow that generally keeps storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens, resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.

#### *Air Pollutants of Concern*

The California Air Resources Board (CARB) and United States Environmental Protection Agency (EPA) focus on the following air pollutants as regional indicators of ambient air quality:



- Ozone
- Coarse particulate matter (PM10)
- Fine particulate matter (PM2.5)
- Nitrogen dioxide
- Carbon monoxide
- Sulfur dioxide
- Lead

Because these are the most prevalent air pollutants known to be harmful to human health based on extensive criteria documents, they are referred to as “criteria air pollutants.” In the SFBAAB, the primary criteria air pollutants of concern are ground-level ozone formed through reactions of oxides of nitrogen (NOx) and reactive organic gases (ROG), coarse particulate matter (PM10), and fine particulate matter (PM2.5). Regional air pollutants, such as ozone, PM10, and PM2.5, can be formed and/or transported over long distances and affect ambient air quality far from the emissions source. The magnitude and location of specific health effects from exposure to increased ozone, PM10, and PM2.5 concentrations are the result of emissions generated by numerous sources throughout the SFBAAB, as opposed to a single project.

Localized air pollutants generally dissipate with distance from the emission source and can pose a health risk to nearby populations. Toxic air contaminants (TACs), such as diesel particulate matter (DPM), are considered localized pollutants. PM2.5 is also considered a localized air pollutant, in addition to being considered a regional air pollutant. Air dispersion models can be used to reliably quantify the health risks to nearby receptors associated with emissions of localized air pollutants from an individual project.

## REGULATORY SETTING

### *Federal and State Regulations*

The federal EPA is responsible for implementing the programs established under the Federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans to attain the NAAQS. A State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. If a state fails to enforce its implementation of approved regulations, or if the EPA determines that a State Implementation Plan is inadequate, the EPA is required to prepare and enforce a Federal Implementation Plan to promulgate comprehensive control measures for a given State Implementation Plan.

CARB is responsible for establishing and reviewing the California Ambient Air Quality Standards (CAAQS), developing and managing the California State Implementation Plans, identifying TACs, and overseeing the activities of regional air quality management districts. In California, mobile emissions sources (e.g., construction equipment, trucks, and automobiles) are regulated by CARB and stationary emissions sources (e.g., industrial facilities) are regulated by the regional air quality management districts.

In accordance with the Federal Clean Air Act and California Clean Air Act, areas in California are classified as either in attainment, maintenance (i.e., former nonattainment), or nonattainment of the NAAQS and CAAQS for each criteria air pollutant. To assess the regional attainment status, the Bay Area Air Quality Management District (BAAQMD) collects ambient air quality data from



over 30 monitoring sites within the SFBAAB. Based on current monitoring data, the SFBAAB is designated as a nonattainment area for ozone, PM10 (CAAQS only), and PM2.5, and is designated as an attainment or unclassified area for all other pollutants (Table 2).

**Table 2. San Francisco Bay Area Air Basin Attainment Status with National Ambient Air Quality Standards**

POLLUTANT	AVERAGING TIME	CAAQS		NAAQS	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 Hours	0.070 ppm	N	0.070 ppm	N (marginal)
	1-Hour	0.09 ppm	N	Revoked in 2005	---
Carbon Monoxide	8 Hours	9.0 ppm	A	9 ppm	A
	1-Hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide	1-Hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	---	0.053 ppm	A
Sulfur Dioxide	24 Hours	0.04 ppm	A	0.14 ppm	A
	1-Hour	0.25 ppm	A	0.075 ppm	A
	Annual	---	---	0.030 ppm	A
Coarse Particulate Matter (PM10)	Annual	20 µg/m <sup>3</sup>	N	---	---
	24 Hours	50 µg/m <sup>3</sup>	N	150 µg/m <sup>3</sup>	U
Fine Particulate Matter (PM2.5)	Annual	12 µg/m <sup>3</sup>	N	12 µg/m <sup>3</sup>	U/A
	24 Hours	---	---	35 µg/m <sup>3</sup>	N (moderate)
Lead	30 Days	1.5 µg/m <sup>3</sup>	A	---	---
	Calendar Quarter	---	---	1.5 µg/m <sup>3</sup>	A
	Rolling 3 Months	---	---	0.15 µg/m <sup>3</sup>	A

Source: BAAQMD 2017a

Notes: CAAQS = California Ambient Air Quality Standards; NAAQS National Ambient Air Quality Standards; A = Attainment; N = Nonattainment; U = Unclassified; “---” = not applicable; ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter; PST = Pacific Standard Time.

### Regional Regulatory Framework

The BAAQMD is primarily responsible for ensuring that the NAAQS and CAAQS are attained and maintained in the SFBAAB. The BAAQMD fulfills this responsibility by adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions.



The BAAQMD has adopted thresholds of significance to assist lead agencies in the evaluation of ozone precursors (NOx and ROG), PM10, and PM2.5 emitted from individual projects that could have a cumulatively considerable contribution to adverse air quality in the SFBAAB. The BAAQMD’s thresholds of significance are summarized in Table 3.

**ASSESSMENT METHODOLOGY**

The Project’s potential impacts related to air quality were evaluated in accordance with the current BAAQMD CEQA Air Quality Guidelines. The Project’s estimated emissions associated with ROG, NOx, PM10, and PM2.5 were compared to the BAAQMD’s thresholds of significance presented in Table 3.

**Table 3. BAAQMD Project-level Thresholds of Significance**

IMPACT ANALYSIS	POLLUTANT	THRESHOLD
<b>Regional Air Quality (Construction)</b>	ROG	54 pounds/day (average daily emission)
	NOx	54 pounds/day (average daily emission)
	Exhaust PM10	82 pounds/day (average daily emission)
	Exhaust PM2.5	54 pounds/day (average daily emission)
	Fugitive dust (PM10 and PM2.5)	Best management practices
<b>Regional Air Quality (Operation)</b>	ROG	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
	NO <sub>x</sub>	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
	PM10	82 pounds/day (average daily emission) 15 tons/year (maximum annual emission)
	PM2.5	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
<b>Local Community Risks and Hazards</b>	Exhaust PM2.5 (project)	0.3 µg/m <sup>3</sup> (annual average)
	TACs (project)	Cancer risk increase > 10.0 in one million Chronic hazard index > 1.0
	Exhaust PM2.5 (cumulative)	0.8 µg/m <sup>3</sup> (annual average)
	TACs (cumulative)	Cancer risk > 100 in one million Chronic hazard index > 10.0

Source: BAAQMD 2023

Notes: ROG = reactive organic gases; NOx = oxides of nitrogen; PM10 = coarse particulate matter; PM2.5 = fine particulate matter; TACs = toxic air contaminants; µg/m3 = micrograms per cubic meter

**DISCUSSION OF IMPACTS**

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

**Less-than-Significant Impact**



The BAAQMD's 2017 Clean Air Plan (CAP) is the applicable air quality plan for projects located in the SFBAAB. Consistency may be determined by evaluating whether the Project supports the primary goals of the 2017 CAP, including applicable control measures contained within the 2017 CAP, and would not conflict with or obstruct implementation of any 2017 CAP control measures. The primary goals of the 2017 CAP are the attainment of ambient air quality standards and reduction of population exposure to air pollutants for the protection of public health in the Bay Area (BAAQMD 2017b). As described further in Impact b), the Project's air pollutant emissions would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment or expose the local community to substantial air pollutant concentrations.

The 2017 CAP includes control measures that aim to reduce air pollution and greenhouse gases (GHGs) from stationary, area, and mobile sources. The control measures are organized into nine categories: stationary sources, transportation, buildings, energy, agriculture, natural and working lands, waste, water, and super-GHG pollutants (e.g., methane, black carbon, and fluorinated gases). The consistency of the proposed Project with control measures from the 2017 CAP is summarized in Table 4.

**Table 4. Project Consistency with BAAQMD 2017 CAP**

CONTROL MEASURES	PROPOSED PROJECT CONSISTENCY
<b>Stationary Sources</b>	<b>Not applicable.</b> The stationary source measures are enforced by the BAAQMD pursuant to its authority to control emissions from permitted facilities. The Project would not create any permanent new stationary sources of emissions. Therefore, the control measures of the 2017 CAP are not applicable to the Project.
<b>Transportation</b>	<b>Not applicable.</b> The transportation control measures are designed to reduce vehicle trips, use, miles traveled, idling, or traffic congestion for the purpose of reducing vehicle emissions. The Project operation would not cause an increase in vehicle trips compared to the existing conditions. Therefore, the transportation control measures of the 2017 CAP are not applicable to the Project.
<b>Energy</b>	<b>Not applicable.</b> The energy control measures are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the 2017 CAP are not applicable to the Project.



CONTROL MEASURES	PROPOSED PROJECT CONSISTENCY
<b>Buildings</b>	<b>Not applicable.</b> The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the building control measures focus on working with local governments that have authority over local building codes to facilitate adoption of best GHG control practices and policies. The Project would construct any new buildings or include any work on existing buildings. Therefore, the building control measures of the 2017 CAP are not applicable to the Project.
<b>Agriculture</b>	<b>Not applicable.</b> The agriculture control measures are designed primarily to reduce emissions of methane. Since the Project does not include any agricultural activities, the agriculture control measures of the 2017 CAP are not applicable to the Project.
<b>Natural and Working Lands</b>	<b>Consistent.</b> The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. As described in Section 4.2.4, Biological Resources, although there are wetlands present within the Project site, the Project would not have any permanent impacts on rangelands or wetlands. Therefore, the Project would be consistent with the natural and working lands control measures of the 2017 CAP.
<b>Waste Management</b>	<b>Not applicable.</b> The waste management measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The Project would generate minimal amounts of waste during construction; however, operation of the Project would not cause an increase in waste generation. Therefore, the waste management measures of the 2017 CAP are not applicable to the Project.
<b>Water</b>	<b>Not applicable.</b> The water control measures to reduce emissions from the water sector are focused on minimizing emissions of GHGs, ROGs, and TACs from publicly owned treatment works (POTWs) and encouraging water conservation to reduce GHG emissions. The Project would rehabilitate an existing wastewater treatment facility and would not impact any water supply or distribution infrastructure. Therefore, the water control measures of the 2017 CAP are not applicable to the Project.
<b>Super GHGs</b>	<b>Not applicable.</b> The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the super-GHG control measures of the 2017 CAP are not applicable to the Project.

Source: BAAQMD 2017b



As shown above in Table 4, the Project would not conflict with control measures of the 2017 CAP. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and the impact would be less than significant.

- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?**

**Less-than-Significant Impact with Mitigation Incorporated**

Project construction activities would generate criteria air pollutant emissions that could potentially affect regional air quality. During construction, the primary pollutant emissions of concern would be ROG, NOx, PM10, and PM2.5 from the exhaust of off-road construction equipment and on-road construction vehicles related to worker vehicles, vendor trucks, and haul trucks. In addition, fugitive dust emissions of PM10 and PM2.5 would be generated by soil disturbance and demolition activities. The Project’s emissions of fugitive dust during construction are analyzed separately, further below.

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod), Version 2022.1, to estimate construction and operational emissions of pollutants from a project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land-use projects that can be used if site-specific information is not available. CalEEMod Version 2022.1 was used to estimate construction and operational emissions of pollutants from the proposed Project. The primary input data used to estimate emissions associated with construction of the Project were provided by the Project applicant and contain information on construction duration, construction-related vehicle trips, trip lengths, and off-road construction equipment inventory and usage. Construction information provided by the applicant and a copy of the CalEEMod report, which summarizes the input parameters, assumptions, and findings, are included in Appendix B.

As described in Section 3.0, Project Description, construction would last from June 2025 to October 2025. To analyze daily emission rates, the total emissions estimated during construction were averaged over a total of 110 working days. The average daily emissions were then compared to the BAAQMD’s thresholds of significance, as shown in Table 5.

**Table 5. Criteria Air Pollutant Emissions during Construction (Pounds per Day)**

EMISSIONS SCENARIO	ROG	NOX	EXHAUST PM10	EXHAUST PM2.5
<b>Construction Emissions</b>	4.3	35.1	1.2	1.1
<b>Thresholds of Significance</b>	54	54	82	54
<b>Exceed Threshold?</b>	No	No	No	No

Source: CalEEMod Report, Appendix B

As shown above in Table 5, construction emissions from ROG, NOx, and PM10 and PM2.5 from vehicle exhaust, would not exceed the BAAQMD’s thresholds of significance.

The generation of fugitive dust PM10 and PM2.5 emissions from soil disturbance activities during construction could result in a cumulatively considerable net increase in regional PM10 and PM2.5 concentrations. The BAAQMD does not have a quantitative threshold of significance for fugitive dust PM10 and PM2.5 emissions; however, the BAAQMD considers implementation of dust

control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level. The Project would implement Mitigation Measure AIR-1, which contains BMPs from the BAAQMD's CEQA Guidelines. Implementation of Mitigation Measure AIR-1 would ensure that Project construction activities would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment.

With the implementation of Mitigation Measure AIR-1, construction of the Project would not result in a cumulatively considerable net increase in ROG, NOx, PM2.5, or PM10 emissions. Operation of the Project would not create any new, permanent sources of emissions. Therefore, the Project would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. The impact would be less than significant with mitigation incorporated.

**c) *Expose sensitive receptors to substantial pollutant concentrations?***

***Less-than-Significant Impact***

Sensitive receptors are groups of people that are more affected by air pollution than others. CARB has identified that the following persons are considered air quality sensitive receptors: children, elderly, asthmatics, and others who are at a heightened risk of negative health outcomes due to exposure to air pollution (CARB 2023b). Locations that may contain a high concentration of these sensitive population groups include residential areas, schools, hospitals, daycare facilities, and elder care facilities. The nearest sensitive receptors to the Project site are the residents of the residential areas surrounding the proposed pipeline alignment.

Construction activities could generate DPM and PM2.5 emissions from off-road diesel construction equipment and on-road heavy-duty diesel trucks that could potentially result in elevated health risks at nearby sensitive receptors. The BAAQMD recommends evaluating a project's potential health risks to sensitive receptors within 1,000 feet of the project during project construction.

The Office of Environmental Health Hazard Assessment does not recommend assessing cancer risk for projects lasting less than two months due to the uncertainty in assessing cancer risk from short-term exposures. Although Project construction would last for approximately four months, the Project involves rehabilitation of a linear pipeline, so construction work would move throughout the Project site during the four-month construction period. As construction activities within the 1,000 feet zone of influence of any given sensitive receptor would last less than two months, a health risk assessment was not conducted, and the short-term Project construction emissions are presumed to be negligible. According to Project-specific construction information, most of the construction offroad equipment that is going to be used for this Project would be equipped with Tier 4 engines, which are considered the best available technology for reducing DPM emissions. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant.

**d) *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

***Less-than-Significant Impact with Mitigation Incorporated***

Project construction could generate unpleasant odors due to the need for a temporary sewer bypass pipeline. Sewer gas is a mixture of gases created by anaerobic bacteria that break down



sewage and sludge. The gas can contain hydrogen sulfide, which smells like rotten eggs, even in low concentrations. Odors would be generated during Project construction due to the use of gasoline- and/or diesel-powered construction equipment that emit exhaust fumes. The bypass pipeline would be constructed in primarily agricultural areas adjacent to Llano Road and Meadow Lane and would not be situated directly adjacent to residences or other occupiable structures. Odors caused by the bypass pipeline are not anticipated to affect a substantial number of people due to the Project site's location within an area of agricultural, low density residential, and industrial land uses. However, a leak or break in the bypass pipeline may exacerbate the level of odors being emitted from the Project site. The pipeline would be monitored 24/7 throughout Project construction to ensure that any leaks or breaks are discovered and addressed immediately. Nevertheless, in the case that a leak or break were to go undiscovered, odors generated by such leakage may be objectionable to neighbors and cause complaints. The Project would implement Mitigation Measure AIR-2, which would require that the phone number of the construction site manager be posted at the Project site as the number to call regarding odor complaints. The construction site manager would be responsible for addressing and resolving any complaints that arise from issues with the bypass pipeline.

Removal of the bypass pipeline after construction is complete may also generate objectionable odors. These odors would be temporary and therefore would not be enough to adversely impact substantial numbers of people. As such, construction of the Project would not generate odors which would adversely impact substantial numbers of people. The impact would be less-than-significant with mitigation incorporated.

After construction and site cleanup activities have been completed, the Project would not generate any objectionable odors. The rehabilitated sewer line would be underground, and there would be no new aboveground infrastructure which would create odors. Project operation would not result in other emissions, such as those leading to odors. No impact would occur.

## MITIGATION MEASURES

### *Mitigation Measure AIR-1: Fugitive Dust Control Measures*

The Project shall implement BMPs as recommended by the BAAQMD 2022 CEQA Air Quality Guidelines, which include the following measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne



toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

***Mitigation Measure AIR-2: Odor Complaints***

The construction site manager's phone number shall be posted in at least three locations spaced throughout the Project site. Each sign shall state that the construction site manager should be contacted with any odor concerns or complaints. The construction site manager shall be responsible for investigating any odor complaints and resolving issues related to leaks or breaks in the bypass pipeline.



#### 4.2.4 Biological Resources

Would the project:	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Incorporated</i>	<i>Less-than-Significant Impact</i>	<i>No Impact</i>
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### METHODOLOGY

On March 20, April 25, and May 22, 2024, WRA biologists visited the Project site to map vegetation, aquatic communities, unvegetated land cover types, document plant and wildlife species present, evaluate habitat on site for the potential to support special-status species as



defined by the CEQA and conducted special-status plant surveys. The results of the field surveys are discussed in the BRTR prepared by WRA in 2024 (Appendix C).

Prior to visiting the Project site, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive biological communities (e.g., wetlands) and special-status species (e.g., endangered plants), including:

- Soil Survey of Sonoma County, California (United States Department of Agriculture [USDA] 1972)
- Sebastopol and Two Rock 7.5-minute quadrangles (United States Geological Survey [USGS] 2021)
- Contemporary aerial photographs (Google Earth 2024)
- Historical aerial photographs (Historical Aerials 2024)
- National Wetlands Inventory (United States Fish and Wildlife Service [USFWS] 2024a)
- California Aquatic Resources Inventory (San Francisco Estuaries Institute [SFEI] 2024)
- California Natural Diversity Database (CNDDDB, California Department of Fish and Wildlife [CDFW] 2024a)
- California Native Plant Society (CNPS) Electronic Inventory (CNPS 2024a)
- Consortium of California Herbaria (CCH 2024)
- California Aquatic Resource Inventory (SFEI 2024)
- USFWS List of Federal Endangered and Threatened Species (USFWS 2024b)
- CDFW Publication, California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- CDFW and University of California Press publication California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009)
- A Manual of California Vegetation Online (CNPS 2024b)
- Preliminary Descriptions of the Terrestrial Natural Communities (Holland 1986)
- Sonoma County Fine Scale Vegetation and Habitat Map (Sonoma County 2020)
- California Natural Community List (CDFW 2018b)

Database searches (i.e., CNDDDB, CNPS) focused on Guerneville, Healdsburg, Mark West Springs, Camp Meeker, Sebastopol, Santa Rosa, Valley Ford, Two Rock, and Cotati USGS 7.5-minute quadrangles for special-status plants and wildlife (CDFW 2024a, CNPS 2024a).

Following the remote assessment, WRA biologists completed a field review over the course of one day to document: (1) land cover types (e.g., terrestrial communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic natural communities (e.g., wetlands) are present, and (4) if special-status species are present .



### **Special-status Species**

Potential occurrence of special-status species in the Project site was evaluated by first determining which special-status species occur in the vicinity of the Project site through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the May 2024 site visit based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur within the Project site was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDDB, other reports) on the site in the recent past.

If a more thorough assessment was deemed necessary, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. If designated critical habitat is present for a species, the extent of critical habitat present and an evaluation of critical habitat elements is provided in the Discussion of Impacts below.

### **Special-status Plants**

Protocol-level rare plant surveys following CDFW and USFWS guidelines were conducted in the spring of 2023 and 2024. During the assessment, all plants were identified using the *Jepson Manual, 2<sup>nd</sup> Edition* (Baldwin et al. 2012), *A Flora of Sonoma County* (Best et al. 1996), and/or the Jepson Flora Project (eFlora 2023). All observed plants are included in Appendix B of the BRTR (Appendix C). Those special-status plants with the potential to occur based on the physical and biological characteristics of the Project site are described below in Discussion of Impacts.

### **Special-status Wildlife**

The general assessment for special-status wildlife determined that a few species have the potential to occur within the Project site. A targeted assessment for CTS and other special-status wildlife habitat was conducted on March 25, 2024. The site was traversed systematically by a WRA biologist with experience in CTS habitat, distribution, and ecology. Observations on physical characteristics such as mammal burrows (potential summer refugia); wetland shape, extent, and depth (potential breeding habitat); and density of upland vegetation (potential dispersal habitat) were noted if present. The



areas adjacent to the Project site were assessed for their potential to present barriers to CTS that would ingress or egress from the site if present. Protocol-level surveys were not conducted for any wildlife species.

## **REGULATORY SETTING – FEDERAL AND STATE**

### ***Endangered and Threatened Plants, Fish, and Wildlife***

Specific species of plants, fish, and wildlife may be designated as threatened or endangered by the Federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of "endangered" and "threatened" plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to the take of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in "take" of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (California Fish and Game Code (CFGC) 2050 et seq.) prohibits a "take" of any plant and animal species that the California Fish and Game Commission determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to "candidate species" which are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. The CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), if the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit.

### ***Fully Protected Species and Designated Rare Plant Species***

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or the ESA. Fully Protected Species includes specific lists



of birds, mammals, reptiles, amphibians, and fish designated in the CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for the take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the CFGC and the CESA.

### **Special Protections for Nesting Birds and Bats**

The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are like those provided by the ESA. In addition to regulations for special-status species, most native birds in the U.S., including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 (MBTA) and CFGC, i.e., Sections 3503, 3503.5 and 3513. Under these laws/codes, the harm or collection of adult birds as well as the collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA (Western Bat Working Group [WBWG] 2024).

### **Species of Special Concern, Movement Corridors, and Other Special-Status Species under CEQA**

A Species of Special Concern is a species formally designated by CDFW which meet one or more criteria related to federal ESA status (if it is not listed under CESA), extirpation from California, documented population declines, or small population size within California and risk of declines. Section 15280 of the CEQA Guidelines states that species of special concern must be included in project impact analyses. In addition, CDFW has developed a special animals list as "a general term that refers to all of the taxa the California Natural Diversity Database (CNDDDB) is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2023) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

## **REGULATORY SETTING - LOCAL**

### **Santa Rosa Plain Conservation Strategy**

The Conservation Strategy Area is an area established by the USFWS for the protection and continued existence of California tiger salamander (CTS, *Ambystoma californiense*) and three endangered plant species: Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), and Sebastopol meadowfoam (*Limnanthes vinculans*). The Final Conservation Strategy (Conservation Strategy Team 2005) outlines the species of concern for this area along with guidance for specific conservation measures. In 2007 the Corps consulted with USFWS for Section 404 permitting within Conservation Strategy Area, which resulted in the issuance of a Programmatic Biological Opinion (PBO; USFWS 2007). The PBO was updated in June 2020 to



address the addition of CTS Critical Habitat (USFWS 2020). The PBO for the Conservation Strategy outlines the mitigation requirements necessary to compensate for impacts to wetlands and associated species including CTS and the three listed plants. The PBO can be appended to permits authorized by the Corps. Inclusion of a Project under the PBO requires a federal nexus (i.e. impacts to Corps wetlands) which would trigger a Section 7 Consultation between the Corps and the USFWS.

### **City of Santa Rosa General Plan**

The City’s General Plan Open Space and Conservation Element includes the following applicable policies pertaining to biological resources:

**Policy OSC-D-1:** Utilize existing regulations and procedures, including Subdivision Guidelines, Zoning, Design Review, and environmental law, to conserve wetland and rare plants. Comply with the federal policy of no net loss of wetlands using mitigation measures such as:

- Avoidance of sensitive habitat;
- Clustered development;
- Transfer of development rights; and/or
- Compensatory mitigation, such as restoration or creation.

**Policy OSC-D-2:** Protect high quality wetlands and vernal pools from development or other activities as determined by the Vernal Pool Ecosystem Preservation Plan.

**Policy OSC-D-4:** Continue to consult with the California Department of Fish and Wildlife to identify significant environments. Identify priorities for acquisition or maintenance of open space areas based on biological and environmental concerns and develop an overall strategy for the maintenance of areas that will preserve the populations of plants and animals currently found within the Urban Growth Boundary.

**Policy OSC-D-5:** Consult with North Coast Regional Water Quality Control Board staff as part of the CEQA process for proposed developments to help them identify wetland and vernal pool habitat that has candidacy for restoration/protection based on actual and potential beneficial uses and determine appropriate locations for mitigation banking.

**Policy OSC-D-6:** Preserve waterways by informing residents of the environmental effects of dumping yard waste into creeks, or other wastes, such as motor oil, into storm drains that empty into creeks.

**Policy OSC-D-9:** Ensure that construction adjacent to creek channels is sensitive to the natural environment. Ensure that natural topography and vegetation is preserved along the creek, and that construction activities do not disrupt or pollute the waterway.

### **City of Santa Rosa Tree Ordinance**

The City of Santa Rosa recognizes the aesthetic, environmental, and economic benefits mature trees provide to the citizens of the City. Chapter 17-24, “Trees” of the Santa Rosa City Code (Tree Ordinance) regulates the protection of certain trees on public and private properties within the City limits. The Tree Ordinance defines a “heritage tree” as: valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), or buckeye (*Aesculus californica*) 19 inches circumference at breast height (measured at 4.5 feet above ground; or six inches diameter at breast height [DBH]) or greater; madrone (*Arbutus menziesii*) 38 inches circumference (12 inches DBH) or greater; coast live oak



(*Q. agrifolia*), black oak (*Q. kelloggii*), Oregon oak (*Q. garryana*), canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizeni*), red alder (*Alnus rubra* [*A. oregona*]), or white alder (*A. rhombifolia*) 57 inches circumference (18 inches DBH) or greater; or redwood (*Sequoia sempervirens*), bay (*Umbellularia californica*), Douglas fir (*Pseudotsuga menziesii*), or big-leaf maple (*Acer macrophyllum*) 75 inches circumference (24 inches DBH) or greater.

A Tree Permit is generally required for the removal, alteration or relocation of any “heritage tree,” “protected tree” (i.e. any tree, including a heritage tree, designated to be preserved on an approved development plan or as a condition of approval of a tentative map, a tentative parcel map, or other development approval issued by the City), or “street tree” (i.e. any tree having a single trunk circumference greater than 6.25 inches or a diameter greater than two inches, a height of more than six feet, and one half or more of its trunk is within a public right of way or within five feet of the paved portion of a City street or a public sidewalk), except as exempted in Section 17-24.030 of the Tree Ordinance. Several non-native species including acacia, silver maple, ailanthus, hawthorn, fruitless mulberry, privet, pyracantha, Monterey pine, Monterey cypress, and fruit and nut trees (except walnut) are exempt from the provisions of the Tree Ordinance. Trees, other than heritage trees, situated within City owned parks and other City owned or controlled places when altered, removed, or relocated by City employees or by contractors retained by the City are also exempt.

### ***City of Santa Rosa Creekside Development Ordinance***

Section 20-30.040 “Creekside Development,” of the Santa Rosa City Code defines minimum setbacks from waterways for new structures to protect the public from the hazards of streambank failures and flooding. Under the ordinance, buildings of any type, driveways, streets, parking areas, patios, platforms, decks, fences, earth fill or other structural debris fill, and retaining walls, shall be setback a minimum of 50 feet from: (a) the top of the highest bank for streams with defined channels and banks with slopes gentler than 2.5:1; (b) the intersection of 2.5:1 slope from toe of bank with top-of-bank where the natural bank is steeper than 2.5:1; or (c) the 100-year storm freeboard level for streams where there is no defined top-of-bank. Bridges for motor vehicles, pedestrians, and/or bicycles, and/or public utility infrastructure may cross through a waterway setback area and over or under its channel, provided that the installation has received all required approvals from the City.

### ***Sonoma County General Plan***

#### ***Sensitive Natural Communities***

In conjunction with the CDFW, Sonoma County has identified several habitats as sensitive natural communities which include coastal salt marsh, brackish water marsh, freshwater marsh, freshwater seeps, native grasslands, several types of forest and woodland (including riparian, valley oak, Oregon white oak, black oak, buckeye, Sargent cypress and pygmy cypress, old growth redwood and Douglas fir forest), mixed serpentine chaparral, and coastal scrub, prairie, bluff, and dunes. The County’s General Plan states that the General Plan shall be consulted should any project activities occur within any of the above-mentioned habitats.

#### ***Valley Oak Habitat Combining Zone (VOH)***

The Sonoma County General Plan Open Space and Resource Conservation Element calls for the designation of a VOH Combining Zone wherein the Native and Heritage Tree



Ordinance has special enforcement for the removal and replacement of valley oaks. Within the VOH, the removal of any large valley oak (20 inches DBH or greater), or small valley oaks (less than 20 inches DBH) with a cumulative DBH of 60 inches are included. Sites within the VOH where valley oaks are removed shall either (1) retain equivalent sized valley oaks, (2) replacement planting of valley oaks on- or off-site, (3) a combination of 1 and 2, or (4) pay an in-lieu fee based on the cumulative DBH of valley oaks removed. The mitigation shall be completed within one calendar year of the removal.

Exceptions to the ordinance include (1) emergency removal of valley oak trees, (2) dead or irretrievably damaged or destroyed through unintentional means, or (3) part of a development project subject to design review. Development projects under design review shall require, but not be limited to, a requirement that valley oaks constitute a minimum of 50 percent of the required landscape trees.

### ***Riparian Corridor Combining Zone***

The Sonoma County General Plan Open Space and Resource Conservation Element calls for the designation of Riparian Corridor conservation areas along selected streams throughout the County. In November 2014, the Riparian Corridor conservation areas were amended to include new agricultural activities along with other activities that could pose a potential impact to the County's streams. The County designated the following three zones with varying setbacks:

- Russian River Riparian Corridor: 200 feet
- Flatland Riparian Corridors: 100 feet
- Other riparian corridors: 50 feet

Non-conforming activities within these setbacks require biological review and approval from the Permit and Resource Management Department and/or the Office of Agricultural Commissioner of Sonoma County. Non-conforming uses with some exemptions include but are not limited to grading vegetation removal (riparian vegetation), agricultural cultivation, structures, roads, utility lines, and parking lots.

### ***Sonoma County Tree Protection Ordinance***

The Sonoma County Tree Ordinance (Sonoma County Municipal Code Chapter 26) requires those projects seeking a permit from the County (e.g., grading, building) that may impact protected trees, or their protected perimeters, shall provide an accompanying site plan. The site plan must include the location, species, and size of all impacted trees as well as those near project-related activities where effects of such could damage trees. The County encourages that trees not scheduled for removal, should include protective measures. Trees scheduled for removal must be evaluated for their "arboreal value" and compensated with either on-site or off-site plantings, preservation of existing trees not scheduled for removal, or with in-lieu fees.

Protected trees are defined as the native trees, including big leaf maple (*Acer macrophyllum*), black oak, blue oak, coast live oak, interior live oak, oracle oak (*Q. morehus*), Oregon oak, valley oak, redwood, madrone, California bay, and their hybrids, with a DBH of 9 inches or greater. For trees with multiple trunks, the measurement includes the measurement of two or more trunks, which, if combined are equal to or greater than the minimum size stipulated. In addition, the



valley oak shall receive special consideration under the Tree Ordinance to the extent that mature specimens of the species shall be retained to the fullest extent feasible.

Exemptions to tree protections include timber harvest plans filed with the State of California, emergency tree removal in the instance of hazards, lot line adjustments, zoning permits, and certain agricultural uses including: the raising, feeding, maintaining and breeding of confined and unconfined animals, commercial aquaculture, commercial mushroom farming, wholesale nurseries, greenhouses, wineries, and agricultural cultivation.

## ENVIRONMENTAL SETTING

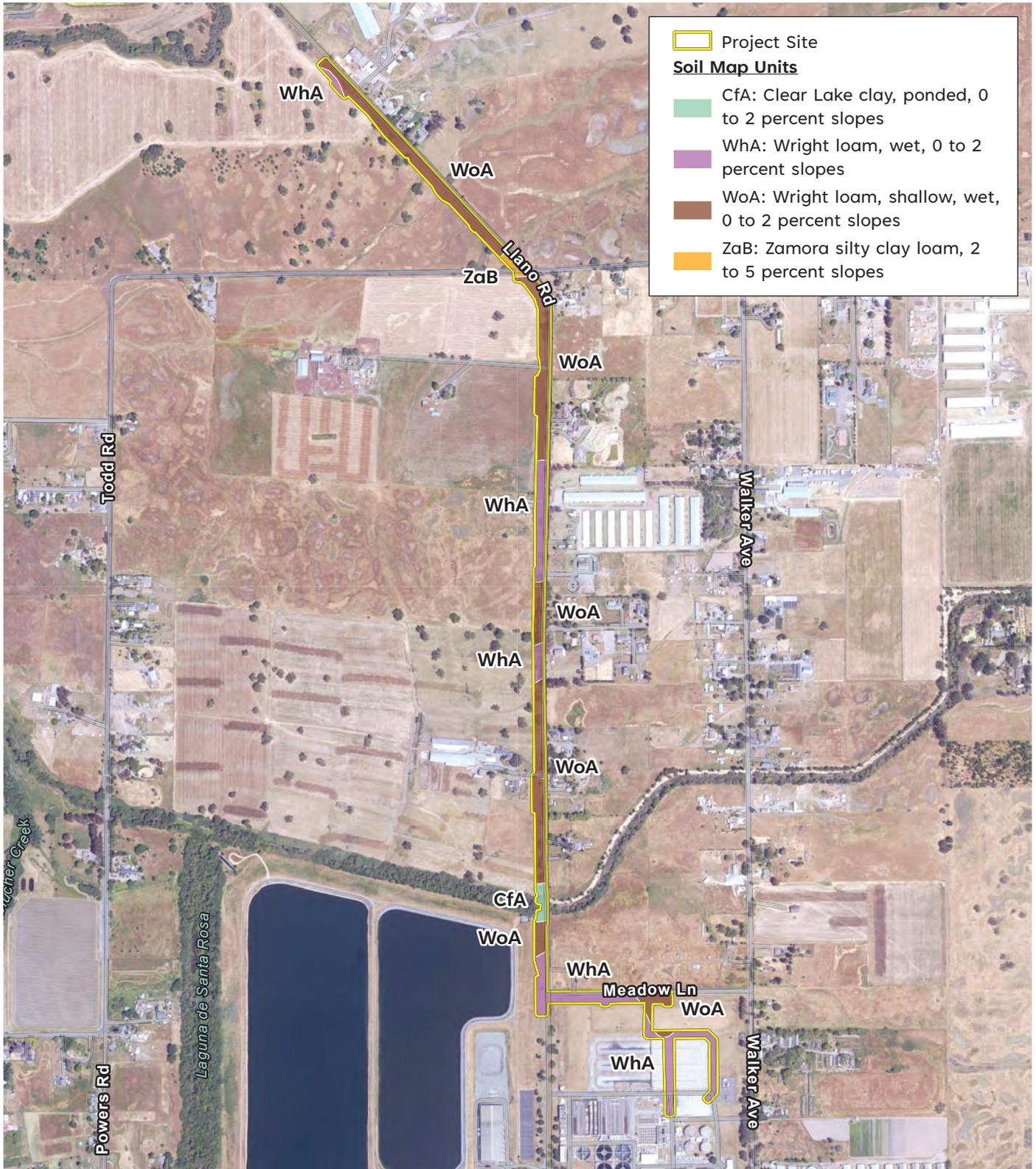
### *Soils and Topography*

The overall topography of the Project site is flat, with slopes of less than five percent, and an elevation of approximately 90 feet. According to the *Soil Survey of Sonoma County* (USDA 1972), the Project site is underlain by four soil mapping units: Wright Loam, wet 0 to 2 percent slopes; Wright Loam, shallow, wet, 0 to 2 percent slopes; Clear Lake Clay, ponded, 0 to 2 percent slopes; and Zamora silty clay loam moist, 0 to 8 percent slopes. The parent soil series are summarized below. Figure 4 depicts soil types within the Project site.

- **Wright Series:** The Wright series consists of deep, somewhat poorly drained soils formed in alluvium from mixed rock sources. Wright soils are on low terraces and have slopes of 0 to 9 percent. Soils have slow runoff and very slow permeability. Typically, in the months of December through April, a perched water table occurs at a depth of two to three feet.
- **Clear Lake Series:** Soils in the Clear Lake series consist of very deep, poorly drained clay formed in alluvium derived from sandstone and shale on basins and swales of drainage ways. These soils occur under grasslands, crop fields and rangeland, have negligible to high runoff with slow to very slow permeability with an intermittent perched water table very near the surface during the wet winter months. The Clear Lake series is considered a hydric soil in the survey area of the Soil Survey of Sonoma County (USDA 2021).
- **Zamora Series:** The Zamora series consists of very deep, well drained soils that formed in alluvium from mixed rocks. Zamora soils are on alluvial fans, stream terraces and flood plains. Zamora soils have slow to medium runoff and moderately slow permeability.



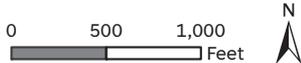
Path: L:\Acad 2000 Files\3300000\330204\GIS\ArcMap\330204Base.aprx Layout Name: Soils



Sources: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: rochelle, 6/26/2024

Figure 4. Soil Types Within the Project Site

Llano Road Trunk Sewer Phase I Rehabilitation Project  
Santa Rosa, Sonoma County, California



### ***Climate and Hydrology***

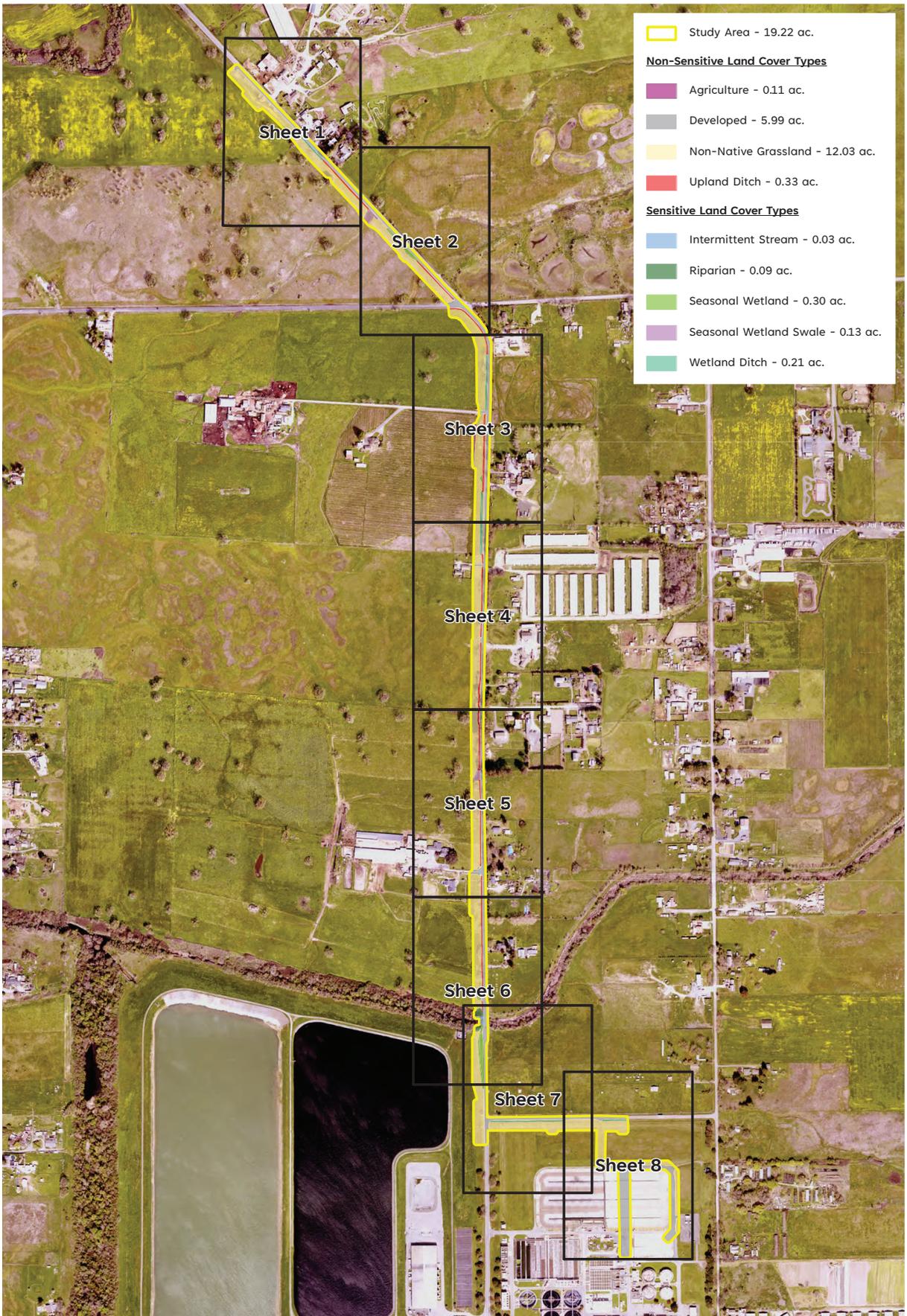
The Project site is located within the valley fog incursion zone of Sonoma County where summer temperatures are buffeted by fog and fog drip contributes to annual rainfall totals. Winter “tule” fog is common, and summer “coastal” fog emerges with increased interior temperatures. The average monthly maximum temperature of Santa Rosa is 82.8 °F, while the average monthly minimum temperature is 36.7 °F. Predominantly, precipitation falls as rainfall with an annual average of 30.1 inches. Precipitation-bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March, with a combined average of 24.5 inches (USDA 2023).

The local watershed is Lower Laguna de Santa Rosa and the regional watershed is Mark West Creek. The Laguna de Santa Rosa is the receiving drainage for the Project site, with all waters eventually flowing into this drainage. The Laguna de Santa Rosa is a named blue-line stream on the Sebastopol USGS 7.5-minute quadrangle (USGS 2015). This flows into Mark West Creek and onward into the Russian River. Other than the tributaries of the Laguna de Santa Rosa (e.g., Colgan Creek), there are no blue-line streams or other aquatic features on the quadrangle within the Project site (USGS 2015). The National Wetlands Inventory mapped three ‘Freshwater Emergent Wetland’ features and one ‘Riverine’ (Colgan Creek) feature within the Project site (NWI; USFWS 2023a), and the California Aquatic Resources Inventory (CARI; SFEI 2023) mapped one ‘Fluvial Unnatural’ feature, four ‘Fluvial Natural’ features, and five ‘Vernal Pool’ features.

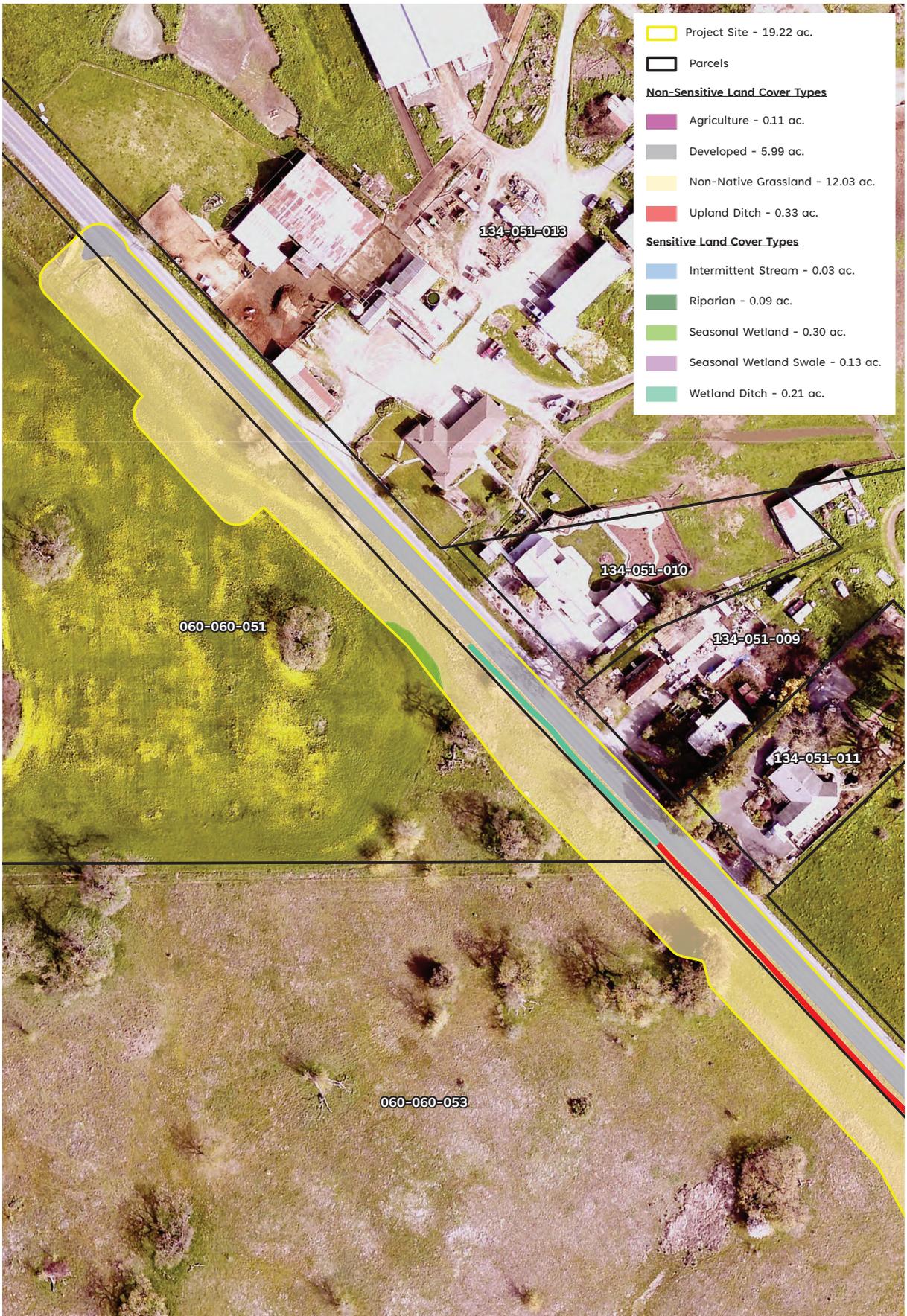
### ***Vegetation Communities and Land Cover***

WRA observed nine land cover types within the Project site: agriculture, developed areas, upland ditch, non-native grassland with scattered trees, seasonal wetland, seasonal wetland swale, wetland ditch, intermittent stream, and riparian. Land cover types within the Project site are illustrated in Figure 5. The non-sensitive land cover types in the Project site include the developed areas, agricultural areas, upland ditch, and the non-native grassland, while the sensitive communities are seasonal wetlands, seasonal wetland swale, wetland ditch, riparian, and intermittent stream.





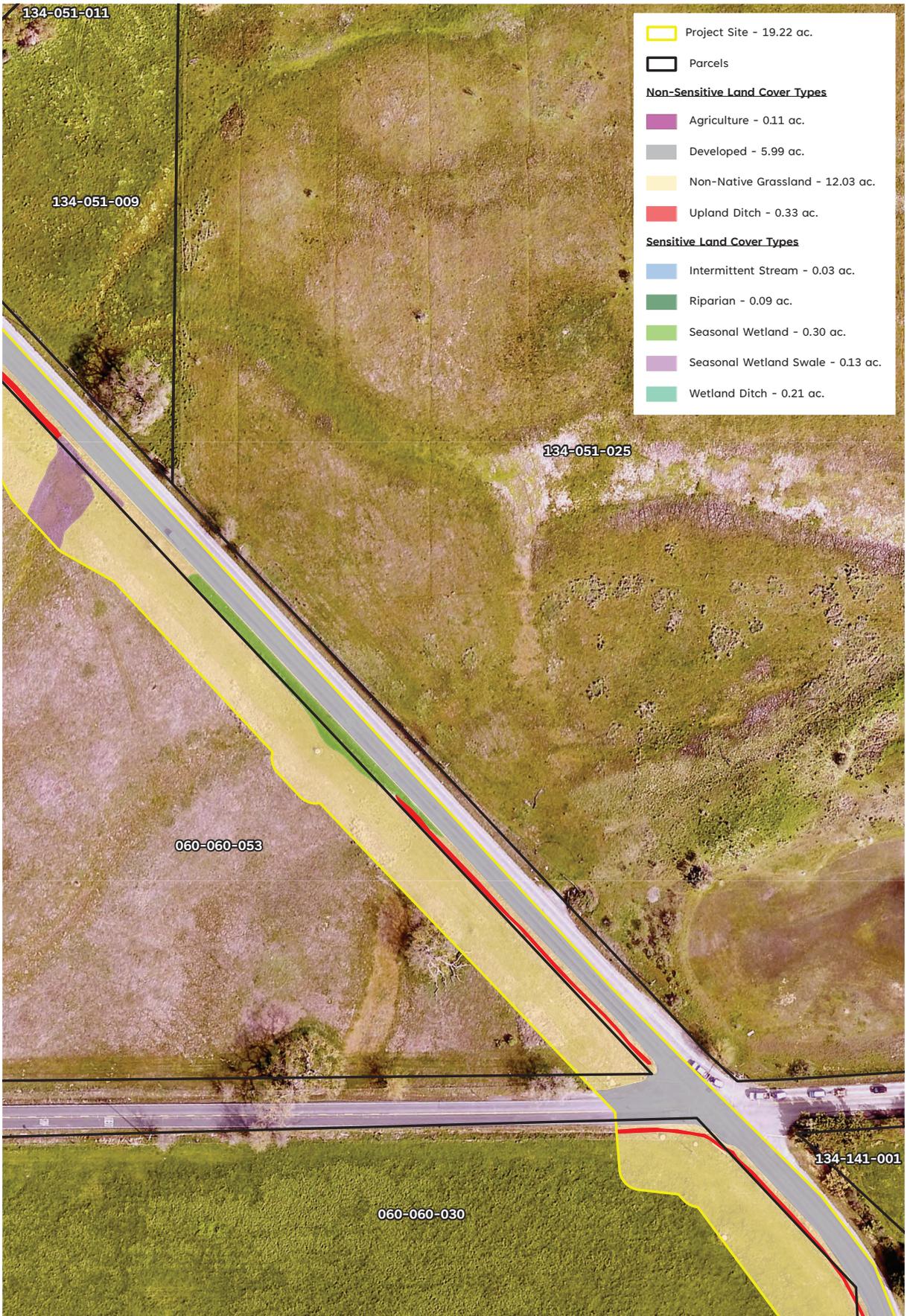
**Figure 5-1. Natural Communities and Land Cover within the Project Site (Overview)**



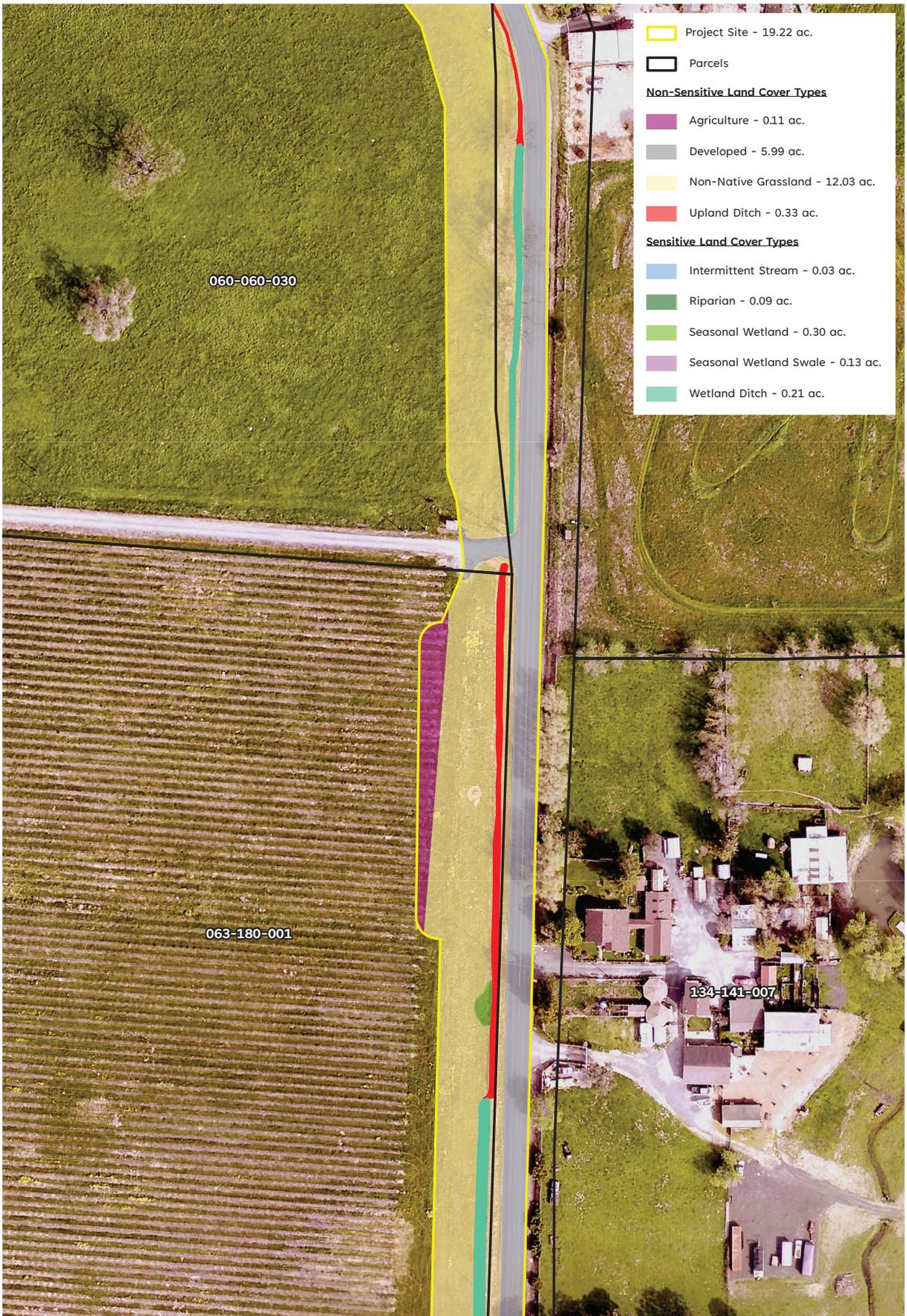
Path: L:\Acad\_2000\Files\330000\033020\060\051\AcMap\33020\060\051\Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 5-2. Natural Communities and Land Cover within the Project Site (Sheet 1)**



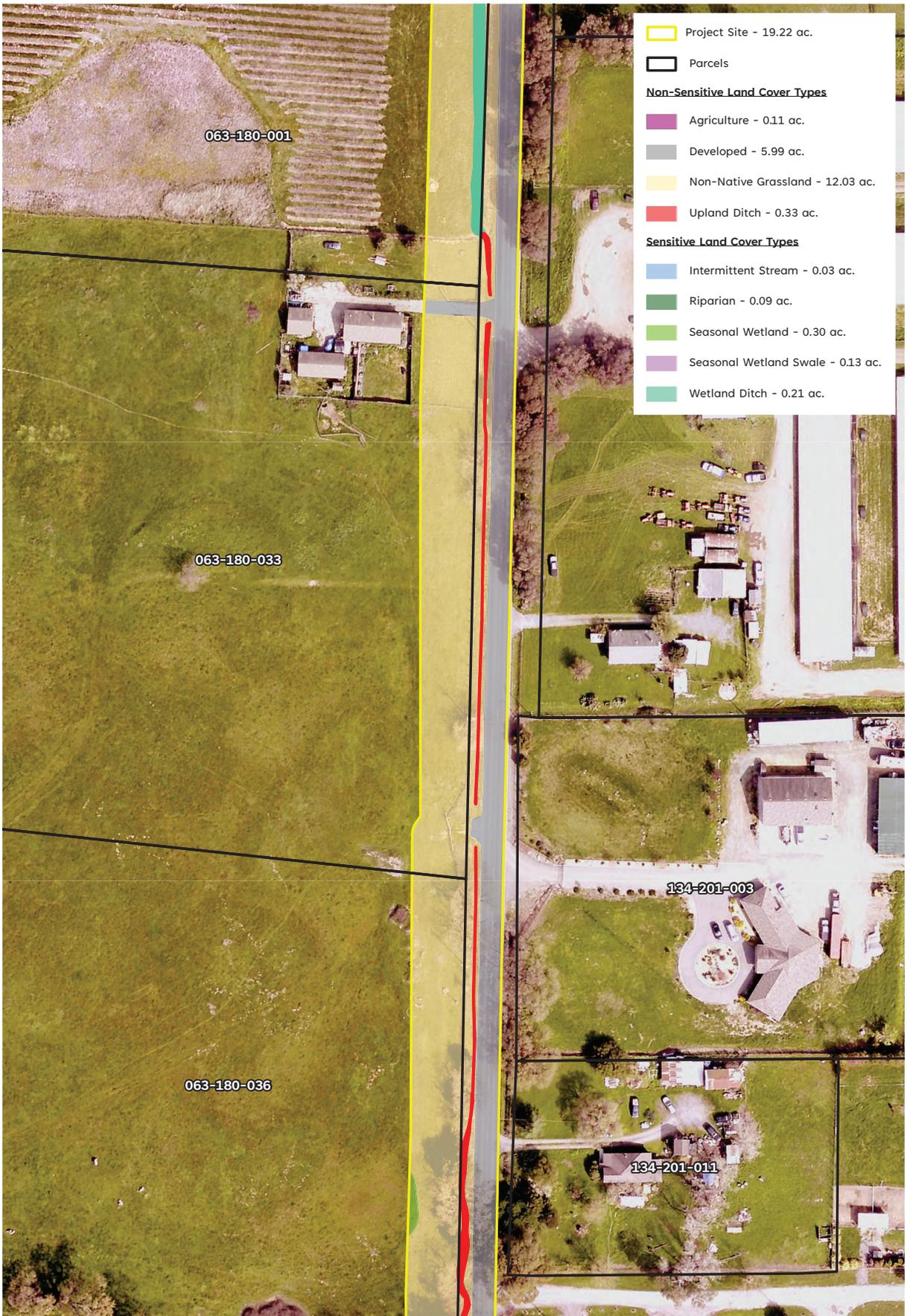
**Figure 5-3. Natural Communities and Land Cover within the Project Site (Sheet 2)**



Path: L:\Acad\_2000\Files\33000\03302046\5\AcMap\3302046Base.aprx, Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

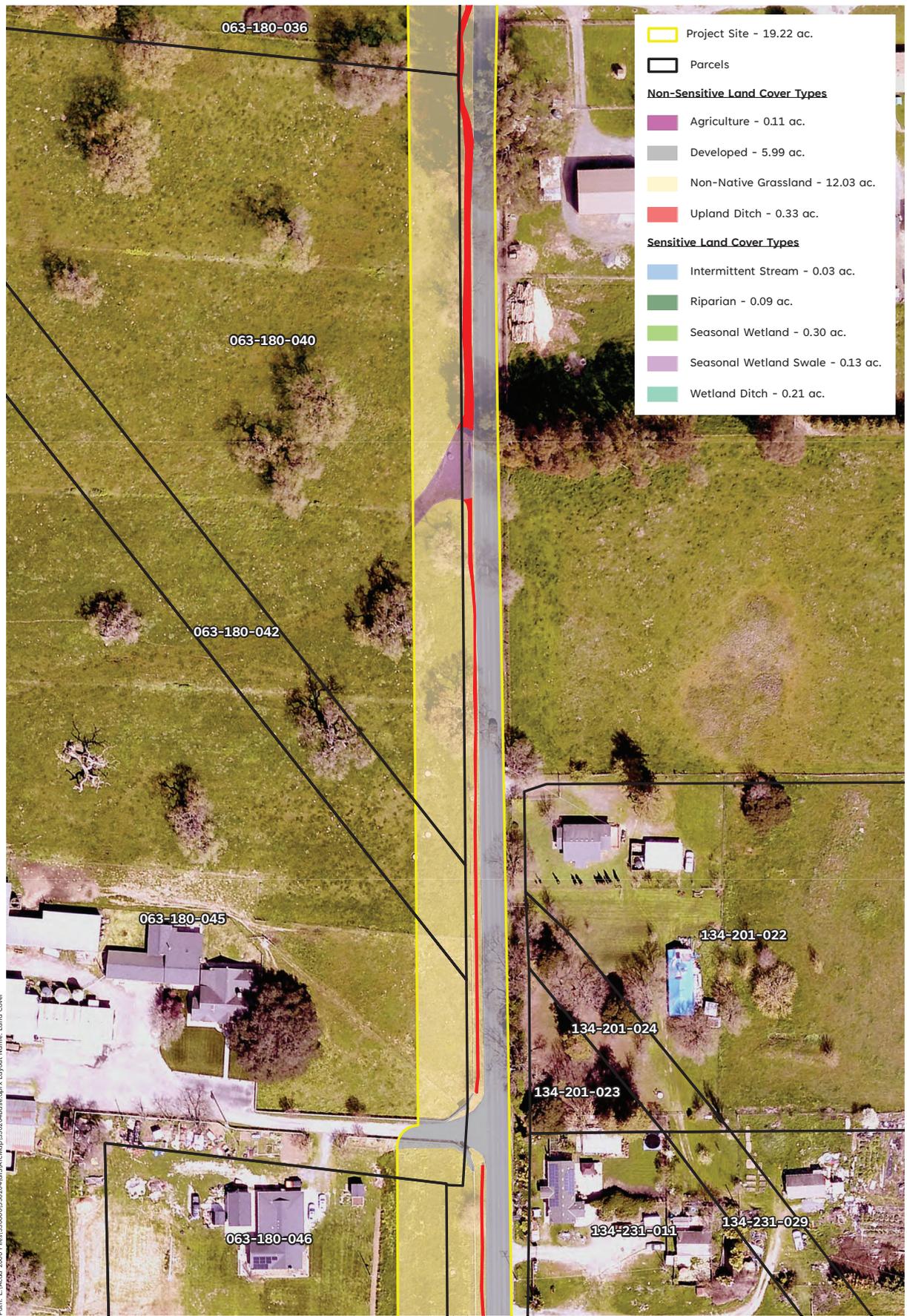
**Figure 5-4. Natural Communities and Land Cover within the Project Site (Sheet 3)**



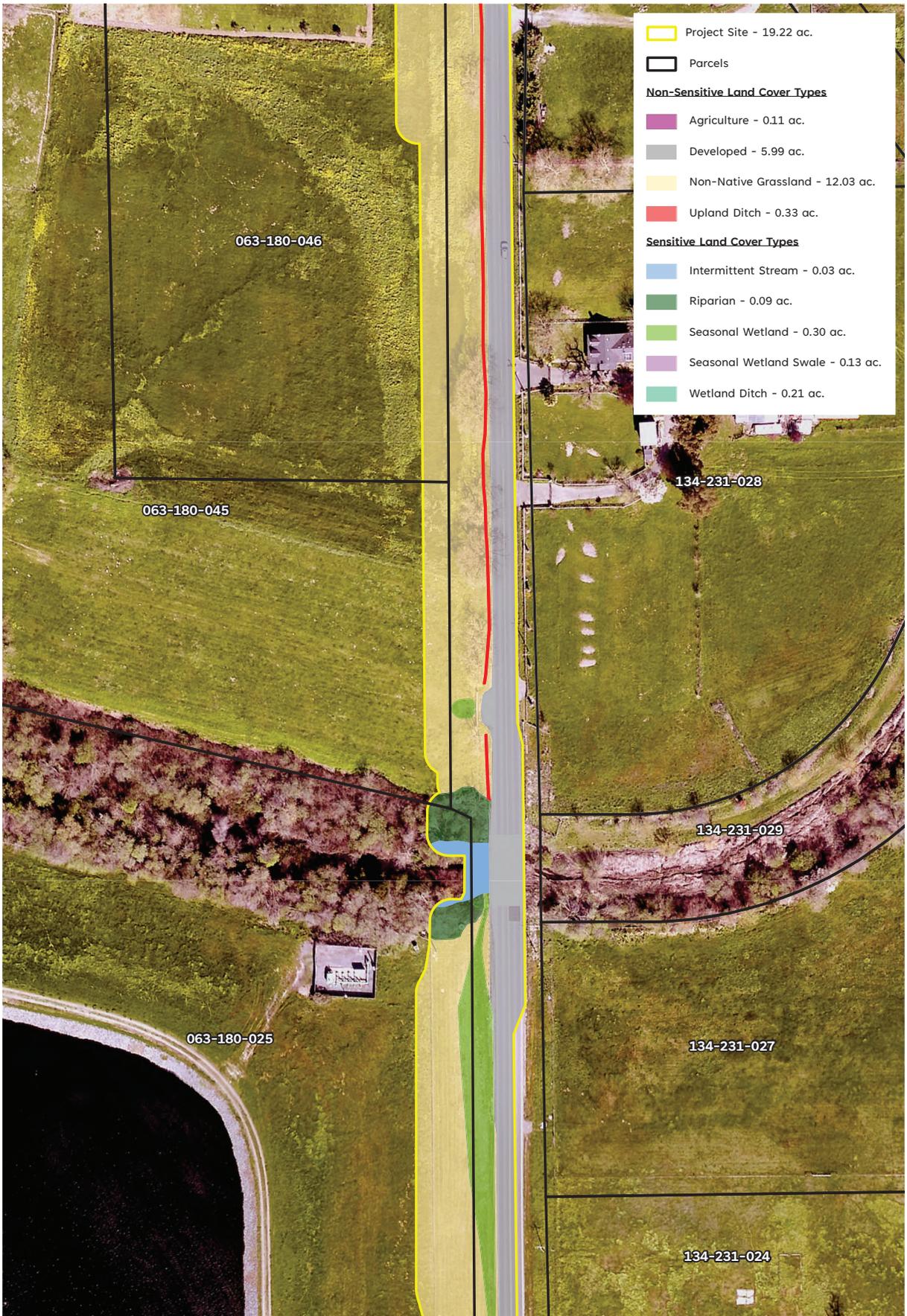
Path: L:\Acad\_2000\Files\330000\033020\063\063\Map\33020\MapBase.aprx; Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LIDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 5-5. Natural Communities and Land Cover within the Project Site (Sheet 4)**



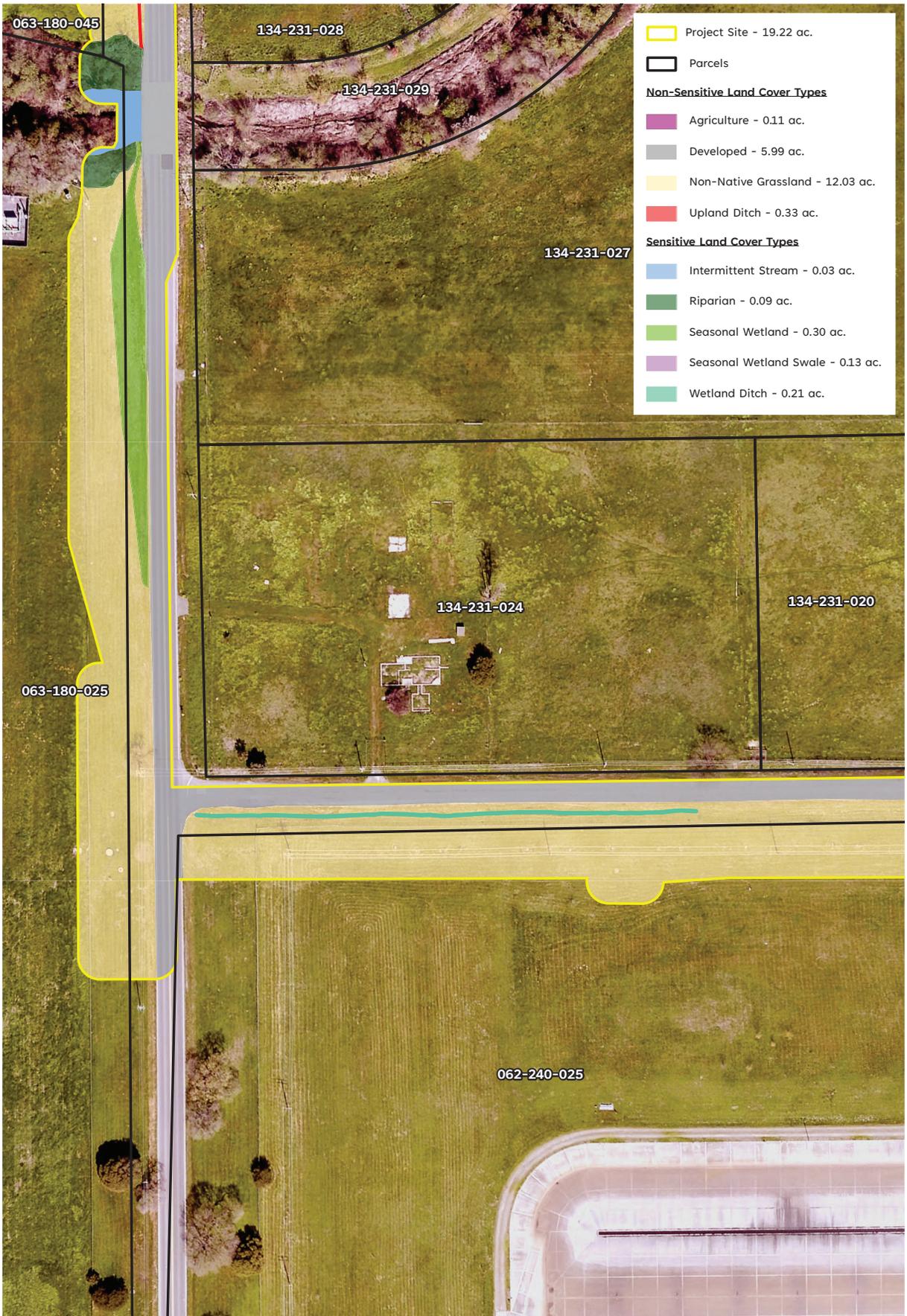
**Figure 5-6. Natural Communities and Land Cover within the Project Site (Sheet 5)**



Path: L:\Acad\_2000\Files\330000\033020\063\063\Map\33020\MapBase.aprx; Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LIDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

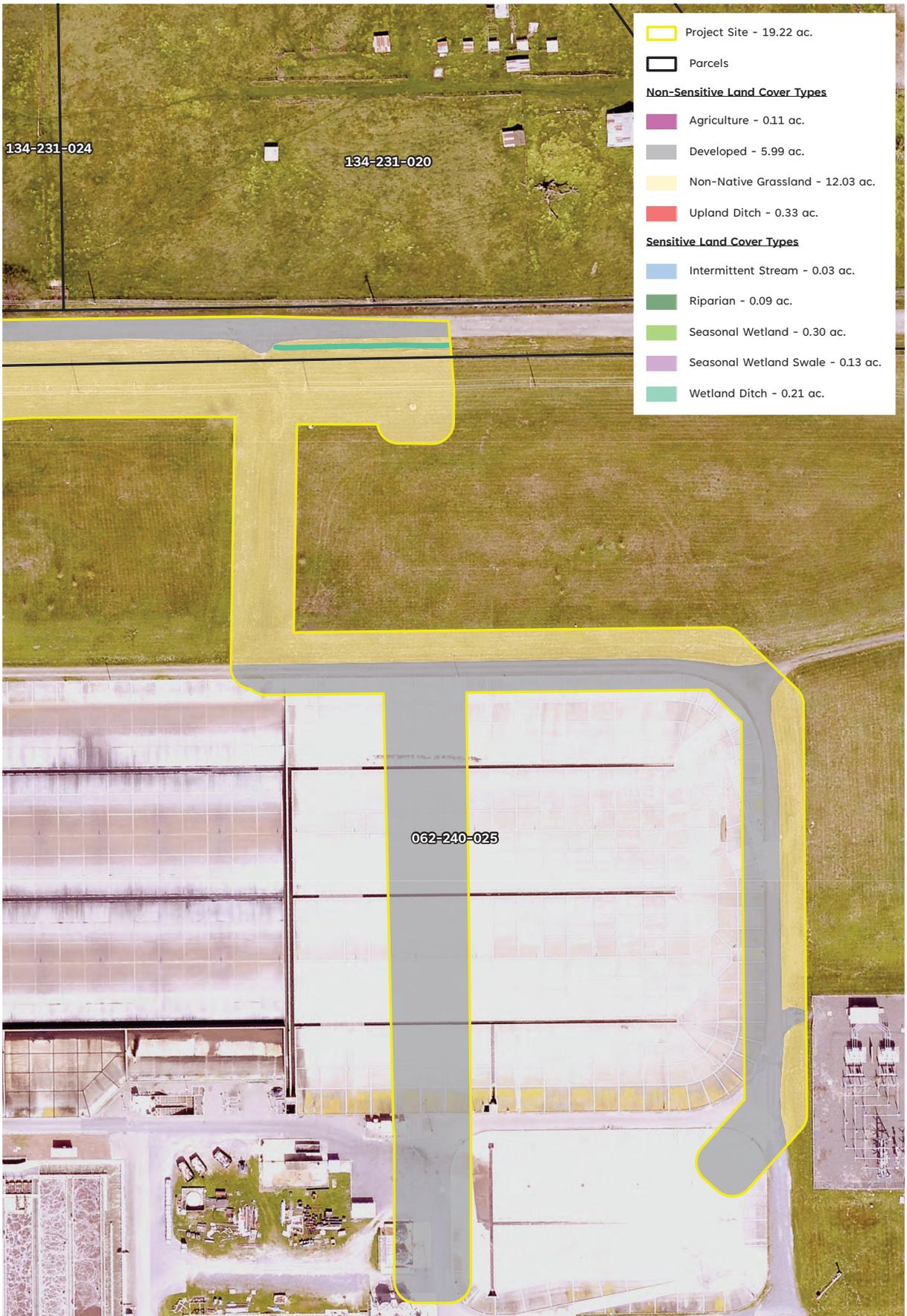
**Figure 5-7. Natural Communities and Land Cover within the Project Site (Sheet 6)**



Path: L:\Acad\_2000\Files\330000\033020\06\5\AcMap\330204Base.aprx, Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 5-8. Natural Communities and Land Cover within the Project Site (Sheet 7)**



Path: L:\Acad\_2000\Files\33000\03\30204\615\AcMap\330204Base.aprx; Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 5-9. Natural Communities and Land Cover within the Project Site (Sheet 8)**

### ***Special-status Plant Species***

Based upon a review of the resources databased listed in the Assessment Methodology section above, 110 special-status plant species have been documented in the vicinity of the Project site. Thirteen of these plants have a moderate to high potential to occur within the Project site. The remaining 96 species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following reasons:

- The Project site does not contain the necessary hydrologic, edaphic (soil), topographic, and pH conditions necessary to support the special-status species.
- Associated natural communities necessary to support the special-status species are not present within the Project site.
- The Project site is geographically isolated from the documented range of the special-status plant species.

A total of six site visits following the methods for protocol-level surveys have been conducted, with one each occurring in March, April, and May 2023 and 2024 within the Project site to determine the presence and extent of special-status plants. These surveys constitute a full two-year survey protocol for listed plants on the Santa Rosa Plain. Two special-status plant species, Sebastopol meadowfoam and Lobb's buttercup, were observed during focused special-status plant surveys in 2023 and 2024. The remaining eleven species with moderate potential were not observed during the six site visits, and therefore, were determined absent from the Project site.

### ***Special-status Wildlife Species***

Dozens of special-status wildlife species have been documented in Sonoma County (CDFW 2024a). Due to the distance of the Project site from the ocean, marine species were considered to have no potential to occur and are not discussed further. Eight special-status wildlife species have a moderate to high potential to occur within the Project site. The remaining special-status wildlife species are unlikely or have no potential to occur due to one or more of the following reasons:

- Aquatic habitats (e.g., rivers, estuaries, vernal pools) necessary to support the species are not present in the Project site;
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary to support the species are not present in the Project site;
- Physical structures and vegetation (e.g., mines, old-growth coniferous trees) necessary to provide nesting, cover, and/or foraging habitat to support the species are not present in the Project site;
- Host plants necessary to provide larval and nectar resources for the species are not present in the Project site;
- The Project site is outside (e.g., north of, west of) of the species documented range of occurrence.

No special-status species have been documented to occur within the Project site. The following special-status wildlife were determined to have a moderate or high potential to occur in the Project site based on evaluation of the habitat in and near the site and review of literature and databases. Species that were determined to have no potential or are unlikely to occur in the



Project site are not discussed further here, except for those species that require special consideration due to a high level of protection.

***American Badger (Taxidea taxus). CDFW Species of Special Concern. Moderate Potential.***

The American badger is a large, semi-fossorial member of the Mustelidae (i.e., weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species tend to be large, depending on the habitat available; population density averages one badger per square mile in prime open country.

No evidence of badger was detected during the site visit. However, the species is documented to occur nearby and in open habitats in the region.

***Pallid bat (Antrozous pallidus). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential.***

Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented within snags and basal hollows of conifers, and within bole cavities in oak trees. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2024). Trees within the Project site (primarily oaks) may contain cavities or snags suitable for day roosting by this species. The structures within the Project site did not show any evidence of bat occupation (urine stains, fecal material etc.), however, these areas may become occupied in the future.

Due to the presence of trees that may support pallid bat, it was determined that pallid bat has a moderate potential to occur in the Project site.

***Western red bat (Lasiurus blossevillii). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential***

This species is highly migratory and broadly distributed, ranging from southern Canada through much of the western United States. Western red bats are believed to make seasonal shifts in their distribution, although there is no evidence of mass migrations (Pierson et al. 2006). They are typically solitary, roosting primarily in the foliage of broad-leaved trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly and association with riparian trees (particularly willows, cottonwoods, and sycamores; Pierson et al. 2006). It is believed that males and females maintain different distributions during pupping, where females take advantage of warmer inland areas and males occur in cooler areas along the coast. Trees within the Project site are potentially suitable for roosting. A targeted



bat habitat assessment was not performed as a component of this assessment. The Project site includes trees that may support roosting.

***Long-legged myotis (Myotis volans). WBWG High Priority. Moderate Potential.***

The long-legged myotis ranges across western North America from southeastern Alaska to Baja California and east to the Great Plains and central Texas. This species is usually found in coniferous forests, but also occurs seasonally in riparian and desert habitats. They use abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark and hollows within snags as summer day roosts. Caves and mines are used as hibernation roosts. Long-legged myotis forage in and around the forest canopy and feed on moths and other soft-bodies.

Due to the presence of trees that may support long-legged myotis, it was determined that this species has a moderate potential to occur within the Project site.

***Burrowing owl (Athene cunicularia). CDFW Species of Special Concern. Moderate Potential.***

This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in northern California, it is typically found in close association with California ground squirrels (*Otospermophilus beecheyi*). Man-made substrates such as pipes or debris piles may also be occupied in place of burrows. Few ground squirrel burrows were observed within the Project site. A debris pile is present adjacent to the access road, which may provide refugia for burrowing owl. Nesting has not been documented in the vicinity of the Project site, and owls are only likely to use the area for migration stopovers or potentially overwintering.

Wintering occurrences of this species are documented within the nine-quad CNDDB database search (CDFW 2024b) for the site. Breeding within the Project site is considered unlikely based on available literature, review of the CNDDB and eBird. The presence of tall vegetation throughout most of the site decreases the likelihood that owls may occur. However, because suitable refugia is present (though limited) and the Project site is within this species' range, burrowing owl has a moderate potential to occur.

***White-tailed kite (Elanus leucurus). CDFW Fully Protected Species. Moderate Potential.***

White-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. The Project site provides suitable year-round habitat for white-tailed kites, including a few trees that are suitable for nesting and open areas in close proximity for foraging.

Due to the presence of suitable nesting habitat, suitable foraging habitat and white-tailed kite's prevalence in the area, it was determined that it has moderate potential to occur in the Project site.



***Northwestern pond turtle (NPT). CDFW Species of Special Concern. Moderate Potential.***

The NPT is the only freshwater turtle native to this part of California. This species is highly aquatic, typically inhabiting perennial waters including lakes, ponds/reservoirs, rivers, streams, and canals that provide submerged cover and suitable exposed basking structures such as rocks, logs and mats of emergent vegetation. Nesting usually occurs in spring to early summer, with eggs hatching in the fall; nests are excavated in upland areas with friable soil, usually on unshaded slopes within approximately 300 feet of water (Thomson et al. 2016). Hatchlings require shallow water with relatively dense emergent and aquatic vegetation to provide forage, usually aquatic invertebrates (Thomson et al. 2016). The Project site provides intermittent aquatic habitat (stream and swale and wetland features) that may offer seasonal foraging opportunities for adult NPT if they are moving across the landscape between more suitable habitats. It is unlikely that nesting would occur within the Project site because aquatic features on the site are not perennial and therefore unlikely to support hatchlings, which must find their way to water for foraging. There is a recent CNDDDB occurrence approximately 2.6 aerial miles northwest of the Project site (CDFW 2024b).

***Sonoma County distinct population segment of the California tiger salamander (Ambystoma californiense), Federal Endangered, State Threatened. High Potential.***

The CTS is a large terrestrial salamander restricted to grasslands and low-elevation foothill regions in California where it uses seasonal aquatic habitats for breeding. This salamander breeds in natural ephemeral pools, or ponds that mimic ephemeral pools (e.g., stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. Larval CTS require at least 10-12 weeks to complete their larval stage, so pools must be inundated for at least this long for them to support successful CTS recruitment. CTS spend most of their life in grasslands surrounding breeding pools, surviving hot, dry summers by living underground in burrows such as those created by ground squirrels, gophers or other mammals. Individuals may also use deep cracks or holes in the ground where the soil atmosphere remains near the water saturation point of breeding pools. During wet periods, CTS may emerge from refugia and feed in the surrounding grasslands.

The Project site is within designated critical habitat for the CTS (the “Santa Rosa Plain Unit;” USFWS 2016). A data search of the CNDDDB revealed several occurrences of this species near the Project site (CDFW 2024). There are no substantial barriers that would preclude CTS from using upland refugia in the Project site.

During the 2024 site visit, several burrows that could provide suitable refugia for CTS were detected. Ground-dwelling mammals are essential to create the burrows that CTS are dependent upon, and their presence immediately adjacent to documented breeding sites and adult occurrences establishes that habitat in the Project site is adequate to support CTS. Based on these observations, the Project site has high potential to support upland dwelling CTS.

Aquatic features in the Project site that would have the potential to be inundated long enough for CTS to complete its larval stage (approximately 10-12 weeks) in most years are limited to two features, at most. All observed features were very shallow. During the April 2024 site visit, very little surface water was observed, including in the potential



wetlands. Though aquatic habitats suitable to support CTS breeding are rare and may be absent on the site, CTS were to occur on the site, can disperse from off-site aquatic breeding locations, which are present nearby.

### ***Critical Habitat and Essential Fish Habitat***

The Project site is in designated critical habitat for CTS. Essential Fish Habitat (EFH) for coho and Chinook salmon is also present within the Project site.

## **DISCUSSION OF IMPACTS**

- a) ***Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?***

### ***Less-than-Significant Impact with Mitigation Incorporated***

#### ***Special-status Plants***

As described above in Environmental Setting, protocol-level surveys for special-status plants were conducted in the spring of 2023 and 2024, which constitute a full two-year survey protocol for listed plants on the Santa Rosa Plain. Two special-status plant species, Sebastopol meadowfoam and Lobb's buttercup, were observed during focused special-status plant surveys of the Project site. The remaining eleven species with moderate potential to occur on the site were not observed during the surveys, and therefore, were determined absent from the Project site.

Sebastopol meadowfoam and Lobb's buttercup could be impacted by construction activities on the Project site, which is a potentially significant impact. The Project would implement Mitigation Measure BIO-1 to avoid impacts to special-status plant species. Mitigation Measure BIO-1 requires that, in the unlikely event that Project work cannot avoid habitat occupied by special-status plants, mitigation would be implemented through the purchase of credits from an approved mitigation bank at a ratio of no less than 1.5 to 1 or equivalent ratio authorized by CDFW or USFWS. With implementation of Mitigation Measure BIO-1, the Project would not have a substantial adverse effect on any special-status plant species. The impact would be less than significant with mitigation incorporated.

The above noted surveys determined the extent of occurrence for non-listed special-status plants as well, with none being documented within the Project site. No mitigation for non-listed plants is required.

#### ***Special-status Wildlife***

The Project site has the potential to support eleven special-status wildlife species and a variety of non-status bird species with baseline protections under the MBTA and CFGC. The Project site and its immediate surroundings may contain breeding habitat for CTS in the form of wetland swales and does contain potential upland refugia for CTS. The Project site is within the known dispersal distance of several documented CTS occurrences, including a breeding occurrence located north of the Project site. The following measures are recommended to avoid or otherwise minimize potential impacts to these species.



### ***Special-status Bats***

Special-status bats, including pallid bat, western red bat, and long-legged myotis, have the potential to occur within the Project site. Trimming of trees during the bat maternity season (generally, April through August) could result in disturbance to maternity roosting bats, resulting in mortality and/or loss of roost sites. Mitigation Measure BIO-2 would be implemented, which requires bat surveys prior to tree removal and/or trimming. If bat maternity roosts are detected, then roost trees shall be avoided until the end of maternity season. Implementation of Mitigation Measure BIO-2 would reduce potential impacts to special-status bats to a less-than-significant level.

### ***Special-status and Nesting Birds***

Two special-status bird species, white-tailed kite and burrowing owl, and a variety of non-status bird species with baseline protections under the MBTA and CFGC may use areas within the Project site for nesting. Project activities could result in the abandonment or direct removal of occupied nests which is a potentially significant impact. Mitigation Measure BIO-3 would be implemented, which requires surveys for and avoidance of birds, including white-tailed kite, burrowing owl, and other nesting birds. Implementation of Mitigation Measure BIO-3 would reduce Project impacts to special-status and nesting birds to a less-than-significant level.

### ***California Tiger Salamander***

Designated critical habitat for CTS is found within the Project site, and the species was determined to have potential to occur in and around the Project site. If CTS are present on-site during construction, the Project would temporarily affect potentially occupied upland habitat utilized by the species and may result in injury or mortality to individual CTS on the site. CTS is listed by both the ESA and CESA; therefore, take of CTS is a potentially significant impact. Mitigation Measure BIO-4 would be implemented, which includes measures to avoid take of CTS during Project construction, such as wildlife exclusion fencing, on-site biological monitors, and work windows. The Project would cause temporary impacts to approximately 1.43 acres of CTS habitat, which would be mitigated through the purchase of mitigation bank credits at a 1:1 ratio. This ratio is based on the Santa Rosa Plain Conservation Strategy's criteria for linear projects that result in temporary impacts to habitat of listed species. The Project would not result in any permanent impacts to CTS designated critical habitat, as all proposed permanent improvements would be within the footprint of the existing roadway. Implementation of Mitigation Measure BIO-4 would reduce impacts to CTS to a less-than-significant level.

### ***Northwestern Pond Turtle***

NPT was determined to have potential to occur within the Project site. If NPT are present on-site during construction, the Project may result in injury or mortality to individual NPT on the site. NPT is proposed for listing under the ESA and is a California species of special concern. As such, take of NPT is a potentially significant impact under CEQA. Mitigation Measure BIO-5 would be implemented, which requires preconstruction surveys for NPT and avoidance measures if necessary. Implementation of Mitigation Measure BIO-5 would reduce impacts to NPT to a less-than-significant level.



### **American Badger**

American badger was determined to have potential to occur within the Project site. If badgers are present on-site during construction, the Project may result in injury or mortality to individual badgers on the site. Due to its status as a CDFW species of special concern, injury or mortality to American badgers is a potentially significant impact. Mitigation Measure BIO-6 would be implemented, which requires preconstruction surveys and avoidance measures for maternity dens and burrows, if necessary. Implementation of Mitigation Measure BIO-6 would reduce impacts to American badger to a less- than-significant level.

### **Fish**

EFH for coho and Chinook salmon is present within the Project site but would not be affected by any Project work, since no modification of streams or stream habitat would occur. The Project would not include any work below the ordinary high water mark of Colgan Creek; therefore, the Project would not directly impact any habitat for coho, Chinook, or steelhead. The Project would implement sediment and erosion control BMPs during construction which would avoid any indirect impacts to the creek. Operation of the Project would not impact any fish habitat, as all proposed improvements would be within the existing roadway. The impact would be less than significant.

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?**

### **Less-than-Significant Impact with Mitigation Incorporated**

Nine land cover types are present within the Project site, five of which are considered sensitive natural communities. Four of these communities are aquatic resources and are discussed in detail in Impact c) below. The only terrestrial sensitive community is riparian, which is considered sensitive under Section 1600-1607 of the LSAA. The Project site contains approximately 0.09 acres of riparian habitat which is primarily preset located along Colgan Creek, an intermittent stream, within the southern portion of the Project site.

The Project may result in temporary impacts to riparian habitat due to the need to trim and/or remove individual riparian species. If native plants are only trimmed, they will be allowed to revegetate naturally, and no permanent impact to riparian habitat would occur. If individual native riparian species must be removed, Mitigation Measure BIO-7 would be implemented, which requires replacement of removed species at a 1:1 ratio. Implementation of Mitigation Measure BIO-7 would ensure that no permanent impacts to riparian habitat would occur as a result of the Project. As such, the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community. The impact would be less than significant with mitigation incorporated.

- c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

### **Less-than-Significant Impact with Mitigation Incorporated**

The Project site includes approximately 0.67 acres of aquatic resources, including 0.30 acres of seasonal wetland, 0.13 acres of seasonal wetland swale, 0.21 acres of wetland ditch, and 0.03



acres of intermittent stream. During construction, approximately 0.04 acres of seasonal wetland and seasonal wetland swale would be temporarily impacted by filling needed for the bypass pipeline, which is a potentially significant impact. Mitigation Measure BIO-7 would be implemented which requires that a Nationwide Permit from the Corps and a Water Quality Certification Permit from the State Water Resources Control Board (SWRCB) be obtained prior to construction activities on-site. The Project shall comply with mitigation measures outlined in the applicable permits, which includes restoration of impacted wetlands after construction to a condition equal to or better than the pre-Project condition. Implementation of Mitigation Measure BIO-7 would reduce impacts to aquatic resources to a less-than-significant level. No permanent impacts to aquatic resources would occur as a result of the Project because all permanent improvements would be within the footprint of the existing roadway. The impact would be less than significant with mitigation incorporated.

- d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

***Less-than-Significant Impact***

To account for potential impacts to wildlife movement/migratory corridors, WRA biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2021a). Additionally, aerial imagery (Google 2024) for the local area was referenced to assess if local core habitat areas were present within or connected to the Project site. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

It was found that potential wildlife corridors are present within the Project site, including Essential Fish Habitat for coho and chinook salmon. However, no impacts to wildlife corridors or native wildlife nursery sites are expected as a result of the Project because no work below the ordinary high-water mark of Colgan Creek would occur. Work that would occur in riparian areas of Colgan Creek would be limited to trimming of willows and short-term equipment operation during the dry season. The Project would take place over the course of one dry season, thereby minimizing the potential for barriers to migrating amphibians, including CTS. As such, the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of wildlife nursery sites. The impact would be less than significant.

- e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

***Less-than-Significant Impact with Mitigation Incorporated***

Local policies and ordinances protecting biological resources include the City's General Plan, Tree Ordinance, and Creekside Development Ordinance, the County's General Plan and Tree Ordinance, as well as the Santa Rosa Plain Conservation Strategy.

Trees protected under the City's Tree Ordinance, including oak trees, are located within the Project site. Impacts to trees that qualify as protected/heritage trees under the Tree Ordinance would be a potentially significant impact. The Project would not require the removal of any protected or heritage trees but may require trimming/pruning to a minor extent such that the



trees' health and growing conditions would not be affected. Further, oak trees are protected under the City's Oak Woodlands Ordinance; however, neither the rehabilitation of the existing trunk sewer line nor the temporary installation of the above-ground bypass pipeline and pump facilities would result in type conversion of oaks or oak woodlands. As such, the Project would not conflict with the Tree Ordinance or the Oak Woodlands Ordinance. The impact would be less than significant.

The Project would temporarily impact 0.10 acres of seasonal wetlands during construction. The City's General Plan requires compliance with federal policy of no net loss of wetlands through the use of mitigation measures. Implementation of Mitigation Measure BIO-7, which requires compliance with measures outlined in a Nationwide Corps permit and Water Quality Certification permit, would reduce impacts to a less-than-significant level.

The City's Creekside Development Ordinance defines minimum setbacks from waterways for new structures to protect the public from the hazards of streambank failures and flooding. The Project would not install any new permanent structures near streambanks or on floodplains. Therefore, the Project would not conflict with the Creekside Development Ordinance. No impact would occur.

The Project site includes portions of the Sonoma County Riparian Corridor and VOH Combining Zones. As described above, the Project would not remove any oak trees, and therefore, would not conflict with regulations pertaining to the VOH Combining Zone. In addition, the Project would not place any new permanent structures within the riparian corridor of any creek; therefore, the Project would not conflict with setback requirements established by the Riparian Corridor Combining Zone. The Project would not conflict with any policies of Sonoma County pertaining to biological resources. The impact would be less than significant.

With implementation of Mitigation Measure BIO-7, the Project would not conflict with any local policies or ordinances. The impact would be less than significant with mitigation incorporated.

**f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?***

***Less-than-Significant Impact with Mitigation Incorporated***

The Project site is not located within an area under a Habitat Conservation Plan; however, the site is located within the Santa Rosa Plain Conservation Strategy area. The Project may result in impacts to species listed in the Strategy, which is a potentially significant impact. The Project would implement Mitigation Measures BIO-1, BIO-4, and BIO-7, which are based on proposed mitigation measures outlined in the Strategy and address potential impacts to listed species. With implementation of these measures, the impacts to species listed in the Strategy would be less than significant.

With implementation of Mitigation Measures BIO-1, BIO-4, and BIO-7, the Project would not conflict with the Santa Rosa Plain Conservation Strategy. The impact would be less than significant with mitigation incorporated.



## MITIGATION MEASURES

### ***Mitigation Measure BIO-1. Special-status Plants***

To avoid impacts to special-status plants, the extent of habitat occupied by special status plants shall be demarcated in the field during the year of construction and avoided. In the unlikely event that the Project cannot avoid special-status plants, they shall be mitigated for through the purchase of mitigation credits. Mitigation for impacted state and federal-listed plants shall be completed through purchase of mitigation credits from an approved bank at a ratio of no less than 1.5:1 or equivalent permittee responsible mitigation authorized by the CDFW and USFWS.

Habitat mitigation for listed species, if applicable, shall be obtained either through a conservation easement over suitable habitat and managed to maintain habitat for the species or through purchase of credits at an approved conservation bank.

### ***Mitigation Measure BIO-2. Roosting Bats***

Any tree removal or trimming shall be performed from September through March, outside of the general bat maternity season. If tree removal or building demolition during this period is not feasible, a bat roost survey shall be performed by a qualified biologist no more than 14 days prior to tree removal and/or trimming to determine if bats are present in the trees. If no roosting bats are detected, then no further study is warranted. If bat maternity roosts are detected, then roost trees shall be avoided until the end of the maternity roosting season. Irrespective of time of year, all felled trees shall remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.

### ***Mitigation Measure BIO-3A. Special-status and Nesting Birds***

Tree/vegetation removal and initial ground disturbance shall occur between April 15 and October 15. If tree/vegetation removal during the nesting bird season occurs, a pre-construction nesting bird survey shall be performed by a qualified biologist no more than seven days prior to the initiation of tree removal or ground disturbance. The survey shall cover the Project site (including tree removal areas) and surrounding areas within 500 feet except where precluded by property access. If active bird nests are found during the survey, an appropriate no-disturbance buffer shall be established by the qualified biologist. The buffer will be dependent on species and type of disturbance but will be no less than 50 feet for common passerines, 250 feet for raptors and 250 feet for listed/fully protected species. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer shall be lifted and work shall be initiated within the buffer. If disturbance of an area covered by a bird survey will begin more than seven days after the nesting bird survey is completed, the survey will be repeated to ensure that no new nests have been constructed in the interim period between the completion of the survey and construction activities that could affect nesting.

### ***Mitigation Measure BIO-3B. Burrowing Owl***

To reduce potential impacts to burrowing owls to less than significant, if initial ground disturbance occurs on any part of the site between September 1 and January 31 (wintering season), a preconstruction habitat assessment shall be conducted by a qualified biologist with at least two years of experience in implementing burrowing owl habitat assessments and surveys as described in the 2012 Staff Report on Burrowing Owl Mitigation (2012 Staff Report; CDFG 2012). Habitat assessments shall be conducted within 30 days of initiation of ground disturbing activity.



If habitat for burrowing owl is detected, follow-up surveys for burrowing owls, in accordance with the 2012 Staff Report shall be conducted within seven days of the initiation of ground disturbing activities and repeated within 24 hours of initiation of ground disturbing activities. The survey area shall include all areas with potential to support burrowing owl on the site and in adjacent areas (up to 500 meters), where access is granted. If burrowing owls are found to be occupying the site, they shall be avoided to the extent necessary to avoid having them abandon the site until they leave the site on their own, as determined by a qualified biologist using the criteria described in the 2012 Staff Report. If an avoidance buffer is established, the size of the buffer and criteria used to establish it shall be submitted to CDFW and may be increased or decreased in size based on the behavior of the owls. If avoidance is not feasible and eviction is necessary, an eviction plan shall be submitted to CDFW and shall not be implemented until approved. The relocation plan shall include mitigation for loss of wintering burrowing owl habitat and foraging habitat for burrowing owl will be compensated for at a 1:1 ratio through purchase of lands equivalent or superior to the foraging habitat on the site.

#### ***Mitigation Measure BIO-4. California Tiger Salamander***

Based upon Santa Rosa Plain Conservation Strategy's criteria for linear projects that result in temporary impacts, the appropriate ratio for habitat mitigation within the Project site shall be 1:1. Mitigation bank credits shall be purchased from an accredited bank or mitigated through permittee responsible mitigation, with approval of the USFWS and CDFW. Take of individual CTS shall be mitigated to less-than-significant levels through the issuance of federal and state authorization, pursuant to the ESA and CESA, respectively. The following measures will be implemented pursuant to these authorizations to minimize the potential for take of CTS:

**Mitigation Measure BIO-4A: Wildlife Exclusion Fencing (WEF).** Prior to the start of construction, WEF will be installed at the edge of the Project footprint in all areas where Sonoma County CTS could enter the construction area where ground disturbance will occur (work areas). WEF shall include exit ramps or funnels, and coverboards spaced at least every 150 feet along the perimeter of the fence to allow CTS to leave the work areas and find refuge along the outer portion of the fence.

The location of the fencing shall be determined by the on-site Project manager and the USFWS-approved biologist in cooperation with the USFWS prior to the start of staging or surface disturbing activities. A conceptual fencing plan shall be submitted to the USFWS for review and approval prior to WEF installation. The location, fencing materials, installation specifications, and monitoring and repair criteria shall be approved by the USFWS prior to start of construction. The applicant shall include the WEF specifications on the final Project plans. The applicant shall include the WEF specifications including installation and maintenance criteria in the bid solicitation package special provisions. The WEF shall remain in place throughout the duration of the Project and shall be inspected weekly and fully maintained. Repairs to the WEF shall be made within 24 hours of discovery. Upon Project completion the WEF shall be completely removed, the area cleaned of debris and trash, and returned to natural conditions.

An exception to the foregoing fencing measure is that for work sites where the duration of work activities is very short (e.g., four days or less) and during the dry season. If installation will result in more ground disturbance than project activities, then the boundaries and access areas and sensitive habitats may be staked and flagged by the



biological monitor prior to disturbance and species monitoring would occur during all Project activities at that site.

**Mitigation Measure BIO-4B: Relocation Plan.** The Project Applicant shall prepare and submit a Relocation Plan for the USFWS's and CDFW's written approval. The Relocation Plan shall be consistent with the Guidelines for the relocation of CTS (Shaffer et. al. 2008). The Relocation Plan shall contain the name(s) of the USFWS-approved biologist(s) to relocate Sonoma County CTS, method of relocation (if different than Mitigation Measure BIO-4C below), a map, and description of the proposed release site(s) and burrow(s), and written permission from the landowner to use their land as a relocation site. At various times, a conservation bank may be a desired location to relocate Sonoma County CTS from a salvage site; however, no conservation bank may receive relocated Sonoma County CTSs until all the bank's credits have been sold to prevent interfering with their performance criteria and credit release schedule.

**Mitigation Measure BIO-4C: Protocol for Species Observation, Handling, and Relocation.** Only USFWS-approved biologists shall participate in activities associated with the capture, handling, relocation, and monitoring of Sonoma County CTS. If a Sonoma County CTS is encountered, work activities within 50 feet of the individual shall cease immediately and the on-site Project Manager and USFWS-approved biologist shall be notified. Based on the professional judgment of the USFWS-approved biologist, if project activities can be conducted without harming or injuring the individual(s), it may be left at the location of discovery and monitored by the USFWS-approved biologist. All Project personnel shall be notified of the finding and at no time shall work occur within 50 feet of the Sonoma County CTS without a USFWS-approved biologist present. If relocation of the species to another site has been approved by the USFWS and CDFW prior to the start of the Project, the following steps shall be followed:

- i. Prior to handling and relocation, the USFWS-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the CTS (USFWS 2003). Disinfecting equipment and clothing is especially important when biologists are coming to the Action Area to handle amphibians after working in other aquatic habitats. Sonoma County CTS shall also be handled and assessed according to the Restraint and Handling of Live Amphibians (USGS National Wildlife Health Center 2001).
- ii. Sonoma County CTS shall be captured by hand, dipnet, or other USFWS-approved methodology, transported, relocated, and released as soon as practicable the same day of capture. Individuals should be relocated to areas with one or more potential breeding pools and an active burrow system (unless otherwise with written approved by the USFWS). The USFWS shall be notified within 24 hours of all capture, handling, and relocation efforts.
- iii. If an injured Sonoma County CTS is encountered and the USFWS-approved biologist determines the injury is minor or healing and the salamander is likely to survive, the salamander shall be released as soon as possible, in accordance with the USFWS-approved Relocation Plan. The relocated Sonoma County CTS shall be monitored until it is determined that it is not threatened by predators or other dangers.



- iv. If the USFWS-approved biologist determines that the Sonoma County CTS has serious injuries as a result of project-related activities the USFWS-approved biologist shall immediately take it to a licensed veterinarian, the Sonoma County Wildlife Rescue, or another USFWS-approved facility. If taken into captivity the individual shall remain in captivity and not be released into the wild unless it has been kept in quarantine and the release is authorized by the USFWS. The Applicant shall bear any costs associated with the care or treatment of such injured individuals. The circumstances of the injury, the procedure followed, and the final disposition of the injured animal shall be documented in a written incident report.
- v. Notification to the USFWS of an injured or dead Sonoma County CTS in the Action Area will be made within 2 calendar days of the finding. Written notification to the USFWS shall include the following information: the species, number of animals taken or injured, sex (if known), date, time, location of the incident or of the finding of a dead or injured animal, how the individual was taken, photographs of the specific animal, the names of the persons who observe the take and/or found the animal, and any other pertinent information. Dead specimens will be preserved, as appropriate, and held in a secure location until instructions are received from the USFWS regarding the disposition of the specimen.

**Mitigation Measure BIO-4D: Biological Monitors.** Qualified biological monitor(s) will be on site each day during all initial earth moving activities. The biological monitor(s) shall conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may displace, injure, or kill Sonoma County California tiger salamanders through contact with workers, vehicles, and equipment. All aquatic and upland habitat including refugia habitat such as small woody debris, refuse, burrow entries, etc., shall be duly inspected. Where feasible and only on a case-by-case basis, rodent burrows and other ground openings suspected to contain Sonoma County California tiger salamanders that would be destroyed from project activities may be carefully excavated with hand tools. Pre-soaking the area prior to ground disturbance may also increase emergence of the species for translocation. The USFWS will consider the implementation of specific project activities without the oversight of an on-site biological monitor on a case-by-case basis.

Before the start of work each day, the biological monitor will check for animals under all equipment such as vehicles and stored pipes. The biological monitor will check all excavated steep-walled holes or trenches greater than one foot deep for any Sonoma County California tiger salamanders. Sonoma County California tiger salamanders will be removed by the biological monitor and relocated according to the Relocation Plan. To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar materials) that leave no entry gaps at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. The USFWS-approved biologist shall inspect all holes and trenches at the beginning of each workday and before such holes or trenches are filled. All replacement pipes, culverts, or similar structures stored in the project footprint overnight will be inspected before they are subsequently moved, capped, and/or buried.

**Mitigation Measure BIO-4E: Biological Monitoring Records.** The biological monitor(s) shall maintain monitoring records that include: (1) the beginning and ending time of each



day's monitoring effort; (2) a statement identifying the listed species encountered, including the time and location of the observation; (3) the time the specimen was identified and by whom and its condition; (4) the capture and release locations of each individual; (5) photographs and measurements (snout to vent and total length) of each individual; and (6) a description of any actions taken. The biological monitor(s) shall maintain complete records in their possession while conducting monitoring activities and shall immediately provide records to the USFWS upon request. All monitoring records shall be provided to the USFWS within 30 days of the completion of monitoring work.

**Mitigation Measure BIO-4F: Work Windows.** Ground disturbance will be conducted between April 15 and October 15, of any given year, depending on the level of rainfall and/or site conditions. However, grading, and other disturbance in pools and ponds, if unavoidable, shall be conducted only when dry, typically between June 15 and October 15. Work within a pool or wetland may begin prior to June 15 if the pool or wetland has been dry for a minimum of 30 days prior to initiating work. Any work in pools and wetlands that are holding water shall be subject to approval of the USFWS. If work must continue when rain is forecast (greater than 40 percent chance of rain), a USFWS-approved biologist(s) shall survey the Project site before construction begins each day rain is forecast. If rain exceeds 0.5 inches during a 24-hour period, work shall cease until National Weather Service forecasts no further rain. This restriction is not applicable for areas within 1.3 miles of potential or known Sonoma County California tiger salamander breeding sites once the Applicant encircles the site with Wildlife Exclusion Fencing.

**Mitigation Measure BIO-4G: Proper Use of Erosion Control Materials.** Plastic or synthetic monofilament netting will not be used in order to prevent Sonoma County California tiger salamanders from becoming entangled, trapped, or injured. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers. Following site restoration, any materials left behind as part of the restoration, such as straw wattles, should not impede movement of this species.

**Mitigation Measure BIO-4H: Wildlife Passage Improvement.** When constructing a road improvement, wherever possible, the Corps through the Applicant will enhance or construct wildlife passage for the Sonoma County California tiger salamander across roads, highways, or other anthropogenic barriers. This includes upland culverts, tunnels, and other crossings designed specifically for wildlife movement, as well as making accommodations in curbs, median barriers, and other impediments to terrestrial wildlife movement at locations most likely to provide a net benefit to wildlife.

**Mitigation Measure BIO-4I: Vegetation Removal.** A USFWS-approved biologist will be present during all vegetation clearing and grubbing activities. Grasses and weedy vegetation should be mowed to a height no greater than 6 inches prior to ground-disturbing activities. All cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site. Prior to vegetation removal, the USFWS-approved biologist shall thoroughly survey the area for Sonoma County California tiger salamanders. Once the qualified biologist has thoroughly surveyed the area, clearing and grubbing may continue without further restrictions on equipment; however, the qualified biologist shall remain on-site to monitor for Sonoma County California tiger salamanders until all clearing and grubbing activities are complete.



**Mitigation Measure BIO-4J: Nighttime Activities.** Construction and ground disturbance will occur only during daytime hours to the extent feasible and will cease no less than 30 minutes before sunset and will not begin again prior to no less than 30 minutes after sunrise. Night lighting of Environmental Sensitive Areas should be avoided to the extent feasible. When work requiring equipment operation must occur at night, it will only occur within areas that have been excluded using a WEF. Inspections of the bypass pipe that occur on foot may take place outside the WEF by staff using flashlights that have been trained to identify and avoid CTS by the USFWS-approved biologist.

**Mitigation Measure BIO-4K: Trash.** All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day and removed from the site every three days.

**Mitigation Measure BIO-4L: Agency Access.** If verbally requested before, during, or upon completion of ground disturbance and construction activities, the Applicant will ensure the USFWS can immediately and without delay, access and inspect the project site for compliance with the project description, Conservation Measures, and reasonable and prudent measures of this programmatic biological opinion and appendage, and to evaluate project effects to the Sonoma County California tiger salamander and its habitat.

#### ***Mitigation Measure BIO-5. Northwestern Pond Turtle***

No more than 24 hours prior to any work activities within the Project site, a pre-construction survey for NPT shall be conducted by a qualified biologist. The survey shall consist of walking the Project limits and within the Project site to ascertain the possible presence of the species. The qualified biologist will investigate all potential areas that could be used by NPT for feeding, breeding, sheltering, nesting, movement, and other essential behaviors. This includes an adequate examination of potential nest sites. If any adults, subadults, juveniles, are found, the NPT will be avoided. Any detected nests of NPT will be flagged and avoided until young have become independent of the nest. If NPT are detected within the Project site at any time, a qualified biologist will be present to monitor for NPT in any areas within 300 feet of inundated aquatic features during construction activities that could harm NPT including vegetation removal, operation of vehicles off paved areas, and ground disturbing activities. No monitor will be required within areas that are encircled by a wildlife exclusion fence.

#### ***Mitigation Measure BIO-6. American Badger***

To avoid impacts to American badgers, within 14 days of commencement of ground disturbing activities, surveys for American badger shall be conducted by a qualified wildlife biologist. If any active maternity dens are detected, these will be avoided by at least 100 feet until the dependent young are no longer present. If adult badgers without young are detected, they may be excluded from burrows and once burrows are determined to no longer house badgers, they can be collapsed.

#### ***Mitigation Measure BIO-7. Riparian Habitat***

The Project applicant shall replace any native plants that will be removed due to the Project, in kind, at a 1:1 ratio. If native plants are only trimmed, they will be allowed to revegetate naturally.



**Mitigation Measure BIO-8. Wetlands**

A Nationwide permit from the Corps and a Water Quality Certification permit from the SWRCB shall be obtained for the proposed impacts to wetlands. Mitigation measures outlined in the applicable permits shall be followed and shall be no less than 1:1 replacement of wetland acreage, if impacts are permanent. For temporary impacts, mitigation will consist of restoration of impacted wetlands after construction to a condition equal to or better than the pre-project condition. Mitigation for impacts to seasonal wetlands may include, but are not limited to, off-site restoration, enhancement, creation, or purchase of credits at an approved mitigation bank.



#### 4.2.5 Cultural Resources

Would the project:		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tom Origer & Associates (Origer) prepared a Cultural Resources Study for the Project in June 2024 (Barrow 2024, Appendix D).<sup>1</sup> The study was conducted to meet the requirements of the Corps, Section 106 of the National Historic Preservation Act (NHPA), the City of Santa Rosa, CEQA, and to identify potential historical resources other than Tribal Cultural Resources, as defined in Public Resources Code (PRC) 21074 (a)(1)(A)-(B), in the vicinity of the Project site. The study included archival research at the Northwest Information Center, Sonoma State University, examination of the library and files of Origer, Native American contact, and a field survey of the Project site. Information in this section is adapted from and relies on the Cultural Resources Study. The study is available for review at the City by qualified individuals only.

### ENVIRONMENTAL SETTING

#### Prehistory

The concept of prehistory refers to the period of time before events were recorded in writing and varied worldwide. Because there is no written record, the understanding of California prehistory relies on archaeological materials and oral histories passed down through generations. In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifacts from sites in the lower Sacramento Valley (Lillard, Heizer, and Fenenga 1939). Their cultural sequence became known as the Central California Taxonomic System, which identified three culture periods termed the Early, Middle, and Late Horizons, but without offering date ranges. Refinement of the Central California Taxonomic System became a chief concern of archaeologists as the century progressed.

It is estimated that native peoples have occupied the region for over 11,000 years, and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973). Early occupants appear to have had an economy based largely on hunting, with limited

<sup>1</sup> The Cultural Resources Study is available at the City for review by qualified individuals only.

exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

These horizons or periods are marked by a transition from large projectile points and milling slabs, indicating a focus on hunting and gathering during the Early Period, to a marine focus during the Middle Period evidenced by the number of shellmounds in the Bay Area. The Middle Period also saw more reliance on acorns and the use of bowl-shaped mortars and pestles. Acorn exploitation increased during the Late Period and the bow and arrow were introduced.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones.

### ***Ethnography***

Linguists and ethnographers tracing the evolution of languages have found that most of the indigenous languages of the California region belong to one of five widespread North American language groups (the Hokan and Penutian phyla, and the Uto-Aztecan, Algic, and Athabaskan language families). The distribution and internal diversity of four of these groups suggest that their original centers of dispersal were outside, or peripheral to, the core territory of California, that is, the Central Valley, the Sierra Nevada, the Coast Range from Cape Mendocino to Point Conception, and the Southern California coast and islands. Only languages of the Hokan phylum can plausibly be traced back to populations inhabiting parts of this core region during the Archaic period, and there are hints of connections between certain branches of Hokan, such as that between Salinan and Seri, that suggest that at least some of the Hokan languages could have been brought into California by later immigrants, primarily from the Southwest and northwestern Mexico (Golla 2011).

It is suggested that the Project area was inhabited by pre-Yukian speakers (Moratto 2014). It has been hypothesized that Yukian speaking descendants may have been some of the first settlers to California (Golla 2011; Moratto 2014). By about 4,000 years ago both Hokan and Penutian (Utian) speakers began to move westward, pushing Yukian speaking people out of the northern San Francisco Bay Area.

Between AD 1 and AD 1000 a great deal of migration took place in Northern California and groups settled into lands where they were later encountered when Europeans came to California (Moratto 2014).

At the time of Euroamerican settlement, people inhabiting this area spoke Southern Pomo, one of seven mutually unintelligible Pomoan languages belonging to the Hokan language stock. The Southern Pomo's aboriginal territory falls within present-day Sonoma County. To the north, it reaches the divide between Rock Pile Creek and the Gualala River, and to the south it extends to



near the town of Cotati. The eastern boundary primarily runs along the western flanks of Sonoma Mountain until it reaches Healdsburg, where it crosses to the west side of the Russian River. Within the larger area that constitutes the Southern Pomo homelands there were bands or tribelets that occupied distinct areas. Primary village sites of the Southern Pomo were occupied continually, while temporary sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

The Southern Pomo population was nearly decimated early in the historic period, especially in the southern part of their territory. Ethnic identity was severely impacted in the region of Santa Rosa and Sebastopol; McLendon and Oswalt (1978) reported that the few Southern Pomo speakers remaining in 1976 were from north of Healdsburg.

### **History**

The Project site is within the lands between Santa Rosa to the north, Rohnert Park and Cotati to the southeast, and Sebastopol to the northwest. The area has remained relatively rural. Historically, the Project site is within the Rancho Llano de Santa Rosa granted to Joaquin Carrillo in 1844. When granted, it consisted of 13,316 acres that extended west from Santa Rosa, along the Laguna de Santa Rosa, and encompassed present-day Sebastopol (Cowan 1977; Hoover 2002). In 1846, Carillo built his house at the western end of his lands within what is now Sebastopol (The Lewis Publishing Company 1889). By 1850, several immigrants arrived in Sonoma County and settled in this area. James Miller and John Walker partnered together and started a store located towards the southern end of Sebastopol (The Lewis Publishing Company 1889). Eventually, the two men amassed 4,000 acres of the Llano de Santa Rosa rancho which included land containing the current Project site (Thompson 1877).

By 1877, John Walker is shown as the sole owner; however, he sold some of the land, and part of the Project site was owned by W.H. Rogers and J. Jones (Thompson 1877). Eventually, Walker, Rogers, and Jones' lands were further subdivided into smaller parcels and sold to a variety of people.

Historic period site indicators generally include fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

## **REGULATORY SETTING**

### **Cultural Resources**

As set forth in Section 5024.1(c) of the Public Resources Code for a cultural resource to be deemed "important" under CEQA and thus eligible for listing on the California Register of Historical Resources (California Register), it must meet at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California History and cultural heritage; or
2. Is associated with the lives of persons important to our past; or
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic value; or



4. Has yielded or is likely to yield, information important to prehistory or history.

Historic-era structures older than 50 years are most commonly evaluated in reference to Criterion 1 (important events), Criterion 2 (important persons) or Criterion 3 (architectural value). To be considered eligible under these criteria the property, must retain sufficient integrity to convey its important qualities. Integrity is judged in relation to seven aspects including: location, design, setting, materials, workmanship, feeling, and association. Prehistoric and historic-era archaeological resources are commonly evaluated with regard to Criterion 4 (research potential).

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Section 15064.5(b) prescribes that project effects that would “cause a substantial adverse change in the significance of an historical resource” are significant effects on the environment. Substantial adverse changes include both physical changes to the historical resource, or to its immediate surroundings.

### ***Archaeological Resources***

Section 21083.2 of the CEQA guidelines also defines “unique archaeological resources” as “any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and show that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

This definition is equally applicable to recognizing “a unique paleontological resource or site.” CEQA Section 15064.5 (a)(3)(D), which indicates “generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history,” provides additional guidance.

### ***National Historic Preservation Act Section 106***

Under Section 106 of the NHPA, when a federal agency is involved in an undertaking, it must take into account the effects of the undertaking on historic properties (36 Code of Federal Regulations (CFR) Part 800). Compliance with Section 106 requires that agencies make an effort to identify historic properties that might be affected by a project.

The National Register of Historic Places (National Register) defines a historic property as a district, site, building, structure, or object significant in American history, architecture, engineering, archaeology, and culture, and that may be of value to the nation as a whole or important only to the community in which it is located.



## CULTURAL RESOURCES STUDY FINDINGS

### **Archival Research**

Results of the records search indicated that most of the Project site had been previously subjected to a cultural resources study. During these studies, cultural resources were documented within the Project site which indicated that the sites may contain sensitive locations for archaeological resources.

Twenty-two studies have been conducted within a half mile of the Project site, which have resulted in the documentation of cultural resources. There are no reported ethnographic sites within a half-mile of the Project site (Barrett 1908; Kroeber 1925; McLendon and Oswalt 1978).

Review of historical maps show that Llano Road was present by 1877. No buildings are shown within the Project site until the Laguna WTP is shown. The Laguna WTP completed construction in early 1968 and has been subject to several upgrades since.

### **Sensitivity for Buried Sites**

Origer estimated the sensitivity of the Project site for buried archaeological sites using a method which considers the age of the landform, slope, and proximity to water (Byrd et al. 2017). A location is considered to have highest sensitivity if the landform dates to the Holocene, has a slope of five percent or less, is within 150 meters of fresh water, and 150 meters of a confluence. Note, the Holocene Epoch is the current period of geologic time, which began about 11,700 years ago, and coincides with the emergence of human occupation of the area. A basic premise of the model is that archaeological deposits will not be buried within landforms that predate human colonization of the area. Calculating these factors using the buried site model, a location's sensitivity is scored on a scale of 1 to 10 and classed as follows: lowest (<1); low (1-3); moderate (3-5.5); high (5.5-7.5); highest (>7.5).

By incorporating the formula created by Byrd *et al.* (2017), it was determined that there are areas of the Project site that have a high potential (5.5-7.5) for archaeological resources. The remainder of the Project site has a low to moderate potential (<5.5) for buried archaeological resources. The location of areas with high sensitivity for archaeological resources is confidential and will not be shared with the public.

### **Field Survey**

A field survey of the Project site was completed by Eileen Barrow on May 7, 2024. Ground visibility was primarily poor with vegetation being the primary hindrance. A hoe was used as necessary to remove vegetation and duff to examine the ground surface. In places that allowed, the road cut was examined for archaeological materials both at and below ground surface. No archaeological site constituents were found during the survey.

### **Built Environment**

A portion of the Laguna WTP is within the Project site. Though the Laguna WTP was originally constructed in 1968, it has been subject to several renovations since. The portion of the plant that would be impacted by the Project is the Existing Flow Equalization Basin at the northern end of the facility. This portion of the plant was constructed between 1982 and 1993, which is



too recent to be considered potentially eligible for inclusion on the California or National Registers.

### ***Extended Phase I Study***

The City retained ALTA Archaeological Consulting (ALTA) to conduct an Extended Phase I Study for areas within the Project site that have high sensitivity for buried archaeological resources. The results of the Extended Phase I Study were described in an Archaeological Survey Report prepared by ALTA in January 2025 and are summarized below (ALTA 2025).

ALTA conducted an Extended Phase I Study in January 2025, which included field work at excavation locations that were identified to ensure the most effective investigation. Field work was overseen by three ALTA archaeologists, a tribal representative from Graton Rancheria, and a WRA biologist. The field work involved hand excavation using a 50-centimeter diameter shovel probe to examine subsurface conditions and assess the presence of cultural materials. Excavated sediments were screened through a ¼-inch mesh to ensure the recovery of any potential cultural materials. No artifacts were collected during the course of the study.

## **DISCUSSION OF IMPACTS**

### ***a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?***

#### ***Less-than-Significant Impact***

No historical resources, as defined by CEQA Guidelines Section 15064.5, were identified during the records search or field survey of the Project site. Therefore, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. No impact would occur.

### ***b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?***

#### ***Less-than-Significant Impact with Mitigation Incorporated***

Archaeological resources have been previously documented within the Project site. There are areas within the Project site that have been identified as having a high potential for buried archaeological resources. No archaeological resources were found during the field survey or the Extended Phase I Study for the Project; therefore, the Project would not impact any known archaeological resources. However, ground-disturbing activities during construction could result in the discovery of unknown archaeological resources within the Project site, which is a potentially significant impact. The Project would implement Mitigation Measure CUL-1, which requires that a professional archaeologist and tribal monitor from the Federated Indians of Graton Rancheria (the affiliated tribe) be retained to monitor all initial ground disturbing work within the Project site. If archaeological resources are found, this measure requires that a Data Discovery Plan be implemented, which would contain measures to ensure that a significance evaluation of the find is made by a professional archaeologist in consultation with the tribal monitor, and measures will be developed to ensure that the resource is avoided or preserved in place. With the implementation of Mitigation Measure CUL-1, the Project would not cause a substantial adverse change in the significance of an archaeological resource as defined by CEQA Guidelines Section 15064.5. The impact would be less than significant with mitigation incorporated.



**c) Disturb any human remains, including those interred outside of dedicated cemeteries?**

***Less-than-Significant Impact with Mitigation Incorporated***

There are no known human remains located within the Project site. However, ground-disturbing activities during construction have the potential to impact unknown human remains which may be present within the Project site. The Project would implement Mitigation Measure CUL-2, which contains proper procedures that must be followed in the event of discovery of human remains on the Project site. With implementation of mitigation Measure CUL-2, the Project would not disturb any human remains, including those interred outside of dedicated cemeteries. The impact would be less than significant with mitigation incorporated.

**MITIGATION MEASURES**

***Mitigation Measure CUL-1: Archaeological Resources Monitoring***

Prior to any ground disturbing activities for the proposed Project, a qualified archaeologist shall prepare a Cultural Resources Monitoring Plan for review by and in consultation with the Federated Indians of Graton Rancheria, and approval by the City. The Plan shall identify the type of archaeological material that could potentially be found within the Project site and procedures to follow should any material be encountered during ground disturbing activities. The Plan shall provide procedures and guidelines for in-field assessment of the significance of any archaeological material identified during monitoring.

A qualified professional archaeologist and tribal monitor from the Federated Indians of Graton Rancheria shall be retained to monitor all initial ground disturbing and grading work. The archaeologist must meet the Secretary of Interior's Professional Qualification Standards for archaeology. The archaeologist and tribal monitor shall have the authority to halt construction activities at the location of a discovery to review possible archaeological material and to protect the resource while the materials are being assessed. Monitoring shall continue until, in the archaeologist's judgement, in consultation with the tribal monitor, additional archaeological resources are not likely to be encountered. If no archaeological resources are discovered during construction, the archaeologist shall prepare a report to document the negative findings after construction is complete.

If an archaeological deposit is encountered, a Data Discovery Plan shall be implemented, which shall require that all ground disturbing work within 50 feet of the find shall cease until the monitoring team can assess the find, consult with agencies, and make recommendations for the treatment of the discovery. Upon completion of the assessment, the archaeologist shall prepare a report to document the methods and results of the assessment. The final report shall be reviewed by and in consultation with the Federated Indians of Graton Rancheria, and submitted to the City and Northwest Information Center.

***Mitigation Measure CUL-3: Human Remains***

Work shall halt within 50 feet if human remains are uncovered during construction. The significance of the find shall be assessed, and the appropriate management shall be pursued. California law recognizes the need to protect interred human remains, particularly Native American burials and items of cultural patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §§ 7050.5 and 7052 and PRC § 5097. If remains are uncovered, the City and the



County coroner shall be notified immediately. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code § 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code § 7050[c]). The City and the professional archaeologist shall contact the Most Likely Descendent, as determined by the NAHC, regarding the remains. The Most Likely Descendant, in cooperation with the City, shall determine the ultimate disposition of the remains and any associated artifacts.



#### 4.2.6 Energy

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### ENVIRONMENTAL SETTING

Power in the City is provided by Pacific Gas and Electric (PG&E). PG&E is responsible for transmitting and distributing electricity through the grid, maintaining infrastructure, billing customers, and providing customer services (City of Santa Rosa 2024).

#### REGULATORY SETTING

The City adopted its Community-wide Climate Action Plan (CCAP) in 2012. The CCAP guides greenhouse gas (GHG) reduction policies and activities at the community level. The CCAP consists of a Citywide GHG emissions inventory and identifies GHG reduction measures. The CCAP will be replaced by the GHG Reduction Strategy that the City is in the process of drafting as a part of the City’s 2050 General Plan Update. The GHG reduction strategy will include an updated GHG emissions inventory and will provide a comprehensive path to accomplish carbon neutrality by incorporating quantifiable measures to reduce GHG emissions across Santa Rosa, both within City operations and communitywide (City of Santa Rosa 2012).

Strategies outlined by the CCAP related to energy include reducing emissions from energy consumption; installing renewable energy infrastructure; promoting energy efficiency in land use management; improving transit options; optimizing waste reduction, recycling, and composting; promoting efficiency in water and wastewater systems, and supporting local agriculture. Goals set forth in the CAAP to support these strategies include:

- Facilitate energy efficiency and conservation through behavior changes and retrofits,
- Install and utilize renewable energy sources in Santa Rosa,
- Reduce vehicle miles traveled by managing the parking supply and facilitating efficient land uses,
- Increase the availability of safe, reliable, and convenient alternatives to single-occupancy vehicular travel,
- Increase the use of electric, hybrid, and alternatively fueled vehicles in Santa Rosa,
- Reduce the amount of solid waste sent to landfill from Santa Rosa,



- Improve the efficiency of wastewater and water operations in Santa Rosa, and continue to develop a diversified water supply portfolio, including water conservation and recycled water, in order to enhance water supply reliability,
- Improve the efficiency of agricultural operations and food consumption in Santa Rosa,
- Reduce emissions from construction and lawn and garden activities.

The CCAP does not specifically address sewer infrastructure in the City.

## DISCUSSION OF IMPACTS

- a) *Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?***

### ***Less-than-Significant Impact***

The Project includes rehabilitation of approximately 8,170 LF of RCP trunk sewer. It also includes condition assessment of the existing manholes along the alignment and rehabilitation of the manholes as recommended at the conclusion of the condition assessment field investigation. To implement the Project, a temporary bypass pipeline would be required and will include temporary bypass pumps, associated manifold and valving assemblies, and approximately 9,200 linear feet of triple barrel 18-inch diameter HDPE bypass pipelines. The Project would not create an increased demand for energy, and would not generate any new source of wasteful, inefficient, or unnecessary energy consumption. The rehabilitation of the existing trunk sewer would be a more efficient use of energy resources in the long-term because it would reduce the amount of necessary maintenance and repairs to the sewer. The construction process would be designed to be efficient in order to avoid excess monetary costs. That is, equipment and fuel would not be used wastefully on the site because of the added expense associated with renting, maintaining, and fueling equipment. Therefore, energy and fuel would not be wasted or used inefficiently by construction equipment and vehicles. The impact would be less than significant.

- b) *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

### ***No Impact***

The City's CCAP established goals, policies, and procedures to reach carbon neutrality by 2045, which are described above (City of Santa Rosa 2012). The Project would not conflict with any strategies, goals, or actions described in this plan or any other state or local plan for renewable energy or energy efficiency. No impact would occur.



4.2.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ENVIRONMENTAL SETTING

### *Regional Geology*

The Project site lies within the Coast Ranges geomorphic province (California Geological Survey [CGS] 2022). The Coast Ranges province runs almost directly parallel to the San Andreas Fault, beginning in the Central California Coast and extending north to the State boundary. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The northern Coast Ranges, in which the project sites are located, are dominated by irregular, knobby, landslide-topography of the Franciscan Complex (CGS 2002).

The City lies within the northeastern portion of the Cotati Valley found along the Santa Rosa Plain and also includes part of the Sonoma Mountains to the east. The City is generally characterized by three topographic features: gently sloping alluvial plains, upland foothills, and low valleys. The Santa Rosa Plain slopes gently to the west, away from the uplands, towards the lowest elevations of Cotati Valley. The project site is situated at an elevation of approximately 85 feet above sea level and the slope of the project site is relatively flat.

The City is generally underlain by volcanic flow deposits known as the Sonoma Volcanics, sedimentary rocks known as the Petaluma Formation, and alluvial deposits (City of Santa Rosa 2009). The Sonoma Volcanics, formed during volcanic activity approximately three to six million years ago, are typically found in the hilly upland areas of the City. Similarly aged, the Petaluma Formation consists of claystones, siltstones, and mudstones, resulting from the deposition of eroded materials in the uplands. The alluvial deposits are categorized into the younger Huichica Formation and the Glen Ellen Formation, comprising gravels, silts, sands, and clays, predominantly found in the lower valley areas east of the City.

### *Soils*

The USDA Natural Resource Conservation Service (NRCS) has characterized the majority of soils within Santa Rosa as clayey alluvial soils and riverwash with some silty and gravelly soils and loams. The most prominent soil type in Santa Rosa is the Zamora silty clay loam found on 0 to 2 percent slopes, although other soils also include Arbuckle, Clear Lake, Guenoc, Haire Clays, Spreckles, Wright, and Yolo series units (Figure 4). As described in Section 4.2.4, Biological Resources, soils within the Project site area include:

- Wright loam, shallow, wet, 0 to 2 percent slopes
- Wright loam, wet, 0 to 2 percent slopes,
- Zamora silty clay loam, moist, 0 to 8 percent slopes, and
- Clear Lake clay, ponded, 0 to 2 percent slopes (USDA 2019).

### *Seismicity*

The San Francisco Bay Area contains both active and potentially active faults and is regarded as a region of high seismic activity. Earthquakes pose especially high risks to Santa Rosa because of the City's proximity to active faults. The City is situated adjacent west of the Rodgers Creek Fault zone and approximately 12 miles southwest of the Maacama Fault Zone. The San Andreas Fault zone also runs 18 miles west of Santa Rosa. The Rodgers Creek and San Andreas faults are the two principally active, Bay Area "strike-slip" faults that have experienced movement within the last 150 years. Hazards associated with regional active faults is related to the estimated



potential magnitude of earthquake occurring on each fault. The higher the magnitude of an earthquake occurring along a fault, the more intense the ground shaking will be.

Seismically induced ground rupture can also occur, which is the physical displacement of surface deposits in response to an earthquake's seismic waves. Surface rupture can damage or collapse buildings, cause severe damage to roads and pavement structures, and cause failure of utilities, including overhead and underground. Ground rupture is typically confined to relatively narrow zones and considered more likely along active faults.

## DISCUSSION OF IMPACTS

***a-i), ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?***

### ***Less-than-Significant Impact***

The Project site does not lie within a State mandated Alquist-Priolo Earthquake Fault Zone, as identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (California Geological Survey 2022). However, because the Project site is located in the seismically active San Francisco Bay Region, the occurrence of earthquakes due to rupture of a nearby earthquake fault cannot be precluded. There are no indications of active faulting at the site and no active fault traces in the immediate Project site vicinity. The closest major fault is the Rodgers Creek Fault zone, which is approximately six miles east of the Project site. There is also an unnamed quaternary fault and an unnamed pre-quaternary fault situated 4.15 miles east and 4 miles northeast, respectively. Seismic activity along these faults, including fault rupture or earthquakes, has potential to cause high intensity ground shaking at the Project site. As faulting typically occurs along identified fault zones, the likelihood of surface rupture occurring from active faulting at the site is small because there are no known faults within or in the immediate vicinity of the Project site.

Ground shaking at the Project site during construction could interfere with construction activities. The Project contractor would be required to comply with all federal Occupational Safety and Health Administration (OSHA) and California OSHA (Cal/OSHA) requirements related to construction worker safety, which would reduce risks associated with fault rupture during construction to a less-than-significant level. The Project would not create any new inhabitable or occupiable structures which would be at risk of causing loss, injury, or death due to seismic activity. As such, the Project would not cause potential substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking. The impact would be less than significant.

***a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?***

### ***Less-than-Significant Impact***

Liquefaction primarily occurs in relatively loose, saturated, cohesionless soils that lose their strength and become incapable of supporting the weight of overlying soils or structures when subject to earthquake stresses. The Project site is not located within a liquefaction zone of an



Earthquake Zone of Required Investigation (California Geological Survey, 2022), however, clayey soils surrounding the Project site are described as “wet,” meaning that they have a tendency to be highly saturated. Therefore, liquefaction has the potential to occur within and in areas surrounding the Project site. During construction, all heavy equipment would remain within paved areas of the roadway, the Laguna WTP, and designated staging areas. The Project contractor would avoid placing heavy duty equipment in saturated areas which may be impacted by liquefaction. During operation, all new infrastructure would be located underground within the existing Llano Road Trunk sewer pipeline. As such, operation of the Project would not be impacted by liquefaction. The impact would be less than significant.

**a-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?**

**No Impact**

The Project site is not located within a landslide hazard zone of an Earthquake Zone of Required Investigation (California Geological Survey 2022) and is situated in a flat area. There are no steep slopes near the Project site which would pose risk of landslide. Project construction or operation would not directly or indirectly cause potential substantial adverse effects related to landslides. No impact would occur.

**b) Result in substantial soil erosion or the loss of topsoil?**

**Less-than-Significant Impact**

Soil erosion occurs when soil materials are worn away and transported to another area, either by wind or water. Erosion is most likely to occur on sloped areas with exposed soil, especially where unnatural slopes are created by cut and fill activities. The Project site is located on relatively flat land, and therefore, is not highly susceptible to soil erosion. Construction of the Project would cause only very limited soil-disturbing activities, primarily due to shallow trenching for the bypass pipeline in road crossing areas. Although this trenching would disturb soils on the Project site, it would not create substantial amounts of loose soil which would result in substantial soil erosion or loss of topsoil. The impact would be less than significant.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Less-than-Significant Impact**

The Project site is situated in a relatively flat area and is underlain by Wright loam, Zamora silty clay loam, and Clear Lake clay soils. As discussed above in Impact a-iii, these soils may pose risk of liquefaction due to their tendency to be highly saturated. However, the Project would not place heavy equipment or structures on areas which may be at risk of liquefaction during construction. During operation, all new infrastructure would be placed underground, and therefore, no new structures would be placed on unstable soil units. As discussed in Impact a-iv above, the Project site is not in an area that is at high risk of landslides. Therefore, the Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project. The impact would be less than significant.

**d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?**

**No Impact**



Expansive soils are those that possess a “shrink-swell” characteristic, which is a change in volume caused by expansion and contraction. This typically occurs in fine-grained clay sediments from the process of wetting and drying. Damage caused by expansive soils is typically structural damage that occurs over a long period of time, usually due to inadequate soil and formation engineering or the placement of structures on expansive soils. The Project would not place any new structures on expansive soils. The new pipeline would be installed using CIPP, technology, meaning that the new pipeline would be constructed directly within the existing pipeline. As such, the Project would not cause any substantial risks to life or property associated with expansive soils. No impact would occur.

- e) ***Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?***

***No Impact***

The Project would repair the existing Llano Road Trunk sewer pipeline using CIPP technology. As the existing pipeline is already functioning in this location, it is evident that the soils are suitable to support this infrastructure. The Project would not construct any alternative wastewater disposal systems. No impact would occur.

- f) ***Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

***Less-than-Significant Impact with Mitigation Incorporated***

Ground disturbing work within the Project site would primarily occur at OTH setup locations around existing manholes, aside from areas where shallow trenching would occur through driveways. There are no known paleontological resources within the Project site, and the probability of paleontological resources to occur at shallow depths within developed areas is low. However, trenching may uncover unknown paleontological resources that may be buried within the Project site. Mitigation Measure CUL-1 would be implemented to ensure that any potential impacts to unknown paleontological resources would be less-than-significant. Therefore, the Project would not destroy a unique paleontological resource or unique geologic feature. The impact would be less-than-significant with mitigation incorporated.



#### 4.2.8 Greenhouse Gas Emissions

Would the project:		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### ENVIRONMENTAL SETTING

GHGs are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The most common GHGs released from human activity are carbon dioxide, methane, and nitrous oxide (Governor’s Office of Planning and Research 2008). The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (e.g., dairies and hog farms).

In the United States, the major sources of GHG emissions are transportation, electricity generation, and industrial activities (EPA 2022). These three sources are also the top contributors of GHG emissions in California (CARB 2023a).

#### Global Warming Solutions Act

Assembly Bill (AB) 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce GHG emissions to 1990 levels by 2020. In 2016, Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solution Action. SB 32 and Executive Order B-30-15 require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of carbon dioxide equivalent (MMTCO<sub>2e</sub>). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 MMTCO<sub>2e</sub>.

#### Bay Area 2017 Clean Air Plan

The 2017 Clean Air Plan is the most recently adopted air quality plan in the Bay Area. The Clean Air Plan focuses on two related BAAQMD goals: protecting public health and protecting the climate. To protect the climate, the Clean Air Plan includes control measures designed to reduce emissions of methane and other super-GHGs that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

#### CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The



City of Santa Rosa and other jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

### ***City of Santa Rosa 2012 Community-wide Climate Action Plan***

The City of Santa Rosa 2012 CCAP identifies that the highest GHG emissions associated with electricity use, natural gas use, on-road transportation, solid waste disposal, water and wastewater, off-road equipment, agriculture, and stationary sources. Chapter four of the CCAP presents nine new reduction strategies that, when implemented, will reduce GHG emissions, improve community adaptation and resilience to climate change-related hazards, and address other sustainability issues (City of Santa Rosa 2012). One strategy listed involves installing and utilizing renewable energy sources in Santa Rosa.

## **DISCUSSION OF IMPACTS**

- a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

### ***Less-than-Significant Impact***

BAAQMD has adopted thresholds of significance that were designed to establish the level at which GHG emissions would cause significant environmental impacts under CEQA. The thresholds are included in the 2022 CEQA Air Quality Guidelines (BAAQMD 2022). The General Plan discusses GHGs but does not contain specific policies pertaining to GHG emissions.

The Project would result in GHG emissions from temporary construction-related activities, including operation of heavy equipment, use of trucks, worker trips, and site preparation. Direct long term operational emissions would be limited to vehicular traffic during occasional maintenance activities. The Project would not cause an increase in indirect or direct emissions during operation.

Construction would occur for approximately 110 working days from June 2025 to October 2025. GHG emissions generated by construction activities were calculated using CalEEMod Version 2022.1 and were based on the Project's estimated construction schedule and anticipated equipment use (Appendix B). Construction activities would generate a maximum of 536 metric tons (MT) of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) during the entire construction period.

The BAAQMD does not have adopted thresholds of significance for GHG emissions. The BAAQMD's approach to developing thresholds of significance for GHG impacts is to use a "fair share" approach to determine whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve statewide long-term GHG reduction goals, the impact of the project's GHG emission would be less than significant. The BAAQMD has identified required design elements that development and transportation projects must incorporate into project plans for their impact to be considered less than significant. There are no design elements required for infrastructure projects, and therefore the project must only be consistent with the local GHG reduction strategy that meets the criteria under CEQA Guidelines Section 15183.5(b) (BAAQMD 2022). As described below in Impact b), the Project would be consistent with GHG reduction strategies outlined in the



CCAP, and therefore, would not constitute a significant impact regarding GHG emissions. The impact from GHG emissions would be less than significant.

**b) *Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?***

***No Impact***

The CCAP outlines goals, strategies, and actions for the City to achieve carbon neutrality by 2045. The CAAP does not specifically address plumbing or sewer infrastructure but contains general goals of maintaining infrastructure to increase efficiency and reduce waste. The Project would align with goals identified in the CCAP because it would replace rehabilitate the existing 50 year old sewer main to prevent failure of the system and/or more impactful actions that would be associated with replacement. The rehabilitated pipeline would require less maintenance than the existing infrastructure and would therefore reduce vehicle trips and GHG emissions associated with maintenance of the sewer pipeline. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No impact would occur.



#### 4.2.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### ENVIRONMENTAL SETTING

A search of the SWRCB GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor databases indicated that the Laguna WTP, a portion of which is inside the Project site, is a listed leaking underground storage tank (LUST) cleanup site. There are no other sites listed within one-quarter mile of the Project site (SWRCB 2024; DTSC 2024).



The Project site is not located within an area of fire hazard as mapped by the California Department of Forestry and Fire Protection (CalFire) (CalFire 2024). The Project site is not located within or near an area that is designated as Moderate, High, or Very High Fire Hazard Severity Zone (FHSZ) by CalFire (CalFire, 2024).

## REGULATORY SETTING

### *City of Santa Rosa Local Hazard Mitigation Plan*

The City's Local Hazard Mitigation Plan (LHMP) identifies capabilities, resources, information, and strategies for risk reduction for hazards which may impact the City. The LHMP also provides guidance for and coordination of mitigation actions in order to reduce the City's vulnerability to disasters. Included in the LHMP are a set of strategies to reduce vulnerability to disaster through education and outreach programs, the development of partnerships, and implementation of actions to reduce impacts of disaster. Hazardous materials are identified as a medium priority hazard planning consideration, while seismic hazards, flood, drought, and wildfire are considered high priority hazards (City of Santa Rosa 2016).

### *City of Santa Rosa Emergency Operations Plan*

The City's Emergency Operations Plan outlines how the City's government, stakeholder agencies, community-based organizations, business community, and residents coordinate their response to major emergencies and disasters. The Plan identifies operational strategies and plans for managing inherently complex and potentially catastrophic events. The Plan contains the Basic Plan, Functional Annexes, and Hazard Specific Annexes. In general, the City's Fire Department is responsible for conducting hazardous materials response operations and conducting assessments of facilities which contain, use, or store hazardous materials.

## DISCUSSION OF IMPACTS

***a, b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

### ***Less-than-Significant Impact***

Project construction would involve the use and transport of typical construction-related hazardous materials such as fuels, lubricants, adhesives, and solvents. Heavy equipment would be staged and refueled within the Project staging areas. Construction activities would be required to comply with numerous hazardous materials regulations and implement BMPs to ensure that hazardous materials are handled properly and do not pose a threat to worker safety or the environment. Workers handling hazardous materials are required to adhere to federal and California Occupational Safety and Health Administration (OSHA) health and safety requirements. Hazardous materials must be transported to and from the project area in accordance with the Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation regulations and disposed of in accordance with RCRA at a facility that is permitted to accept the waste.

Although a spill or leak of hazardous materials is unlikely, a spill or leak that is not handled properly would have the potential to contaminate the environment. However, the Project



construction contractor would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) for construction activities in accordance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction and describe spill response and control measures, equipment inspections, equipment storage, and protocols for responding immediately to spills. With implementation of the SWPPP and compliance with existing regulations, the potential impact related to routine transport and accidental releases of hazardous materials would be less than significant.

- c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

***No Impact***

The Project is not located within one-quarter mile of an existing or proposed school. The closest school is Gravenstein Elementary School, which is located approximately 1.25 miles southwest of the Project site. No impact would occur.

- d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***

***Less-than-Significant Impact***

The Project site includes a portion of the Laguna WTP, which is listed in GeoTracker as a LUST cleanup site. The case was closed in 1993 after remedial actions were taken for contaminated on-site soil; therefore, this listing does not indicate an environmental hazard for the Project. There are no other listed sites within the Project site or within one-quarter mile of the Project site. The Project would not be impacted by any site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 within (DTSC 2024) (SWRCB 2024). Therefore, the Project would not create a significant hazard to the public or environment due to its location on a hazardous materials site. The impact would be less than significant.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?***

***No Impact***

The Project site is not located within two miles of an airport. The nearest airport to the Project site is the Charles M. Schulz–Sonoma County Airport located approximately 11.2 miles north of the Project site. The Project would not result in a safety hazard for people residing or working on the Project area. No impact would occur.

- f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

***Less-than-Significant Impact with Mitigation Incorporated***

The City’s LHMP discusses emergency response procedures within the City and identifies emergency evacuation routes. The Project site is not located along a designated evacuation route; however, Llano Road intersects with State Route 12, a designated evacuation route,

approximately two miles north of the Project site. Work within the Project site could potentially delay vehicles traveling along Llano Road to access State Route 12, which is a potentially significant impact. As described in Section 4.2.17, Transportation, the Project would implement Mitigation Measure TRAN-1, which includes the preparation of a TCP. The TCP would contain measures to ensure that construction of the Project would not have a significant adverse effect on local traffic safety and circulation. In addition, the Project would be required to obtain an encroachment permit from the County and City and comply with all applicable requirements of the permits. With implementation of Mitigation Measure TRAN-1 and compliance with permit requirements, the Project would not impair any adopted emergency response plan or emergency evacuation plan during construction. The impact would be less than significant with mitigation incorporated.

Operational conditions of the Project would be similar to existing conditions. The Project would rehabilitate the existing Llano Trunk pipeline which is located underground and would restore any trenched roadways to their original condition after construction is complete. The Project would not include any new aboveground infrastructure. As such, Project operation would not impair an existing adopted emergency response plan or evacuation plan. No impact would occur.

As discussed above, neither Project construction nor operational activities would permanently alter the physical configuration of the existing roadway network serving the Project area. However, construction activities would take place in the existing roadway which could affect emergency access, which is a potentially significant impact. Mitigation Measure TRAN-1 requires the preparation of a TCP, which would include measures to ensure adequate emergency access during Project construction. In addition, the Project contractor would coordinate with local police and fire departments to ensure law enforcement and emergency response personnel are aware of construction and potential delays. The Project would be required to obtain an Encroachment Permit from the City and County and would comply with all requirements of the issued permits. With implementation of Mitigation Measure TRAN-1 and compliance with permit requirements, the Project would not result in inadequate emergency access. The impact would be less than significant with mitigation incorporated.

**g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?***

***No Impact***

The Project site is surrounded by rural residential and agriculture. The project site is located within an LRA, but not within or near an area that is designated as Moderate, High, or Very High FHSZ by CalFire. The Project would not directly expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impact would occur.



#### 4.2.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### ENVIRONMENTAL SETTING

The local watershed is Lower Laguna de Santa Rosa and the regional watershed is Mark West Creek (Russian). The Laguna de Santa Rosa is the receiving drainage for the Project site, with all waters eventually flowing into this drainage. The Laguna de Santa Rosa flows into Mark West Creek and onward into the Russian River. Colgan Creek, a tributary of Laguna de Santa Rosa, passes through the Project site.



The Project site is located within the jurisdiction of the North Coast Regional Water Quality Control Board (RWQCB). The North Coast (Region 1) Water Quality Control Plan (Basin Plan) indicates that the Project site is within the North Coast Hydrologic Basin Planning Area (North Coast RWQCB 2018).

The Project site is within the Santa Rosa Plain groundwater basin (North Coast RWQCB 2018). Portions of the Project site are located within the one percent (1%) Annual Chance Flood Hazard Zone (100-year floodplain), 0.2% Annual Chance Flood Hazard, and Regulatory Floodway, as designated by the Federal Emergency Management Agency (FEMA) (FEMA 2024).

## DISCUSSION OF IMPACTS

### **a) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?***

#### ***Less-than-Significant Impact***

The Basin Plan sets narrative and numerical water quality objectives for the North Coast Hydrologic Planning Area. Numerical objectives typically describe pollutant concentration, physical and chemical conditions of water, and the toxicity of water to aquatic organisms.

Portions of Colgan Creek are situated within the Project site, which qualifies as an inland surface water. Water quality objectives for inland surface waters included in the Basin Plan include bacterial levels, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pesticides, pH, radioactivity, sediment, settleable materials, suspended material, tastes and odors, temperature toxicity, and turbidity.

The Project would not include any work below the ordinary high water mark (OHWM) of Colgan Creek; therefore, no direct impacts to surface waters would occur. However, construction of the Project could indirectly impact surface waters through runoff of sediment and pollutants from the Project site, if proper measures for erosion control and sediment runoff are not in place. Prior to construction activities, the Project contractor would be required to prepare a SWPPP in accordance with the NPDES Construction General Permit requirements. The SWPPP would include proactive measures to prevent any water pollution from stormwater runoff during project construction, including BMPs to reduce substantial erosion which could lead to off-site water pollution and/or sedimentation of waterways. The Project contractor would be required to implement the measures contained in the SWPPP during Project construction, which would ensure that the Project would not indirectly impact water quality. With the implementation of a SWPPP, the Project would not violate any water quality standards. Project operations would not include any activities that would violate water quality standards or degrade surface or groundwater quality.

The CIPP method used for pipeline rehabilitation would require the use of water for curing and cooling of the pipeline. Water being used for curing and cooling of the Llano Trunk pipeline may contain resin residue and would need to be treated after use for construction. The City would coordinate with staff at the Laguna WTP to ensure that the WTP has the capacity to receive and treat the effluent used for curing and cooling. The impact would be less than significant.



- b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

**No Impact**

The Project would not use groundwater supplies during construction or operational activities. The City of Santa Rosa General Plan does not indicate groundwater as a source of potable water supply. No impact would occur.

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?**

**Less-than-Significant Impact**

The Project would involve rehabilitation of an existing underground sewer pipeline using CIPP technology. The rehabilitation of the pipeline would be done using existing manholes as access points, and therefore, the Project would not require trenching or ground disturbance activities that would significantly change the existing site conditions and drainage patterns. In addition, as described above in Impact a) the Project would implement a SWPPP to prevent excessive runoff and erosion and siltation during Project construction. Therefore, the Project would not result in flooding on- or off-site, create or contribute to new runoff, or significantly impede or redirect flood flows due to changes in drainage patterns. The impact would be less than significant.

- d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?**

**Less-than-Significant Impact**

The Project is not located in a coastal area or in an area subject to seiches or tsunamis. As discussed above in Impact c), portions of the Project site are located within 100-year floodplain, 0.2% Annual Chance Flood Hazard, and Regulated Floodway (Federal Emergency Management Agency 2024). The City's Municipal Code Chapter 18.52, Flood Damage Protection, lists specific regulations that apply to flood hazard area, including permits required for development in floodplain. Complying with the City's Municipal Code for floodplain management would ensure impacts related to flood hazard would be less than significant.

- e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

**No Impact**

The Project falls within the Santa Rosa Valley Groundwater Basin – Santa Rosa Plain Subbasin, which is managed in accordance with the 2017 Groundwater Sustainability Agency (Santa Rosa Groundwater Sustainability Agency 2017). The Project would not conflict with any goals, programs, or policies outlined in this groundwater management plan. No impact would occur.



**4.2.11 Land Use and Planning**

Would the project:	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Incorporated</i>	<i>Less-than-Significant Impact</i>	<i>No Impact</i>
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

The Project site is partially situated in unincorporated Sonoma County and partially within the southwestern portion of the City of Santa Rosa. Areas surrounding the Project site have a Sonoma County General Plan land use designation of Diverse Agriculture and City of Santa Rosa General Plan land use designation of Agriculture and Public/Institutional (Sonoma County 2018; City of Santa Rosa 2021a). Areas surrounding the Project site are within the Sonoma County Diverse Agriculture zoning district and Land Extensive Agriculture zoning district (Sonoma County “Zoning and Land Use”). Areas within the City’s boundaries are within the Rural Residential zoning district (City of Santa Rosa “Planning”).

**DISCUSSION OF IMPACTS**

**a) *Physically divide an established community?***

***Less-than-Significant Impact***

The Project site is surrounded by agricultural and public institutional land uses. Project construction activities would require space for staging areas in various locations throughout private properties, Llano Road, Todd Road, and at the Laguna WTP. Use of these areas for staging would not physically divide any established community. As the Project would rehabilitate an existing underground sewer pipeline, Project operational conditions would be similar to existing conditions at the Project site. Therefore, operational conditions of the Project would not physically divide an established community. The impact would be less than significant.

**b) *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?***

***No Impact***

The Project site spans across multiple land use designations as specified by the City of Santa Rosa General Plan Land Use Element and the Sonoma County General Plan. Areas surrounding the Project site have a Sonoma County General Plan land use designation of Diverse Agriculture and City of Santa Rosa General Plan land use designation of Agriculture and Public/Institutional. The Project would not conflict with any land use designation, plan, policy, or regulation in the



City or County General Plan because the conditions after Project construction would be similar to existing conditions at the Project site. No impact would occur.



**4.2.12 Mineral Resources**

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

The Project site is not located within or near a mineral resource site. The City of Santa Rosa 2035 General Plan includes the following goal related to mineral resources (City of Santa Rosa 2020):

**Goal OSC-C-4:** Work with the County of Sonoma to encourage the conservation of mineral resources and the protection of access to those resources.

**DISCUSSION OF IMPACTS**

**a-b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

**No Impact**

The Project site is not located within or near a mine or mineral resource site. The City of Santa Rosa 2035 General Plan (City of Santa Rosa 2020) does not identify the Project area as a locally important mineral resource site. Therefore, the Project would not result in a loss of a known mineral resource that would be of value to the region or residents of the State, or a locally important mineral resource. No impact would occur.



#### 4.2.13 Noise

Would the project result in:	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Incorporated</i>	<i>Less-than-Significant Impact</i>	<i>No Impact</i>
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information in this section is based on and adapted from a Noise and Vibration Technical Memorandum (Appendix E) which was prepared for the Project by Baseline in June 2024.

#### BACKGROUND INFORMATION ON NOISE

##### *Noise Concepts and Terminology*

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used, and monitoring results are reported in A-weighted decibels (dBA). Decibels and other acoustical terms are defined in Table 6.

A typical method for determining a person’s subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people:<sup>2</sup>

- A 3-dBA change is considered barely noticeable.
- A 5-dBA change is considered clearly noticeable, but not dramatic.

<sup>2</sup> Charles M. Salter Associates, Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.



- A 10-dBA change is perceived as a doubling or halving in loudness.

**Table 6. Definition of Acoustical Terms**

TERM	DEFINITION
<b>Frequency (Hz)</b>	The number of complete pressure fluctuations per second above and below atmospheric pressure.
<b>Decibel (dB)</b>	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise “level.” This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
<b>A-Weighted Sound Level (dBA)</b>	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency response of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
<b>Maximum Sound Levels (Lmax)</b>	The maximum sound level measured during a given measurement period.
<b>Equivalent Noise Level (Leq)</b>	The average A-weighted noise level during the measurement period. For this evaluation, Leq refers to a 1-hour period unless otherwise stated.
<b>Community Noise Equivalent Level (CNEL)</b>	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
<b>Day/Night Noise Level (Ldn)</b>	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
<b>Ambient Noise Level</b>	The existing level of environmental noise at a given location from all sources near and far.
<b>Vibration Decibel (VdB)</b>	A unit describing the amplitude of vibration on a logarithmic scale.
<b>Peak Particle Velocity (PPV)</b>	The maximum instantaneous peak of a vibration signal.
<b>Root Mean Square (RMS) Velocity</b>	The average of the squared amplitude of a vibration signal.

Sources: (Charles M. Salter Associates, Inc 1998; Federal Transit Administration 2018)

### **General Information on Vibration**

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. Typically, ground-borne



vibration generated by human activities attenuates rapidly with distance from the source of the vibration.

Several different methods are used to quantify vibration. Vibration amplitudes are usually expressed as either Peak Particle Velocity (PPV) or as Root Mean Square (RMS) velocity. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration event. Thus, RMS is more appropriate for evaluating human response to vibration. PPV and RMS are described in units of inches per second (in/sec), and RMS is also described in vibration decibels (VdB).

## **ENVIRONMENTAL SETTING**

The primary source of noise in the Project vicinity is traffic on Todd Road, which intersects Llano Road within the northern section of the Project site. Based on the 2020 noise contours included in the Santa Rosa General Plan, the ambient noise level from traffic adjacent to Todd Road is approximately 60 dba (City of Santa Rosa 2009). Therefore, the maximum ambient noise level associated with traffic along the Project alignment is 60 dba.

### ***Existing Sensitive Receptors***

Noise-sensitive receptors are locations where people are more susceptible to elevated noise levels than others due to the amount of noise exposure and the types of activities typically involved. Sensitive receptors include residences, schools, places of worship, hospitals, convalescent homes, hotels, libraries. Noise-sensitive receptors near the Project include single-family homes located as close as 54 feet from the pipeline alignment.

Vibration-sensitive receptors are locations where people are more susceptible to the adverse effects of vibration. These include residences and other buildings where people normally sleep, as well as buildings that have the potential for activity interference (e.g., schools and places of worship). In certain situations, vibration can also cause structural damage. Vibration-sensitive receptors near the Project are the same single-family homes identified as noise-sensitive receptors.

## **REGULATORY SETTING**

### ***Federal Transit Administration***

The Federal Transit Administration (FTA) has developed a general construction noise threshold of 90 dBA Leq at the nearest noise-sensitive receptor (FTA 2018). According to the FTA, if the combined noise level in 1 hour from the two noisiest pieces of equipment exceeds the 90 dBA threshold at a noise-sensitive receptor, then there may be a substantial adverse reaction.

The FTA has developed vibration thresholds to prevent disturbances to (i.e., annoyance of) building occupants based on the frequency of a vibration event, as shown in Table 7 (FTA 2018). Vibrations that exceed the vibration thresholds could result in potential disturbance to people or activities. For construction activities, FTA's recommended vibration threshold for the disturbance of residences is 80 VdB.



**Table 7. Vibration Thresholds for Disturbance to Building Occupants**

LAND USE	MAXIMUM RMS VELOCITY (VDB)		
	Frequent Events	Occasional Events	Infrequent Events
Buildings where vibration would interfere with operations	65	65	65
Residences and buildings where people normally sleep	72	75	80
Institutional land uses with primarily daytime use	75	78	83

Note: Frequent events = more than 70 events per day; Occasional events = 30 - 70 events per day; Infrequent events = less than 30 events per day.

Source: (FTA 2018)

**California Department of Transportation**

The California Department of Transportation (Caltrans) has developed vibration thresholds based on PPV values to evaluate the potential impact of construction vibration on structures (Caltrans 2020), as shown in Table 8. Construction vibrations that exceed the vibration thresholds could result in potential damage to structures. For construction activities, Caltrans recommends vibration threshold for damage to older residential structures is 0.3 in/sec.

**Table 8. Vibration Thresholds for Damage to Structures**

LAND USE	MAXIMUM PEAK PARTICLE VELOCITY (IN/SEC)	
	Transient Source	Continuous or Frequent Intermittent Source
Extremely fragile historic buildings, ruins	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern commercial buildings	2.0	0.5

Note: Transient sources create a single isolated vibration event (e.g., blasting). Continuous/frequent intermittent sources include impact pile drivers, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: (Caltrans 2020)

**City of Santa Rosa General Plan**

The Noise and Safety Element of the Santa Rosa General Plan includes policies and programs to guide the City in maintaining acceptable community noise levels. None of the policies or programs apply to construction noise.

**City of Santa Rosa Noise Ordinance**

Chapter 17-16 of the City’s municipal code outlines noise standards associated with land-use development. None of these standards apply to construction noise.



## **Sonoma County General Plan**

The Noise Element of the Sonoma County General Plan includes goals and policies to guide the County in maintaining acceptable community noise levels. Policy NE-1c includes noise criteria for recurring impulse tones such as pile drivers. There are no other policies that would apply to construction noise.

### **SIGNIFICANCE THRESHOLDS**

The City and County have not established criteria for assessing construction noise and vibration impacts. Therefore, in this analysis the following FTA and Caltrans thresholds are used to evaluate the significance of potential noise and vibration impacts to nearby single-family homes associated with implementation of the Project:

- Construction Noise Threshold = 90 dBA Leq
- Construction Vibration Disturbance Threshold = 80 VdB
- Construction Vibration Damage Threshold = 0.3 in/sec

### **METHODOLOGY**

To evaluate noise levels during construction, the Project applicant provided a list of construction equipment that would be used for the Project (e.g., excavator and backhoe). The types of construction equipment that would be used for the Project and the associated noise calculations are included in Appendix E, Attachment A.

In accordance with FTA guidance, construction noise impacts were evaluated by quantifying the maximum noise levels that would result from simultaneous operation of the two noisiest pieces of equipment near the boundary of the Project closest to a noise-sensitive receptor (FTA 2006). Modeling the potential noise impact at the closest noise-sensitive receptor is conservative because it represents a worst-case scenario for all nearby sensitive receptors exposed to noise during Project construction.

To evaluate the Project's potential vibration effects on nearby sensitive receptors, it was assumed that the equipment that could generate substantial ground vibration would be used the near boundary of the Project closest to a vibration-sensitive receptor. Modeling the potential vibration impact at the closest vibration-sensitive receptor is conservative because it represents a worst-case scenario for all nearby sensitive receptors exposed to vibration during Project construction.

### **DISCUSSION OF IMPACTS**

- a) ***Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

#### ***Less-than-Significant Impact***

Construction of the Project is anticipated to begin in June 2025 and is expected to occur over a period of approximately five months. As construction progresses along the Project alignment, noise from construction activities would temporarily affect different sensitive receptors within the Project site vicinity. Construction noise levels would vary from day to day, depending on the number and type of equipment being used, the types and duration of activity being performed,



the distance between the noise source and the receptor, and the presence of barriers (if any) between the noise source and receptor.

The Project’s construction noise level was estimated at the nearest noise-sensitive receptor, a single-family home, located at 3944 Llano Road approximately 54 feet east of the Project site. As shown in Table 9 , Project construction would not generate noise levels above the FTA’s 90 dBA Leq threshold at the nearest noise-sensitive receptor. Therefore, Project construction would not generate a substantial temporary increase in ambient noise levels in the Project vicinity and this impact would be less than significant.

**Table 9. Potential Noise Impact at Nearest Sensitive Receptor from Project Construction**

SOURCE	MAXIMUM NOISE LEVEL (DBA LEQ)	NOISE THRESHOLD (DBA LEQ)	EXCEED THRESHOLD?
Construction Activity	84	90	No

Source: Noise calculations included in Appendix E, Attachment A.

**b) Generation of excessive groundborne vibration or groundborne noise levels?**

**Less-than-Significant Impact**

Construction can result in varying degrees of ground vibration depending on the type of equipment and activity. The primary types of equipment that could generate substantial ground vibration during Project construction and the associated vibration calculations are included in Appendix D, Attachment A.

The Project’s construction vibration levels were estimated at the nearest vibration-sensitive receptor, a single-family home, located at 3944 Llano Road approximately 54 feet east of the Project alignment. As shown in Table 10 and Table 11, Project construction would not generate vibration levels above the disturbance and damage thresholds, respectively, at the nearest vibration-sensitive receptor. Therefore, Project construction would not generate excessive vibration levels that would disturb nearby residents or damage older residential structures and this impact would be less than significant.

**Table 10. Potential Vibration Disturbance Impact at Nearest Sensitive Receptor from Project Construction**

GROUND VIBRATION EQUIPMENT	MAXIMUM VIBRATION LEVEL (VDB)	DISTURBANCE THRESHOLD (VDB)	EXCEED THRESHOLD?
Loaded Trucks	76	80	No

Source: Vibration calculations included in Appendix E, Attachment A.

**Table 11. Potential Vibration Damage Impact at Nearest Sensitive Receptor from Project Construction**

GROUND VIBRATION EQUIPMENT	MAXIMUM VIBRATION LEVEL (IN/SEC)	DAMAGE THRESHOLD (IN/SEC)	EXCEED THRESHOLD?
Loaded Trucks	0.02	0.3	No

Source: Vibration calculations included in Appendix E, Attachment A.



- c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

**No Impact**

The Project is not located within the vicinity of a private airstrip or public airport. The nearest airport is the Sonoma County Airport, located approximately 11.2 miles north of the Project site. The Project is not located within an airport land use plan. No impact would occur.



#### 4.2.14 Population and Housing

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### ENVIRONMENTAL SETTING

The Project would rehabilitate the existing Llano Road Trunk pipeline, which extends through private parcels that are in residential use. Residential uses in the vicinity of the Project site generally include rural residential and low-density single family residential.

#### DISCUSSION OF IMPACTS

**a) *Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?***

**No Impact**

The Project would not construct new homes and would not alter the number or type of residential units present in the Project area. The Project would not introduce changes in infrastructure that would encourage substantial unplanned population growth in the Project area. Rehabilitation of the Llano Trunk pipeline would not expand the capacity of wastewater infrastructure and therefore, would not accommodate future population growth in the Project area. No direct or indirect impacts regarding substantial unplanned population growth would occur.

**b) *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?***

**No Impact**

The Project site is surrounded by agricultural and low-density residential land uses. The Project would not displace people or housing or necessitate the construction of replacement housing elsewhere. No impact would occur.



**4.2.15 Public Services**

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
<i>Fire protection?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Police protection?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Schools?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parks?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Other public facilities?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

The Project site is served by the Santa Rosa Police Department. The nearest police station is located approximately 8.2 miles northeast of the Project site at 965 Sonoma Avenue in Santa Rosa.

The Santa Rosa Fire Department (SRFD) provides protection, suppression, emergency medical, hazardous materials services, and rescue services for the City. The SRFD has 11 fire stations throughout Santa Rosa. Station 10 is the closest station located 4.5 miles northeast of the Project site.

The closest school is Bellevue Elementary School, which is located approximately 2.5 miles northeast of the Project site. The closest park is Southwest Community Park, which is located 3.6 miles northeast of the Project site.

**DISCUSSION OF IMPACTS**

a) ***Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:***

- Fire Protection?
- Police Protection?
- Schools?
- Parks?
- Other Public Facilities?



**No Impact**

The Project would not contribute any change in infrastructure that would require the provision of or need for new or physically altered governmental facilities. The purpose of the Project is to rehabilitate the Llano trunk sewer, which would not expand the capacity of wastewater infrastructure. As described above in Section 4.2.14, the Project would not directly or indirectly induce population growth in the City. Therefore, the Project would result in conditions which would require the construction of new or altered governmental facilities, including fire protection, police protection, schools, parks, or other public facilities. No impact would occur.



**4.2.16 Recreation**

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

Laguna Uplands Preserve is the closest public recreational facility near the Project area. This small open space preserve is located at the end of Palm Avenue and is characterized by moderately sloping hillsides, with scenic views across the Laguna looking east toward Taylor Mountain and Santa Rosa.

**DISCUSSION OF IMPACTS**

**a, b) *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?***

**No Impact**

The proposed Project would not restrict the use of any regional parks or other recreational facilities. As described in Section 4.2.14, the Project would not directly or indirectly induce population growth and therefore would not increase the use of existing park facilities in way that would require the construction of new facilities or expansion of existing facilities. No impact would occur.



#### 4.2.17 Transportation

Would the project:		Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### ENVIRONMENTAL SETTING

##### *Regional and Local Access*

Regional access to the Project site is provided via California State Route 116 (SR-116). The route runs from SR-1 on the Pacific coast near Jenner to SR 121 south of Sonoma. Local access to the Project site Llano Road and Todd Road.

##### *Pedestrian/Bicycle Routes*

Llano Road does not currently have bike lanes or pedestrian facilities on either side of the roadway. However, the Sonoma County Bicycle and Pedestrian Plan (Sonoma County 2010) identifies Llano Road as a proposed Class II bike route. Currently there are no existing bus routes or bus stops along Llano Road.

##### *Transportation Planning*

The Metropolitan Transportation Commission (MTC) is the agency responsible for transportation planning and funding for the nine-county Bay Area, which includes Sonoma County.

MTC is charged with regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities in the region. MTC and Association of Bay Area Governments adopted Plan Bay Area 2040 in July 2017, which includes the region's Sustainable Communities Strategy and Regional Transportation Plan.



## REGULATORY SETTING

### *City of Santa Rosa General Plan*

The City's General Plan includes the following relevant policies related to transportation:

**Policy T-A-1:** Expand Transportation Systems Management programs for employers, and reduce peak hour single-occupancy automobile trips through the following techniques: promotion of transit service; staggering of work shifts; flextime (9/80 work schedules); telecommuting; carpool and vanpool incentives; provision of bicycle facilities; trip reduction incentive programs; parking disincentives for single-occupant vehicles; and car sharing programs.

**Policy T-A-2:** Work with employers and business associations to meet employee transportation needs that will lead to reduction of the use of single occupant vehicles.

**Policy T-A-5:** Pursue cooperation between local and regional transportation agencies to coordinate multi-modal connections throughout the city.

**Policy T-L-4:** Maintain all roadways and bicycle-related facilities so they provide safe and comfortable conditions for bicyclists.

## DISCUSSION OF IMPACTS

### **a) *Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?***

#### ***Less-than-Significant Impact with Mitigation Incorporated***

Construction of the Project would generate off-site traffic, primarily due to the delivery of construction equipment and materials to the Project site and the daily arrival and departure of construction workers. Construction-related traffic would be temporary and would not result in any long-term degradation in operating conditions on any locally used roadways. All areas of streets that must be trenched to accommodate the bypass pipeline would be repaved. Therefore, the Project would not conflict with any General Plan policies regarding the quality and condition of public roadways or complete streets features.

The impact of construction-related traffic would temporarily decrease capacities of streets in the Project area because of the slower movements and larger turning radii of construction vehicles compared to passenger vehicles. The public could experience delays if traveling behind a large or heavy truck. In addition, temporary road closures of Todd Road and Llano Road would be required during trenching. However, since the Project site is in a relatively rural area, intersections in the Project area do not typically experience significant delays. The addition of construction-related truck traffic in the Project area and traffic caused by temporary road closures would not be substantial enough to conflict with level of service (LOS) standards in the City's General Plan. While the traffic generated by construction activities may be noticeable at times and may increase traffic volumes on the local roadways serving the construction site, it would not be enough to conflict with LOS standards.

The Project would implement Mitigation Measure TRAN-1, which requires preparation of a Traffic Control Plan (TCP) for all work within the public right-of-way during construction. The TCP would contain measures to ensure safe passage for bicyclists, pedestrians, and motorists during Project construction activities that take place in the roadway. The TCP may require measures such as



advance warning signs and traffic guards. In addition, the TCP would contain measures to ensure adequate emergency access is maintained throughout Project construction. In addition, the Project would be required to obtain an Encroachment Permit from the County and would comply with all requirements of the issued permit. With the implementation of Mitigation Measure TRAN-1, the Project would not conflict with any General Plan policies regarding safety of pedestrians, bicyclists, and motorists, and emergency access. The impact would be less than significant with mitigation incorporated.

Once constructed, the Project would only require occasional maintenance inspection, which would be similar to existing conditions. No operational impact would occur.

**b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?**

***Less-than-Significant Impact***

In accordance with the Technical Advisory on Evaluating Transportation Impacts in CEQA, Section 21099 of the PRC states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. Section 21099 subd. (b)(1) further directed the Office of Planning and Research (OPR) to prepare and develop criteria for determining significance. The OPR identifies a screening threshold for small, land use projects as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR 2018).

According to information regarding vehicle trips provided by the construction contractor, the daily number of vehicle trips associated with the project would not exceed 110 trips per day, which is the OPR's screening threshold for conducting a vehicle traveled analysis. Once constructed, the Project would only require occasional maintenance inspection, which would be similar to existing conditions. The Project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

**c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

***No Impact***

The Project would include rehabilitation of the existing Llano Trunk pipeline which runs underneath existing roadways. The Project would not introduce any new aboveground structures which may present a hazard due to a geometric design feature. Operation of the Project would not involve a new use of the Project site; therefore, operational conditions would be similar to existing conditions. No impact would occur.

**d) Result in inadequate emergency access?**

***Less-than-Significant Impact with Mitigation Incorporated***

As discussed above, neither Project construction nor operational activities would permanently alter the physical configuration of the existing roadway network serving the Project area. However, construction activities would take place in the existing roadway which could affect emergency access, which is a potentially significant impact. Mitigation Measure TRAN-1 requires the preparation of a TCP, which would include measures to ensure adequate emergency access during Project construction. In addition, the Project contractor would coordinate with local police



and fire departments to ensure law enforcement and emergency response personnel are aware of construction and potential delays. The Project would be required to obtain an Encroachment Permit from the County and would comply with all requirements of the issued permits. With implementation of Mitigation Measure TRAN-1 and compliance with permit requirements, the Project would not result in inadequate emergency access. The impact would be less than significant with mitigation incorporated.

## **MITIGATION MEASURES**

### ***Mitigation Measure TRAN-1 Traffic Control Plan***

To ensure that construction of the Project does not adversely interfere with local traffic safety and circulation, a TCP shall be prepared for the Project. The TCP shall include, but not be limited to, the following elements:

- The contractor shall provide flaggers as needed to temporarily hold traffic to safely stage equipment in advance of and/or during construction.
- The contractor shall coordinate with the Santa Rosa Police and Fire Departments to ensure that construction activities, including staging and storage of materials in and near the proposed staging areas, do not interfere with law enforcement activities, emergency response, or evacuation procedures.
- The contractor shall install advance warning signs to alert pedestrians, bicyclists, and motorists regarding construction activities in the project area. Advance warning signs may include reflective signs, cones, or barricades. Signage should state the anticipated duration for construction.
- Work shall be confined to the immediate project site and performed in a manner that would be least disruptive to the public.
- The contractor shall ensure that public access to businesses and private driveways is maintained at all times.



**4.2.18 Tribal Cultural Resources**

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**ENVIRONMENTAL SETTING**

A description of the environmental setting related to tribal cultural resources can be found in Section 4.2.5, Cultural Resources.

**REGULATORY BACKGROUND**

***Tribal Cultural Resources Assembly Bill 52 (AB 52)***

AB 52 (Chapter 532, Statutes 2014) required an update of the CEQA Guidelines to include questions related to impacts to tribal cultural resources. AB 52 establishes a consultation process with all California Native American Tribes on the Native American Heritage Commission List, Federal and Non-Federal Recognized Tribes. AB 52 also establishes a new class of resources: Tribal Cultural Resources. Key components of AB 52 include consideration of Tribal Cultural Values in determination of project impacts and mitigation, and required Tribal notice and meaningful consultation.

California Public Resources Code (PRC) Section 21080.3.2(b) states that consultation ends when either 1) parties agree to mitigation measures or avoid a significant effect on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort concludes that mutual agreement cannot be reached.



## **State of California Public Resources Code**

Section 21074 of the PRC defines historical resources related to tribal cultural resources.

- a) “Tribal cultural resources” are either of the following:
  - 1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    - A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    - B. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
  - 2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Section 5020.1(k) defines “Local register of historical resources” as a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

Section 5024.1 is the establishment of the California Register of Historical Resources (California Register).

## **DISCUSSION OF IMPACTS**

- a) ***Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***
  - i) ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?***
  - ii) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the***



***criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

***Less-than-Significant Impact with Mitigation Incorporated***

Native American groups traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources. In light of this, AB 52 requires that a lead agency provide written notification of projects to California Native American tribes that have previously requested placement on the agency's notice list. Notice to tribes shall include a brief project description, location, lead agency contact information, and the statement that the tribe has 30 days to request consultation. The lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a tribe.

A search request was sent to the NAHC on April 15, 2024, and a response was received on April 22, 2024. The NAHC's response indicated that the Sacred Lands File has no information about the presence of Native American cultural resources within the Project site. The NAHC also provided a list of contacts for individuals who might have knowledge of cultural resources in the Project area. Origer sent letters to these individuals to inform them of the Project and request information on cultural resources within the Project area.<sup>3</sup> The following responses were received:

- On April 18, 2024, Brenda Tomaras of the Lytton Rancheria of California, responded via email stating that the tribe has no specific information about the Project area and intends to get a copy of the Cultural Resources Study upon completion.
- On April 16, 2024, Anthony Macias, Tribal Historic Preservation Officer for the Kashia Band of Pomo Indians of the Stewarts Point Rancheria, responded via email stating that the Project is outside of the tribe's aboriginal territory and that the tribe does not have any comments or concerns. He did reserve the right to comment at a later date if necessary.
- On May 22, 2024, Buffy McQuillen, Tribal Historic Preservation Officer for the Federated Indians of Graton Rancheria (Graton Rancheria), responded via email stating that the study area is within the Tribe's ancestral territory and requested the research results and recommendations of the Cultural Resources Study.
- On June 10, 2024, Mary Norris, Chairperson for the Cahto Tribe, responded via email indicating that the tribe had no questions or concerns about the Project.
- On June 10, 2024, Valerie Stanley, Tribal Historic Preservation Officer for the Sherwood Valley Rancheria of Pomo responded via email stating that the tribe would not be commenting on this Project as it is outside of their territory.
- On July 3, 2024, Valerie Stanley with the Noyo River Indian Community called and left a message stating that the Project site is outside of their tribal area and they had no comments on the Project.

The City, as the lead agency, identified Native American tribes which had requested placement on the City's AB 52 notice list, and on August 15, 2024, the City mailed certified project notification letters to both Graton Rancheria and Lytton Rancheria. Graton Rancheria responded to the City's request for consultation under the provisions of AB 52, acknowledging receipt of the notification and formally requesting a consultation.

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<sup>3</sup> This outreach did not constitute formal outreach under AB 52.



The City's Project team met with tribal representatives of the Graton Rancheria on September 16, 2024. The City will continue to work with the Graton Rancheria in order to identify and avoid impacts to any tribal cultural resources which may be present within the Project site. As described in Section 4.2.5, Cultural Resources, ALTA conducted an Extended Phase I Study for areas within the Project site that have high sensitivity for buried archaeological resources. No archaeological materials were found during the study.

As described above in *Section 4.2.5, Cultural Resources*, the Project would implement Mitigation Measure CUL-1 which requires that a professional archaeologist and tribal monitor from Graton Rancheria be present for all initial ground-disturbing activities, and that a Data Discovery Plan be implemented in the event that an archaeological resource is found. Implementation of this measure and continued consultation under AB 52 with the Graton Rancheria would ensure that the Project would not cause a substantial adverse change in the significance of a tribal cultural resource. The impact would be less than significant with mitigation incorporated.



**4.2.19 Utilities and Service Systems**

Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant Impact with Mitigation Incorporated</i>	<i>Less-than-Significant Impact</i>	<i>No Impact</i>
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**ENVIRONMENTAL SETTING**

Water in the City is supplied by the City, who purchases water from the Sonoma County Water Agency. The Project is located within the planning jurisdiction of the City’s 2020 Urban Water Management Plan (City of Santa Rosa 2021b). The majority of the City’s potable water supply is derived from the Russian River watershed. Wastewater utilities are provided by the City and wastewater is conveyed to the Laguna WTP for treatment and disposal. A portion of the Laguna WTP is located within the Project site.

Compost, trash, and recycling services in the City are provided by Recology. Power in the City is available through PG&E.



## DISCUSSION OF IMPACTS

- a) ***Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

### ***Less-than-Significant Impact with Mitigation Incorporated***

The Project would not require or result in the relocation or construction of new or expanded water, storm water drainage, electric power, natural gas, or telecommunications facilities. The Project would include the rehabilitation of the Llano Road Trunk Sewer pipeline. The purpose of rehabilitating this wastewater infrastructure is to reduce the potential for sewer system failure and reduce the overall operations and maintenance costs associated with repair of the existing pipeline.

Potential environmental effects of rehabilitating the Llano Trunk pipeline are discussed throughout this IS/MND. Section 4.2.21, Mandatory Findings of Significance, describes the cumulative impacts of the proposed Project. As described throughout this IS/MND, the Project would not result in any significant environmental impacts which could not be mitigated to a less-than-significant level with the implementation of mitigation measures described throughout this document. Therefore, the environmental effects of rehabilitating wastewater treatment facilities included in the Project would be less than significant with mitigation incorporated.

- b) ***Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?***

### ***No Impact***

The purpose of the Project is to rehabilitate existing wastewater infrastructure. The Project would not increase demand for water supply or require new or expanded water supply entitlements. Planning for future water supplies in the Project area is addressed in the City's 2020 Urban Water Management Plan. The Project would not conflict with any goals, policies, or activities set forth in this plan. No impact would occur.

- c) ***Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?***

### ***Less-than-Significant Impact***

The Project would not impact demand for wastewater treatment during construction or operation. The Project would rehabilitate the existing Llano Trunk pipeline, a critical City wastewater facility, without expanding the capacity of the system. A temporary bypass pipeline would be used during the construction phase of the Project so that sewer service can continue without interruption. Therefore, the Project would not conflict with capacity of the wastewater treatment provider. The impact would be less than significant.

- d) ***Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?***

### ***Less-than-Significant Impact***



The Project would generate construction & demolition (C&D) waste during construction, which would need to be disposed of at a facility that accepts C&D waste. Project operations would not cause an increase in solid waste generation. The impact would be less than significant.

**e) *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

***Less-than-Significant Impact***

The Project would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste. The Project would be required to obtain a demolition permit from the City prior to issuance of a building permit. C&D waste from Project construction would be disposed of in accordance with all federal, state, and local regulations. Project operation would not result in substantial amounts of solid waste. Therefore, the impact would be less than significant.



**4.2.20 Wildfire**

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

CAL FIRE is responsible for mapping fire hazards within the State Responsibility Area (SRA). Fire Hazard Severity Zone (FHSZ) maps are prepared by CAL FIRE which show areas of Moderate, High, and Very High fire hazard severity in the SRA. CAL FIRE also makes recommendations for mapping Very High FHSZ in Local Responsibility Areas (LRA).

The Project site is located within a LRA for fire protection, and is not located within a Very High FHSZ. The Project is not located near any Very High FHSZ. Areas to the south within the SRA are characterized by Moderate fire hazard severity, and the nearest Very High FHSZ are in the eastern part of the City within the LRA.

**REGULATORY SETTING**

The City’s Emergency Operations Plan and the LHMP are planning documents that describe emergency protocols and infrastructure within the City (City of Santa Rosa 2020). These plans include policies and procedures pertaining to emergency planning, organization, response, and evacuation routes. The nearest evacuation travel route is Route 12 located north of the Project site (City of Santa Rosa 2016).

**DISCUSSION OF IMPACTS**

- a) ***Substantially impair an adopted emergency response plan or emergency evacuation plan?***



### ***Less-than-Significant Impact with Mitigation Incorporated***

The City's LHMP discusses emergency response procedures within the City and identifies emergency evacuation routes. The Project site is not located along a designated evacuation route; however, Llano Road intersects with State Route 12, a designated evacuation route, approximately two miles north of the Project site. Work within the Project site could potentially delay vehicles traveling along Llano Road to access State Route 12, which is a potentially significant impact. As described in Section 4.2.17, Transportation, the Project would implement Mitigation Measure TRAN-1, which includes the preparation of a TCP. The TCP would contain measures to ensure that construction of the Project would not have a significant adverse effect on local traffic safety and circulation. In addition, the Project would be required to obtain an encroachment permit from the County and City and comply with all applicable requirements of the permits. With implementation of Mitigation Measure TRAN-1 and compliance with permit requirements, the Project would not impair any adopted emergency response plan or emergency evacuation plan during construction. The impact would be less than significant with mitigation incorporated.

Operational conditions of the Project would be similar to existing conditions. The Project would rehabilitate the existing Llano Trunk pipeline which is located underground and would restore any trenched roadways to their original condition after construction is complete. The Project would not include any new aboveground infrastructure. As such, Project operation would not impair an existing adopted emergency response plan or evacuation plan. No impact would occur.

- b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?***

### ***Less-than-Significant Impact***

The Project site is located in a relatively flat area and is surrounded by agricultural lands, low density residential dwellings and associated structures. The Project site is not located in a designated FHSZ and is not situated near any Very High FHSZs. During construction, there is potential for equipment used during Project construction to create sparks which could pose an exacerbate fire risk. Construction activities would follow all relevant policies and regulations and implement BMPs to ensure fire safety and stop the spread of fire in case of ignition, including contacting the local fire department should ignition occur. The Project site is not surrounded by substantial amounts of dry combustible materials which would ignite and spread fire quickly. As such, the Project would not significantly exacerbate wildfire risks during construction due to existing conditions around the Project site. The impact would be less than significant.

Operation of the Project would not result in any new aboveground infrastructure or conditions which would exacerbate fire risk. All new infrastructure constructed as part of the Project would be underground. No impact would occur.

- c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***

### ***No Impact***

The Project would rehabilitate the Llano Trunk pipeline and existing manholes within the Project site. All infrastructure would be accessed using existing manholes. The Project would not require



the construction of any permanent associated infrastructure, such as roads, fuel breaks, emergency water sources, power lines, or other utilities, which may exacerbate fire risk or result in temporary or ongoing impacts to the environment. No impact would occur.

**d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

**No Impact**

As discussed in Section 4.2.7, Geology and Soils, the Project would not significantly alter slope stability or drainage patterns. The Project is situated in a relatively flat area and would rehabilitate underground wastewater infrastructure using CIPP technology, which minimizes the need for ground disturbance. All areas which would require trenching for the bypass pipeline would be restored to their original condition after construction is complete. Therefore, the Project would not create conditions which could expose people or structures to significant post-wildfire risks, including flooding or landslides. No impact would occur.



**4.2.21 Mandatory Findings of Significance**

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Incorporated</i>	<i>Less-than-Significant Impact</i>	<i>No Impact</i>
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**DISCUSSION OF IMPACTS**

**a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

***Less-than-Significant Impact with Mitigation Incorporated***

The Project has the potential to impact special-status plant and wildlife species, including Sebastopol meadowfoam, Lobb’s buttercup, CTS, white-tailed kite, pallid bat, western red bat, long-legged myotis, American badger, NPT, burrowing owl, and other nesting birds protected under the CFGC and MBTA. The Project would implement Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, and BIO-6, which require pre-construction surveys and avoidance measures, to reduce potential impacts to these species to a less-than-significant level. The Project would temporarily impact less than 0.05 acres of wetlands, which would be mitigated to a less-than-significant level through the implementation of Mitigation Measure BO-7, which requires compliance with permit stipulations and the purchase of mitigation credits. The Project would not cause any direct or indirect permanent impacts to designated critical habitat or EFH. Therefore, the Project would not have the potential to substantially degrade the quality of the environment, reduce habitat of a fish or wildlife species, cause a fish or wildlife population to



drop, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. The impact would be less than significant with mitigation incorporated.

There are no known historical resources within the Project site. The Project has potential to impact unknown archaeological resources, which may include tribal cultural resources, during construction activities. The Project would implement Mitigation Measures CUL1 and CUL-2 which would ensure that the Project would not damage any archaeological resources. The City, as the lead agency, will also continue consultation with the Graton Rancheria to identify any tribal cultural resources that may be present on the Project site or discovered during construction activities. Therefore, the Project would not have the potential to eliminate important examples of the major periods of California history or prehistory. The impact would be less than significant with mitigation incorporated.

**b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

#### **Less-than-Significant Impact**

Other projects that are currently being constructed within the Project area include but may not be limited to:

- Laguna WTP Disinfection Improvements Project
- Laguna WTP Waste Gas Burner Replacement
- Laguna WTP Emergency Generator Fuel Tank and Fleet Fueling Station Replacement

Other projects planned within the Project area that are currently in the design phase:

- Laguna WTP Flood Protection
- Laguna WTP Filter Cells 9-14 Valve and Actuator Replacement
- Laguna WTP Water Booster Station W1 Replacement
- Delta Pond Standby Generator and LTP Annex Boiler Replacements
- Laguna WTP Electrical Infrastructure Improvements

Construction of the Laguna WTP Disinfection Improvements Project is slated to end in January 2025; therefore, construction of this project would not overlap with the proposed Project. Construction of the Laguna WTP Waste Gas Burner Replacement Project is anticipated to be complete by April 2025. The Laguna WTP Emergency Generator Fuel Tank and Fleet Fueling Station Replacement was determined to be categorically exempt from CEQA in accordance with Section 15301 of the CEQA Guidelines. This exemption applies to new construction or conversion of small structures for projects which would not result in a potentially significant environmental impact. As such, construction of this project concurrently with proposed Project construction would not result in a cumulatively significant environmental impact.

The remaining projects are in the design phase and are not anticipated to be under construction concurrently with the proposed Project. As such, the Project would not have any impacts that are individually limited, but cumulatively considerable when viewed cumulatively with impacts of other projects in the area. The impact would be less than significant.

**c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**



### ***Less-than-Significant Impact with Mitigation Incorporated***

Potential impacts to human beings have been addressed in this IS/MND, including impacts related to air quality, noise, and transportation. Project construction activities would cause potential temporary impacts to humans due to the generation of criteria air pollutants and fugitive dust emissions. The Project's anticipated criteria air pollutant emissions were estimated and found to be below BAAQMD's level of significance for criteria air pollutants. Mitigation Measure AIR-1 would be implemented to reduce impacts related to fugitive dust emissions during construction to a less-than-significant level.

Project construction work within the roadway which may cause delays for emergency access vehicles and other vehicles. Mitigation Measure TRAN-1 would be implemented, which requires the preparation and implementation of a TCP during Project construction. This measure would ensure that traffic would be adequately managed during construction and that access throughout the site would be maintained for vehicles, pedestrians, and bicyclists. Implementation of Mitigation Measure TRAN-1 would reduce transportation impacts to a less-than-significant level.

Noise impacts resulting from the Project were found to be less than significant, and no mitigation measures are required. As such, the Project would not have environmental effects that would cause substantial adverse effects on human beings. The impact would be less than significant with mitigation incorporated.



## 5.0 REFERENCES

- ALTA Archaeological Consulting, LLC. 2025. Extended Phase I Letter Report – Llano Trunk Rehabilitation Project, Sonoma County, California. ALTA Archaeological Consulting, LLC: Santa Rosa.
- Bay Area Air Quality Management District (BAAQMD). 2022. 2022 CEQA Guidelines. <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>. Accessed October 13, 2023.
- Bay Area Air Quality Management District. 2017. Air Quality Standards and Attainment Status. Accessed July 9, 2024, from <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status>.
- Bay Area Air Quality Management District. 2017. Spare the Air, cool the Climate. Final 2017 Clean Air Plan. Adopted April 19, 2017. Accessed July 2024, from [https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a\\_-proposed-final-cap-vol-1-pdf.pdf](https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf).
- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California, 2nd Edition. University of California Press, Berkeley, CA. 1568 pp.
- Barrett, S. 1908. The Ethno-Geography of the Pomo and Neighboring Indians. University of California Publications in American Archaeology and Ethnology Vol. 6, No. 1:1-322. University of California Press, Berkeley.
- Barrow, E. 2024. Cultural Resources Study for the Llano Trunk Rehabilitation Project – Phase I, Santa Rosa, Sonoma County, California. Tom Origer & Associates. Rohnert Park, California.
- Best, C., J.T. Howell, W. & I. Knight, and M. Wells. 1996. A Flora of Sonoma County. California Native Plant Society, Sacramento, California.
- Byrd, B., Whitaker, P., Mikkelsen, J., Rosenthal, J., Meyer., and P. Kaigankiski. 2017. Discovering Sites: Geoarchaeological Approaches to Site Sensitivity and Predictive Modeling. In, *San Francisco Bay-Delta Regional Context and Research Design for Native American Archaeological Resources Caltrans District 4*. Pp 4-1 through 4-13. On file at Caltrans District 04 Office of Cultural Resource Studies, Oakland, California.
- California Air Resources Board. 2023a. Current California GHG Emission Inventory Data, 2000-2021 GHG Inventory (2023 Edition). Accessed June 26, 2024, from <https://ww2.arb.ca.gov/ghg-inventory-data>.
- California Air Resources Board. 2023b. Sensitive Receptor Assessment. <https://ww2.arb.ca.gov/capp-resource-center/community-assessment/sensitive-receptor-assessment>. Accessed October 10, 2023.



California Department of Fish and Game. 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607. Environmental Service Division, California Department of Fish and Game, Sacramento, California.

California Department of Fish and Wildlife. 2024. California Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento, California. Accessed: April 2024.

California Department of Fish and Wildlife. 2018b. California Natural Community List. Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento, California. October 15, 2018.

California Department of Transportation. 2010. California Essential Habitat Connectivity Project. Available at: <https://www.wildlife.ca.gov/conservation/planning>.

California Department of Transportation. 2018. California State Scenic Highway System Map. Accessed June 13, 2024, from <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca>.

California Department of Forestry and Fire Protection. 2024. Fire Hazard Severity Zone Maps. Accessed June 26, 2024, from <https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/>.

California Department of Conservation. 2022. California Important Farmland Finder. Accessed June 13, 2024, from <https://maps.conservation.ca.gov/DLRP/CIFF/>.

California Geological Survey. 2022. Earthquake Zones of Required Investigation. Accessed June 25, 2024, from <https://maps.conservation.ca.gov/cgs/EQZApp/app/>.

California Invasive Plant Council (Cal-IPC). 2024. California Invasive Plant Inventory: Cal-IPC Publication 2006-2. California Invasive Plant Council, Berkeley, CA. Available online: <http://www.cal-ipc.org/ip/inventory/index.php>.

City of Santa Rosa. Planning. Accessed May 6, 2024, from <https://maps.srcity.org/Html5Viewer/Index.html?viewer=Planning&scale=76800%C2%A2er=6369333.666666665,1924133.333333335>.

California Native Plant Society. 2001. CNPS Botanical Survey Guidelines. June 2, 2001.

California Native Plant Society. 2024a. Online Inventory of Rare, Threatened, and Endangered Plants of California. Available at: <http://www.rareplants.cnps.org/>. Accessed: April 2024.

California Native Plant Society. 2024b. A Manual of California Vegetation Online. Available at: <http://vegetation.cnps.org/>. Accessed April 2024.

City of Santa Rosa. 2016. City of Santa Rosa's Emergency Operations Plan. Accessed June 26, 2024, from [https://www.srcity.org/DocumentCenter/View/37440/City-of-Santa-Rosa-EOP-BASIC-PLAN\\_-2022\\_FINAL](https://www.srcity.org/DocumentCenter/View/37440/City-of-Santa-Rosa-EOP-BASIC-PLAN_-2022_FINAL).



- City of Santa Rosa. 2021a. General Plan Land Use Diagram. Accessed May 2, 2024, from <https://www.srcity.org/DocumentCenter/View/3094/General-Plan-Land-Use-Diagram-PDF-December-2021>.
- City of Santa Rosa. 2021b. City of Santa Rosa 2020 Urban Water Management Plan. Accessed June 26, 2024, from <https://www.srcity.org/DocumentCenter/View/35798/Urban-Water-Management-Plan---Complete-Document?bidId=>.
- City of Santa Rosa. 2024. Climate Action Planning in Santa Rosa. Accessed June 26, 2024, from <https://www.srcity.org/1634/Climate-Action-Planning>
- Conservation Strategy Team. 2005. Santa Rosa Plain Conservation Strategy. Final. December 1. Available at the Sacramento Fish and Wildlife Service Website: <https://www.fws.gov/sacramento/es/Recovery-Planning/Santa-Rosa/santa-rosa-strategy.php>
- Consortium of California Herbaria (CCH). 2024. Data provided by the participants of the Consortium of California Herbaria. Available at: <http://ucjeps.berkeley.edu/consortium>. Accessed: April 2024.
- Cowan, R. 1977. *Ranchos of California*. Historical Society of Southern California, Los Angeles.
- Department of Toxic Substances Control. (2024). EnviroStor. Accessed June 26, 2024, from <https://www.envirostor.dtsc.ca.gov/public/>.
- Dunk, JR. 1995. White-tailed Kite (*Elanus leucurus*), The Birds of North America Online (A Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/178>.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.
- Environmental Protection Agency. 2022. *Inventory of U.S. Greenhous Gas Emissions and Sinks: 1990-2020*. U.S. Environmental Proteciton Agency, EPA 430-R-22-003.
- Federal Emergency Management Agency. 2024. FEMA's National Flood Hazard Layer Viewer. Accessed June 26, 2024, from <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>.
- Fredrickson, D. 1973. Early Cultures of the North Coast Ranges, California. Ph.D. dissertation. Department of Anthropology, University of California, Davis.
- Golla, V. 2011. California Indian Languages. University of California Press, Berkeley.
- Google Earth. 2024. Cotati Area. Image dates: 1952-2023. Accessed: April 2024.



- Governor's Office of Planning and Research. 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Accessed June 26, 2024, from [https://opr.ca.gov/docs/20180416-743\\_Technical\\_Advisory\\_4.16.18.pdf](https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf).
- Governor's Office of Planning and Research. 2018. CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review. Sacramento: Governor's Office of Planning and Research Technical Advisory.
- Historical Aerials. 2024. Available at: <http://historicalaerials.com>. Accessed: April 2024.
- Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA. 156 pp.
- Hoover, M., Rensch, H., Rensch, E., Abeloe, W., and D. Kyle. 2002. Historic Spots in California. 5<sup>th</sup> edition, Stanford University Press. Stanford.
- Jepson Herbarium. Jepson Flora Project (eFlora). 2024. Jepson eFlora Online at: <http://ucjeps.berkeley.edu/IJM.html>. Accessed: April 2024.
- Keeler-Wolf, T., D.R. Elam, K. Lewis, and S.A. Flint. 1998. California Vernal Pool Assessment Preliminary Report. The Resources Agency, California Department of Fish and Game, Sacramento, CA. 161 pp. with appendices.
- Kroeber, A. 1925. Handbook of the Indians of California. Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C.
- The Lewis Publishing Company 1889. An Illustrated History of Sonoma County, California. The Lewis Publishing Company. Chicago.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. *Phytoneuron* 2016-30: 1-17.
- Lillard, J., Heizer, R., and F. Fenenga. 1939. An Introduction to the Archaeology of Central California. Sacramento Junior College Department of Anthropology, Bulletin 2, pp. 93, figs 20 and map, pls. 31.
- Martin, J.W. and M.K. Wicksten. Review and Redescription of the Freshwater Atyid Shrimp Genus *Syncaris* Holmes, 1900, in California. *Journal of Crustacean Biology* 24(3): 447-462.
- McLendon, S. and R. Oswalt. 1978. Pomo: Introduction. In *California* edited by R. Heizer, pp 274-288. Handbook of North American Indians, Vol. 8, W. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Morrato, M. 2004. *California Archaeology*. 2<sup>nd</sup> edition. Academic Press, San Francisco.
- National Marine Fisheries Service (NMFS). 2024. Essential Fish Habitat Mapper. Available at: <https://www.habitat.noaa.gov/protection/efh/efhmapper/>. Accessed: April 2024.



- NatureServe. 2024. NatureServe Explorer: NatureServe Conservation Status. Available at: <http://www.natureserve.org/explorer/ranking#relationship>. Accessed: April 2024.
- North Coast Regional Water Quality Control Board. (2018). Water Quality Control Plan for the North Coast Region. Accessed June 26, 2024, from [https://www.waterboards.ca.gov/northcoast/water\\_issues/programs/basin\\_plan/190204/Final%20Basin%20Plan\\_20180620\\_lmb.pdf](https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/190204/Final%20Basin%20Plan_20180620_lmb.pdf).
- Safford, H.D., J.H. Viers, and S.P. Harrison. 2005. Serpentine Endemism in the California Flora: A Database of Serpentine Affinity. *Madroño* 52(4): pp. 222-257.
- San Francisco Estuary Institute. 2024. California Aquatic Resource Inventory (CARI). Available at: <http://www.sfei.org/cari#sthash.Mzz93W9i.dpbs>. Accessed: April 2024.
- Santa Rosa Groundwater Sustainability Agency. 2022. Groundwater Sustainability Plan. Accessed June 26, 2024, from <https://santarosaplainingroundwater.org/gsp/>.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, 2nd Edition. California Native Plant Society in collaboration with California Department of Fish and Game. Sacramento, CA. 1300 pp.
- Shuford, W.D. and Gardali, T., eds. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
- Sonoma County. 2018. Sonoma County General Plan Land Use Element. Accessed May 2, 2024, from <https://permitsonoma.org/longrangeplans/adoptedlong-rangeplans/generalplan/organizationandoverview/landuseelement>.
- Sonoma County. 2024. Sonoma County Vegetation and LiDAR Program: High Quality Data for Planning, Conservation, and Resource Management. Available at: <http://sonomavegmap.org/>. Accessed: April 2024.
- Sonoma County. Zoning and Land Use. Permit Sonoma GIS. Accessed May 6, 2024, from <https://sonomacounty.maps.arcgis.com/apps/webappviewer/index.html?id=06ac7fe1b8554171b4682dc141293962>.
- Stebbins, RC. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition. Houghton Mifflin Company, Boston, MA and New York, NY.
- Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. Co-published by the California Department of Fish and Wildlife and University of California Press. Oakland, California.
- Thompson, T. 1877. Historical Atlas Map of Sonoma County, California. Thos. H. Thompson & Co. Oakland, California.



United States Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS. September 28, 2008.

United States Department of Agriculture, Soil Conservation Service (SCS). 1972. Soil Survey of Sonoma County, California. In cooperation with the University of California Agricultural Experiment Station.

United States Department of Agriculture, Natural Resources Conservation Service. 2024a. Climate Information for Sonoma County in the State of California. Available at: <http://www.wcc.nrcs.usda.gov/>. Accessed: April 2024.

United States Department of Agriculture, Natural Resources Conservation Service. 2024b. List of Hydric Soils. Available at: <https://www.nrcs.usda.gov/>

United States Fish and Wildlife Service. 1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain. Sacramento Fish and Wildlife Office, Sacramento, CA. September.

United States Fish and Wildlife Service. 2011. Federal Register Final Rule: endangered and threatened wildlife and plants: revised designation of Critical Habitat for the Sonoma County Distinct Population Segment of California Tiger Salamander. Federal Register 76 (169): 54346-54372.

United States Fish and Wildlife Service. 2020. Santa Rosa Plain Programmatic Biological Opinion. Available at [https://www.fws.gov/sacramento/es/Consultation/Programmatic-Consultations/Documents/COE\\_Santa\\_Rosa\\_CTS\\_and\\_plant\\_programmatic.pdf](https://www.fws.gov/sacramento/es/Consultation/Programmatic-Consultations/Documents/COE_Santa_Rosa_CTS_and_plant_programmatic.pdf). Accessed: April 2024.

United States Fish and Wildlife Service. 2024a. National Wetlands Inventory. Available at: <http://www.fws.gov/wetlands/index.html>. Accessed: April 2024.

United States Fish and Wildlife Service. 2024b. List of Federal Endangered and Threatened Species that Occur in Sonoma County, California. Available at: <https://ecos.fws.gov/ipac/>. Accessed: April 2024.

United States Geological Survey. 2021. Sebastopol, California 7.5-minute quadrangle topographic map.

Western Bat Working Group. 2024. Species Accounts. Available at: [http://www.wbwg.org/speciesinfo/species\\_accounts/species\\_accounts.html](http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html). Accessed: April 2024.

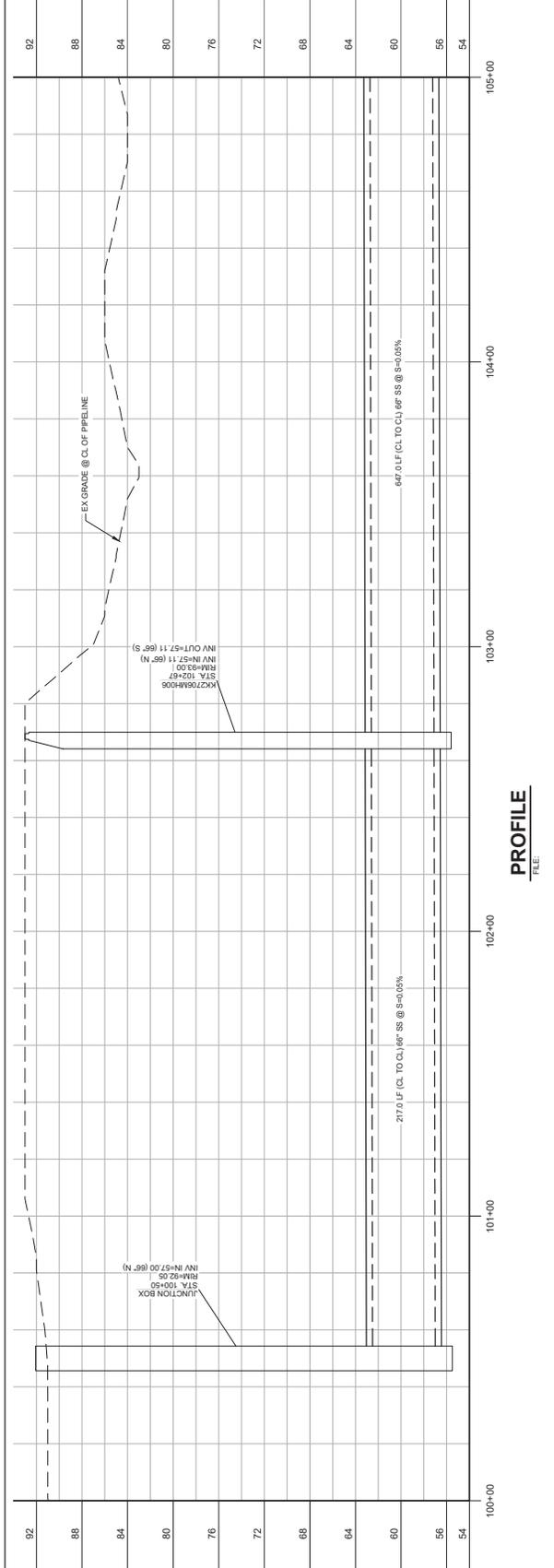


## APPENDIX A. PROJECT 75% DESIGN PLANS





PLAN FILE



PROFILE FILE

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED	CDH
DRAWN	CDH
CHECKED	
DATE	AUG/15/2023

NOT FOR CONSTRUCTION	
CITY OF SANTA ROSA	LLANO TRUNK REHABILITATION
CIVIL	
PLAN AND PROFILE 1	

VERIFY SCALES	JOB NO.	200XXX
BASIS ONE INCH OR SMALLER	DRAWING NO.	PP01
IF NOT ONE INCH	SHEET NO.	X
SCALE ACCORDINGLY	OF XX	X

SCALE

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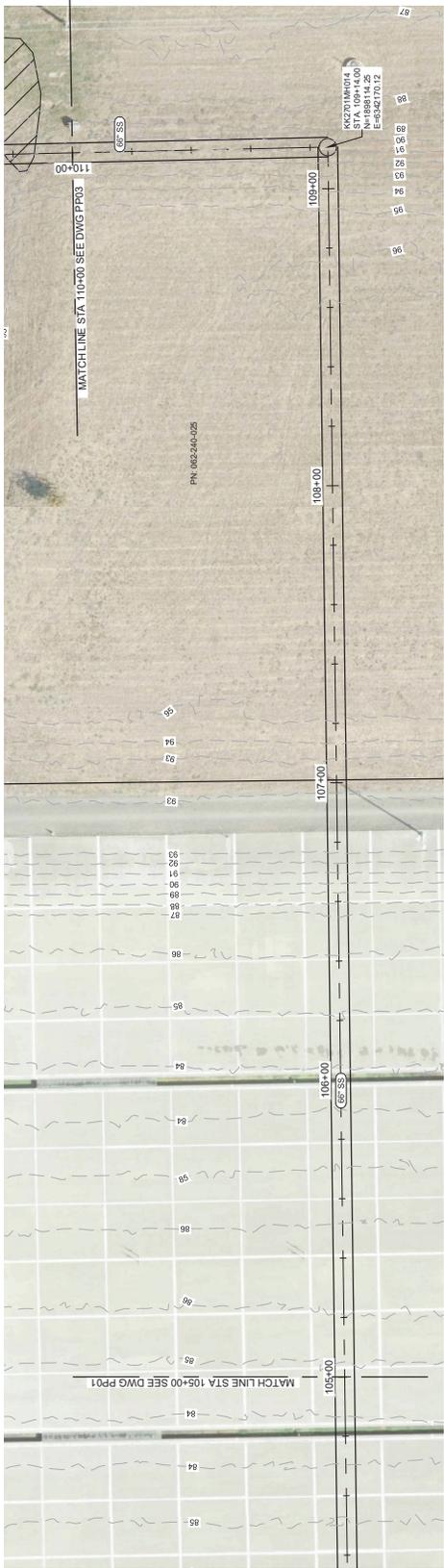
SCALE: 1" = 20' (HORIZ)

0 2 4 6 8 10'

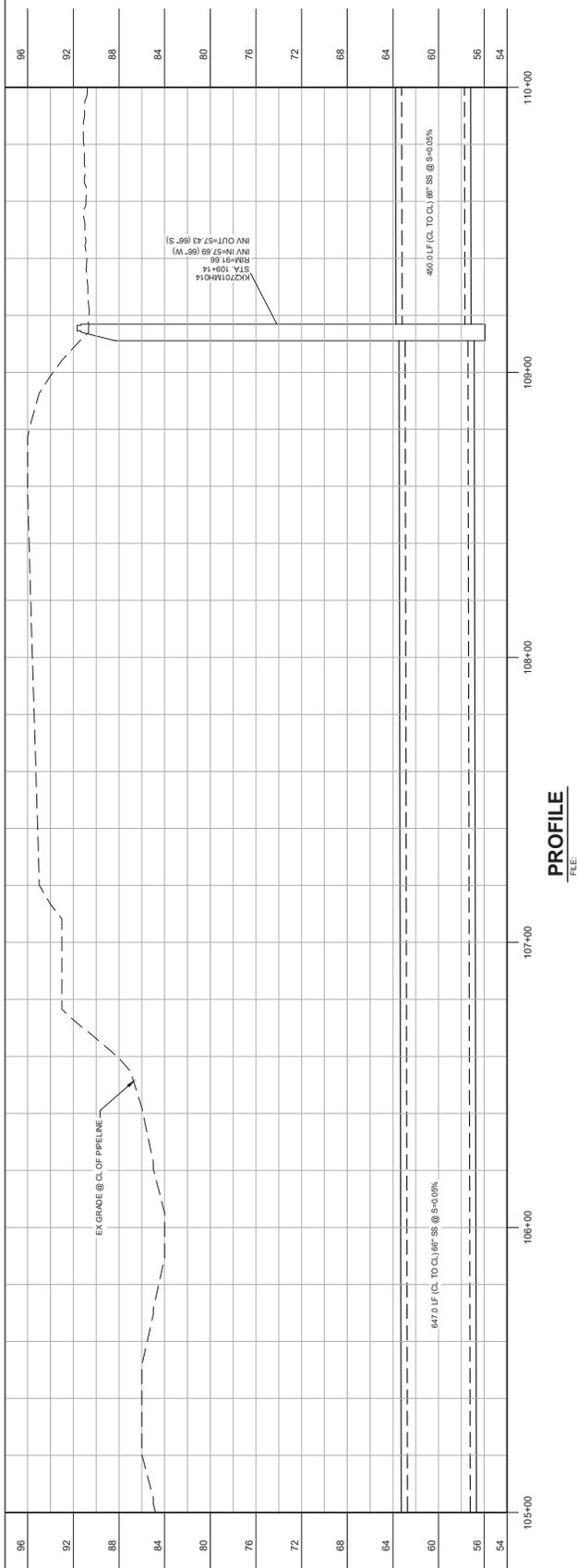
SCALE: 1" = 5' (VERT)

THIS SHEET

REV MAP

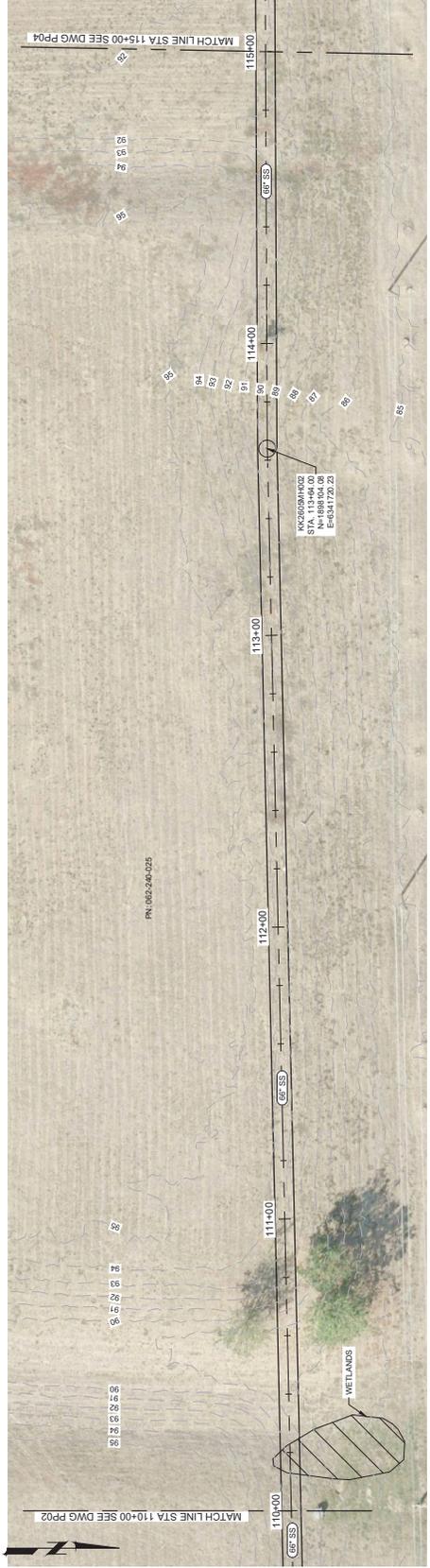


**PLAN**  
FILE

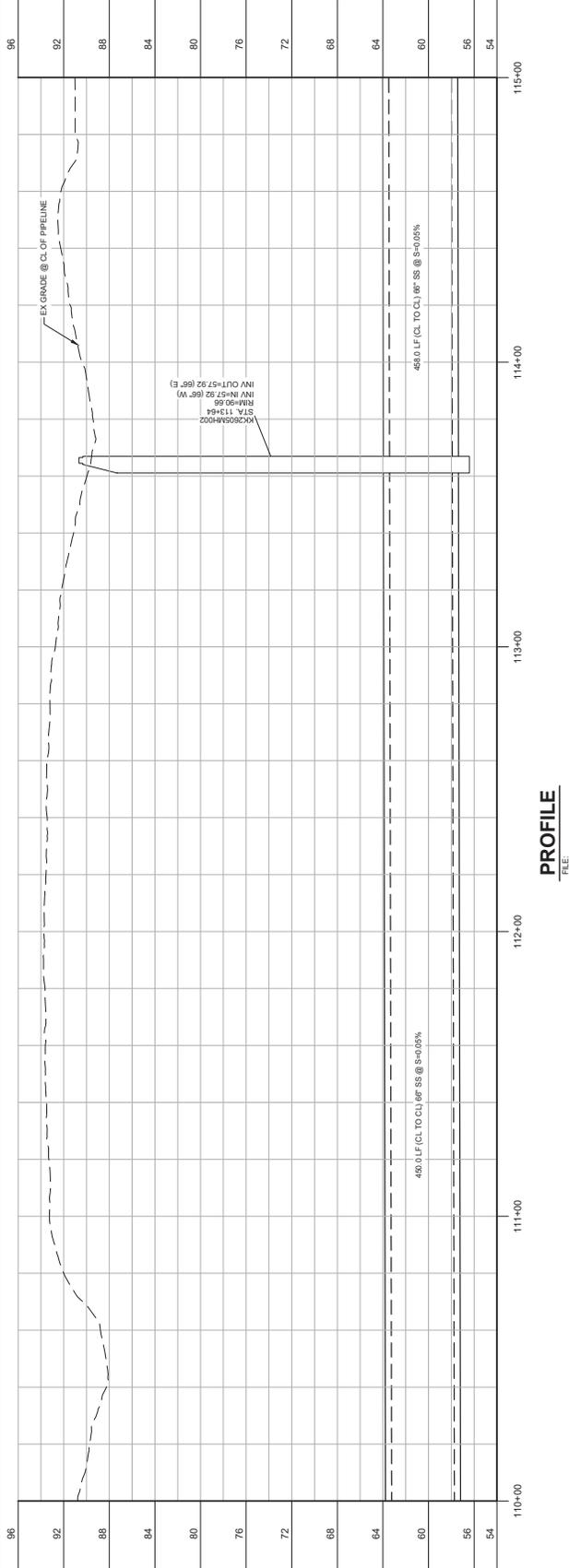


**PROFILE**  
FILE

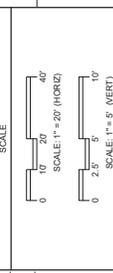
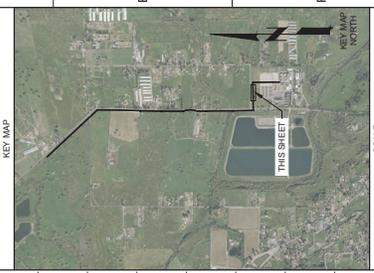
<p>DESIGNED CDH</p> <p>DRAWN CDH</p> <p>CHECKED CDH</p> <p>DATE AUG/15/2023</p>		<p>NOT FOR CONSTRUCTION</p> <p>2</p> <p>DESCRIPTION</p>		<p>CITY OF SANTA ROSA</p> <p>LLANO TRUNK REHABILITATION</p> <p>CIVIL</p> <p>PLAN AND PROFILE 2</p>		<p>VERIFY SCALES</p> <p>BASE IS ONE INCH OR SMALLER</p> <p>SCALE: 1" = 20' (HORIZ)</p> <p>SCALE: 1" = 5' (VERT)</p>	
<p>PROJECT NO. 123454.0</p> <p>FILE NAME: Santa Rosa Llano Trunk P&amp;P 1-5.dwg</p>		<p>811</p> <p>Call before you dig</p> <p>www.811.org</p>		<p>JOB NO. 200XXX</p> <p>DRAWING NO. PP02</p> <p>SHEET NO. X OF XX</p>		<p>LAST SAVED BY: CHH466</p> <p>Plot Date: 8/12/2023 7:29:07 AM</p>	



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FILE:



**PROFILE**  
FILE:

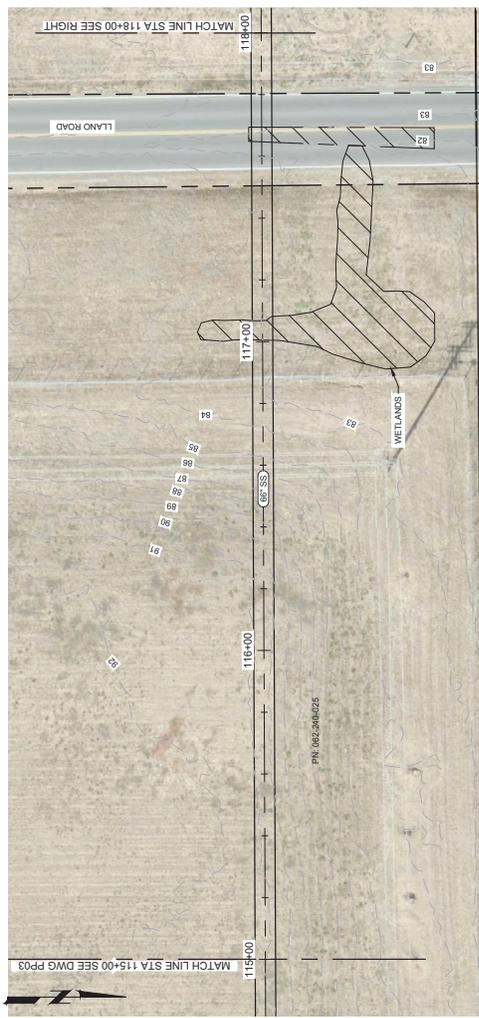
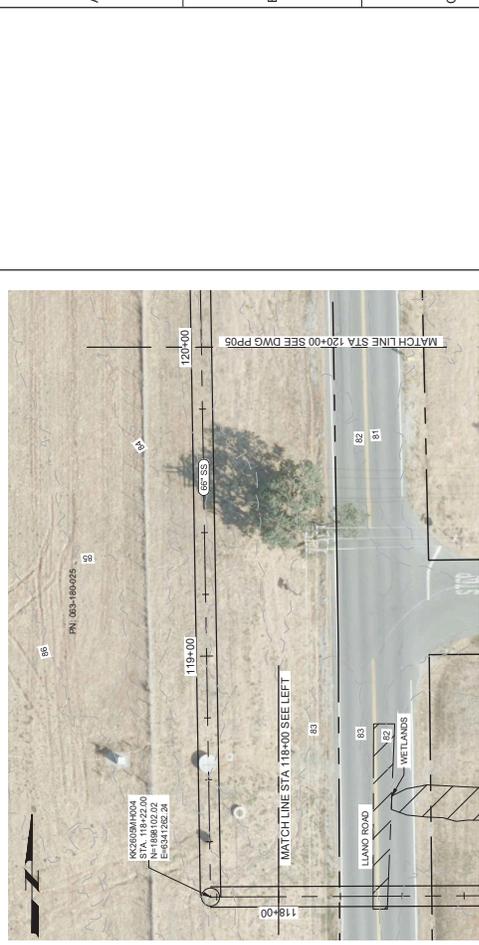


VERIFY SCALES	JOB NO.	200XXX
BASIS ONE INCH ON PAPER EQUALS ONE FOOT ON SITE	DRAWING NO.	PP03
IF NOT ONE INCH ON PAPER, VERIFY SCALES ACCORDINGLY	SHEET NO.	X OF XX

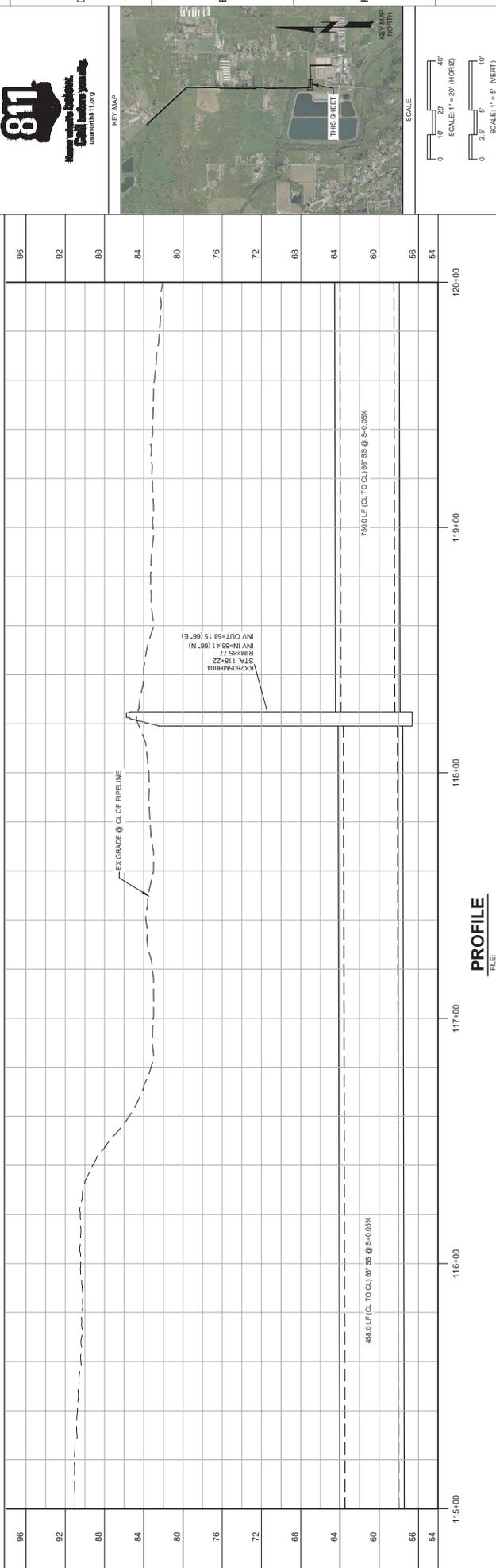
CITY OF SANTA ROSA  
LLANO TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 3



<b>NOT FOR CONSTRUCTION</b>	
DESIGNED	CDH
DRAWN	CDH
CHECKED	
DATE	AUG/15/2023
REV	DATE
1	
2	
3	



**PLAN**  
FILE:



**PROFILE**  
FILE:

DESIGNED CDH		CHECKED CDH		DATE AUG/15/2023	
DRAWN CDH		CHECKED CDH		DATE AUG/15/2023	
NOT FOR CONSTRUCTION		DESCRIPTION		2	
PROJECT NO. 2244A 10		FILE NAME: Santa Rosa Llano Inter P&P 1.6.dwg		3	
CITY OF SANTA ROSA		LLANO TRUNK REHABILITATION		CIVIL	
DRAWING NO. 200XXX		JOB NO. 200XXX		VERIFY SCALES	
SHEET NO. PP04		SHEET NO. PP04		BASE IS ONE INCH ON HORIZONTAL SCALES	
OF XX		OF XX		IF NOT ONE INCH ON HORIZONTAL SCALES ACCORDINGLY	

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San Jose Public Works  
San Jose, CA  
www.sanjose.org

KEY MAP

SCALE

SCALE: 1" = 20' (HORIZ)

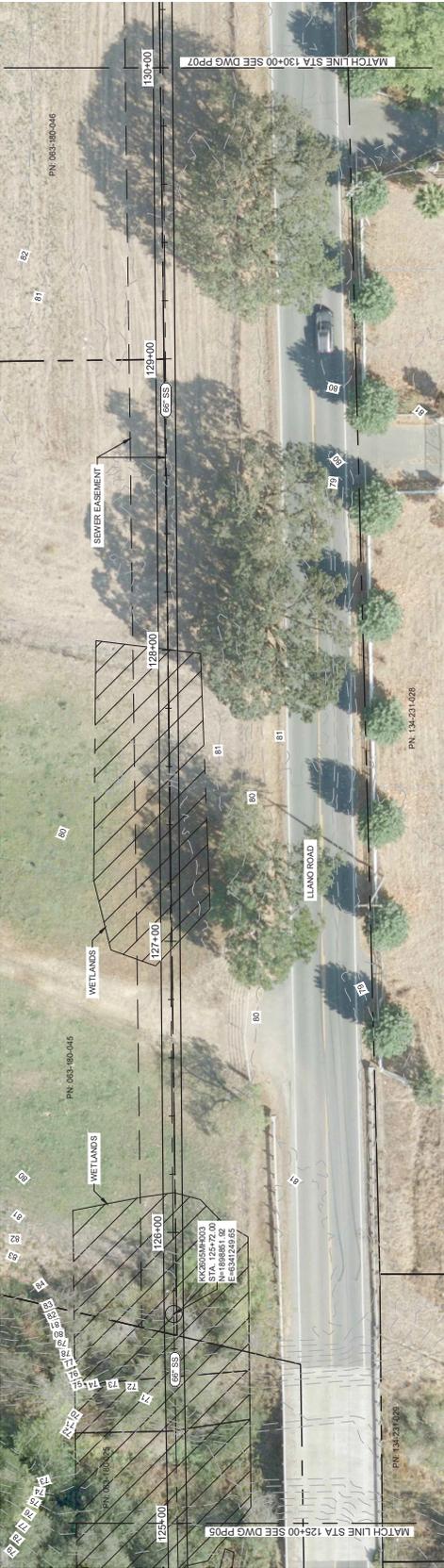
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VERIFY SCALES

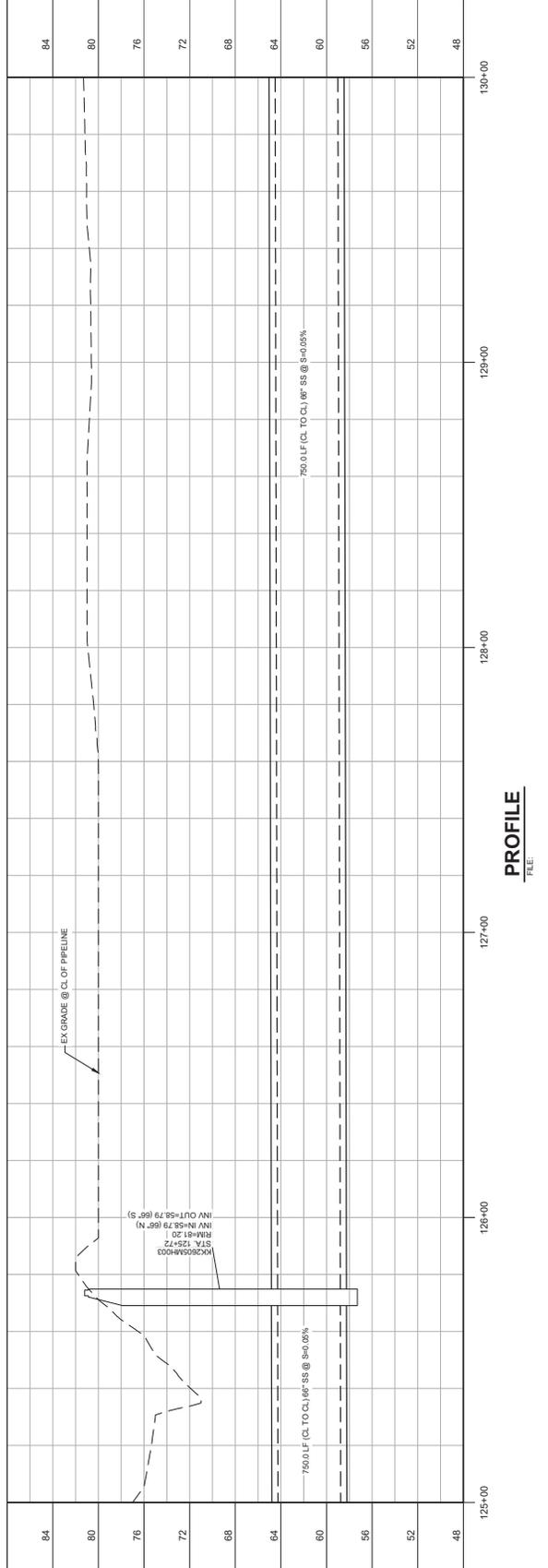
BASE IS ONE INCH ON HORIZONTAL SCALES

IF NOT ONE INCH ON HORIZONTAL SCALES ACCORDINGLY





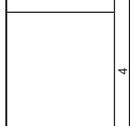
**PLAN**  
FILE:



**PROFILE**  
FILE:

NOT FOR CONSTRUCTION	
REV	DATE
1	
2	
3	
DESCRIPTION	DATE
	AUG/15/2023

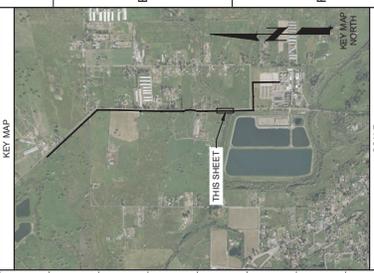
DESIGNED	
CDH	CDH
CHECKED	
CDH	DATE



CITY OF SANTA ROSA  
LLANO TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 6

VERIFY SCALES	
BASE ONE INCH OR SMALLER	DRAWING NO.
0	PP06
IF NOT ONE INCH OR SMALLER	
SCALE ACCORDINGLY	SHEET NO.
X	X
	OF XX

PROJECT NO. 2244A 10 FILE NAME: Santa Rosa Llano Trunk P&P 6-CL 1.dwg

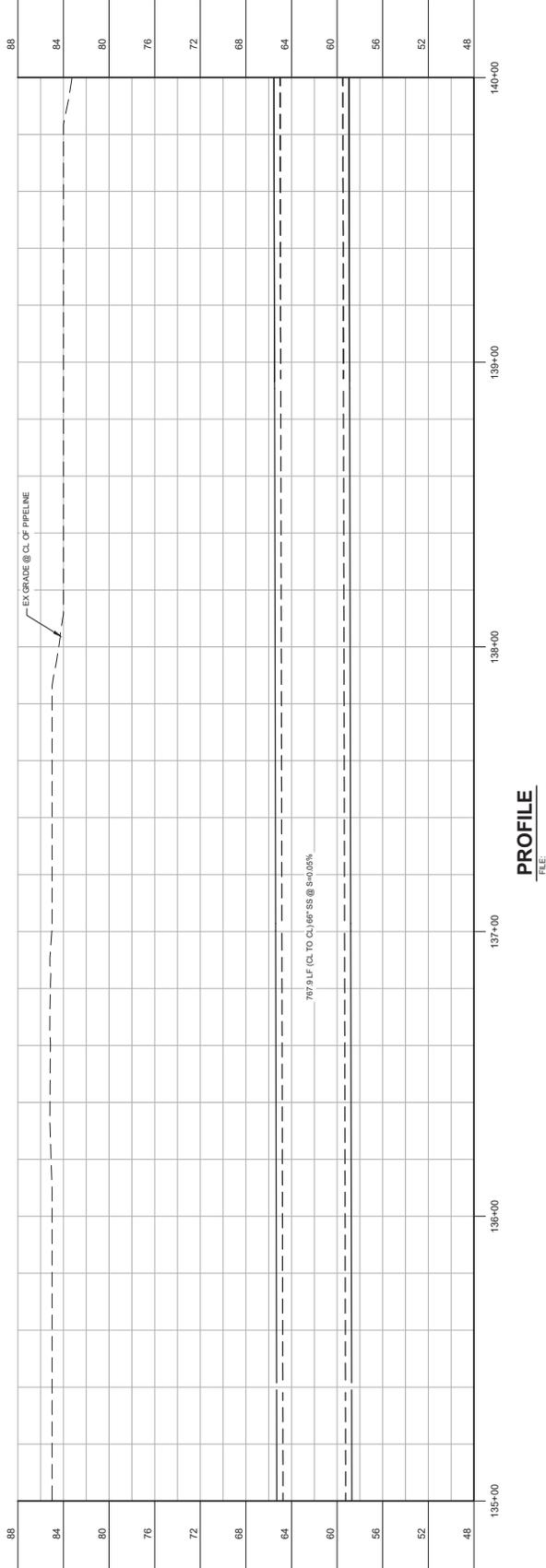


SCALE	
(HORIZ)	(VERT)
0 10 20 40'	0 2 4'
SCALE: 1" = 20'	SCALE: 1" = 5'





PLAN FILE

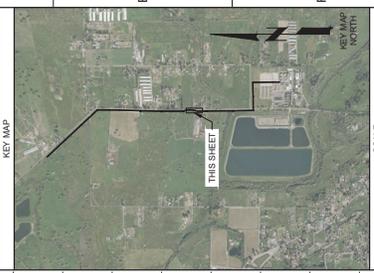


PROFILE FILE

NOT FOR CONSTRUCTION	
DESIGNED	CDH
DRAWN	CDH
CHECKED	
DATE	AUG/15/2023
REV	DESCRIPTION
1	
2	

FILE NAME: Santa Rosa Llano Inter P&P 6-10\_1.mxd

CITY OF SANTA ROSA  
LLANO TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 8



SCALE  
0 10 20 40'  
SCALE: 1" = 20' (HORIZ)  
0 2 4 6'  
SCALE: 1" = 5' (VERT)

VERIFY SCALES  
JOB NO. 2000XX  
DRAWING NO. 2000XX  
PP08  
SHEET NO. X OF XX

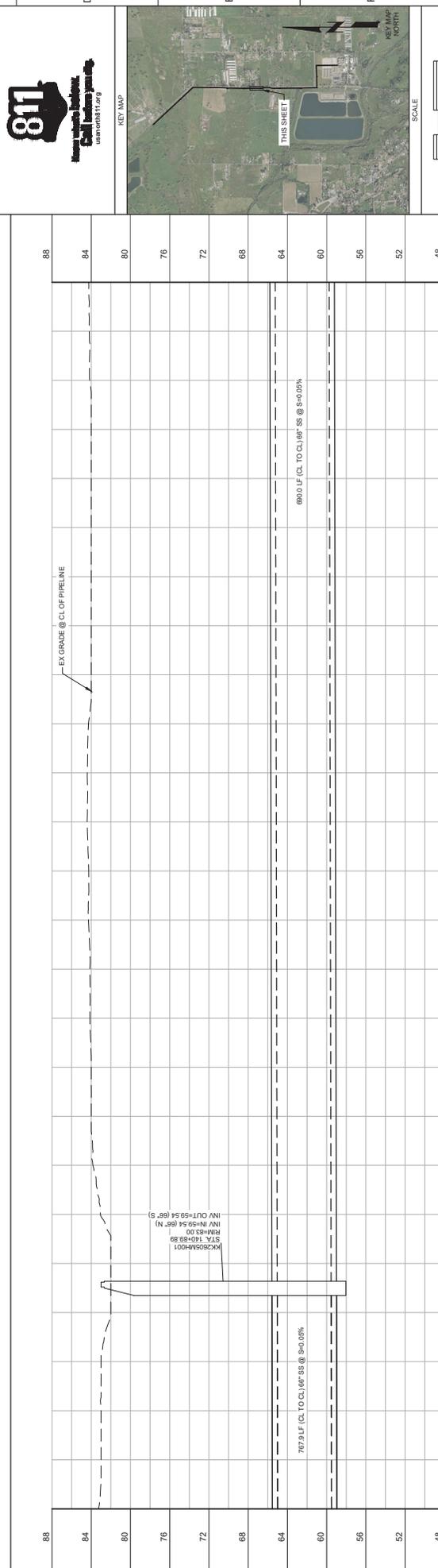
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A B C D E F G

13 12 11 10 9 8 7 6 5 4 3 2 1



**PLAN FILE**



**PROFILE FILE**

**NOT FOR CONSTRUCTION**

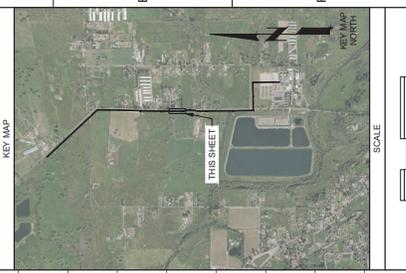
REV	DATE	BY	DESCRIPTION
1			
2			

DESIGNED	CDH
DRAWN	CDH
CHECKED	
DATE	AUG/13/2023



CITY OF SANTA ROSA  
 LLANO TRUNK REHABILITATION  
 CIVIL  
 PLAN AND PROFILE 9

VERIFY SCALES	JOB NO. 200XXX
BASIS OF INFORMATION	DRAWING NO. PP09
NOT FOR CONSTRUCTION	SHEET NO. X OF XX
SCALES ACCORDINGLY	

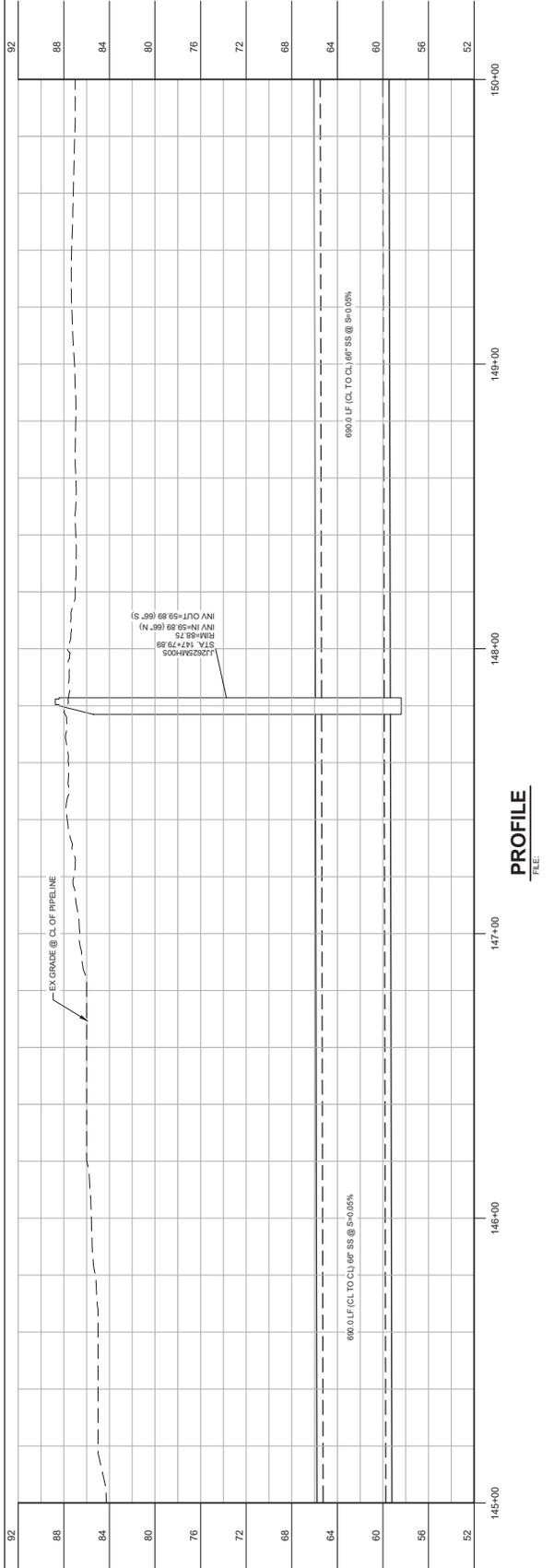


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SCALE: 1" = 20' (HORIZ)	
SCALE	0 2 4 6 8 10'
SCALE: 1" = 5' (VERT)	



PLAN

FILE



PROFILE

FILE

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED	CDH
DRAWN	CDH
CHECKED	
DATE	AUG/18/2023

NOT FOR CONSTRUCTION	
PROJECT NO.	12345A 10
FILE NAME	Santa Rosa Llanos Inter P&P 6-10_1.rwg

CITY OF SANTA ROSA
LLANO TRUNK REHABILITATION
CIVIL
PLAN AND PROFILE 10

VERIFY SCALES	JOB NO.	200XXX
BASE IS ONE INCH OR SMALLER	DRAWING NO.	PP10
IF NOT ONE INCH	SHEET NO.	X
SCALE ACCORDINGLY	OF XX	X

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 www.811.org



THIS SHEET

VERIFY SCALES  
 BASE IS ONE INCH OR SMALLER  
 IF NOT ONE INCH SCALE ACCORDINGLY

JOB NO. 200XXX  
 DRAWING NO. PP10  
 SHEET NO. X  
 OF XX

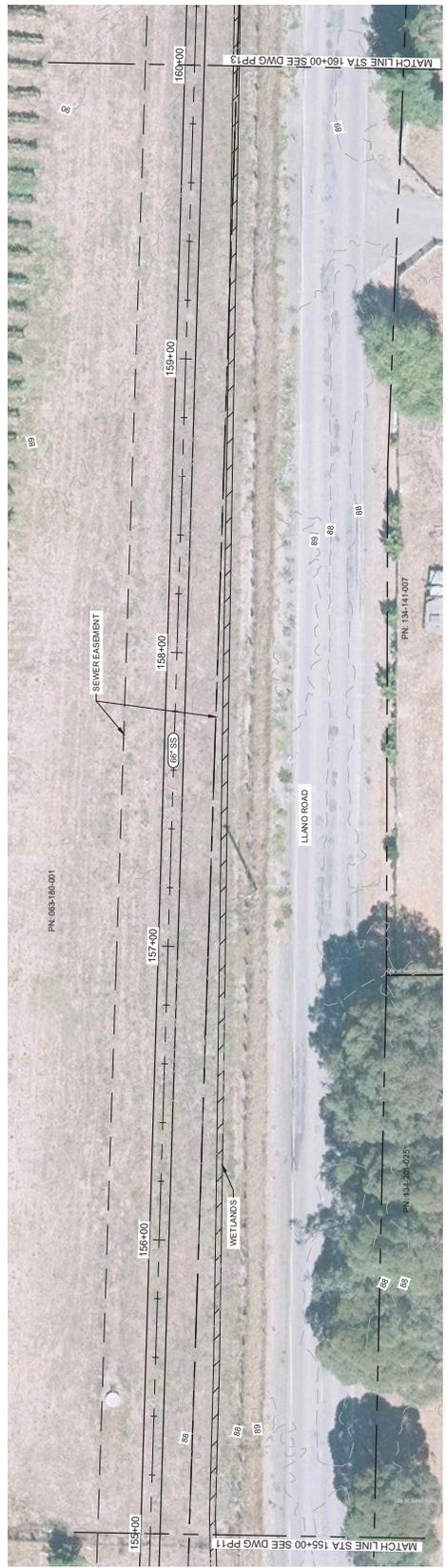
CITY OF SANTA ROSA  
 LLANO TRUNK REHABILITATION  
 CIVIL  
 PLAN AND PROFILE 10

PROJECT NO. 12345A 10  
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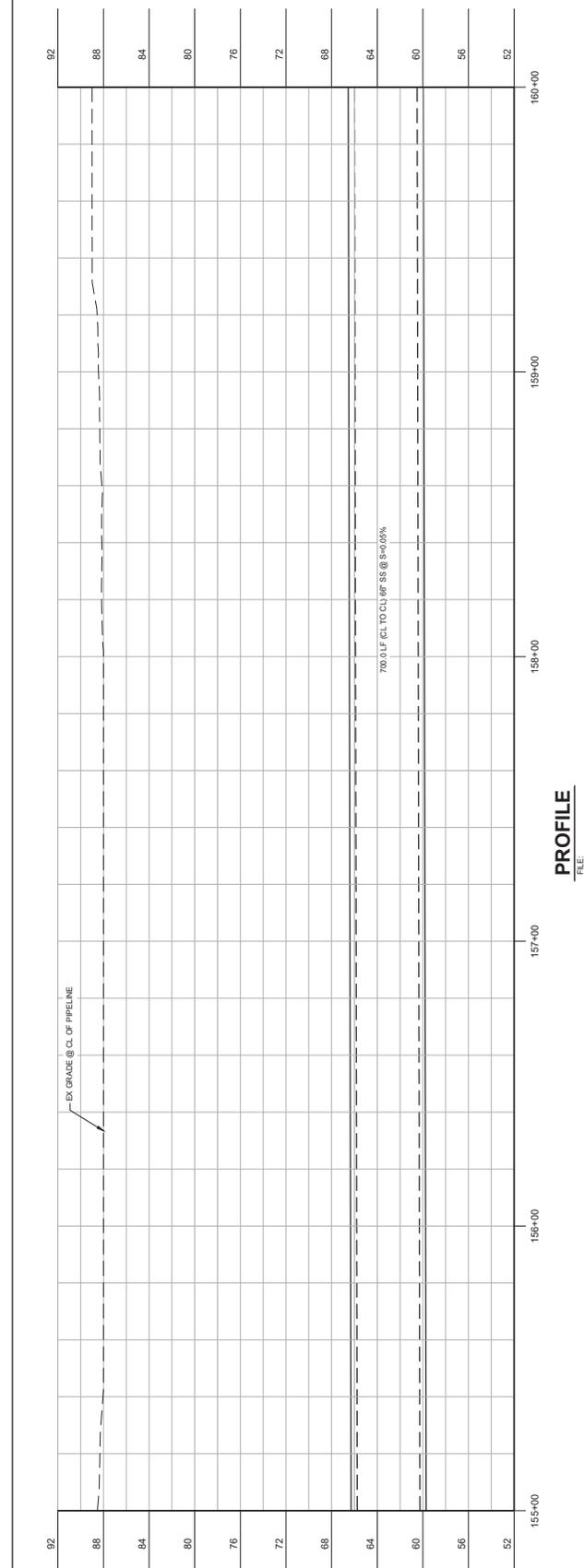
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PLS DATE: 8/12/2023 7:29:07 AM





**PLAN**  
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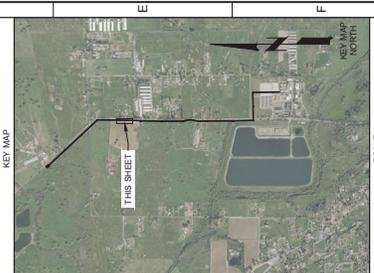
**PROFILE**  
FILE

NOT FOR CONSTRUCTION	
REV	DESCRIPTION
1	
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3	

DESIGNED CDH	
DRAWN CDH	
CHECKED CDH	
DATE AUG/15/2023	

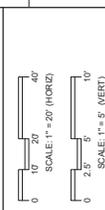
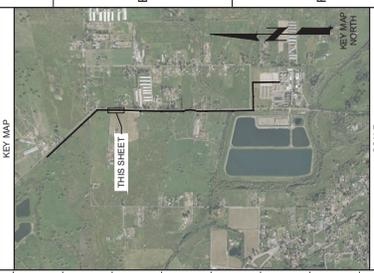
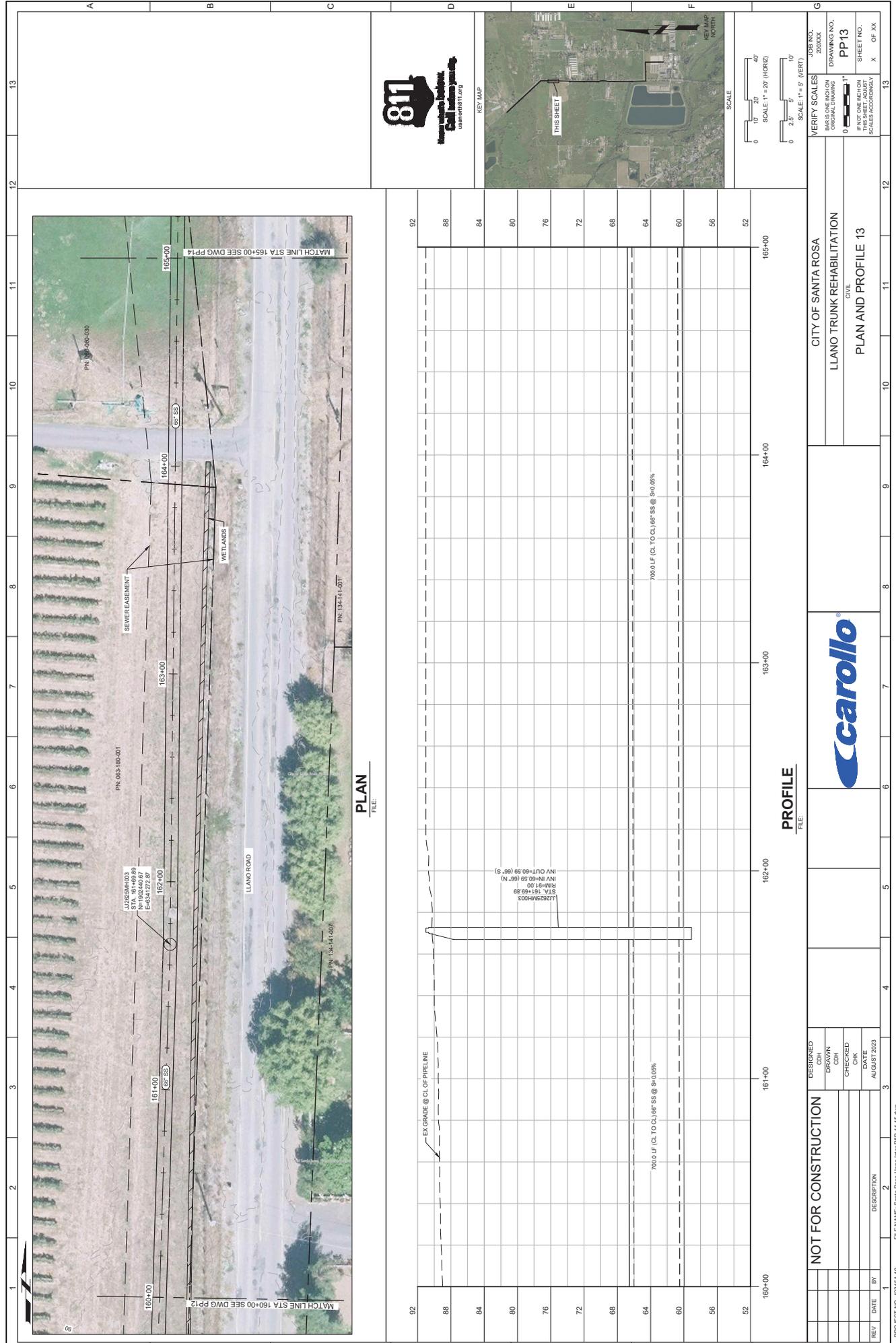


CITY OF SANTA ROSA  
 LLANITO TRUNK REHABILITATION  
 CIVIL  
 PLAN AND PROFILE 12



SCALE  
 0 10 20 40'  
 SCALE: 1" = 20' (HORIZ)  
 0 2 4 6 8 10'  
 SCALE: 1" = 5' (VERT)

VERIFY SCALES	JOB NO. 200XXX
BASIS OF INFORMATION	DRAWING NO. PP12
IF NOT ONE INCH	SHEET NO. X OF XX
SCALES ACCORDINGLY	



VERIFY SCALES	JOB NO. 2000XX
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IF NOT ONE INCH ON GROUND, SCALES ACCORDINGLY	SHEET NO. X OF XX

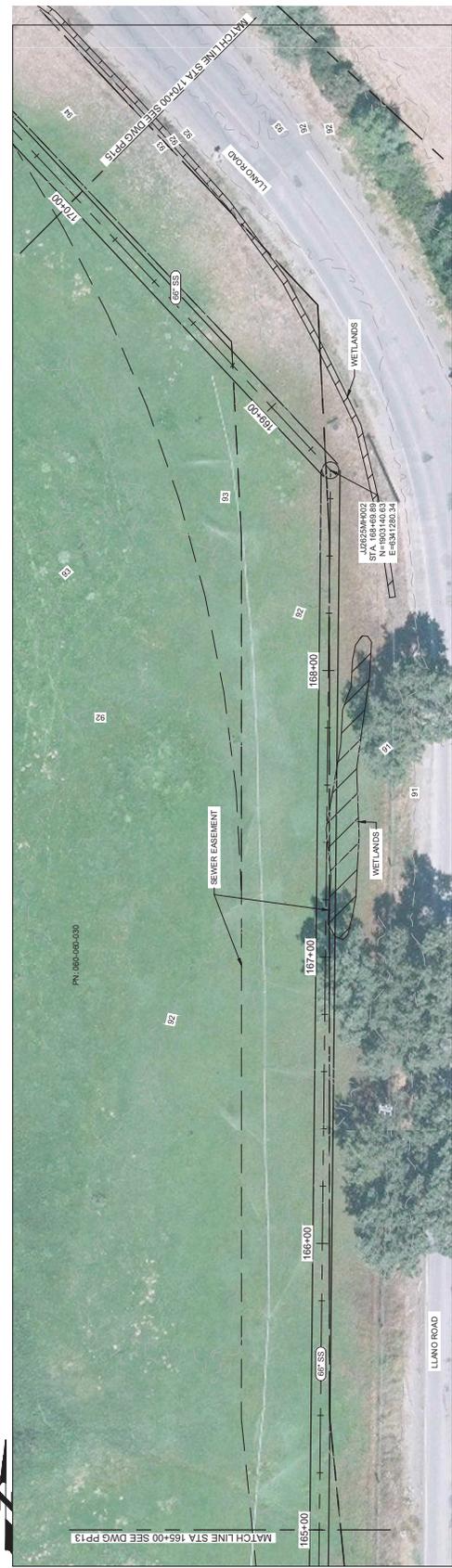
**PLAN**  
FILE:

**PROFILE**  
FILE:

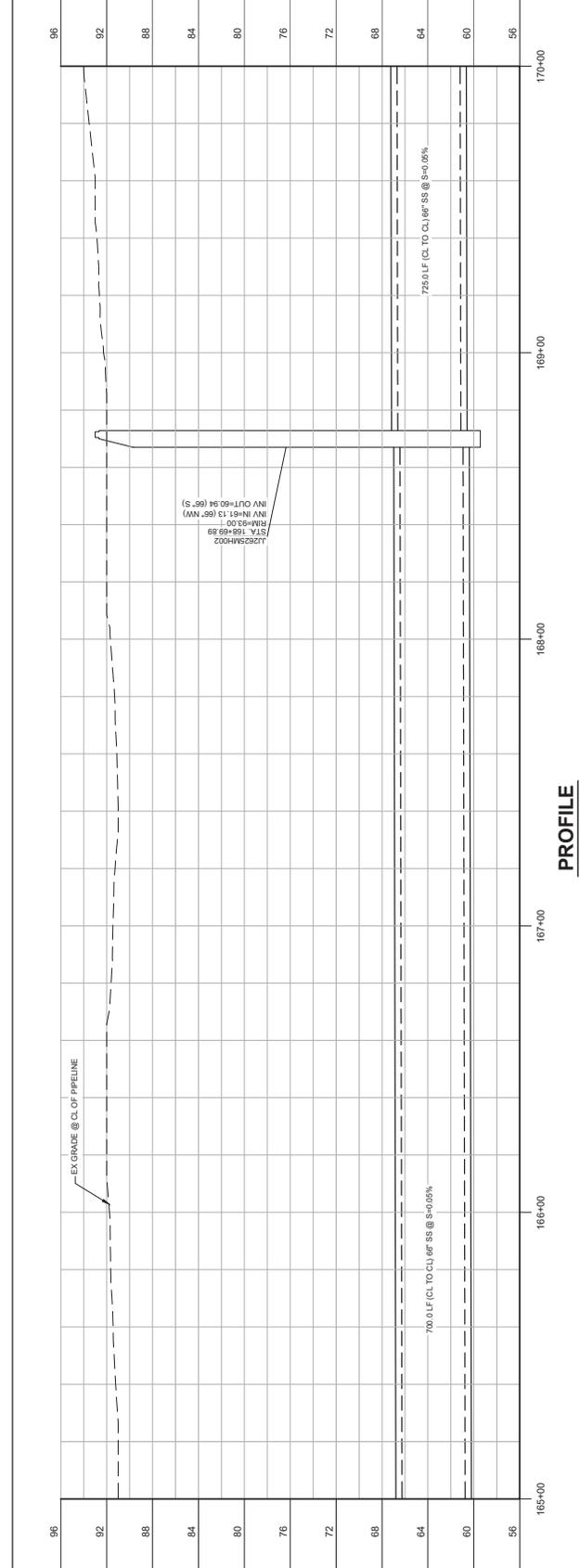
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DESIGNED	CDH
DRAWN	CDH
CHECKED	
DATE	AUG/15/2023
REV	DESCRIPTION
1	
2	

CITY OF SANTA ROSA  
LLANO TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 13



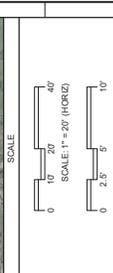
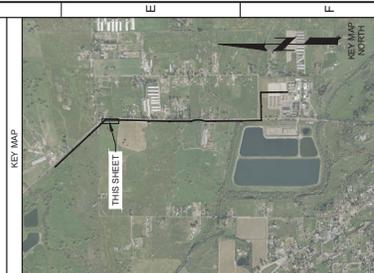


**PLAN**  
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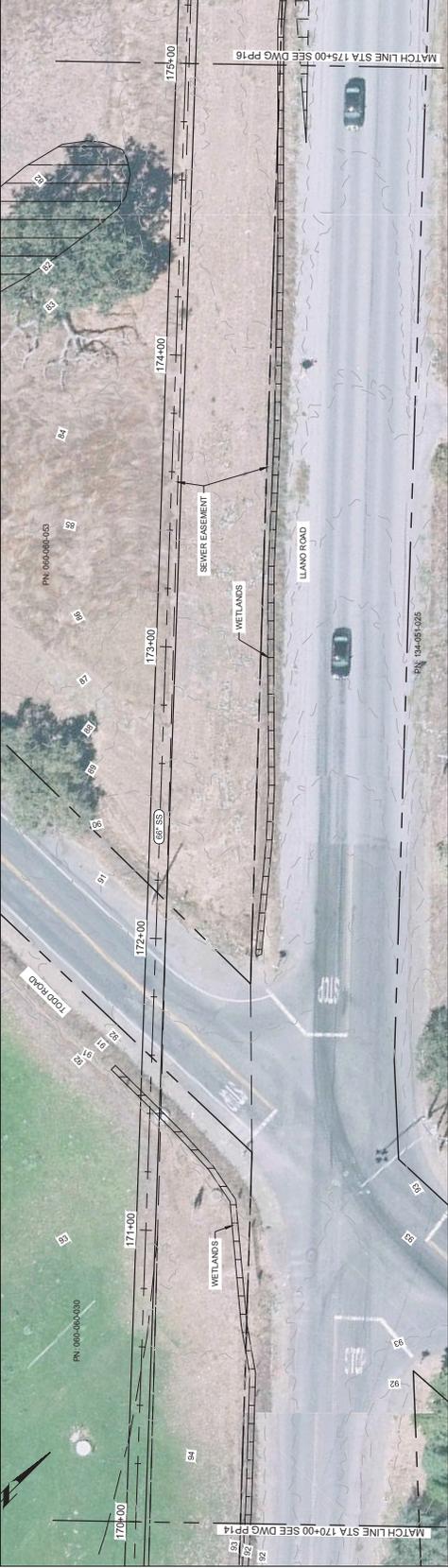


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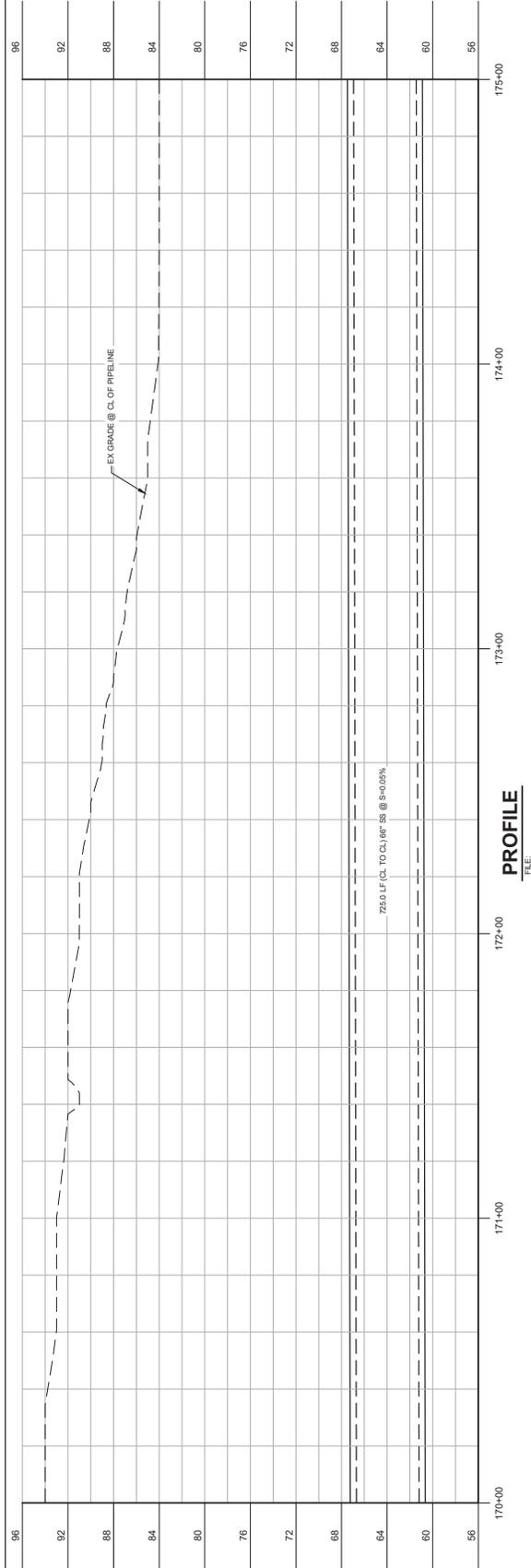
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		DRAWN CDH		LLANO TRUNK REHABILITATION	
		CHECKED		CIVIL	
		DATE		PLAN AND PROFILE 14	
		AUG/15/2023		X OF XX	
REV	DATE	BY	DESCRIPTION	SHEET NO.	
1				PP14	
2				X OF XX	



VERIFY SCALES	JOB NO.
BASIS ONE INCH OR SMALLER	200XXX
IF NOT ONE INCH OR SMALLER	
SCALE ACCORDINGLY	



**PLAN**  
FILE



**PROFILE**  
FILE

NOT FOR CONSTRUCTION			
DESIGNED	CDH		
DRAWN	CDH		
CHECKED			
DATE	AUG/15/2023		
DESCRIPTION			
REV	DATE	BY	DESCRIPTION
1			
2			

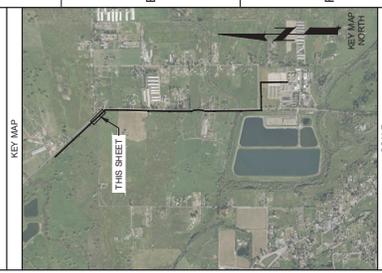
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PROJECT NO. 2244A.10

CITY OF SANTA ROSA  
LLANOS TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 15



VERIFY SCALES	JOB NO. 200XXX
BASIS ONE INCH OR SMALLER	DRAWING NO. PP15
IF NOT ONE INCH	SHEET NO. X OF XX
SCALE ACCORDINGLY	

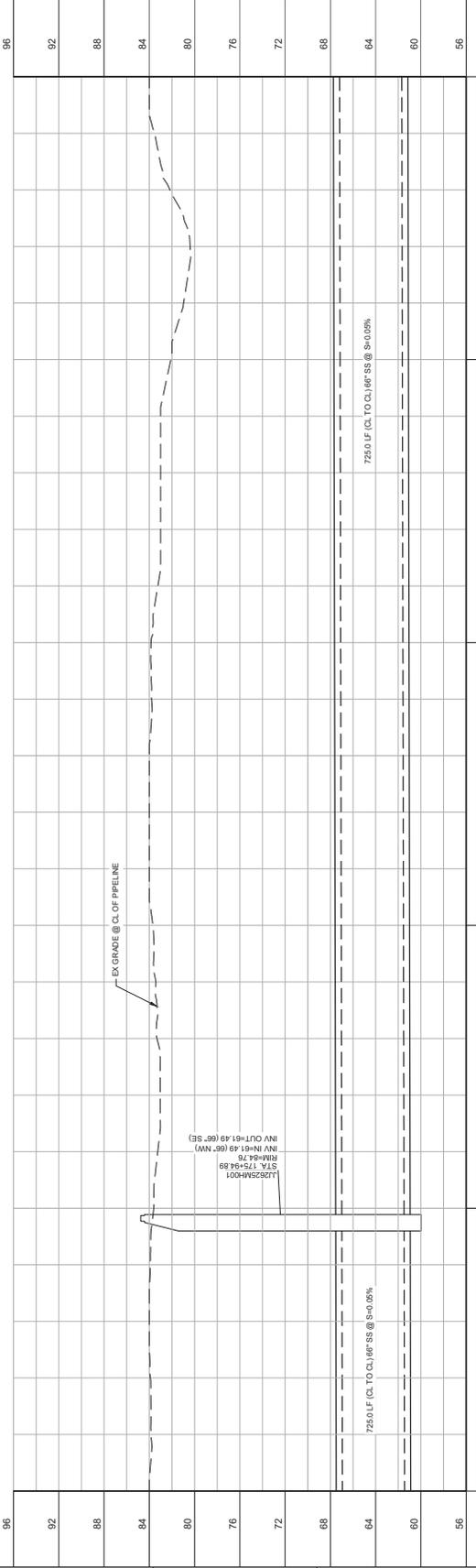


SCALE	1" = 20' (HORZ)
SCALE	1" = 5' (VERT)

PROJECT NO. 15244A 10  
 FILE NAME: Santa Rosa Llano Inter P&P 15-20.dwg  
 LAST SAVED BY: CHH860  
 PROJECT NO. 15244A 10  
 FILE NAME: Santa Rosa Llano Inter P&P 15-20.dwg

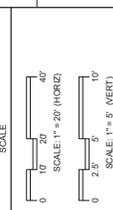
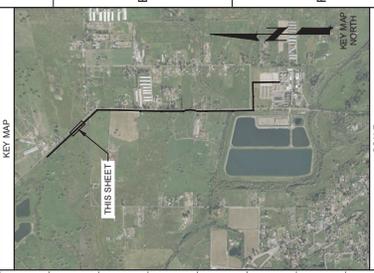


**PLAN**  
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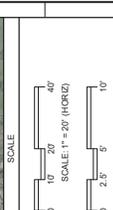
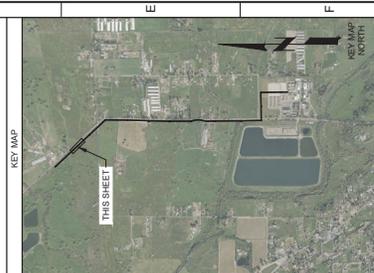
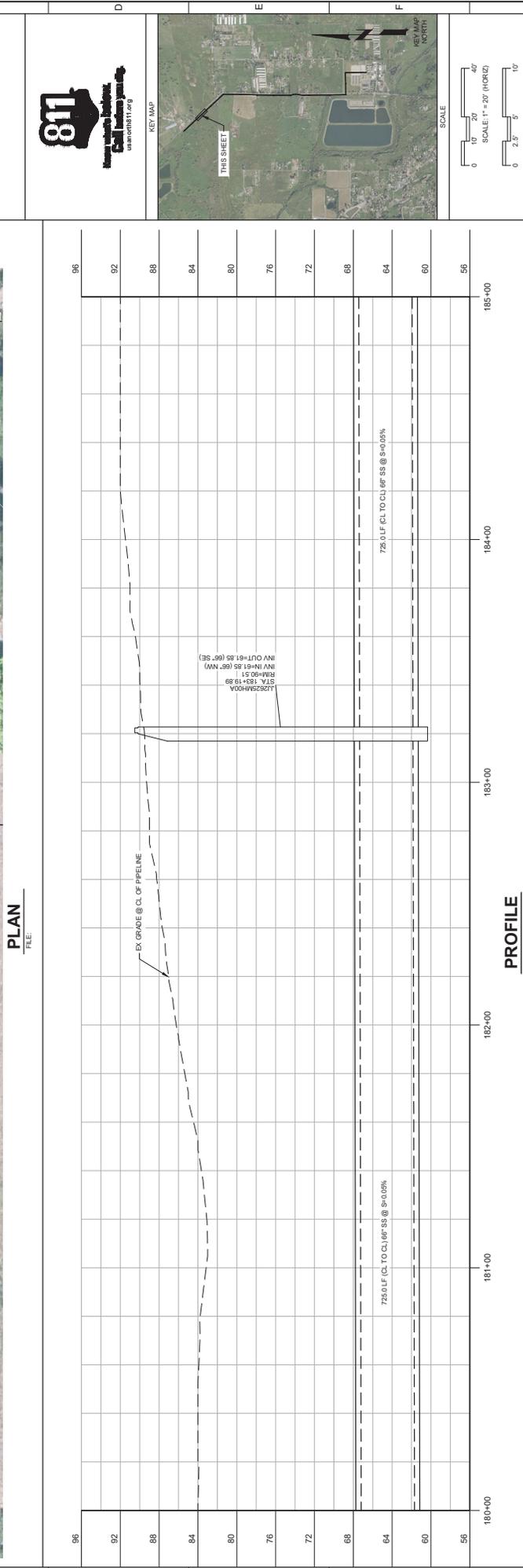


**PROFILE**  
FILE:

<b>NOT FOR CONSTRUCTION</b>		<b>DESIGNED</b>		<b>CITY OF SANTA ROSA</b>		<b>VERIFY SCALES</b>	
DRWNR	CDH	CDH	CDH	LLANO TRUNK REHABILITATION		BASIS ONE INCH OR SMALLER SCALES	
CHECKED	CDH			CIVIL		DRAWING NO. 2004XX	
DATE				PLAN AND PROFILE 16		JOB NO. 2004XX	
REV	DATE	DESCRIPTION	DATE			DRAWING NO. PP16	
1			AUG/15/2023			SHEET NO. X OF XX	
2						SCALES ACCORDINGLY	

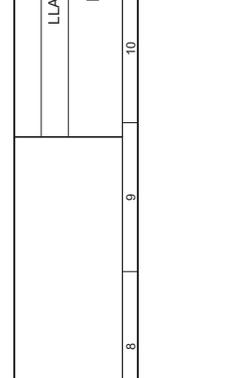


0	10	20	30	40
0	5	10	15	20



VERIFY SCALES	JOB NO.	200XXX
BASIS OF INFORMATION	DRAWING NO.	PP17
0	SHEET NO.	X OF XX
1	SCALE ACCORDINGLY	X OF XX

CITY OF SANTA ROSA  
LLANO TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 17

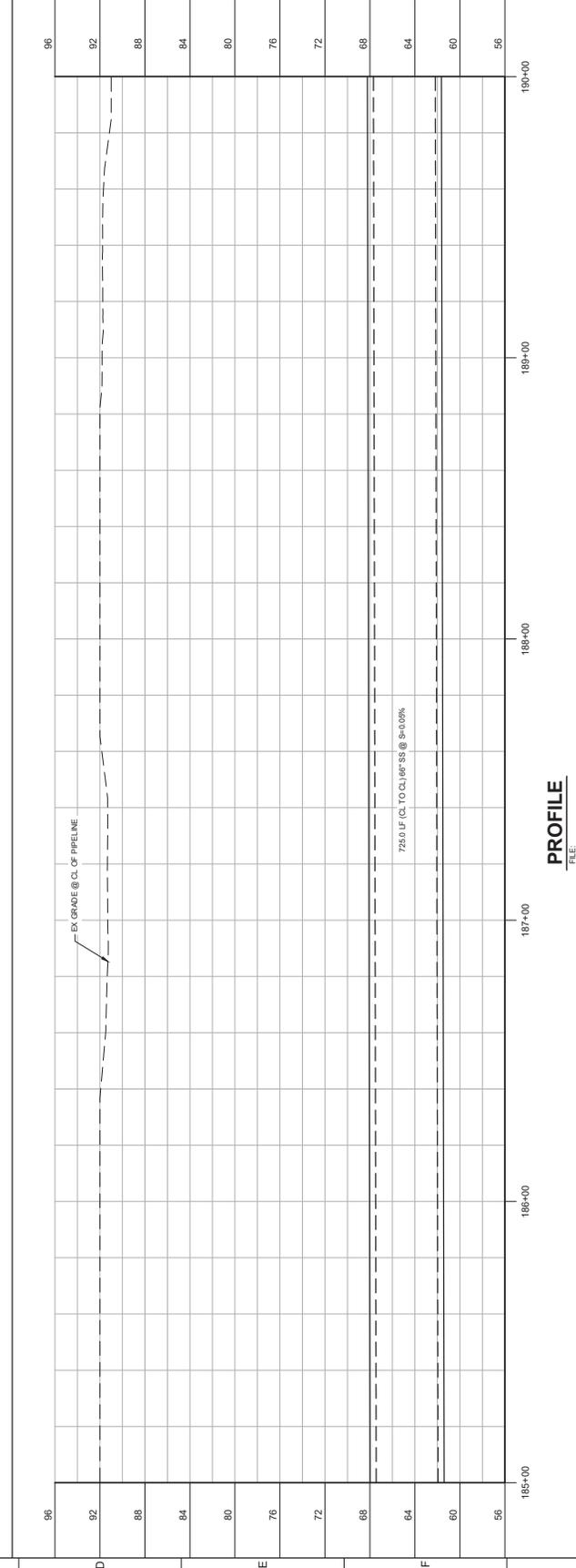


NOT FOR CONSTRUCTION		DESIGNED	CDH
		DRAWN	CDH
		CHECKED	
		DATE	AUG/15/2023
REV	DATE	BY	DESCRIPTION
1			
2			

PROJECT NO. 22454A.10  
FILE NAME: Santa Rosa Llano Inter P&P 16.50.dwg



**PLAN**  
FILE



**PROFILE**  
FILE

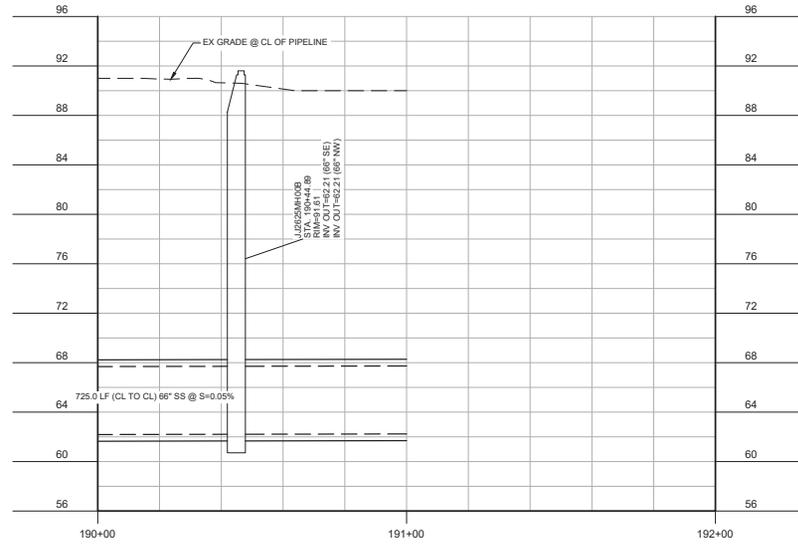
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<p>DRAWN CDH</p>	<p>CHECKED DATE AUG/15/2023</p>	<p>VERIFY SCALES JOB NO. 200XXX DRAWING NO. PP18 BASE IS ONE INCH OR SMALLER IF NOT ONE INCH SCALES ACCORDINGLY</p>		<p>SCALE 0 10 20 40' SCALE: 1" = 20' (HORIZ) 0 2 4 6 8 10' SCALE: 1" = 5' (VERT)</p>	
<p>REV</p>	<p>DATE</p>	<p>BY</p>	<p>DESCRIPTION</p>	<p>811 City of Santa Rosa Engineering www.811.org</p>	

Proj Date: 8/12/2022 7:29:07 AM

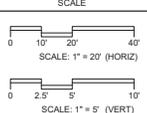
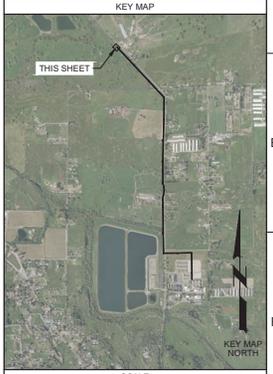
LAST SAVED BY: Charles



**PLAN**  
FILE:



**PROFILE**  
FILE:



<b>NOT FOR CONSTRUCTION</b>		
DESIGNED	CDH	
DRAWN	CDH	
CHECKED		
CHK		
DATE	AUGUST 2023	

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CITY OF SANTA ROSA  
LLANO TRUNK REHABILITATION  
CIVIL  
PLAN AND PROFILE 19

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY	JOB NO. 200XXX DRAWING NO. <b>PP19</b> SHEET NO. X OF XX
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## APPENDIX B. AIR QUALITY DATA



# Llano Trunk Project Custom Report

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- 1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
  - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
  - 3.1. Project Construction (2025) - Unmitigated
- 4. Operations Emissions Details
  - 4.10. Soil Carbon Accumulation By Vegetation Type
    - 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated
    - 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated
    - 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated
- 5. Activity Data

- 5.1. Construction Schedule
  - 5.2. Off-Road Equipment
    - 5.2.1. Unmitigated
  - 5.3. Construction Vehicles
    - 5.3.1. Unmitigated
  - 5.4. Vehicles
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  - 5.5. Architectural Coatings
  - 5.6. Dust Mitigation
    - 5.6.1. Construction Earthmoving Activities
    - 5.6.2. Construction Earthmoving Control Strategies
  - 5.7. Construction Paving
  - 5.8. Construction Electricity Consumption and Emissions Factors
8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Llano Trunk Project
Construction Start Date	6/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	9.60
Location	38.380990306192274, -122.76955572251258
County	Sonoma-San Francisco
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	954
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.25

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	1.60	Mile	2.70	0.00	—	—	—	—

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.10	4.29	35.1	58.1	0.11	1.25	0.01	1.26	1.15	< 0.005	1.15	—	10,700	10,700	0.43	0.09	0.05	10,737
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.10	4.29	35.1	58.1	0.11	1.25	0.01	1.26	1.15	< 0.005	1.15	—	10,699	10,699	0.43	0.09	< 0.005	10,736
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.54	1.29	10.6	17.5	0.03	0.38	< 0.005	0.38	0.35	< 0.005	0.35	—	3,224	3,224	0.13	0.03	0.01	3,236
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.28	0.24	1.93	3.19	0.01	0.07	< 0.005	0.07	0.06	< 0.005	0.06	—	534	534	0.02	< 0.005	< 0.005	536

## 3. Construction Emissions Details

### 3.1. Project Construction (2025) - Unmitigated

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

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





### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Project Construction	Cement and Mortar Mixers	Electric	Average	1.00	1.30	10.0	0.56
Project Construction	Aerial Lifts	Diesel	Average	1.00	0.20	63.0	0.31
Project Construction	Other Material Handling Equipment	Electric	Average	1.00	2.60	10.0	0.40
Project Construction	Off-Highway Trucks	Diesel	Average	1.00	2.40	350	0.38
Project Construction	Generator Sets	Diesel	Average	1.00	10.5	84.0	0.74
Project Construction	Air Compressors	Diesel	Average	1.00	10.5	49.0	0.48
Project Construction	Pumps	Electric	Average	1.00	1.10	10.0	0.74
Project Construction	Off-Highway Trucks	Diesel	Average	1.00	6.40	400	0.38
Project Construction	Pumps	Diesel	Average	1.00	2.00	80.0	0.74
Project Construction	Other General Industrial Equipment	Diesel	Average	1.00	3.30	12.0	0.34
Project Construction	Pumps	Electric	Average	1.00	1.30	5.00	0.74
Project Construction	Other Construction Equipment	Diesel	Average	1.00	39.3	225	0.42
Project Construction	Aerial Lifts	Diesel	Average	1.00	1.50	110	0.31
Project Construction	Other General Industrial Equipment	Gasoline	Average	1.00	6.50	10.0	0.48
Project Construction	Other Construction Equipment	Diesel	Average	1.00	1.90	16.0	0.42

### 5.3. Construction Vehicles

#### 5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Project Construction	—	—	—	—
Project Construction	Worker	0.64	21.0	LDA,LDT1,LDT2
Project Construction	Vendor	0.00	8.40	HHDT,MHDT
Project Construction	Hauling	0.44	2.50	HHDT
10 / 12				

Project Construction	Onsite truck	—	—	HHDT
----------------------	--------------	---	---	------

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Project Construction	—	192	2.70	0.00	—

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Project Construction	—	192	2.70	0.00	—

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

## 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	2.70	100%

## 5.8. Construction Electricity Consumption and Emissions Factors

### kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	22.8	204	0.03	< 0.005

## 8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	The project includes CIPP pipeline rehabilitation, manhole rehabilitation, and bypass pipeline construction. The applicant provided the duration, schedule, haul truck trips, and off-road construction equipment activity.
Construction: Off-Road Equipment	Construction off-road equipment activity information provided by the applicant.
Construction: Trips and VMT	The applicant provided construction vehicle trip activity. It was conservatively assumed that the fleet mix for hauling trips would be 100% HDD. Under the "Dust from Material Movement" Tab, the total amount of material exported was estimated based on 12 soil haul trips x 16 cubic yards per truck = 192 cubic yards.

## EQUIPMENT HOURS

## Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025					Duration (day)	Average Hours per day
					Jun	Jul	Aug	Sept	Oct		
<b>Garney - Excavation</b>											
Cat 335 Excavator	Excavator	Diesel	115	Tier 4 Final	320	320	320	320	320	110	14.5
Cat 624 Loader	Rubber Tired Loader	Diesel	200	Tier 4 Final	160	160	160	160	160		7.3
John Deere 410 Backhoe	Tractors/Loaders/Backhoes	Diesel	116	Tier 4 Final	160	160	160	160	160		7.3
Signal Boards	Signal Boards	Diesel	6	Average	720	720	720	720	720		32.7
<b>Manhole Rehab</b>											
Dodge Ram 5500	Off-Highway Truck - 1	Diesel	410	Average	0	0	12	360	36	110	3.7
Dodge Ram 3500	Off-Highway Truck - 1	Diesel	410	Average	0	0	12	360	36		3.7
Doosan P185 Portable Air Compressor	Air Compressor	Diesel	49	Tier 4 Final	0	0	12	360	36		3.7
Llanda 7000 psi Pressure Washer	Pressure Washer	Diesel	24	Tier 4 Final	0	0	12	360	36		3.7
Honda 6500 Portable Power	Generator Set	Diesel	24	Tier 4 Final	0	0	12	360	36		3.7
<b>CIPP</b>											
Resin Static Mixer	Cement and Mortar Mixers	Electric	10	Average	0	0	24	96	24	110	1.3
Reach Lift	Aerial Lifts - 1	Diesel	63	Average	0	9	3	12	3		0.2
Conveyor/Pinch Roller Trailer	Other Material Handling Equipment	Electric	10	Average	0	0	48	192	48		2.6
Refrigeration Truck	Off-Highway Truck - 2	Diesel	350	Average	0	0	24	96	24		1.3
Generator	Generator Set	Diesel	84	Average	0	0	192	768	192		10.5
Air Compressor 185	Air Compressor	Diesel	49	Average	0	0	192	768	192		10.5
Resin Pump/Heat Exchanger	Pump -1	Electric	10	Average	0	0	24	72	24		1.1
CIPP Boiler Truck/Trailer	Off-Highway Truck - 3	Diesel	400	Average	0	0	72	288	72		3.9
Semi Trucks	Off-Highway Truck - 3	Diesel	400	Average	0	0	24	48	24		0.9
6" Gorman Rupp Circulation Pumps	Pump - 2	Diesel	80	Average	0	0	36	144	36		2.0
Light Towers	Other General Industrial Equipment	Diesel	12	Average	0	0	60	240	60		3.3
Vacuum Pump	Pump - 3	Electric	5	Average	0	0	24	96	24		1.3
<b>Bypass</b>											
12" Bypass Pumps	Other Construction Equipment	Diesel	225	Average	0	0	1440	1440	1440	110	39.3
Reach Lift	Aerial Lifts - 2	Diesel	110	Average	0	0	84	0	84		1.5
Light Tower	Other General Industrial Equipment	Gas	10	Average	0	0	240	240	240		6.5
Fusion Machine	Other Construction Equipment	Diesel	16	Average	0	210	0	0	0		1.9
<b>CCTV &amp; Cleaning</b>											
Vactor Jetter/Combo Cleaner	Off-Highway Truck - 3	Diesel	400	Average	0	0	60	60	60	110	1.6
TV Truck	Off-Highway Truck - 2	Diesel	350	Average	0	0	40	40	40		1.1

Note: CalEEMod default values were used as project-specific information, such as engine tier, was not available.

Construction hours of the same type of off-road equipment with the same horsepower and fuel type are combined together in CalEEMod.

Vehicle Trip Activity

**Construction Vehicle Trip Activity (Total Round Trips per Month)**

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Custom Travel Destination	Fleet Mix (percentage)				2025					Duration (day)	Trip Type	Round Trips per Day
			LDA	LHD	MHD	HHD	Jun	Jul	Aug	Sept	Oct			
Worker Commute Trips	21.0	Local Hotel		100%					10	50	10	110	Worker Commute	0.64
Soil Haul Trips	2.5	Laguna Treatment Plant				100%			2	8	2		Hauling	0.44
CIPP Resin Trucks	2.5	Laguna Treatment Plant				100%			5	20	5			
CIPP Liner Flatbed Trucks	2.5	Laguna Treatment Plant				100%			1	4	1			

Note: It was conservatively assumed that fleet mix for hauling trips will be 100% HHD.

**APPENDIX C. BIOLOGICAL RESOURCES TECHNICAL REPORT**





## Biological Resources Assessment

### Llano Road Pipeline Rehabilitation Project

Santa Rosa, Sonoma County, California



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### APPENDIX D. REPRESENTATIVE PHOTOS OF THE STUDY AREA

## List of Preparers

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## DEFINITIONS

**Study Area:** The area throughout which the assessment was performed, inclusive of approximately 19.22 acres spanning across portions of parcels (APNs 060-060-051, 060-060-053, 060-060-030, 063-180-001, 063-180-025, 063-180-033, 063-180-036, 063-180-040, 063-180-042, 063-180-045, and 063-180-046), Llano Road, Todd Road and Meadow Lane (Figure 1).

## List of Acronyms

<b>APN</b>	Accessor's Parcel Number
<b>BGEPA</b>	Bald and Golden Eagle Protection Act
<b>BIOS</b>	Biogeographic Information and Observation System
<b>BRA</b>	Biological Resources Assessment
<b>CCR</b>	California Code of Regulations
<b>CDFW</b>	California Department of Fish and Wildlife
<b>CESA</b>	California Endangered Species Act
<b>CFR</b>	Code of Federal Regulations
<b>CNDDDB</b>	California Natural Diversity Database
<b>CNPPA</b>	California Native Plant Protection Act
<b>CNPS</b>	California Native Plant Society
<b>Corps</b>	U.S. Army Corps of Engineers
<b>CTS</b>	California Tiger Salamander
<b>CWA</b>	Clean Water Act
<b>EPA</b>	U.S. Environmental Protection Agency
<b>ESA</b>	Federal Endangered Species Act
<b>Magnuson-Stevens Act</b>	Magnuson-Stevens Fishery Conservation & Management Act
<b>MBTA</b>	Migratory Bird Treaty Act
<b>NRCS</b>	Natural Resource Conservation Service
<b>NWI</b>	National Wetland Inventory
<b>PBO</b>	Programmatic Biological Opinion
<b>Rank</b>	California Rare Plant Ranks
<b>RWQCB</b>	Regional Water Quality Control Board
<b>SWRCB</b>	State Water Resource Control Board
<b>USDA</b>	U.S. Department of Agriculture
<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>USGS</b>	U.S. Geological Survey
<b>WBWG</b>	Western Bat Working Group
<b>WRA</b>	WRA, Inc.

## 1.0 INTRODUCTION

This Biological Resources Technical Report evaluates existing biological resources, potential impacts, and mitigation measures (if required) for the Project located along a stretch of Llano Road, Santa Rosa, Sonoma County, CA (APNs: 060-060-051, 060-060-053, 060-060-030, 063-180-001, 063-180-025, 063-180-033, 063-180-036, 063-180-040, 063-180-042, 063-180-045, and 063-180-046, hereafter Study Area (Appendix A – Figure 1). The proposed project (Project) involves activities associated with a sewer pipeline rehabilitation within the Study Area.

### 1.1 Overview and Purpose

This report provides an assessment of biological resources within the Study Area and immediate vicinity. Protocol-level plant surveys were conducted for this Project in 2023 and 2024 and the results of these surveys are used herein. This survey is not a formal wetland delineation; however, a wetland delineation was conducted in the spring of 2024 and presented in a separate report. The purpose of the assessment was to develop and gather information on sensitive land cover types and special-status plant and wildlife species to support an evaluation of the Project under the California Environmental Quality Act (CEQA). This report describes the results of the site visit, which assessed the Study Area for (1) the presence of sensitive land cover types, special-status plant species, and special-status wildlife species, (2) the potential for the site to support special-status plant and wildlife species. Based on the results of the site assessment, potential impacts to sensitive land cover types and special-status species resulting from the proposed Project were evaluated. If the Project has the potential to result in significant impacts to these biological resources, measures to avoid, minimize, or mitigate for those significant impacts are described.

A biological resources assessment provides general information on the presence, or potential presence, of sensitive species and habitats. Additional focused studies (such as protocol-level species surveys or a wetland delineation) may be required to support regulatory permit applications or to implement mitigation measures included in this report. This assessment is based on information available at the time of the study and on-site conditions that were observed on the dates the site was visited. Conclusions are based on currently available information used in combination with the professional judgement of the biologists completing this study.

### 1.2 Project Description

The proposed Project includes the rehabilitation of the existing Llano Road Trunk pipeline, a critical City of Santa Rosa (City) wastewater collection facility, which carries approximately two thirds of the City's wastewater flow to the Laguna Wastewater Treatment Plant. The existing pipeline is nearly 50 years old and must be rehabilitated to prevent failure of the system and/or more impactful actions that would be associated with replacement. The scope of the Project includes rehabilitation of approximately 8,170 linear feet of the 66-inch reinforced concrete pipe (RCP) trunk sewer. It also includes condition assessment of the existing manholes along the alignment and rehabilitation of the manholes as recommended at the conclusion of the condition assessment field investigation. To implement the Project, a temporary above-ground bypass pumping facility will be required and will include temporary bypass pumps, associated manifold and valving assemblies, and approximately 9,200 linear feet of triple barrel 18-inch diameter high-density polyethylene (HDPE) bypass pipelines. The HDPE pipelines will be installed in

predominantly undeveloped areas adjacent to Llano Road and Meadow Lane. All effects of the Project will be temporary because the Project footprint will be restored after conclusion of the Project. This assessment provides the framework needed for determining measures to reduce both the impacts of the proposed Project to less than significant levels.

### 1.3 Summary of Results

The Study Area is approximately 19.22 acres along a stretch of Llano Road, Santa Rosa, Sonoma County, CA, and covers portions of ten different parcels.

The Study Area contains wetlands, ditches and riparian areas and one stream. Most of these features will be fully avoided by Project activities and erosion/sediment Best Management Practices (BMPs) will be implemented to avoid potential water quality impacts.

Numerous oak trees are present which qualify as protected trees under the Santa Rosa Tree Ordinance. The proposed Project is not expected to remove or permanently impact these trees, though some trimming may be required. Mitigation measures and BMPs have been developed and provided herein to avoid impacts to these trees.

One special-status plant species, Sebastopol meadowfoam (*Limnanthes vinculans*; FE, SE, CRPR 1B) was observed during protocol surveys for the presence of the three species listed covered by the Santa Rosa Plain Conservation Strategy (Conservation Strategy Team 2005) and Programmatic Biological Opinion (PBO) (USFWS 2020). No other special-status plant species were detected within the Study Area. Mitigation measures have been developed and provided herein to avoid potentially significant impacts to these resources.

Several special-status mammals and birds, as well as non-status birds with baseline legal protections have the potential to occur in the Study Area. California tiger salamander (CTS) was determined to have high potential to occur due to suitability of the upland habitat on the site and the site's proximity to documented nearby occurrences. The Project is anticipated to necessarily acquire state and federal permits for take of CTS and mitigation for impacted habitat is proposed at the ratios described in the Santa Rosa Plain Conservation Strategy. Northwestern pond turtle has a moderate potential to occur on the site, but it is expected that it will be avoided. Recommended mitigation/avoidance measures and BMPs have been developed and provided herein to reduce impacts to these resources.



**Table 1. Summary of Biological Resources Evaluation**

CEQA Assessment Category <sup>1</sup> IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section <sup>2</sup>
<b>Question A. Special-status Species</b>	Special-status Plants Special-status Wildlife Designated Critical Habitat	Federal Endangered Species Act CA Endangered Species Act CA Native Plant Protection Act Migratory Bird Treaty Act Bald & Golden Eagle Protection Act	U.S. Fish & Wildlife Service National Marine Fisheries Service CA Department of Fish & Wildlife	Potentially significant impacts were identified and mitigation measures included that reduce those impacts to a level that is less than significant are provided.  <b>See Section 7.1 for more information</b>
<b>Question B. Sensitive natural communities &amp; riparian habitat</b>	Sensitive Natural Communities Streams, Lakes & Riparian Habitat	CA Fish & Game Code Oak Woodland Conservation Act Porter-Cologne Act Clean Water Act	CA Department of Fish & Wildlife U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified and mitigation measures to reduce impacts to less than significant levels are provided.  <b>See Section 7.2 for more information</b>
<b>Question C. State and federally protected wetlands</b>	Wetlands Unvegetated surface waters	Clean Water Act: Sections 404/401 Rivers & Harbors Act: Section 10 Porter-Cologne Act	U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified and mitigation measures included that reduce those impacts to a level that is less than significant.  <b>See Section 7.3 for more information</b>

<sup>1</sup> CEQA Questions have been summarized here, see Section 6.2 for details.

<sup>2</sup> As given in this report, see Section 5.0 subheadings.

**Table 1. Summary of Biological Resources Evaluation**

CEQA Assessment Category <sup>1</sup> IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section <sup>2</sup>
<p><b>Question D.</b> <b>Fish &amp; Wildlife corridors</b></p>	<p>Essential Fish Habitat Wildlife Corridors</p>	<p>CA Fish &amp; Game Code Magnuson-Stevens Fishery Conservation &amp; Management Act</p>	<p>CA Department of Fish and Wildlife National Marine Fisheries Service</p>	<p>Potentially significant impacts were not identified and mitigation measures and mitigation measures are not necessary.</p>
<p><b>Question E.</b> <b>Local policies</b></p>	<p>Protected Trees</p>	<p>Local Tree Ordinance General Plan (e.g. Stream &amp; Wetland Setbacks) Local ordinances</p>	<p>Local and regional agencies</p>	<p>Potentially significant impacts were identified and mitigation measures included that reduce those impacts to a level that is less than significant.</p> <p><b>See Section 7.5 for more information</b></p>
<p><b>Question F.</b> <b>Local, state, federal conservation plans</b></p>	<p>Santa Rosa Plain Conservation Strategy</p>	<p>Federal Endangered Species Act California Endangered Species Act</p>	<p>U.S. Fish and Wildlife Service CA Department of Fish and Wildlife</p>	<p>Potentially significant impacts were identified and mitigation measures are included that reduce those impacts to a level that is less than significant.</p> <p><b>See Section 7.6 for more information</b></p>



## 2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological resources assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential Project impacts. Table 1 shows the correlation between these regulations and each Biological Resources question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines.

### 2.1 Federal and State Regulatory Setting

#### 2.1.1 Vegetation and Aquatic Communities

CEQA provides protections for particular vegetation types defined as sensitive by the California Department of Fish and Wildlife (CDFW), and aquatic communities protected by laws and regulations administered by the U.S Army Corps of Engineers (Corps), State Water Resources Control Board (SWRCB), and Regional Water Quality Control Boards (RWQCB). The laws and regulations that provide protection for these resources are summarized below.

#### SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2021a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2021b). Natural communities are ranked 1 through 5 in the CNDDDB based on NatureServe's (2020) methodology, with those communities ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code (CPRC).

#### WATERS OF THE UNITED STATES, INCLUDING WETLANDS

The Corps regulates "Waters of the United States" under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.



The Corps also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA requires Corps approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

## **WATERS OF THE STATE, INCLUDING WETLANDS**

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The SWRCB and nine RWQCBs protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

## **SECTIONS 1600-1616 OF CALIFORNIA FISH AND GAME CODE**

Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream,” which includes creeks and rivers, is defined in the CCR as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). The term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

### **2.1.2 Special-status Species**

## **ENDANGERED AND THREATENED PLANTS, FISH, AND WILDLIFE**

Specific species of plants, fish, and wildlife may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species’ designation under one law does not automatically provide protection under the other.



The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to take of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGF 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to candidate species that are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity.

### **FULLY PROTECTED SPECIES AND DESIGNATED RARE PLANT SPECIES**

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 "rare" or "endangered" plant species, and prevents "take", with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP.

### **SPECIAL PROTECTIONS FOR NESTING BIRDS AND BATS**

The Federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species [bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*)] that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and



CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

### **SPECIES OF SPECIAL CONCERN, MOVEMENT CORRIDORS, AND OTHER SPECIAL-STATUS SPECIES UNDER CEQA**

To address additional species protections afforded under CEQA, CDFW has developed a list of special species as “a general term that refers to all of the taxa the CNDDDB is interested in tracking, regardless of their legal or protection status.” This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. However, for the purposes of this document, the term is applied only to those species of wildlife that are considered under the jurisdiction of the project’s CEQA lead agency. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under CEQA. Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. The Study Area is within the range of the Sonoma County Distinct Population Segment (DPS) of California tiger salamander (CTS, *Ambystoma californiense*), which was listed as endangered on March 19, 2003 (USFWS 2003), and Final Critical Habitat was designated on August 31, 2011 (76 Federal Register [FR] 64346; USFWS 2011). A recovery plan for the Sonoma County DPS of CTS was finalized on May 31, 2016 (USFWS 2016). The Study Area is within the Santa Rosa Plain and designated critical habitat for the Sonoma County DPS of CTS (76 FR 54346).

Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

### **SANTA ROSA PLAIN CONSERVATION STRATEGY**

The Conservation Strategy Area is an area established by the USFWS for the protection and continued existence of CTS and three endangered plant species: Burke’s goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), and Sebastopol meadowfoam (*Limnanthes vinculans*). The Final Conservation Strategy (Conservation Strategy Team 2005) outlines the species of concern for this area along with guidance for specific conservation measures. In 2007 the Corps consulted with USFWS for Section 404 permitting within Conservation Strategy Area, which resulted in the issuance of a Programmatic Biological Opinion (PBO; USFWS 2007). The PBO was updated in June 2020 to address the addition of CTS Critical Habitat (USFWS 2020). The PBO for the Conservation Strategy outlines the mitigation requirements necessary to compensate for impacts to wetlands and associated species including CTS and the three listed plants. The PBO can be appended to permits authorized by the Corps. Inclusion of a project under the PBO requires a federal nexus (i.e. impacts to Corps wetlands) which would trigger a Section 7 Consultation between the Corps and the USFWS.

## **2.2 Local Regulatory Setting**



### 2.2.1 Sonoma County General Plan

Sonoma County General Plan 2020: In conjunction with the CDFW, Sonoma County has identified several habitats as sensitive, natural communities which include coastal salt marsh, brackish water marsh, freshwater marsh, freshwater seeps, native grasslands, several types of forest and woodland (including riparian, valley oak, Oregon white oak, black oak, buckeye, Sargent cypress and pygmy cypress, old growth redwood and Douglas fir forest), mixed serpentine chaparral, and coastal scrub, prairie, bluff, and dunes. The County Plan shall be consulted should any project activities occur within any of the above-mentioned habitats. Any disturbance to these communities may be subject to additional mitigation measures separate from those required by the federal and state regulatory agencies.

Valley Oak Habitat Combining Zone: The Sonoma County General Plan Open Space and Resource Conservation Element (Sonoma County 2008) calls for the designation of a Valley Oak Habitat Combining Zone (VOH) wherein the Native and Heritage Tree Ordinance has special enforcement for the removal and replacement of valley oaks (*Quercus lobata*). Within the VOH, the removal of any large valley oak (20 inches DBH or greater), or small valley oaks (less than 20 inches DBH) with a cumulative DBH of 60 inches are included. Sites within the VOH where valley oaks are removed shall either (1) retain equivalent sized valley oaks, (2) replacement planting of valley oaks on- or off-site, (3) a combination of 1 and 2, or (4) pay an in-lieu fee based on the cumulative DBH of valley oaks removed. The mitigation shall be completed within one calendar year of the removal.

Exceptions to the ordinance include (1) emergency removal of valley oak trees, (2) dead or irretrievably damaged or destroyed through unintentional means, or (3) part of a development project subject to design review. Development projects under design review shall require, but not be limited to, a requirement that valley oaks constitute a minimum of 50 percent of the required landscape trees.

Riparian Corridor Combining Zone: The Sonoma County General Plan Open Space and Resource Conservation Element calls for the designation of Riparian Corridor conservation areas along selected streams throughout the County (Sonoma County 2008). In November 2014, the Riparian Corridor conservation areas were amended to include new agricultural activities along with other activities that could pose a potential impact to the County's streams. The County designated the following three zones with varying setbacks:

- Russian River Riparian Corridor: 200'
- Flatland Riparian Corridors: 100'
- Other Riparian Corridors: 50'

Non-conforming activities within these setbacks require biological review and approval from the Permit and Resource Management Department and/or the Office of the Agricultural Commissioner of Sonoma County. Non-conforming uses with some exemptions include, but are not limited to grading, vegetation removal (riparian vegetation), agricultural cultivation, structures, roads, utility lines, and parking lots.

Biotic Habitat Combining Zone: The Sonoma County General Plan Open Space and Resource Conservation Element calls for the designation of Biotic Habitat (BH)



conservation areas at particularly unique and/or sensitive habitats throughout the County (Sonoma County 2008). The General Plan designates specific BH areas (e.g., Petaluma Marsh, Atascadero Marsh, serpentine vegetation in the Mayacamas Mountains). In addition to those areas mapped in the General Plan, the following habitats are considered BH areas: (1) Special-status Species Habitat, (2) Marshes and Wetlands, (3) Sensitive Natural Communities, and (4) Habitat Connectivity Corridors.

The General Plan policies regarding BH areas call for, in order of preference: (1) avoidance, (2) mitigation on-site, (3) mitigation off-site, and (4) creation of replacement habitat. Additionally, the policies call for setbacks for specific habitats (e.g., 100-foot setback from marshes and wetlands); protection of native trees and oak woodlands; encourage native species plantings; etc.

Sonoma County Tree Protection Ordinance: The Sonoma County Tree Ordinance (Sonoma County Municipal Code Chapter 26) requires those projects seeking a permit from the County (e.g., grading, building) that may impact protected trees, or their protected perimeters, shall provide an accompanying site plan. The site plan must include the location, species, and size of all impacted trees as well as those near project-related activities where effects of such could damage trees. The County encourages that trees not scheduled for removal, should include protective measures. Trees scheduled for removal must be evaluated for their “arboreal value” and compensated with either on-site or off-site plantings, preservation of existing trees not scheduled for removal, or with in-lieu fees.

Protected trees are defined as the native trees: big leaf maple (*Acer macrophyllum*), black oak (*Quercus kelloggii*), blue oak (*Q. douglasii*), coast live oak (*Q. agrifolia*), interior live oak (*Q. wislizenii*), oracle oak (*Q. morehus*), Oregon oak (*Q. garryana*), valley oak (*Q. lobata*), redwood (*Sequoia sempervirens*), madrone (*Arbutus menziesii*), California bay (*Umbellularia californica*), and their hybrids, with a DBH of 9 inches or greater. For trees with multiple trunks, the measurement includes the measurement of two or more trunks, which, if combined are equal to or greater than the minimum size stipulated. In addition, the valley oak shall receive special consideration under the Tree Ordinance to the extent that mature specimens of the species shall be retained to the fullest extent feasible.

Exemptions to tree protections include timber harvest plans (THP) filed with the State of California, emergency tree removal in the instance of hazards, lot line adjustments, zoning permits, and certain agricultural uses including: the raising, feeding, maintaining and breeding of confined and unconfined animals, commercial aquaculture, commercial mushroom farming, wholesale nurseries, greenhouses, wineries, and agricultural cultivation.

Oak Woodland Ordinance. The Sonoma County Oak Woodland Ordinance (Sonoma County Municipal Code Chapter 26) prohibits the removal of oaks within Oak Woodlands, with limited exceptions for certain listed land uses that the County has determined promote public, health, safety, and welfare, including uses related to hazard reduction or removal, conservation, agriculture, pest control, and residential maintenance. Where proposed valley oak or Oak Woodland removal is subject to a discretionary permit process, mitigation measures to address loss of trees would apply, such as measures to ensure no net loss of Oak Woodlands or, for the highest quality woodlands, would provide a unique public benefit equal to or greater than the value associated with removed oaks.



The County defines Oak Woodland as a contiguous stand of trees dominated by Native Oak Trees with at least one-half (0.5) acre of cover. For purposes of the County’s definition, “contiguous stand” means a stand where all individual oak trees with diameter at breast height (dbh) equal to or greater than 6 inches have canopies located within 200 feet of one another on a parcel. Oak Woodland includes lands that supported native oak trees as indicated in the 2013 Sonoma VegMap. This term is inclusive of both oak woodlands and savannas, where canopy gaps may be more present, and oak forests, where canopy gaps are less present. Oak woodland is inclusive of associated vegetative strata including canopy, subcanopy, and shrubs.

#### Oak Woodland Impact Definitions -

**Type Conversion.** The removal of the capacity of the land to grow oak trees or Oak Woodlands by a person. This includes but is not limited to, clearing, grading, or otherwise modifying land for roads, driveways, buildings or building pads, utility easements, and Agricultural Crop Cultivation within an Oak Woodland. Maintenance such as pruning and removing dead branches from living oak resources is not included, provided that the maintenance does not include crown reduction resulting in death or conversion of the oak resource.

**Woodland Impact.** Any activity which results in the removal or death of Native Oak Trees within an Oak Woodland.

### 2.2.2 City of Santa Rosa General Plan, Open Space and Conservation Element

The City of Santa Rosa General Plan Open Space and Conservation Element contains the following goals and policies pertaining to biological resources:

**Goal OSC-D:** Conserve wetlands, vernal pools, wildlife ecosystems, rare plant habitats, and waterways.

**Policy OSC-D-1:** Utilize existing regulations and procedures, including Subdivision Guidelines, Zoning, Design Review, and environmental law, to conserve wetland and rare plants. Comply with the federal policy of no net loss of wetlands using mitigation measures such as:

- Avoidance of sensitive habitat;
- Clustered development;
- Transfer of development rights; and/or
- Compensatory mitigation, such as restoration or creation.

**Policy OSC-D-2:** Protect high quality wetlands and vernal pools from development or other activities as determined by the Vernal Pool Ecosystem Preservation Plan.

**Policy OSC-D-3:** Preserve and restore the elements of wildlife habitats and corridors throughout the Planning Area.

**Policy OSC-D-4:** Continue to consult with the California Department of Fish and Wildlife to identify significant environments. Identify priorities for acquisition or maintenance of open space areas based on biological and environmental concerns and develop an



overall strategy for the maintenance of areas that will preserve the populations of plants and animals currently found within the Urban Growth Boundary.

**Policy OSC-D-5:** Consult with North Coast Regional Water Quality Control Board staff as part of the CEQA process for proposed developments to help them identify wetland and vernal pool habitat that has candidacy for restoration/protection based on actual and potential beneficial uses and determine appropriate locations for mitigation banking.

**Policy OSC-D-6:** Preserve waterways by informing residents of the environmental effects of dumping yard waste into creeks, or other wastes, such as motor oil, into storm drains that empty into creeks.

**Policy OSC-D-7:** Rehabilitate existing channelized waterways, as feasible, to remove concrete linings and allow for a connection with the stream channel and the natural water table. Avoid creating additional channelized waterways, unless no other alternative is available to protect human health, safety, and welfare.

**Policy OSC-D-8:** Restore channelized waterways to a more natural condition which allows for more natural hydraulic functioning, including development of meanders, pools, riffles, and other stream features. Restoration should also allow for growth of riparian vegetation which effectively stabilizes banks, screens pollutants from runoff entering the channel, enhances fisheries, and provides other opportunities for natural habitat restoration.

**Policy OSC-D-9:** Ensure that construction adjacent to creek channels is sensitive to the natural environment. Ensure that natural topography and vegetation is preserved along the creek, and that construction activities do not disrupt or pollute the waterway.

**Policy OSC-D-10:** Orient development and buildings toward creeks, while providing privacy, security, and an open transition between public and private open spaces.

**Policy OSC-D-11:** New development along channelized waterways should allow for an ecological buffer zone between the waterway and development. This buffer zone should also provide opportunities for multi-use trails and recreation.

**Policy OSC-D-12:** New development should maintain an adequate setback from channelized waterways to recognize the 100-year flood elevation and allow for stream corridor restoration. Setbacks identified in the Zoning Code should serve as minimum setbacks. Larger setbacks are encouraged in accordance with Restoration Concept Plans to meet restoration and enhancement goals.

### 2.2.3 City of Santa Rosa Tree Ordinance

The City of Santa Rosa recognizes the aesthetic, environmental, and economic benefits mature trees provide to the citizens of the City. Chapter 17-24, “Trees” of the Santa Rosa City Code (Tree Ordinance) regulates the protection of certain trees on public and private properties within the City limits. The Tree Ordinance defines a “heritage tree” as: valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), or buckeye (*Aesculus californica*) 19 inches circumference at breast height (measured at 4.5 feet above ground; or 6 inches diameter at breast height [DBH]) or greater; madrone (*Arbutus menziesii*) 38 inches circumference (12 inches DBH) or greater; coast live oak (*Q. agrifolia*), black oak (*Q. kelloggii*), Oregon oak (*Q. garryana*), canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizeni*), red alder (*Alnus rubra* [*A. oregona*]), or white alder (*A. rhombifolia*) 57 inches circumference (18 inches DBH) or greater; or redwood (*Sequoia*



*sempervirens*), bay (*Umbellularia californica*), Douglas fir (*Pseudotsuga menziesii*), or big-leaf maple (*Acer macrophyllum*) 75 inches circumference (24 inches DBH) or greater.

A Tree Permit is generally required for the removal, alteration or relocation of any “heritage tree,” “protected tree” (i.e. any tree, including a heritage tree, designated to be preserved on an approved development plan or as a condition of approval of a tentative map, a tentative parcel map, or other development approval issued by the City), or “street tree” (i.e. any tree having a single trunk circumference greater than 6.25 inches or a diameter greater than 2 inches, a height of more than six feet, and one half or more of its trunk is within a public right of way or within 5 feet of the paved portion of a City street or a public sidewalk), except as exempted in Section 17-24.030 of the Tree Ordinance. Several non-native species including acacia, silver maple, ailanthus, hawthorn, fruitless mulberry, privet, pyracantha, Monterey pine, Monterey cypress, and fruit and nut trees (except walnut) are exempt from the provisions of the ordinance. Trees, other than heritage trees, situated within City owned parks and other City owned or controlled places when altered, removed, or relocated by City employees or by contractors retained by the City are also exempt.

#### 2.2.4 Santa Rosa Creekside Development Ordinance

Section 20-30.040 “Creekside Development”, of the Santa Rosa City Code defines minimum setbacks from waterways for new structures to protect the public from the hazards of streambank failures and flooding. Under the ordinance, buildings of any type, driveways, streets, parking areas, patios, platforms, decks, fences, earth fill or other structural debris fill, and retaining walls, shall be setback a minimum of 50 feet from: (a) the top of the highest bank for streams with defined channels and banks with slopes gentler than 2.5:1; (b) the intersection of 2.5:1 slope from toe of bank with top-of-bank where the natural bank is steeper than 2.5:1; or (c) the 100-year storm freeboard level for streams where there is no defined top-of-bank. Bridges for motor vehicles, pedestrians, and/or bicycles, and/or public utility infrastructure may cross through a waterway setback area and over or under its channel, provided that the installation has received all required approvals from the City.

### 3.0 ASSESSMENT METHODOLOGY

On March 20, April 25, and May 22, 2024, WRA biologists visited the Study Area to map vegetation, aquatic communities, unvegetated land cover types, document plant and wildlife species present, evaluate habitat on site for the potential to support special-status species as defined by the CEQA and conducted special-status plant surveys. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive biological communities (e.g., wetlands) and special-status species (e.g., endangered plants), including:

- *Soil Survey of Sonoma County, California* (USDA 1972)
- Sebastopol and Two Rock 7.5-minute quadrangles (USGS 2021)
- Contemporary aerial photographs (Google Earth 2024)
- Historical aerial photographs (Historical Aerials 2024)
- National Wetlands Inventory (USFWS 2024a)
- California Aquatic Resources Inventory (SFEI 2024)



- California Natural Diversity Database (CNDDDB, CDFW 2024a)
- California Native Plant Society Electronic Inventory (CNPS 2024a)
- Consortium of California Herbaria (CCH 2024)
- California Aquatic Resource Inventory (SFEI 2024)
- USFWS List of Federal Endangered and Threatened Species (USFWS 2024b)
- CDFW Publication, California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- CDFW and University of California Press publication California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009)
- A Manual of California Vegetation Online (CNPS 2024b)
- Preliminary Descriptions of the Terrestrial Natural Communities (Holland 1986)
- Sonoma County Fine Scale Vegetation and Habitat Map (Sonoma County 2020)
- California Natural Community List (CDFW 2018b)

Database searches (i.e., CNDDDB, CNPS) focused on Guerneville, Healdsburg, Mark West Springs, Camp Meeker, Sebastopol, Santa Rosa, Valley Ford, Two Rock, and Cotati USGS 7.5-minute quadrangles for special-status plants and wildlife (CDFW 2024a, CNPS 2024a).

Following the remote assessment, WRA biologists completed a field review over the course of one day to document: (1) land cover types (e.g., terrestrial communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic natural communities (e.g., wetlands) are present, and (4) if special-status species are present .

### 3.1 Vegetation Communities and Other Land Cover Types

During site visits conducted March – May 2024, WRA evaluated the species composition and area occupied by distinct vegetation communities, aquatic communities, and other land cover types. Mapping of these classifications utilized a combination of aerial imagery and ground surveys. In most instances, communities are characterized and mapped based on distinct shifts in plant assemblage (vegetation) and follow the California Natural Community List (CDFW 2021b), Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), and A Manual of California Vegetation, Online Edition (CNPS 2023b). These vegetation manuals cannot anticipate every component of every potential vegetation assemblage in California, and so in some cases, it is necessary to identify other appropriate vegetative classifications based on best professional judgment of WRA biologists. When undescribed variants are used, it is noted in the description. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3), were evaluated as sensitive as part of this evaluation.

This site assessment does not constitute a formal wetland delineation; however, the surveys looked for superficial indicators of wetlands such as hydrophytic vegetation (i.e., plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales. In areas with access, where indicators were observed, WRA biologists performed sample points following the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2008). A formal wetland delineation is in progress; and results will be presented in a separate report.

If streams potentially jurisdictional under the CWA and/or the CFGC are noted on a site, they are delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high water mark (OHWM) would be used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank would be used to determine the extent of CFGC Section 1602 and 401. Streams with associated woody vegetation were assessed to determine if these areas would be considered riparian habitat by the CDFW following A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code (CDFG 1994).

## 3.2 Special-status Species

### 3.2.1 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the May site visit based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDDB, other reports) on the site in the recent past.

If a more thorough assessment was deemed necessary, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2. If



designated critical habitat is present for a species, the extent of critical habitat present and an evaluation of critical habitat elements is provided as part of the species discussions below.

### 3.2.2 Special-status Plants

Protocol-level rare plant surveys following CDFW and USFWS guidelines were conducted in the spring of 2023 and 2024. During the assessment, all plants were identified using the *Jepson Manual, 2<sup>nd</sup> Edition* (Baldwin et al. 2012), *A Flora of Sonoma County* (Best et al. 1996), and/or the Jepson Flora Project (eFlora 2023). All observed plants are included in Appendix B; names follow those of Jepson Flora Project (eFlora 2023), unless otherwise noted. Those special-status plants with the potential to occur based on the physical and biological characteristics of the Study Area are discussed in Section 5 (below). Recommendations for special-status plant surveys are included in Section 7 (below).

### 3.2.3 Special-status Wildlife

The general assessment for special-status wildlife determined that a few species have the potential to occur in the Study Area. A targeted assessment for CTS and other special-status wildlife habitat was conducted on March 25, 2024. The site was traversed systematically by a WRA biologist with experience in CTS habitat, distribution, and ecology. Observations on physical characteristics such as mammal burrows (potential summer refugia); wetland shape, extent, and depth (potential breeding habitat); and density of upland vegetation (potential dispersal habitat) were noted if present. The areas adjacent to the Study Area were assessed for their potential to present barriers to CTS that would ingress or egress from the site if present. Protocol-level surveys were not conducted for any wildlife species.

## 3.3 Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2021a). Additionally, aerial imagery (Google 2024) for the local area was referenced to assess if local core habitat areas were present within or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

## 4.0 ECOLOGICAL SETTING

The approximately 19.22-acre Study Area is located in the City of Santa Rosa, Sonoma County, California (Figure 1, Appendix A). The Study Area is approximately 1.8 miles south of Highway 12, along Llano Road, and the predominant land use in the area is agriculture (mostly grazing) and low density residential and associated infrastructure. All of the Study Area parcels are accessed from Llano Road, with the exception of the southeasternmost (City-owned) parcel boundary, which is accessed via Meadow Lane.

Additional details of the local setting are below.



## 4.1 Soils and Topography

The overall topography of the Study Area is flat, with slopes of less than five percent, and an elevation of approximately 90 feet. According to the *Soil Survey of Sonoma County* (USDA 1972), the Study Area is underlain by four soil mapping units: Wright Loam, wet 0 to 2 percent slopes; Wright Loam, shallow, wet, 0 to 2 percent slopes; Clear Lake Clay, ponded, 0 to 2 percent slopes; and Zamora silty clay loam moist, 0 to 8 percent slopes. The parent soil series are summarized below. Figure 2 depicts soil types within the Study Area.

**Wright Series:** The Wright series consists of deep, somewhat poorly drained soils formed in alluvium from mixed rock sources. Wright soils are on low terraces and have slopes of 0 to 9 percent. The mean annual precipitation is 30 inches, and the mean annual temperature is 59 degrees F. Soils have slow runoff and very slow permeability. Typically, in the months of December through April, a perched water table occurs at a depth of 2 to 3 feet.

**Clear Lake Series:** Soils in the Clear Lake series consist of very deep, poorly drained clay formed in alluvium derived from sandstone and shale on basins and swales of drainage ways. These soils occur under grasslands, crop fields and rangeland, have negligible to high runoff with slow to very slow permeability with an intermittent perched water table very near the surface during the wet winter months. The Clear Lake series is considered a hydric soil in the survey area of the Soil Survey of Sonoma County (USDA 2021).

**Zamora Series:** The Zamora series consists of very deep, well drained soils that formed in alluvium from mixed rocks. Zamora soils are on alluvial fans, stream terraces and flood plains. The mean annual precipitation is about 23 inches (548 mm) and the mean annual temperature is about 62 degrees F (16.4 degree C). Zamora soils have slow to medium runoff and moderately slow permeability.

## 4.2 Climate and Hydrology

The Study Area is located within the valley fog incursion zone of Sonoma County where summer temperatures are buffeted by fog and fog drip contributes to annual rainfall totals. Winter “tule” fog is common, and summer “coastal” fog emerges with increased interior temperatures. The average monthly maximum temperature of Santa Rosa (047965) is 82.8 degrees Fahrenheit, while the average monthly minimum temperature is 36.7 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with an annual average of 30.13 inches. Precipitation-bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March, with a combined average of 24.51 inches (USDA 2023).

The local watershed is Lower Laguna de Santa Rosa (HUC 12: 180101100704) and the regional watershed is Mark West Creek [Russian] (HUC 8: 18010110). The Laguna de Santa Rosa is the receiving drainage for the Study Area, with all waters eventually flowing into this drainage. The Laguna de Santa Rosa is a named blue-line stream on the Sebastopol USGS 7.5-minute quadrangle (USGS 2015). This flows into Mark West Creek and onward into the Russian River. Other than the tributaries of the Laguna de Santa Rosa (e.g., Colgan Creek), there are no blue-line streams or other aquatic features on the quadrangle within the Study Area (USGS 2015). The National Wetlands Inventory mapped three ‘Freshwater Emergent Wetland’ features and one ‘Riverine’ (Colgan Creek) feature within the Study Area (NWI; USFWS 2023a), and the California Aquatic Resources Inventory (CARI; SFEI 2023) mapped one ‘Fluvial Unnatural’ feature, four

‘Fluvial Natural’ features, and five ‘Vernal Pool’ features. Aquatic resources are discussed under Section 5 (below).

### 4.3 Land Use

The majority of the Study Area is undeveloped, and in agricultural use. Some areas are in conservation use, including mitigation banks. The remainder of the Study Area consists of existing roads and the Laguna Treatment Plant. Low density residences and agricultural outbuildings are sparsely distributed adjacent to the Study Area.

Detailed descriptions of vegetation are provided in Section 5 (below).

## 5.0 ASSESSMENT RESULTS

### 5.1 Vegetation Communities and Other Land Cover

WRA observed nine land cover types within the Study Area: agriculture, developed areas, upland ditch, non-native grassland with scattered trees, seasonal wetland, seasonal wetland swale, wetland ditch, intermittent stream, and riparian. Land cover types within the Study Area are illustrated in Figure 3 (Appendix A). The non-sensitive land cover types in the Study Area include the developed areas, agricultural areas, upland ditch, and the non-native grassland, while the sensitive communities are seasonal wetlands, seasonal wetland swale, wetland ditch, riparian, and intermittent stream.

**Table 2. Vegetation Communities and Other Land Cover Types**

COMMUNITY / LAND COVERS	SENSITIVE STATUS	RARITY RANKING	ACRES WITHIN STUDY AREA
<b>TERRESTRIAL / COMMUNITY LAND COVER</b>			
<b>Agriculture</b>	N/A	N/A	0.11
<b>Developed Areas</b>	N/A	N/A	5.99
<b>Upland Ditch</b>	N/A	N/A	0.33
<b>Non-native Grassland</b>	N/A	N/A	12.03
<b>RIPARIAN</b>			
<b>Riparian</b>	Sensitive Section 1600-1607 LSAA	N/A	0.09
<b>AQUATIC RESOURCES</b>			
<b>Seasonal Wetlands</b>	Sensitive Section 404/401 Clean Water Act	N/A	0.30
<b>Seasonal Wetland Swale</b>	Sensitive Section 404/401 Clean Water Act	N/A	0.13
<b>Wetland Ditch</b>	Sensitive Section 404/401 Clean Water Act	N/A	0.21
<b>Intermittent Stream</b>	Sensitive Section 404/401 Clean Water Act	N/A	0.03

### 5.1.1 Terrestrial Land Cover

#### **AGRICULTURE (NO VEGETATION TYPE). CDFW RANK: NONE.**

The Study Area contains approximately 0.11 acres of agricultural areas. Large portions of the Study Area have been or are currently being converted to vineyard production. Areas of existing vineyards, as well as areas with active clearing, planting, and other vineyard creation activities were mapped as agricultural areas. These areas contain some natural vegetation, primarily non-native, weedy annual species, but in large part are dominated by grape vines with little to no understory. Soils within these areas are regularly disturbed, greatly reducing their potential to host special-status plants. Agricultural areas are not considered sensitive.

#### **DEVELOPED AREAS (NO VEGETATION TYPE). CDFW RANK: NONE.**

The Study Area contains approximately 5.99 acres of developed areas. As noted above, development includes paved roads (e.g., Llano Road, Todd Road, and Meadow Lane), several buildings, paved areas, compacted gravel roads and pads, fencing, and other infrastructural elements. Vegetation is minimal and entirely composed of remnant native trees and disturbance-adapted grasses and herbs including valley oak (*Quercus lobata*), box-elder (*Acer negundo*), slender oat (*Avena barbata*), perennial rye grass (*Festuca perennis*), prickly lettuce (*Lactuca serriola*), and wild radish (*Raphanus sativus*).

#### **UPLAND DITCH (NO VEGETATION TYPE). CDFW RANK: NONE.**

The Study Area contains approximately 0.33 acres of upland ditches. Upland ditches are man-made, linear ditch features that are adjacent and parallel to roads and are designed to convey surface water off roads and neighboring parcels. A series of upland ditches are located along the western roadside of Llano Road. These features convey flows during and immediately after precipitation events but remains dry otherwise. Upland ditch areas are not considered sensitive.

#### **NON-NATIVE GRASSLAND – PERENNIAL RYE GRASS FIELDS (*FESTUCA PERENNIS* [*LOLIUM PERENNE*] HERBACEOUS SEMI-NATURAL ALLIANCE). CDFW RANK: NONE.**

The Study Area contains 12.03 acres of non-native agricultural grassland. This land cover type is dominated by non-native grasses: perennial rye grass, slender oat, soft brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and harding grass (*Phalaris aquatica*), and trace forbs: Italian thistle (*Carduus pycnocephalus*), wild radish, prickly lettuce. Remnant valley oaks are scattered throughout the grassland as well.

### 5.1.2 Riparian

#### **RIPARIAN (VARIOUS ALLIANCES). CDFW RANK: SENSITIVE.**

The Study Area contains 0.09 acres of Riparian habitat. Riparian includes areas where the dominant woody plants (i.e., trees and tree shrubs) are dependent on groundwater of the nearby stream/ditch, but inundation is typically insufficient to result in wetland conditions. Riparian vegetation exists along Colgan Creek (IS-1), an intermittent stream, within the southern portion of the Study Area. Riparian vegetation along the intermittent stream included a native tree overstory of northern black walnut (*Juglans hindsii*), arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*) and valley oak, with a nonnative understory dominated by poison hemlock (*Conium maculatum*) and Himalayan blackberry (*Rubus armeniacus*) brambles.

### 5.1.3 Aquatic Resources

#### WETLAND WATERS

##### *Seasonal Wetland*

The Study Area contains 0.30 acres of seasonal wetland habitat. Seasonal wetlands are known from a variety of topographic positions and soil types where surface waters collect and flows are reduced, or subsurface waters approach the soil surface as a rising water table or seep. A formalized aquatic resources delineation was completed and determined that approximately 0.10 acre of seasonal wetland exists within the Study Area. The potential seasonal wetlands are depressions where direct precipitation and localized sheetflow collect surface waters. Wetland hydrology indicators include inundation and/or saturation, algal matting, soil cracks, and oxidized rhizospheres. The vegetation is dominated by annual semaphoregrass (*Pleuropogon californicus* var. *californicus*, FACW), perennial rye grass (FAC), meadow barley (*Hordeum brachyantherum*, FACW), pennyroyal (*Mentha pulegium*, OBL), and curly dock (*Rumex crispus*, FAC). Hydric soil indicators included inundation, saturation and iron redox.

##### *Seasonal Wetland Swale*

The Study Area contains 0.13 acres of seasonal wetland swale habitat. Seasonal wetland swales are known throughout California on all aspects and topographic positions underlain by a variety of substrates. Within the Study Area, the seasonal wetland swales are concave linear features without a defined bed and bank and open-ended concavity. Areas mapped as seasonal wetland swale contain a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology sufficient to meet the requirements as wetland under Section 404 of the Clean Water Act. The vegetation is dominated by annual semaphoregrass, lanceleaf water plantain (*Alisma lanceolatum*, OBL), varied leaved water starwort (*Callitriche heterophylla*, OBL), Sebastopol meadowfoam (*Limanthes vinculans*, OBL), pennyroyal, curly dock, and flowering-quillwort (*Triglochin scilloides*). The hydrology in these features appears to be intermittent to seasonal from direct precipitation and overland sheet flow, and of a velocity sufficient to contribute to down-cutting without precluding substantial vegetation cover (greater than five percent).

##### *Wetland Ditch*

The Study Area contains 0.21 acres of wetland ditch habitat. Wetland ditches include depressional areas within linear aquatic features (e.g., ditches and streams) which hold water for part of the year, typically during the rainy season (between October and March), and often, through spring (April-June), and are dominated by hydrophytic vegetative cover. Areas mapped as wetland ditch contain a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology sufficient to meet the requirements as jurisdictional features under Section 404 of the Clean Water Act. Plant species observed within wetland ditches in the Study Area include spike rush (*Eleocharis macrostachya*, OBL), annual semaphoregrass, curly dock, and perennial rye grass.

#### NON-WETLAND WATERS

##### *Intermittent Stream*

The Study Area contains 0.03 acres of intermittent stream. Intermittent streams are linear features that have indicators of OHWM and within which water flows during certain times of the



year, fed by groundwater. One intermittent stream, Colgan Creek Flood Control Channel, intersects a small portion of the Study Area. The Colgan Creek Flood Control Channel is a tributary of Laguna de Santa Rosa (a permanent water source) which has direct connectivity to Mark West Creek and Russian River (a Traditional Navigable Water, TNW). Colgan Creek flows east to west, has a predominantly sedimented bed and bank with some cobble-size rocks. Standing water was present within the channel during site visits, however flow was marginal and standing water was below the OHWM; varying between approximately six and 10 feet in width. Riparian and in-channel vegetation exists within and along the intermittent stream. In-channel and riparian understory vegetation is dominated by poison hemlock and Himalayan blackberry brambles. Riparian overstory vegetation is dominated by arroyo willow, red willow, northern black walnut, and valley oak.

## 5.2 Special-status Species

### 5.2.1 Special-status Plants

Based upon a review of the resource databases listed in Section 3.0, 110 special-status plant species have been documented in the vicinity (within the 9-quad database search) of the Study Area. Thirteen of these plants have a moderate to high potential to occur in the Study Area. The remaining 96 species documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following reasons:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Study Area;
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Study Area;
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area;
- Associated natural communities (e.g., interior chaparral, woodlands) necessary to support the special-status plant species are not present in the Study Area;
- The Study Area is geographically isolated (e.g. below elevation, coastal environ) from the documented range of the special-status plant species.

One special-status plant species, Sebastopol meadowfoam was observed during focused special-status plant surveys in 2024. The remaining eleven species with moderate potential were not observed during the six site visits, and therefore, were determined absent from the Study Area. All species with the potential to occur are listed below and described in Appendix C.

### 5.2.2 Special-status Wildlife

Dozens of special-status wildlife species have been documented in Sonoma County (CDFW 2024a). Due to the distance of the Study Area from the ocean, obligate marine species were considered to have no potential to occur and are not discussed further. Eight special-status wildlife species have a moderate to high potential to occur in the Study Area. The remaining special-status wildlife species are unlikely or have no potential to occur due to one or more of the following reasons:



- Aquatic habitats (e.g., rivers, estuaries, vernal pools) necessary to support the species are not present in the Study Area;
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary to support the species are not present in the Study Area;
- Physical structures and vegetation (e.g., mines, old-growth coniferous trees) necessary to provide nesting, cover, and/or foraging habitat to support the species are not present in the Study Area;
- Host plants necessary to provide larval and nectar resources for the species are not present in the Study Area;
- The Study Area is outside (e.g., north of, west of) the species documented range of occurrence.

No special-status species have been documented to occur in the Study Area. The following special-status wildlife were determined to have a moderate or high potential to occur in the Study Area based on evaluation of the habitat in and near the Study Area and review of literature and databases. Species that were determined to have no potential or are unlikely to occur in the Study Area are not discussed further here, except for those species that require special consideration due to a high level of protection. For further discussions of species determined to have no potential or unlikely to occur, see Appendix C.

#### **SPECIAL-STATUS WILDLIFE WITH THE POTENTIAL TO OCCUR, BUT PRESENCE UNKNOWN**

##### ***American badger (*Taxidea taxus*). CDFW Species of Special Concern. Moderate Potential.***

The American badger is a large, semi-fossorial member of the Mustelidae (i.e., weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species tend to be large, depending on the habitat available; population density averages one badger per square mile in prime open country.

No evidence of badger was detected during the site visit. However, the species is documented to occur nearby and in open habitats in the region. Section 7 of this document includes recommendations for avoiding impacts to badgers.

##### ***Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority. Moderate Potential.***

Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented within snags and basal hollows of conifers, and within bole cavities in oak trees. Pallid bats are primarily insectivorous,



feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2021). Trees within the Study Area (primarily oaks) may contain cavities or snags suitable for day roosting by this species. The structures within the Study Area did not show any evidence of bat occupation (urine stains, fecal material etc.), however, these areas may become occupied in the future.

Due to the presence of trees that may support pallid bat, it was determined that pallid bat has a moderate potential to occur in the Study Area. Recommendations to avoid impacts to pallid bats and bat maternity roosts are described in Section 7 of this assessment.

***Western red bat (*Lasiurus blossevillii*), CDFW Species of Special Concern, WBWG High Priority. Moderate Potential (Presence Unknown).***

This species is highly migratory and broadly distributed, ranging from southern Canada through much of the western United States. Western red bats are believed to make seasonal shifts in their distribution, although there is no evidence of mass migrations (Pierson et al. 2006). They are typically solitary, roosting primarily in the foliage of broad-leafed trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly in association with riparian trees (particularly willows, cottonwoods, and sycamores; Pierson et al. 2006). It is believed that males and females maintain different distributions during pupping, where females take advantage of warmer inland areas and males occur in cooler areas along the coast. Trees within the Study Area are potentially suitable for roosting. A targeted bat habitat assessment was not performed as a component of this assessment. The Study Area includes trees that may support roosting. Recommendations to avoid impacts to western red bats and bat maternity roosts are described in Section 7 of this assessment.

***Long-legged myotis (*Myotis volans*), WBWG High Priority. Moderate Potential.***

The long-legged myotis ranges across western North America from southeastern Alaska to Baja California and east to the Great Plains and central Texas. This species is usually found in coniferous forests, but also occurs seasonally in riparian and desert habitats. They use abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark and hollows within snags as summer day roosts. Caves and mines are used as hibernation roosts. Long-legged myotis forage in and around the forest canopy and feed on moths and other soft-bodies.

Due to the presence of trees that may support long-legged myotis, it was determined that this species has a moderate potential to occur in the Study Area.

***Burrowing owl (*Athene cunicularia*). CDFW Species of Special Concern. Moderate Potential.***

This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in northern California, it is typically found in close association with California ground squirrels (*Otospermophilus beecheyi*). Man-made substrates such as pipes or debris piles may also be occupied in place of burrows. Few ground squirrel burrows were observed within the Study Area. A debris pile is present adjacent to the access road, which may provide refugia for burrowing owl. Nesting has not been documented in the vicinity of the Study Area, and owls are only likely to use the area for migration stopovers or potentially overwintering.



Wintering occurrences of this species are documented within the 9-quad CNDDDB database search (CDFW 2024b) for the site. Breeding within the Study Area is considered unlikely based on available literature, review of the CNDDDB and eBird. The presence of tall vegetation throughout most of the site decreases the likelihood that owls may occur. However, because suitable refugia is present (though limited) and the Study Area is within this species' range, burrowing owl has a moderate potential to occur. Recommendations to avoid impacts to burrowing owl, are described in Section 7 of this assessment.

***White-tailed kite (Elanus leucurus). CDFW Fully Protected Species. Moderate Potential.***

White-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. The Study Area provides suitable year-round habitat for white-tailed kites, including a few trees that are suitable for nesting and open areas in close proximity for foraging.

Due to the presence of suitable nesting habitat, suitable foraging habitat and white-tailed kite's prevalence in the area, it was determined that it has moderate potential to occur in the Study Area. Recommendations to avoid impacts to white-tailed kite and nesting birds in general, are described in Section 7 of this assessment.

***Northwestern pond turtle. CDFW Species of Special Concern. Moderate Potential.***

The northwestern pond turtle is the only freshwater turtle native to this part of California. This species is highly aquatic, typically inhabiting perennial waters including lakes, ponds/reservoirs, rivers, streams, and canals that provide submerged cover and suitable exposed basking structures such as rocks, logs and mats of emergent vegetation. Nesting usually occurs in spring to early summer, with eggs hatching in the fall; nests are excavated in upland areas with friable soil, usually on unshaded slopes within approximately 300 feet of water (Thomson et al. 2016). Hatchlings require shallow water with relatively dense emergent and aquatic vegetation to provide forage, usually aquatic invertebrates (Thomson et al. 2016). The Study Area provides intermittent aquatic habitat (stream and swale and wetland features) that may offer seasonal foraging opportunities for adult pond turtles if they are moving across the landscape between more suitable habitats. It is unlikely that nesting would occur within the Study Area because aquatic features on the site are not perennial and therefore unlikely to support hatchlings, which must find their way to water for foraging. There is a recent CNDDDB occurrence approximately 2.6 aerial miles northwest of the Study Area (CDFW 2024b).

***Sonoma County distinct population segment of the California tiger salamander (Ambystoma californiense), Federal Endangered, State Threatened. High Potential.***

The California tiger salamander, (*Ambystoma californiense*; CTS) is a large terrestrial salamander restricted to grasslands and low-elevation foothill regions in California (generally under 1500 feet) where it uses seasonal aquatic habitats for breeding. This salamander breeds in natural ephemeral pools, or ponds that mimic ephemeral pools (e.g., stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. Larval CTS require at least 10-

12 weeks to complete their larval stage, so pools must be inundated for at least this long for them to support successful CTS recruitment. CTS spend most of their life in grasslands surrounding breeding pools, surviving hot, dry summers by living underground in burrows such as those created by ground squirrels, gophers or other mammals. Individuals may also use deep cracks or holes in the ground where the soil atmosphere remains near the water saturation point of breeding pools. During wet periods, CTS may emerge from refugia and feed in the surrounding grasslands.

A data search of the California Natural Biodiversity Database (CDFW 2024) revealed several occurrences of this species near the Study Area. There are no substantial barriers that would preclude CTS from using upland refugia in the Study Area.

During the 2024 site visit, several burrows that could provide suitable refugia for CTS were detected. Ground-dwelling mammals are essential to create the burrows that CTS are dependent upon, and their presence immediately adjacent to documented breeding sites and adult occurrences establishes that habitat in the Study Area is adequate to support CTS. Based on these observations, the Study Area has high potential to support upland dwelling CTS.

Aquatic features in the Study Area that would have the potential to be inundated long enough for CTS to complete its larval stage (~10-12 weeks) in most years are limited to two features, at most. All observed features were very shallow. During the April, 2024 site visit, very little surface water was observed, including in the potential wetlands. Though aquatic habitats suitable to support CTS breeding are rare and may be absent on the site, CTS have potential to disperse from nearby documented breeding sites.

### **5.2.3 Critical Habitat and Essential Fish Habitat**

The Study Area is within designated critical habitat for CTS (the “Santa Rosa Plain Unit”; USFWS 2016). Further discussion of CTS critical habitat is included in Section 7 of this assessment.

Essential Fish Habitat for coho and chinook salmon is present in the Study Area. Critical habitat for Coho, Chinook, and steelhead are also present. These are discussed further in Section 7 of this assessment.

## **5.3 Wildlife Corridors and Native Wildlife Nursery Sites**

A review of the California essential connectivity Project (CDFW 2024b) showed that the Study Area is not located within areas previously identified as an essential connectivity area, core reserve or corridor, landscape block, or general wildlife corridors identified in the BIOS system. Common wildlife species may occasionally transit through the site or forage within it. CTS may traverse the site during migrations from upland areas to breeding sites. Colgan Creek has connectivity to the Pacific Ocean through the Russian River and has its headwaters on Taylor Mountain. If anadromous fish are able to navigate potential barriers upstream and downstream from the Study Area, Colgan Creek could serve as a corridor for salmonids. No significant nursery sites are present in the Study Area.

## **6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA**



Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of potential project impacts for CEQA purposes. For the purposes of this analysis, a “substantial adverse effect” is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may be considered less than significant if those impacts are speculative, beneficial, de minimis, and/or would not affect the resiliency of a local population.

## 7.0 IMPACTS AND MITIGATION EVALUATION

Using the CEQA analysis methodology outlined in Section 6.0 above, the following section describes potential significant impacts to sensitive resources within the Study Area as well as suggested mitigation measures which are expected to reduce impacts to less than significant. Figure 4 depicts the proposed Project at its current level of design, which is early in the process and reflects the proposed concept.

### 7.1 Special-status Species

This section analyzes the Project’s potential impacts and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

*Does the project have the potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate,*



*sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service?*

Potential impacts and mitigation for potentially significant impacts are discussed below.

### 7.1.1 Special-status Plants

One special-status plant species, Sebastopol meadowfoam (FE, SE, CRPR 1B) was observed during site visits in 2023 and 2024 during focused rare plant surveys.

Impacts to special-status plant species are considered a **potentially significant impact** under CEQA. Therefore, if these species are present on-site during construction and are impacted by the Project, this is a potentially significant impact.

**Potential Impact BIO-1:** The proposed Project could result in direct mortality of special-status plant species during implementation, which may be considered a significant impact.

To reduce potential impacts to listed species to a less-than-significant level, the following measures shall be implemented:

**Mitigation Measure BIO-1:** A total of six site visits following the methods for protocol-level surveys have been conducted, with one each occurring in March, April, and May 2023/2024 within the Study Area to determine the presence and extent of special-status plants. These surveys constitute a full two-year survey protocol for listed plants on the Santa Rosa Plain. To avoid impacts to special-status plants, the extent of habitat occupied by special status plants shall be demarcated in the field during the year of construction and avoided. In the unlikely event that the Project cannot avoid special-status plants, they shall be mitigated for. Mitigation for impacted state and federal-listed plants shall be completed through purchase of mitigation credits from an approved bank at a ratio of no less than 1.5:1 or equivalent permittee responsible mitigation authorized by the CDFW and USFWS.

For non-listed special status plants, the above noted surveys determined the extent of occurrence for non-listed special-status plants as well, with none being documented within the Study Area. No mitigation for non-listed plants is required.

Habitat mitigation for listed species, if applicable, shall be obtained either through a conservation easement over suitable habitat and managed to maintain habitat for the species or through purchase of credits at an approved conservation bank.

### 7.1.2 Special-status Wildlife and Nesting Birds

The Study Area has the potential to support eleven special-status wildlife species and a variety of non-status bird species with baseline protections under the MBTA and CFGC. The Study Area and its immediate surroundings may contain breeding habitat for CTS in the form of wetland swales and does contain potential upland refugia for CTS. The Study Area is within the known dispersal distance of several documented CTS occurrences, including a breeding occurrence located north of the Study Area. The following measures are recommended to avoid or otherwise minimize potential impacts to these species.



## SPECIAL-STATUS BATS

**Potential Impact BIO-2:** Special-status bats have the potential to occur within the Study Area (pallid bat, western red bat, and long-legged myotis). Trimming of trees during the bat maternity season (generally, April through August) could result in disturbance to maternity roosting bats, resulting in mortality and/or loss of roost sites. Mitigation measures to reduce impacts to special-status bat species and maternity roosts of common bat species are provided below.

To reduce potential impacts to listed species to a less-than-significant level, the following measures shall be implemented:

**Mitigation Measure BIO-2:** Any tree removal or trimming shall be performed from September through March, outside of the general bat maternity season. If tree removal or building demolition during this period is not feasible, a bat roost survey shall be performed by a qualified biologist no more than 14 days prior to tree removal and/or trimming to determine if bats are present in the trees. If no roosting bats are detected, then no further study is warranted. If bat maternity roosts are detected, then roost trees shall be avoided until the end of the maternity roosting season. Irrespective of time of year, all felled trees shall remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.

## SPECIAL-STATUS AND NESTING BIRDS

**Potential Impact BIO-3:** Two special-status bird species, (white-tailed kite and burrowing owl) and a variety of non-status bird species with baseline protections under the MBTA and CFGC may use areas within the Study Area for nesting. Project activities may result in the abandonment or direct removal of occupied nests which is a potentially significant impact.

To reduce potential impacts to listed species to a less-than-significant level, the following measure shall be implemented:

**Mitigation Measure BIO-3A:** If possible, tree/vegetation removal and initial ground disturbance shall occur from September 1 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey shall be performed by a qualified biologist no more than 7 days prior to the initiation of tree removal or ground disturbance. The survey shall cover the Study Area (including tree removal areas) and surrounding areas within 500 feet except where precluded by property access. If active bird nests are found during the survey, an appropriate no-disturbance buffer shall be established by the qualified biologist. The buffer will be dependent on species and type of disturbance but will be no less than 50 feet for common passerines, 500 feet for raptors and 250 feet for listed/fully protected species. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer shall be lifted and work shall be initiated within the buffer. If disturbance of an area covered by a bird survey will begin more than 7 days after the nesting bird survey is completed, the survey will be repeated to ensure that no new nests have been constructed in the interim period



between the completion of the survey and construction activities that could affect nesting.

**Mitigation Measure BIO-3B:** To reduce potential impacts to burrowing owls to less than significant, if initial ground disturbance occurs on any part of the site between September 1 and January 31 (wintering season), a preconstruction habitat assessment shall be conducted by a qualified biologist with at least 2 years of experience in implementing burrowing owl habitat assessments and surveys as described in the 2012 Staff Report on Burrowing Owl Mitigation (2012 Staff Report; CDFG 2012). Habitat assessments shall be conducted within 30 days of initiation of ground disturbing activity. If habitat for burrowing owl is detected, follow-up surveys for burrowing owls, in accordance with the 2012 Staff Report shall be conducted within 7 days of the initiation of ground disturbing activities and repeated within 24 hours of initiation of ground disturbing activities. The survey area shall include all areas with potential to support burrowing owl on the site and in adjacent areas (up to 500 meters), where access is granted. If burrowing owls are found to be occupying the site, they shall be avoided to the extent necessary to avoid having them abandon the site until they leave the site on their own, as determined by a qualified biologist using the criteria described in the 2012 Staff Report. If an avoidance buffer is established, the size of the buffer and criteria used to establish it shall be submitted to CDFW and may be increased or decreased in size based on the behavior of the owls. If avoidance is not feasible and eviction is necessary, an eviction plan shall be submitted to CDFW and shall not be implemented until approved. The relocation plan shall include mitigation for loss of wintering burrowing owl habitat and foraging habitat for burrowing owl will be compensated for at a 1:1 ratio through purchase of lands equivalent or superior to the foraging habitat on the site.

## CALIFORNIA TIGER SALAMANDER

**Potential Impact BIO-4:** CTS was determined to have potential to occur in the Study Area and the Study Area is mapped as Critical Habitat for the species. If CTS are present, the proposed Project would temporarily affect potentially occupied upland habitat utilized by the species and construction may result in injury or mortality to individual CTS on the site. CTS is listed by both the ESA and CESA and take of CTS is a potentially significant impact under CEQA.

To reduce potential impacts to CTS to a less-than-significant level, the following measure shall be implemented:

**Mitigation Measure BIO-4** Based upon the Santa Rosa Plain Conservation Strategy's criteria for linear projects that result in temporary impacts, the appropriate ratio for habitat mitigation within the Study Area shall be 1:1. Mitigation bank credits shall be purchased from an accredited bank or mitigated through permittee responsible mitigation, with approval of the USFWS and CDFW. Take of individual CTS shall be mitigated to less than significant levels through the issuance of federal and state authorization, pursuant to the ESA and CESA, respectively. The following measures will be implemented pursuant to these authorizations to minimize the potential for take of CTS:

1. **MM BIO-4A: Wildlife Exclusion Fencing (WEF).** Prior to the start of construction, WEF will be installed at the edge of the Project footprint in all areas where Sonoma County



California tiger salamanders could enter the construction area where ground disturbance will occur (work areas). WEF will include exit ramps or funnels, and coverboards spaced at least every 150 feet along the perimeter of the fence to allow CTS to leave the work areas and find refuge along the outer portion of the fence.

The location of the fencing shall be determined by the onsite project manager and the Service-approved biologist in cooperation with the USFWS prior to the start of staging or surface disturbing activities. A conceptual fencing plan shall be submitted to the Service for review and approval prior to WEF installation. The location, fencing materials, installation specifications, and monitoring and repair criteria shall be approved by the Service prior to start of construction. The applicant shall include the WEF specifications on the final project plans. The applicant shall include the WEF specifications including installation and maintenance criteria in the bid solicitation package special provisions. The WEF shall remain in place throughout the duration of the Project and shall be inspected weekly and fully maintained. Repairs to the WEF shall be made within 24 hours of discovery. Upon Project completion the WEF shall be completely removed, the area cleaned of debris and trash, and returned to natural conditions.

An exception to the foregoing fencing measure is that for work sites where the duration of work activities is very short (e.g., 3 days or less) and during the dry season. If installation will result in more ground disturbance than Project activities, then the boundaries and access areas and sensitive habitats may be staked and flagged by the biological monitor prior to disturbance and species monitoring would occur during all Project activities at that site.

2. **MM BIO-4B: Relocation Plan.** The Applicant shall prepare and submit a Relocation Plan for the USFWS's and CDFW's written approval. The Relocation Plan shall be consistent with the Guidelines for the relocation of California tiger salamanders (*Ambystoma californiense*) (Shaffer et. al. 2008). The Relocation Plan shall contain the name(s) of the Service-approved biologist(s) to relocate Sonoma County California tiger salamanders, method of relocation (if different than Mitigation Measure BIO-4C below), a map, and description of the proposed release site(s) and burrow(s), and written permission from the landowner to use their land as a relocation site. At various times, a conservation bank may be a desired location to relocate Sonoma County California tiger salamanders from a salvage site; however, no conservation bank may receive relocated Sonoma County California tiger salamanders until all the bank's credits have been sold to prevent interfering with their performance criteria and credit release schedule.
3. **MM BIO-4C: Protocol for Species Observation, Handling, and Relocation.** Only USFWS-approved biologists shall participate in activities associated with the capture, handling, relocation, and monitoring of Sonoma County California tiger salamanders. If a Sonoma County California tiger salamander is encountered, work activities within 50 feet of the individual shall cease immediately and the Onsite Project Manager and Service-approved biologist shall be notified. Based on the professional judgment of the Service-approved biologist, if Project activities can be conducted without harming or injuring the individual(s), it may be left at the location of discovery and monitored by the Service-approved biologist. All Project personnel shall be notified of the finding and at no time shall work occur within 50 feet of the Sonoma County California tiger salamander without



a Service-approved biologist present. If relocation of the species to another site has been approved by the Service and CDFW prior to the start of the Project, the following steps shall be followed:

- i. Prior to handling and relocation, the Service-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (Service 2003). Disinfecting equipment and clothing is especially important when biologists are coming to the Action Area to handle amphibians after working in other aquatic habitats. Sonoma County California tiger salamanders shall also be handled and assessed according to the Restraint and Handling of Live Amphibians (USGS National Wildlife Health Center 2001).
  - ii. Sonoma County California tiger salamanders shall be captured by hand, dipnet, or other Service-approved methodology, transported, relocated, and released as soon as practicable the same day of capture. Individuals should be relocated to areas with one or more potential breeding pools and an active burrow system (unless otherwise with written approved by the Service). The Service shall be notified within 24 hours of all capture, handling, and relocation efforts.
  - iii. If an injured Sonoma County California tiger salamander is encountered and the Service-approved biologist determines the injury is minor or healing and the salamander is likely to survive, the salamander shall be released as soon as possible, in accordance with the Service-approved Relocation Plan. The relocated Sonoma County California tiger salamander shall be monitored until it is determined that it is not threatened by predators or other dangers.
  - iv. If the Service-approved biologist determines that the Sonoma County California tiger salamander has serious injuries as a result of Project-related activities the Service-approved biologist shall immediately take it to a licensed veterinarian, the Sonoma County Wildlife Rescue, or another Service-approved facility. If taken into captivity the individual shall remain in captivity and not be released into the wild unless it has been kept in quarantine and the release is authorized by the Service. The Applicant shall bear any costs associated with the care or treatment of such injured individuals. The circumstances of the injury, the procedure followed, and the final disposition of the injured animal shall be documented in a written incident report.
  - v. Notification to the Service of an injured or dead Sonoma County California tiger salamander in the Action Area will be made within 2 calendar days of the finding. Written notification to the Service shall include the following information: the species, number of animals taken or injured, sex (if known), date, time, location of the incident or of the finding of a dead or injured animal, how the individual was taken, photographs of the specific animal, the names of the persons who observe the take and/or found the animal, and any other pertinent information. Dead specimens will be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen.
4. **MM BIO-4D: Biological Monitors.** Qualified biological monitor(s) will be on site each day during all initial earth moving activities. The biological monitor(s) shall conduct clearance surveys at the beginning of each day and regularly throughout the workday when
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construction activities are occurring that may displace, injure, or kill Sonoma County California tiger salamanders through contact with workers, vehicles, and equipment. All aquatic and upland habitat including refugia habitat such as small woody debris, refuse, burrow entries, etc., shall be duly inspected. Where feasible and only on a case-by-case basis, rodent burrows and other ground openings suspected to contain Sonoma County California tiger salamanders that would be destroyed from Project activities may be carefully excavated with hand tools. Pre-soaking the area prior to ground disturbance may also increase emergence of the species for translocation. The Service will consider the implementation of specific Project activities without the oversight of an on-site biological monitor on a case-by-case basis.

Before the start of work each day, the biological monitor will check for animals under all equipment such as vehicles and stored pipes. The biological monitor will check all excavated steep-walled holes or trenches greater than one foot deep for any Sonoma County California tiger salamanders. Sonoma County California tiger salamanders will be removed by the biological monitor and relocated according to the Relocation Plan. To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar materials) that leave no entry gaps at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. The Service-approved biologist shall inspect all holes and trenches at the beginning of each workday and before such holes or trenches are filled. All replacement pipes, culverts, or similar structures stored in the Project footprint overnight will be inspected before they are subsequently moved, capped, and/or buried.

5. **MM BIO-4E: Biological Monitoring Records.** The biological monitor(s) shall maintain monitoring records that include: (1) the beginning and ending time of each day's monitoring effort; (2) a statement identifying the listed species encountered, including the time and location of the observation; (3) the time the specimen was identified and by whom and its condition; (4) the capture and release locations of each individual; (5) photographs and measurements (snout to vent and total length) of each individual; and (6) a description of any actions taken. The biological monitor(s) shall maintain complete records in their possession while conducting monitoring activities and shall immediately provide records to the Service upon request. All monitoring records shall be provided to the Service within 30 days of the completion of monitoring work.
  
6. **MM BIO-4F: Work Windows.** Ground disturbance will be conducted between April 15 and October 15, of any given year, depending on the level of rainfall and/or site conditions. However, grading, and other disturbance in pools and ponds, if unavoidable, shall be conducted only when dry, typically between June 15 and October 15. Work within a pool or wetland may begin prior to June 15 if the pool or wetland has been dry for a minimum of 30 days prior to initiating work. Any work in pools and wetlands that are holding water shall be subject to approval of the Service. If work must continue when rain is forecast (greater than 40 percent chance of rain), a Service-approved biologist(s) shall survey the Project site before construction begins each day rain is forecast. If rain exceeds 0.5 inches during a 24-hour period, work shall cease until National Weather Service forecasts no further rain. This restriction is not applicable for areas within 1.3



miles of potential or known Sonoma County California tiger salamander breeding sites once the Applicant encircles the site with Wildlife Exclusion Fencing.

7. **MM BIO-4G: Proper Use of Erosion Control Materials.** Plastic or synthetic monofilament netting will not be used in order to prevent Sonoma County California tiger salamanders from becoming entangled, trapped, or injured. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers. Following site restoration, any materials left behind as part of the restoration, such as straw wattles, should not impede movement of this species.
8. **MM BIO-4H: Wildlife Passage Improvement.** When constructing a road improvement, wherever possible, the Corps through the Applicant will enhance or construct wildlife passage for the Sonoma County California tiger salamander across roads, highways, or other anthropogenic barriers. This includes upland culverts, tunnels, and other crossings designed specifically for wildlife movement, as well as making accommodations in curbs, median barriers, and other impediments to terrestrial wildlife movement at locations most likely to provide a net benefit to wildlife.
9. **MM BIO-4I: Vegetation Removal.** A Service-approved biologist will be present during all vegetation clearing and grubbing activities. Grasses and weedy vegetation should be mowed to a height no greater than 6 inches prior to ground-disturbing activities. All cleared vegetation will be removed from the Project footprint to prevent attracting animals to the Project site. Prior to vegetation removal, the Service-approved biologist shall thoroughly survey the area for Sonoma County California tiger salamanders. Once the qualified biologist has thoroughly surveyed the area, clearing and grubbing may continue without further restrictions on equipment; however, the qualified biologist shall remain onsite to monitor for Sonoma County California tiger salamanders until all clearing and grubbing activities are complete.
10. **MM BIO-4J: Nighttime Activities.** Construction and ground disturbance will occur only during daytime hours to the extent feasible and will cease no less than 30 minutes before sunset and will not begin again prior to no less than 30 minutes after sunrise. Night lighting of Environmental Sensitive Areas should be avoided to the extent feasible. When work requiring equipment operation must occur at night, it will only occur within areas that have been excluded using a WEF. Inspections of the bypass pipe that occur on foot may take place outside the WEF by staff using flashlights that have been trained to identify and avoid CTS by the Service-approved biologist.
11. **MM BIO-4K: Trash.** All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day and removed from the site every three days.
12. **MM BIO-4L: Agency Access.** If verbally requested before, during, or upon completion of ground disturbance and construction activities, the Applicant will ensure the Service can immediately and without delay, access and inspect the Project site for compliance with the Project description, Conservation Measures, and reasonable and prudent measures of this programmatic biological opinion and appendage, and to evaluate Project effects to the Sonoma County California tiger salamander and its habitat.



## NORTHWESTERN POND TURTLE

**Potential Impact BIO-5:** NPT was determined to have potential to occur in the Study Area. If NPT are present during construction, this may result in injury or mortality to individual NPT on the site. NPT is proposed for listing under the Federal endangered species act and is a California species of special concern and take of NPT is a potentially significant impact under CEQA.

To reduce potential impacts to NPT to a less-than-significant level, the following measure shall be implemented:

**Mitigation Measure BIO-5:** Preconstruction Surveys. No more than twenty-four (24) hours prior to any work activities within the Study Area, a pre-construction survey for NPT will be conducted by a qualified biologist. The survey will consist of walking the Project limits and within the Study Area to ascertain the possible presence of the species. The qualified biologist will investigate all potential areas that could be used by NPT for feeding, breeding, sheltering, nesting, movement, and other essential behaviors. This includes an adequate examination of potential nest sites. If any adults, subadults, juveniles, are found, the NPT will be avoided. Any detected nests of NPT will be flagged and avoided until young have become independent of the nest. If NPT are detected within the Study Area at any time, a qualified biologist will be present to monitor for NPT in any areas within 300 feet of inundated aquatic features during construction activities that could harm NPT including vegetation removal, operation of vehicles off paved areas, and ground disturbing activities. No monitor will be required within areas that are encircled by a wildlife exclusion fence.

## AMERICAN BADGER

**Potential Impact BIO-6:** American badger was determined to have potential to occur in the Study Area. If badgers are present during construction, this may result in injury or mortality to individual badgers on the site. Due to its status as a CDFW species of special concern, injury or mortality to badgers may be considered a significant impact under CEQA.

To reduce potential impacts to American badger to a less-than-significant level, the following measure shall be implemented:

**Mitigation Measure BIO-6:** To avoid impacts to American badgers, within 14 days of commencement of ground disturbing activities, surveys for American badger will be conducted by a qualified wildlife biologist. If any active maternity dens are detected, these will be avoided by at least 100 feet until the dependent young are no longer present. If adult badgers without young are detected, they may be excluded from burrows and once burrows are determined to no longer house badgers, they can be collapsed. By implementing this measure, effects to American badger shall be mitigated to less than significant levels.



## 7.2 Sensitive Natural Communities and Land Cover Types

This section addresses the question:

*b) Does the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;*

**Potential Impact BIO-7:** One sensitive land cover type, riparian, is present within the Study Area. If the proposed Project results in the permanent removal of riparian habitat, then it may be considered a significant impact. The Project may result in temporary impacts to riparian habitat due to the need to trim and/or remove individual riparian species. If native plants are only trimmed, they will be allowed to revegetate naturally, and no permanent impact to riparian habitat would occur. The Project would implement Mitigation Measure BIO-7 pertaining to the removal of native species, which would ensure that no permanent loss of riparian habitat would occur.

To reduce potential impacts to riparian habitat to a less-than-significant level, the following measures shall be implemented:

**Mitigation Measure BIO-7:** The Project applicant shall replace any native plants that will be removed due to the Project, in kind, at a 1:1 ratio. If native plants are only trimmed, they will be allowed to revegetate naturally.

## 7.3 Aquatic Resources

This section analyzes the Project's potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the Corps or BCDC in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

*c) Does the Project have the potential to have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;*

**Potential Impact BIO-8.** The Study Area contains a small amount of wetlands that will be temporarily impacted by filling by the proposed Project and this may be considered a significant impact without mitigation. No permanent impacts are expected. Less than 0.5 acres of seasonal wetlands will be impacted, and as such a nationwide permit from the Corps will be required prior to any construction. The features are also within the jurisdiction of the RWQCB under the Porter-Cologne Act and State Water Policy guidelines.

To reduce potential impacts to listed aquatic resources to a less-than-significant level, the following measures shall be implemented:

**Mitigation Measure BIO-8:** A Nationwide permit from the Corps and a Water Quality Certification permit from the State Waterboard shall be obtained for the proposed impacts to wetlands. Mitigation measures outlined in the applicable permits shall be followed and shall be no less than 1:1 replacement of wetland acreage, if impacts are permanent. For temporary impacts, mitigation will consist of restoration of impacted



wetlands after construction to a condition equal to or better than the pre-project condition. Mitigation for impacts to seasonal wetlands may include, but are not limited to, off-site restoration, enhancement, creation, or purchase of credits at an approved mitigation bank.

## 7.4 Wildlife Corridors and Native Wildlife Nursery Sites

This section analyzes the Project's potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

*d) Does the Project have the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;*

Potential wildlife corridors are present within the Study Area. However, no impacts to wildlife corridors or native wildlife nursery sites are expected through the proposed Project because no work below the ordinary high-water mark of Colgan Creek will occur. Work that will occur in riparian areas of Colgan Creek will be limited to trimming of willows and short-term equipment operation during the dry season. The Project will take place over the course of one dry season, thereby minimizing the potential for barriers to migrating amphibians, including CTS. As such, no measures to protect wildlife corridors are required.

## 7.5 Local Policies and Ordinances

This section analyzes the Project's potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

*e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*

**Potential Impact BIO-9:** Oak trees are located within the Study Area (Figure 3-6, Sheet 5) that may be impacted due to the Project. Impacts to trees that are considered Protected/Heritage Trees under the City of Santa Rosa Tree Ordinance and Oak Woodland Ordinance may be considered a significant impact.

Impacts to oaks, other protected/heritage trees, and Oak Woodlands would be considered a significant impact, however the proposed construction is not anticipated to require removal of any protected or heritage trees within the Project Area or to affect Oak Woodlands. Any trimming of oak or other protected/heritage trees will be limited to a minor extent such that the trees' health and growing conditions will not be affected. Neither the rehabilitation of the existing trunk sewer line nor the temporary installation of above-ground HDPE pipeline and pump facilities will result in type conversion of oaks or Oak Woodlands, or woodland impacts to oaks or other trees protected under the City's Tree Ordinance and Oak Woodland Ordinance.

**Potential Impact BIO-10:** It is expected that approximately 0.10 acres of seasonal wetlands will be impacted by the Project. The Santa Rosa General Plan requires compliance with federal policy of no net loss of wetlands, using mitigation measures.

If impacts to seasonal wetlands will occur as a result of the Project, Mitigation Measure BIO-8 would be implemented to reduce impacts to a less-than-significant level.



## 7.6 Habitat Conservation Plans

This section analyzes the Project's potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

*f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The Study Area is not located within an area under an HCP. However, the Study Area is located within the Santa Rosa Plain Conservation Strategy area. Impacts to species listed in the Strategy is possible and mitigation measures BIO-1, BIO-4, BIO-7, are based on proposed mitigation measures outlined in the Strategy and shall address potential impacts to listed species. No conflicts to an HCP are expected through the proposed Project.



## 8.0 REFERENCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California, 2nd Edition. University of California Press, Berkeley, CA. 1568 pp.
- Best, C., J.T. Howell, W. & I. Knight, and M. Wells. 1996. A Flora of Sonoma County. California Native Plant Society, Sacramento, CA.
- California Department of Fish and Game (CDFG). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600–1607. Environmental Service Division, California Department of Fish and Game, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW). 2018a. Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities. California Natural Resources Agency, California Department of Fish and Game. March 20, 2018.
- California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database (CNDDDB), Wildlife and Habitat Data Analysis Branch. Sacramento, CA. Accessed: April 2024.
- California Department of Fish and Wildlife (CDFW). 2018b. California Natural Community List. Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento, CA. October 15, 2018.
- California Department of Transportation (CalTrans). 2010. California Essential Habitat Connectivity Project. Available at: <https://www.wildlife.ca.gov/conservation/planning>.
- California Invasive Plant Council (Cal-IPC). 2024. California Invasive Plant Inventory: Cal-IPC Publication 2006-2. California Invasive Plant Council, Berkeley, CA. Available online: <http://www.cal-ipc.org/ip/inventory/index.php>.
- California Native Plant Society (CNPS). 2001. CNPS Botanical Survey Guidelines. June 2, 2001.
- California Native Plant Society (CNPS). 2024a. Online Inventory of Rare, Threatened, and Endangered Plants of California. Available at: <http://www.rareplants.cnps.org/>. Accessed: April 2024.
- California Native Plant Society (CNPS). 2024b. A Manual of California Vegetation Online. Available at: <http://vegetation.cnps.org/>. Accessed April 2024.
- Conservation Strategy Team. 2005. Santa Rosa Plain Conservation Strategy. Final. December 1. Available at the Sacramento Fish and Wildlife Service Website: <https://www.fws.gov/sacramento/es/Recovery-Planning/Santa-Rosa/santa-rosa-strategy.php>
- Consortium of California Herbaria (CCH). 2024. Data provided by the participants of the Consortium of California Herbaria. Available at: <http://ucjeps.berkeley.edu/consortium>. Accessed: April 2024.

- Dunk, JR. 1995. White-tailed Kite (*Elanus leucurus*), The Birds of North America Online (A Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/178>.
- Jepson Herbarium. Jepson Flora Project (eFlora). 2024. Jepson eFlora Online at: <http://ucjeps.berkeley.edu/IJM.html>. Accessed: April 2024.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.
- Google Earth. 2024. Cotati Area. Image dates: 1952-2023. Accessed: April 2024.
- Historical Aerials. 2024. Available at: <http://historicalaerials.com>. Accessed: April 2024.
- Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA. 156 pp.
- Keeler-Wolf, T., D.R. Elam, K. Lewis, and S.A. Flint. 1998. California Vernal Pool Assessment Preliminary Report. The Resources Agency, California Department of Fish and Game, Sacramento, CA. 161 pp. with appendices.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. *Phytoneuron* 2016-30: 1-17.
- Martin, J.W. and M.K. Wicksten. Review and Redescription of the Freshwater Atyid Shrimp Genus *Syncaris* Holmes, 1900, in California. *Journal of Crustacean Biology* 24(3): 447-462.
- National Marine Fisheries Service (NMFS). 2024. Essential Fish Habitat Mapper. Available at: <https://www.habitat.noaa.gov/protection/efh/efhmapper/>. Accessed: April 2024.
- NatureServe. 2024. NatureServe Explorer: NatureServe Conservation Status. Available at: <http://www.natureserve.org/explorer/ranking#relationship>. Accessed: April 2024.
- Safford, H.D., J.H. Viers, and S.P. Harrison. 2005. Serpentine Endemism in the California Flora: A Database of Serpentine Affinity. *Madroño* 52(4): pp. 222-257.
- San Francisco Estuary Institute (SFEI). 2024. California Aquatic Resource Inventory (CARI). Available at: <http://www.sfei.org/cari#sthash.Mzz93W9i.dpbs>. Accessed: April 2024.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, 2nd Edition. California Native Plant Society in collaboration with California Department of Fish and Game. Sacramento, CA. 1300 pp.
- Shuford, W.D. and Gardali, T., eds. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. *Studies of Western Birds* 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Sonoma County. 2024. Sonoma County Vegetation and LiDAR Program: High Quality Data for Planning, Conservation, and Resource Management. Available at: <http://sonomavegmap.org/>. Accessed: April 2024.

Stebbins, RC. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition. Houghton Mifflin Company, Boston, MA and New York, NY.

Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. Co-published by the California Department of Fish and Wildlife and University of California Press. Oakland, California.

U.S. Army Corps of Engineers (Corps). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS. September 28, 2008.

U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS). 1978. Soil Survey of Sonoma County, California. In cooperation with the University of California Agricultural Experiment Station.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2024a. Climate Information for Sonoma County in the State of California. Available at: <http://www.wcc.nrcs.usda.gov/>. Accessed: April 2024.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2024b. List of Hydric Soils. Available at: <https://www.nrcs.usda.gov/>

U.S. Fish and Wildlife Service (USFWS). 1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain. Sacramento Fish and Wildlife Office, Sacramento, CA. September.

U.S. Fish and Wildlife Service (USFWS). 2011. Federal Register Final Rule: endangered and threatened wildlife and plants: revised designation of Critical Habitat for the Sonoma County Distinct Population Segment of California Tiger Salamander. Federal Register 76 (169): 54346-54372.

U.S. Fish and Wildlife Service (USFWS). 2020. Santa Rosa Plain Programmatic Biological Opinion. Available at [https://www.fws.gov/sacramento/es/Consultation/Programmatic-Consultations/Documents/COE\\_Santa\\_Rosa\\_CTS\\_and\\_plant\\_programmatic.pdf](https://www.fws.gov/sacramento/es/Consultation/Programmatic-Consultations/Documents/COE_Santa_Rosa_CTS_and_plant_programmatic.pdf). Accessed: April 2024.

U.S. Fish and Wildlife Service (USFWS). 2024a. National Wetlands Inventory. Available at: <http://www.fws.gov/wetlands/index.html>. Accessed: April 2024.

U.S. Fish and Wildlife Service (USFWS). 2024b. List of Federal Endangered and Threatened Species that Occur in Sonoma County, California. Available at: <https://ecos.fws.gov/ipac/>. Accessed: April 2024.

U.S. Geological Survey (USGS). 2021. Sebastopol, California 7.5-minute quadrangle topographic map.

Western Bat Working Group (WBWG). 2024. Species Accounts. Available at:  
[http://www.wbwg.org/speciesinfo/species\\_accounts/species\\_accounts.html](http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html).  
Accessed: April 2024.



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## APPENDIX A. FIGURES



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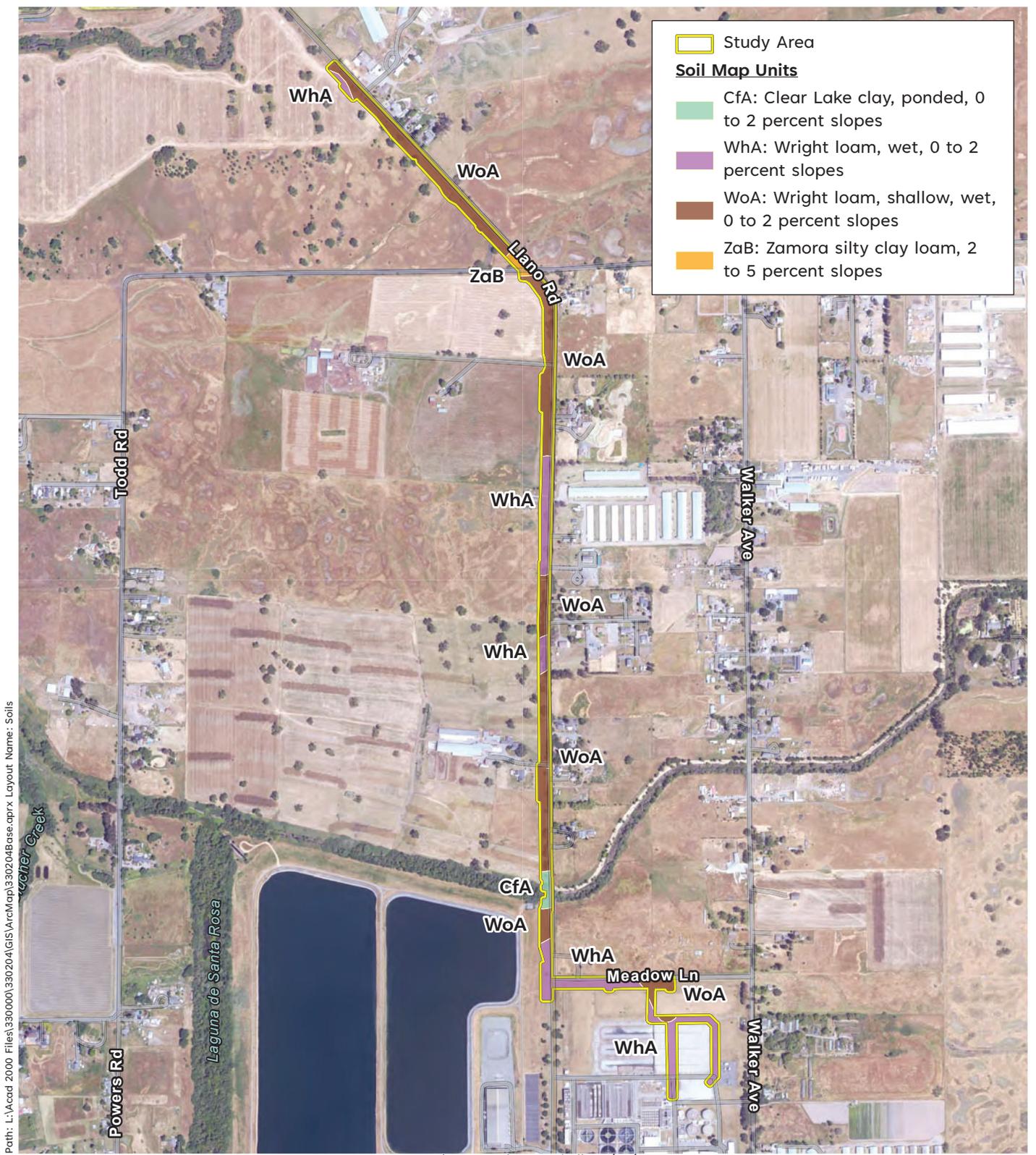


Sources: National Geographic, WRA | Prepared By: rochelle, 6/26/2024

Figure 1. Study Area Regional Location Map

Llano Road Pipeline Rehabilitation Project  
Sonoma County, California





**Figure 2. Soil Types within the Study Area**



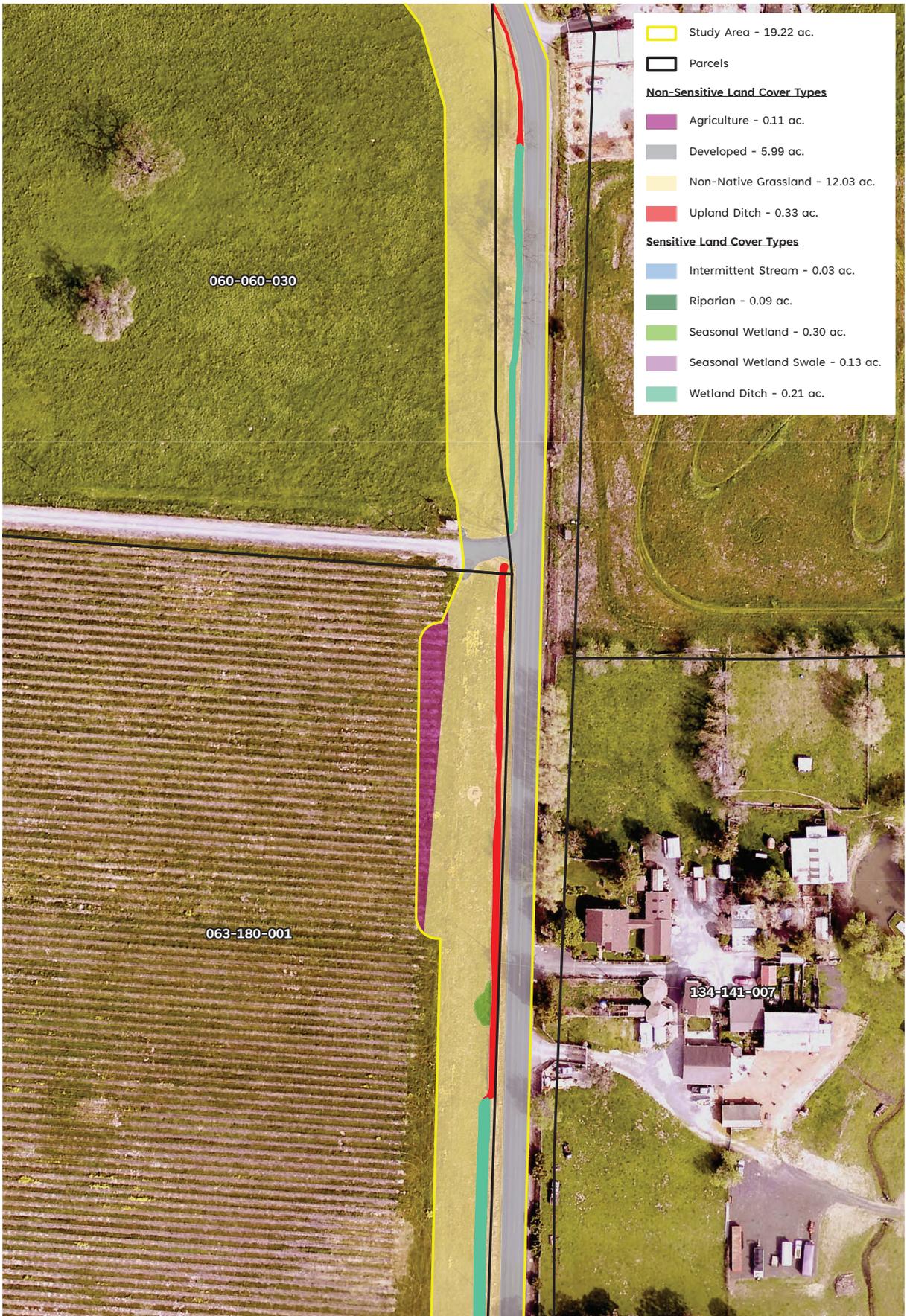


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Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 3-2. Natural Communities and Land Cover within the Study Area (Sheet 1)**



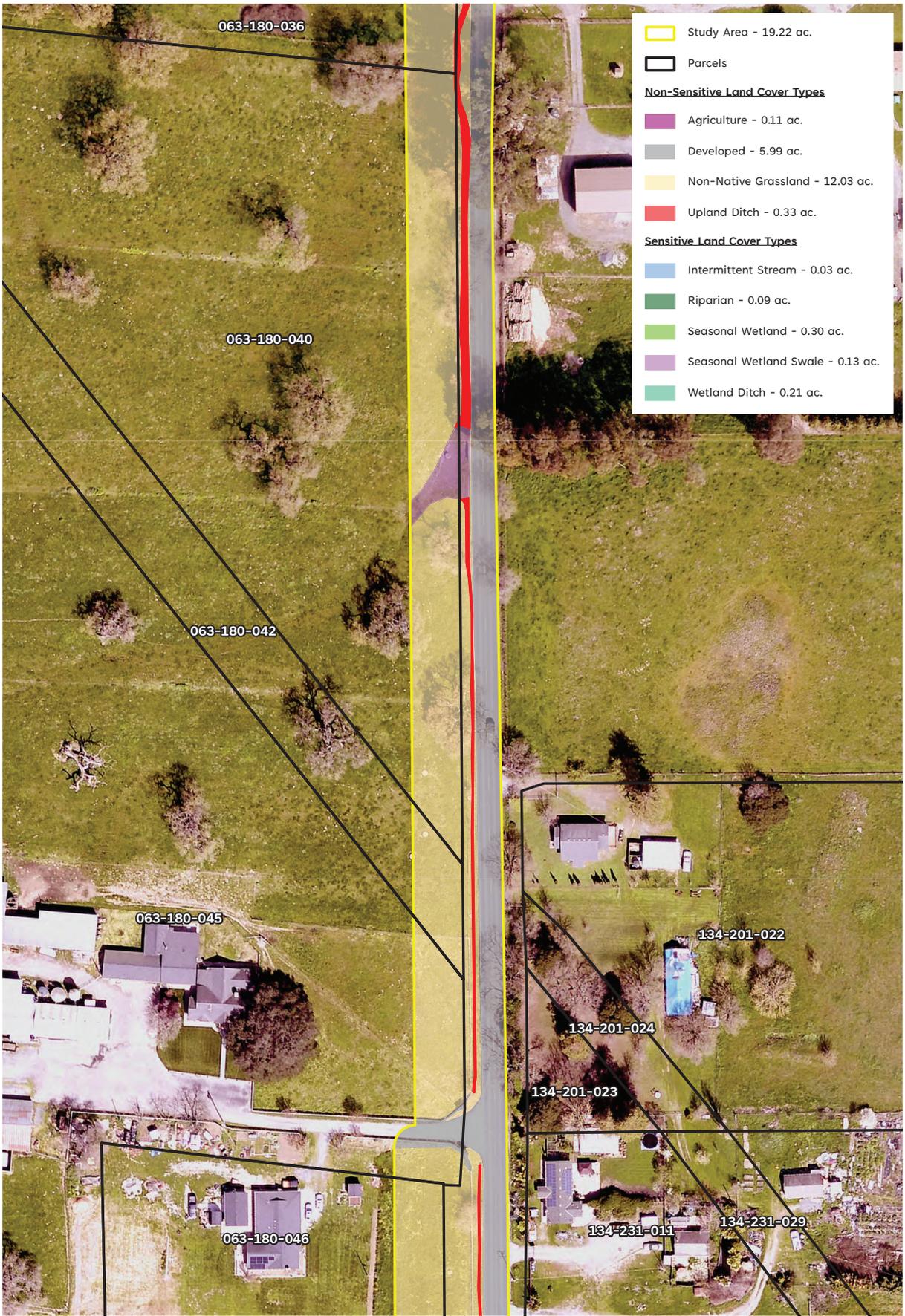


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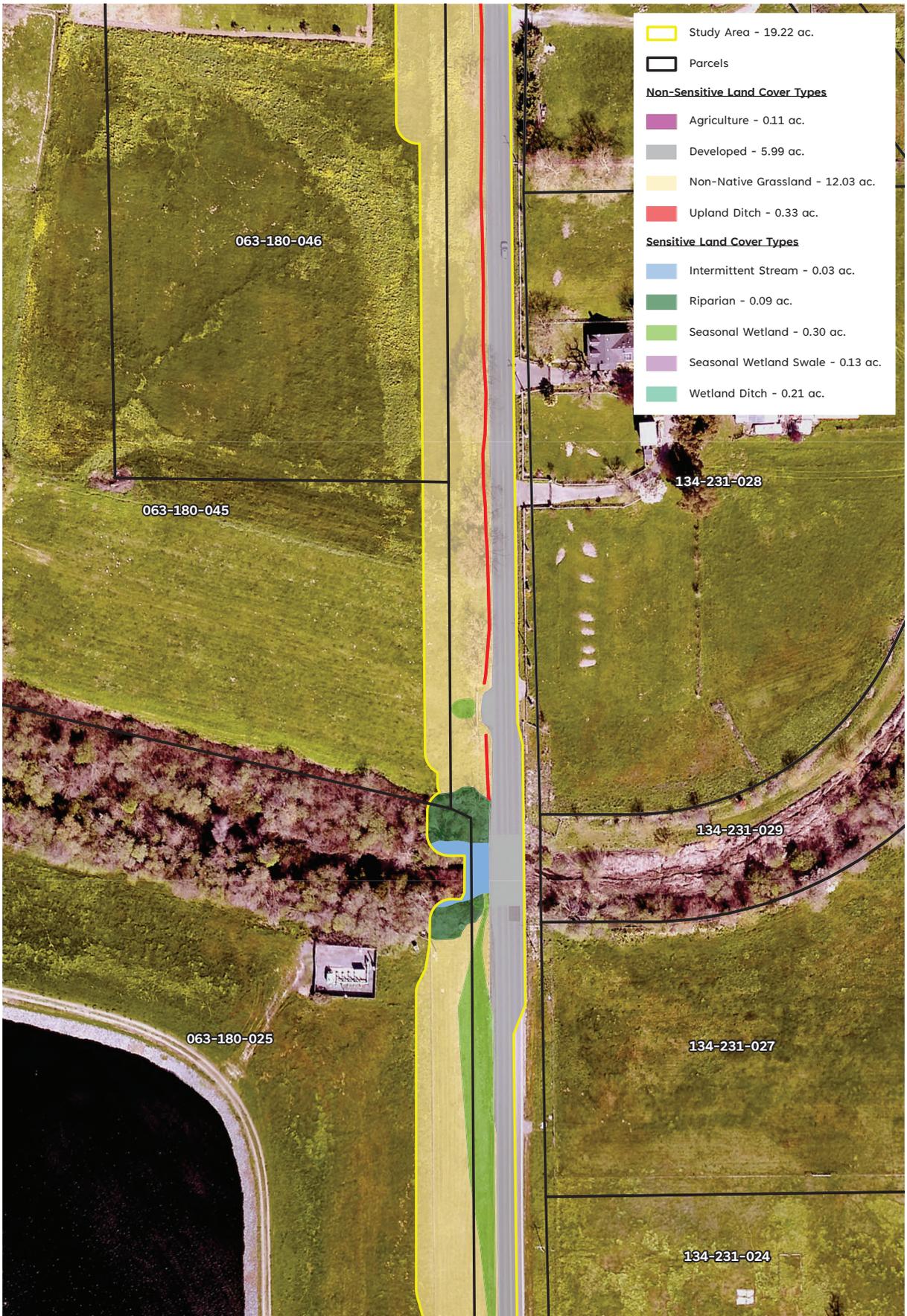
Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 3-4. Natural Communities and Land Cover within the Study Area (Sheet 3)**





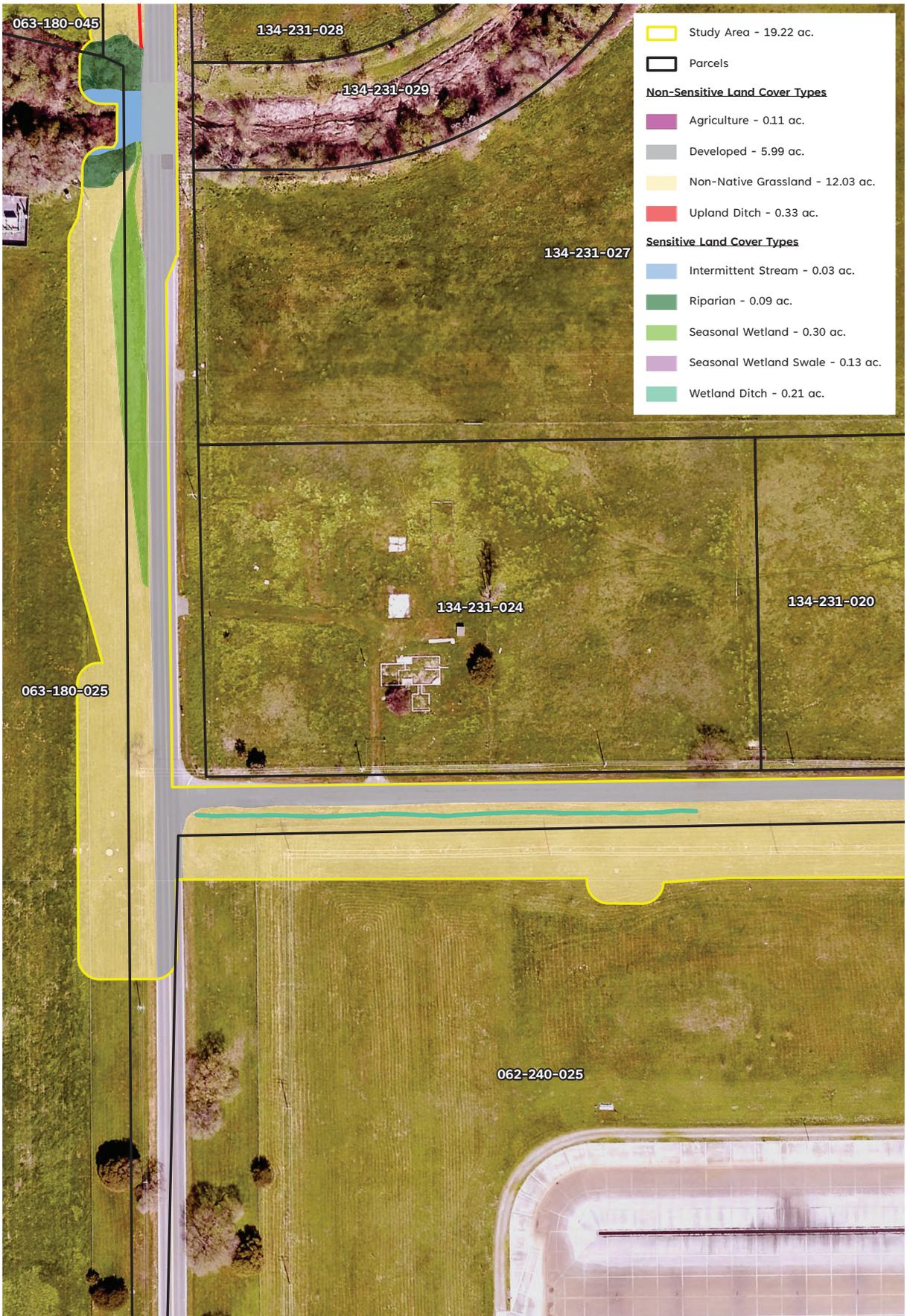
**Figure 3-6. Natural Communities and Land Cover within the Study Area (Sheet 5)**



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Sources: Sonoma County Imagery 2021, Sonoma County LIDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

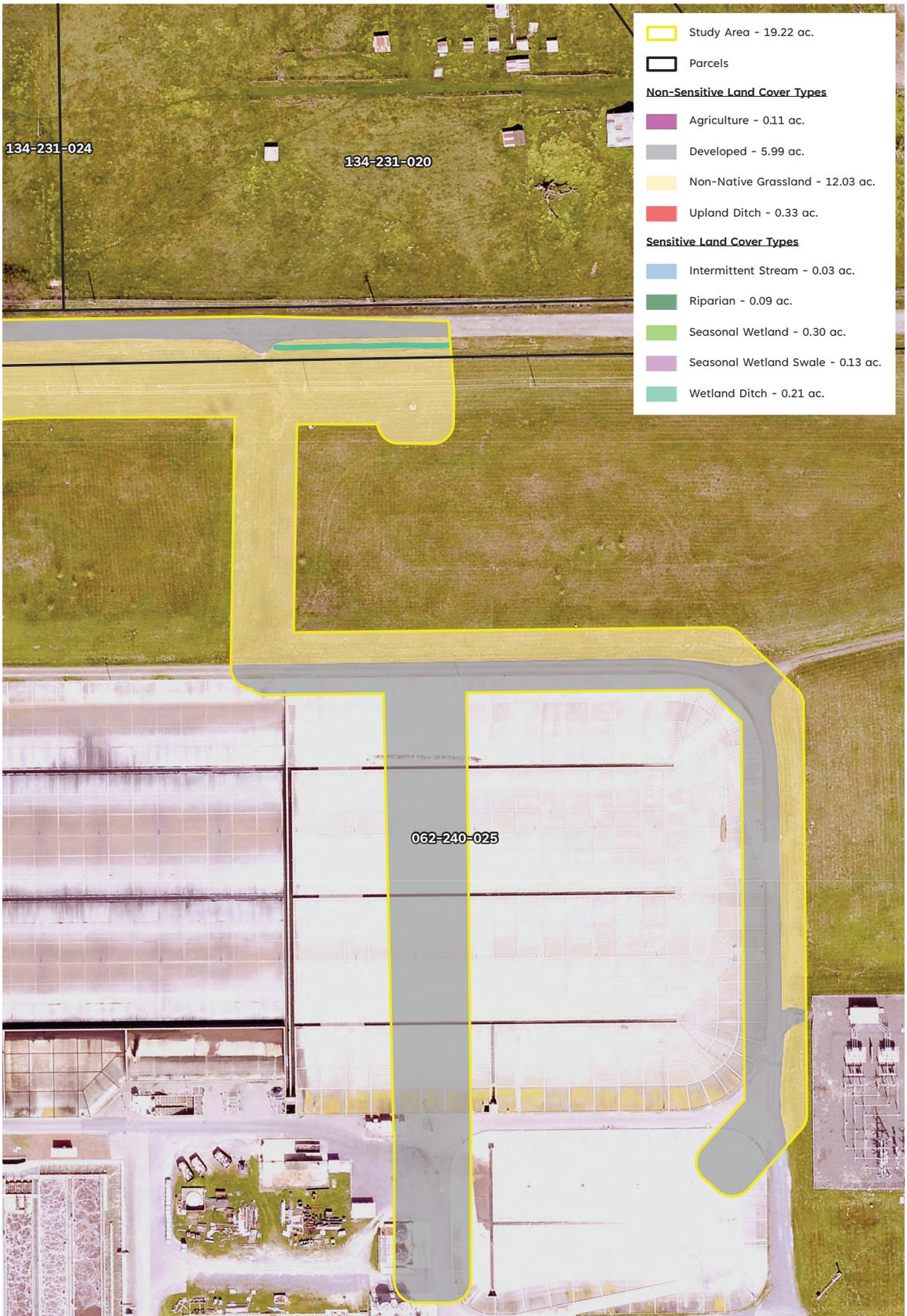
**Figure 3-7. Natural Communities and Land Cover within the Study Area (Sheet 6)**



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Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 3-8. Natural Communities and Land Cover within the Study Area (Sheet 7)**



Path: L:\Acad\_2000\_Files\33000\03\30204\615\AcMap\330204Base.aprx; Layout Name: Land Cover

Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 6/26/2024

**Figure 3-9. Natural Communities and Land Cover within the Study Area (Sheet 8)**



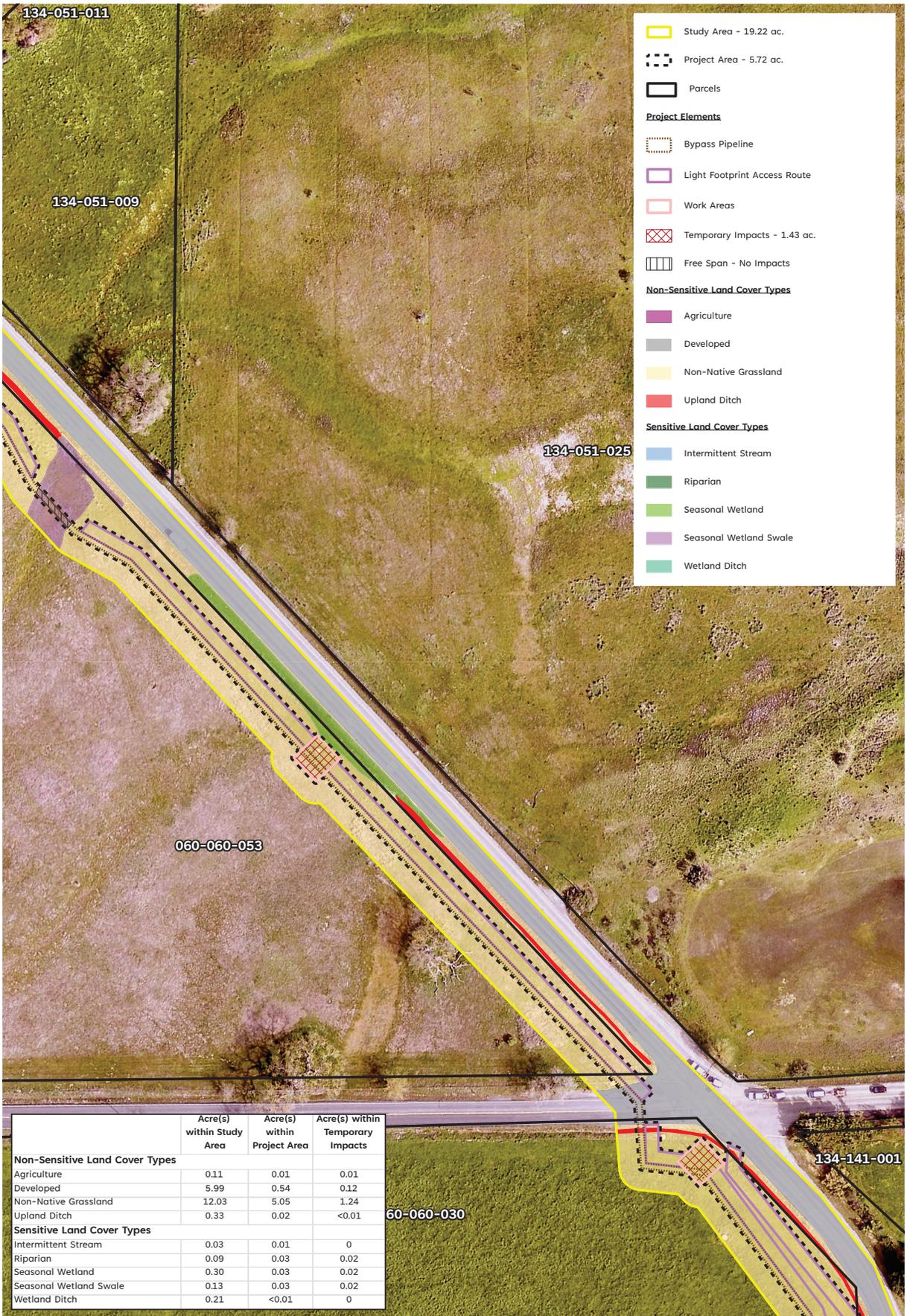
Sources: Sonoma County Imagery 2021, Sonoma County LIDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

**Figure 4-1. Project Design Plans and Impacts (Overview)**



Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

**Figure 4-2. Project Design Plans and Impacts (Sheet 1)**



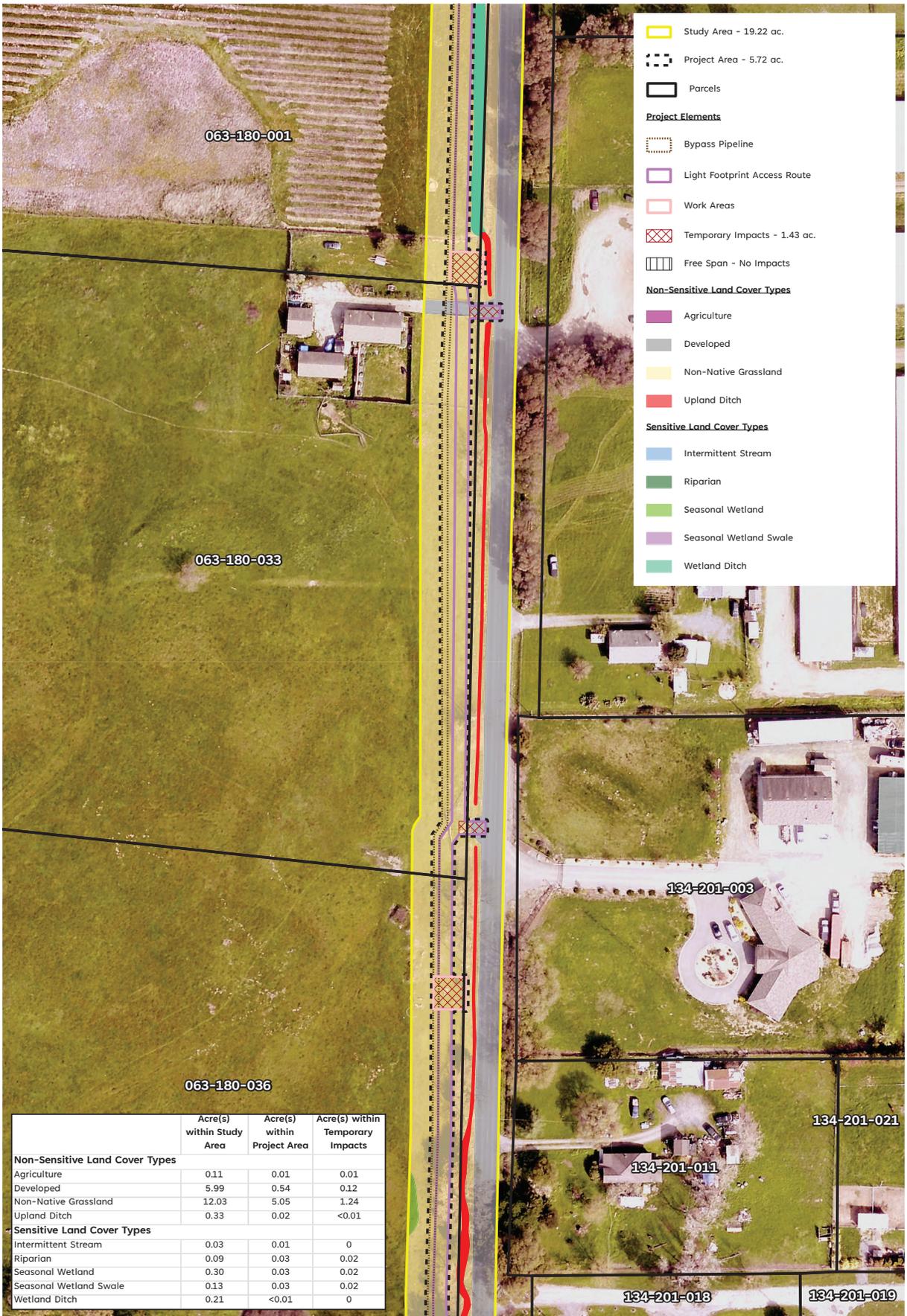
Sources: Sonoma County Imagery 2021, Sonoma County LIDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

**Figure 4-3. Project Design Plans and Impacts (Sheet 2)**



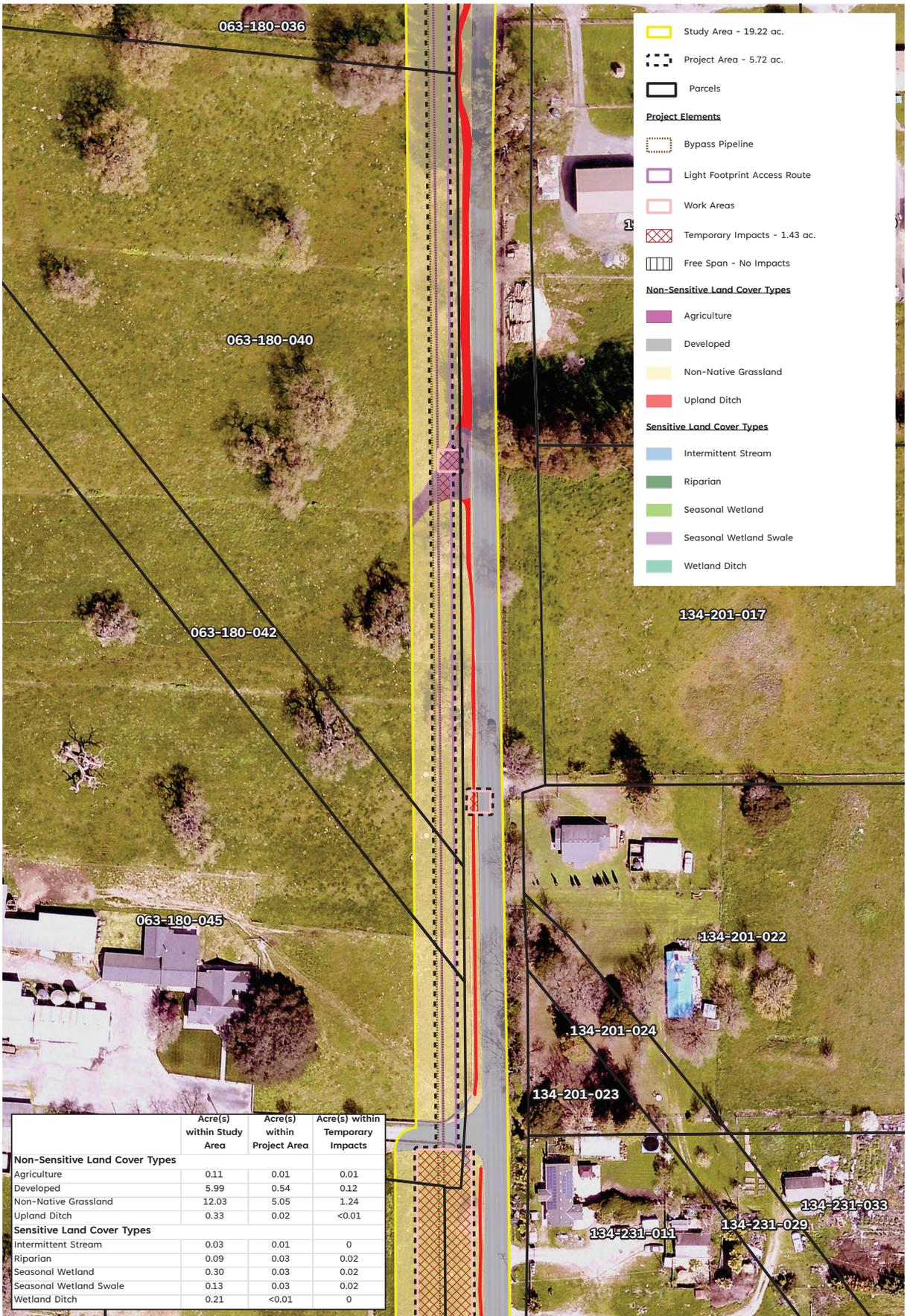
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**Figure 4-4. Project Design Plans and Impacts (Sheet 3)**

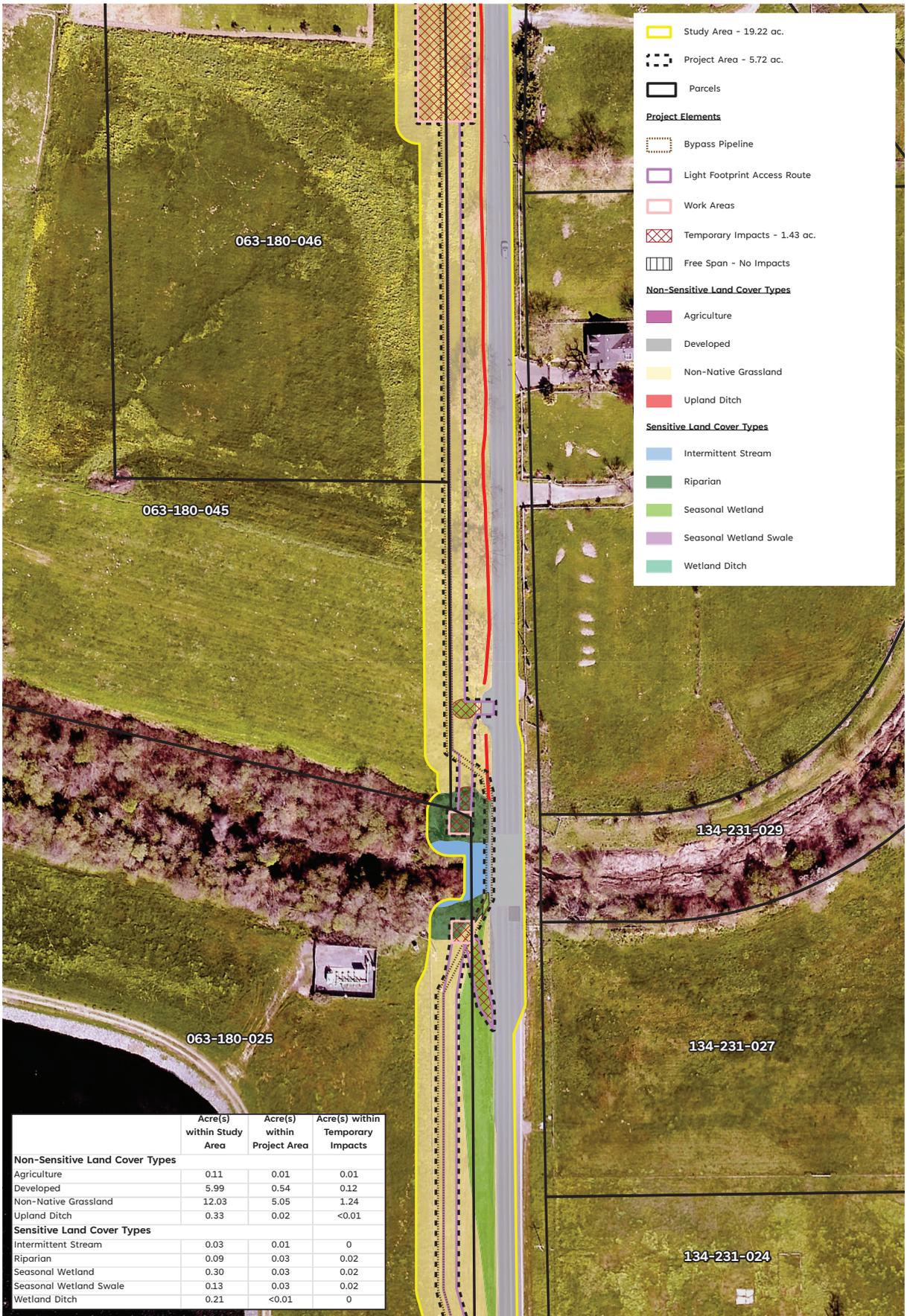


Sources: Sonoma County Imagery 2021, Sonoma County LIDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

**Figure 4-5. Project Design Plans and Impacts (Sheet 4)**



**Figure 4-6. Project Design Plans and Impacts (Sheet 5)**

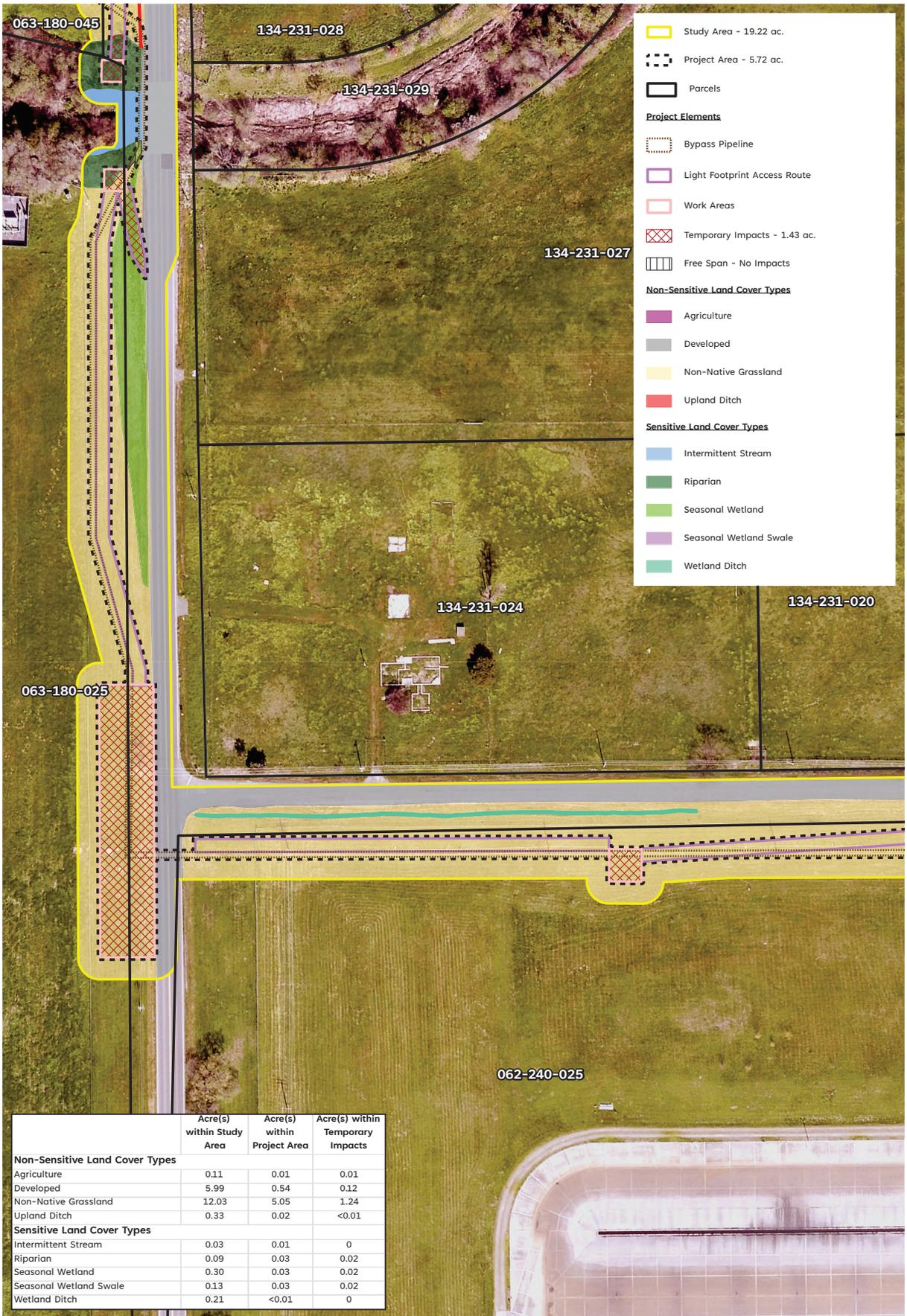


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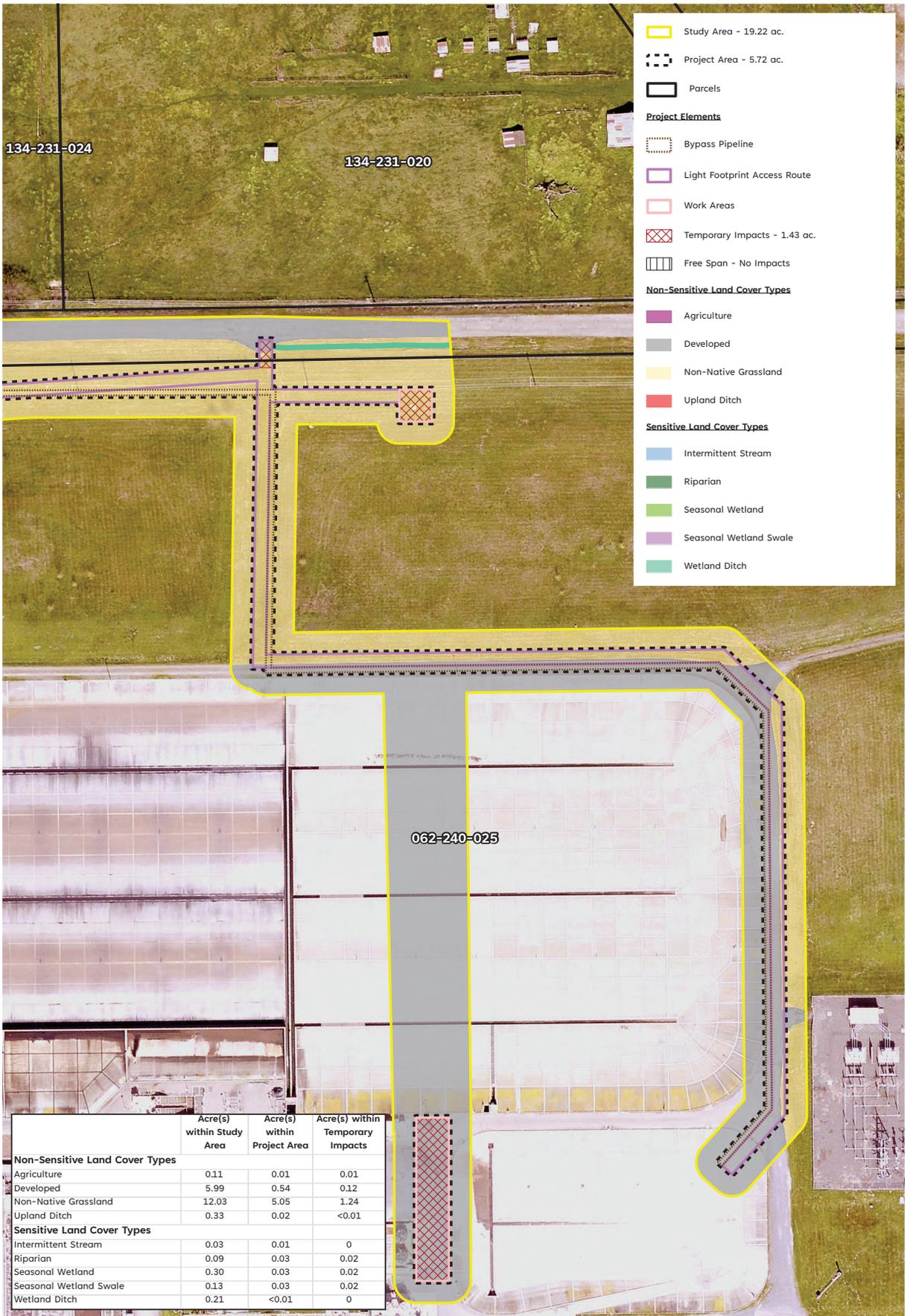
	Acre(s) within Study Area	Acre(s) within Project Area	Acre(s) within Temporary Impacts
<b>Non-Sensitive Land Cover Types</b>			
Agriculture	0.11	0.01	0.01
Developed	5.99	0.54	0.12
Non-Native Grassland	12.03	5.05	1.24
Upland Ditch	0.33	0.02	<0.01
<b>Sensitive Land Cover Types</b>			
Intermittent Stream	0.03	0.01	0
Riparian	0.09	0.03	0.02
Seasonal Wetland	0.30	0.03	0.02
Seasonal Wetland Swale	0.13	0.03	0.02
Wetland Ditch	0.21	<0.01	0

Sources: Sonoma County Imagery 2021, Sonoma County LiDAR 2013, WRA | Prepared By: rochelle, 7/10/2024

**Figure 4-7. Project Design Plans and Impacts (Sheet 6)**



**Figure 4-8. Project Design Plans and Impacts (Sheet 7)**



**Figure 4-9. Project Design Plans and Impacts (Sheet 8)**

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**APPENDIX B.**  
**SPECIES OBSERVED IN AND AROUND THE STUDY AREA**



Appendix B-1. Plant Species Observed within the Study Area during Surveys in March, April, and May of 2023 and 2024

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS <sup>1</sup>	CAL-IPC STATUS <sup>2</sup>	WETLAND STATUS <sup>3</sup>
<i>Acer negundo</i>	Boxelder	native	tree	-	-	FACW
<i>Alisma lanceolatum</i>	Water plantain	non-native	perennial herb (aquatic)	-	-	OBL
<i>Alopecurus pratensis</i>	Meadow foxtail	non-native	perennial grass	-	Watch	FACW
<i>Amsinckia intermedia</i>	Common fiddleneck	native	annual herb	-	-	-
<i>Anthemis cotula</i>	Dog fennel	non-native	annual herb	-	-	FACU
<i>Avena barbata</i>	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
<i>Brassica nigra</i>	Black mustard	non-native (invasive)	annual herb	-	Moderate	-
<i>Brassica rapa</i>	Common mustard	non-native (invasive)	annual herb	-	Limited	FACU
<i>Briza maxima</i>	Rattlesnake grass	non-native (invasive)	annual grass	-	Limited	-
<i>Briza minor</i>	Little rattlesnake grass	non-native	annual grass	-	-	FAC
<i>Bromus diandrus</i>	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
<i>Bromus hordeaceus</i>	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
<i>Calendula arvensis</i>	Field marigold	non-native	annual herb	-	-	-
<i>Callitriche heterophylla</i> var. <i>heterophylla</i>	Varied leaved water starwort	native	annual herb	-	-	OBL
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
<i>Carex densa</i>	Dense sedge	native	perennial grasslike herb	-	-	OBL
<i>Carex praegracilis</i>	Field sedge	native	perennial grasslike herb	-	-	FACW
<i>Carex</i> sp.	-	-	-	-	-	-

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS <sup>1</sup>	CAL-IPC STATUS <sup>2</sup>	WETLAND STATUS <sup>3</sup>
<i>Castilleja ambigua</i> var. <i>ambigua</i>	Johnny-nip	native	annual herb	Rank 4.2	-	-
<i>Centaurea calcitrapa</i>	Purple star thistle	non-native (invasive)	annual, perennial herb	-	Moderate	-
<i>Centaurea solstitialis</i>	Yellow starthistle	non-native (invasive)	annual herb	-	High	-
<i>Chenopodium album</i>	Lambs quarters	non-native	annual herb	-	-	FACU
<i>Chenopodium murale</i>	Nettle leaf goosefoot	non-native	annual herb	-	-	FACU
<i>Chlorogalum pomeridianum</i>	Amole	native	perennial herb	-	-	-
<i>Cichorium intybus</i>	Chicory	non-native	perennial herb	-	-	FACU
<i>Cirsium vulgare</i>	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
<i>Conium maculatum</i>	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
<i>Convolvulus arvensis</i>	Field bindweed	non-native	perennial herb, vine	-	-	-
<i>Cyperus eragrostis</i>	Tall cyperus	native	perennial grasslike herb	-	-	FACW
<i>Danthonia californica</i>	California oatgrass	native	perennial grass	-	-	FAC
<i>Daucus carota</i>	Carrot	non-native	perennial herb	-	-	UPL
<i>Eleocharis macrostachya</i>	Spike rush	native	perennial grasslike herb	-	-	OBL
<i>Elymus glaucus</i>	Blue wildrye	native	perennial grass	-	-	FACU
<i>Epilobium brachycarpum</i>	Panicled willow herb	native	annual herb	-	-	FAC
<i>Eschscholzia californica</i>	California poppy	native	annual, perennial herb	-	-	-
<i>Festuca arundinacea</i>	Reed fescue	non-native (invasive)	perennial grass	-	Moderate	FACU
<i>Festuca bromoides</i>	Brome fescue	non-native	annual grass	-	-	FACU
<i>Festuca myuros</i>	Rattail sixweeks grass	non-native (invasive)	annual grass	-	Moderate	FACU



SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS <sup>1</sup>	CAL-IPC STATUS <sup>2</sup>	WETLAND STATUS <sup>3</sup>
<i>Festuca perennis</i>	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
<i>Foeniculum vulgare</i>	Fennel	non-native (invasive)	perennial herb	-	High	-
<i>Galium aparine</i>	Cleavers	native	annual herb	-	-	FACU
<i>Galium</i> sp.	-	-	-	-	-	-
<i>Genista monspessulana</i>	French broom	non-native (invasive)	shrub	-	High	-
<i>Geranium dissectum</i>	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
<i>Helminthotheca echioides</i>	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
<i>Hemizonia congesta</i> ssp. <i>lutescens</i>	Hayfield tarweed	native	annual herb	-	-	-
<i>Hirschfeldia incana</i>	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
<i>Hordeum brachyantherum</i>	Meadow barley	native	perennial grass	-	-	FACW
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
<i>Hordeum murinum</i>	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
<i>Juglans hindsii</i>	Northern California black walnut	native	tree	-	-	FAC
<i>Juncus bufonius</i>	Common toad rush	native	annual grasslike herb	-	-	FACW
<i>Juncus capitatus</i>	Leafy bracted dwarf rush	non-native	annual grasslike herb	-	-	FACU
<i>Juncus occidentalis</i>	Western rush	native	perennial grasslike herb	-	-	FACW
<i>Juncus phaeocephalus</i>	Brown headed rush	native	perennial grasslike herb	-	-	FACW

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS <sup>1</sup>	CAL-IPC STATUS <sup>2</sup>	WETLAND STATUS <sup>3</sup>
<i>Lactuca serriola</i>	Prickly lettuce	non-native	annual herb	-	-	FACU
<i>Limnanthes douglasii</i>	Common meadow foam	native	annual herb	-	-	OBL
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	native	annual herb	FE, SE, Rank 1B.1	-	OBL
<i>Lupinus bicolor</i>	Miniature lupine	native	annual, perennial herb	-	-	-
<i>Lysimachia arvensis</i>	Scarlet pimpernel	non-native	annual herb	-	-	FAC
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
<i>Madia sativa</i>	Coastal tarweed	native	annual herb	-	-	-
<i>Matricaria discoidea</i>	Pineapple weed	native	annual herb	-	-	FACU
<i>Medicago polymorpha</i>	Bur clover	non-native (invasive)	annual herb	-	Limited	FACU
<i>Mentha pulegium</i>	Pennyroyal	non-native (invasive)	perennial herb	-	Moderate	OBL
<i>Montia fontana</i>	Water montia	native	annual herb	-	-	OBL
<i>Phalaris aquatica</i>	Harding grass	non-native (invasive)	perennial grass	-	Moderate	FACU
<i>Phalaris paradoxa</i>	Hood canarygrass	non-native	annual grass	-	-	FAC
<i>Plantago lanceolata</i>	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
<i>Pleuropogon californicus</i> var. <i>californicus</i>	Annual semaphoregrass	native	annual grass	-	-	OBL
<i>Poa palustris</i>	Fowl bluegrass	non-native	perennial grass	-	-	FAC
<i>Polygonum aviculare</i>	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
<i>Quercus agrifolia</i>	Coast live oak	native	tree	-	-	-
<i>Quercus kelloggii</i>	California black oak	native	tree	-	-	-
<i>Quercus lobata</i>	Valley oak	native	tree	-	-	FACU
<i>Ranunculus californicus</i>	Common buttercup	native	perennial herb	-	-	FACU
<i>Raphanus sativus</i>	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-



SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS <sup>1</sup>	CAL-IPC STATUS <sup>2</sup>	WETLAND STATUS <sup>3</sup>
<i>Rubus armeniacus</i>	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
<i>Rumex acetosella</i>	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
<i>Rumex crispus</i>	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
<i>Sagina procumbens</i>	Arctic pearlwort	native	perennial herb	-	-	FAC
<i>Salix laevigata</i>	Red willow	native	tree	-	-	FACW
<i>Salix lasiolepis</i>	Arroyo willow	native	tree, shrub	-	-	FACW
<i>Sanicula bipinnata</i>	Poison sanicle	native	perennial herb	-	-	-
<i>Senecio vulgaris</i>	Common groundsel	non-native	annual herb	-	-	FACU
<i>Silybum marianum</i>	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
<i>Sisyrinchium bellum</i>	Blue eyed grass	native	perennial herb	-	-	FACW
<i>Sonchus asper</i> ssp. <i>asper</i>	Prickly sow thistle	non-native	annual herb	-	-	FAC
<i>Spergularia rubra</i>	Purple sand spurry	non-native	annual, perennial herb	-	-	FAC
<i>Stipa pulchra</i>	Purple needle grass	native	perennial grass	-	-	-
<i>Tragopogon porrifolius</i>	Salsify	non-native	perennial herb	-	-	-
<i>Trifolium dubium</i>	Shamrock	non-native	annual herb	-	-	UPL
<i>Trifolium subterraneum</i>	Subterranean clover	non-native	annual herb	-	-	-
<i>Veronica anagallis-aquatica</i>	Water speedwell	non-native	perennial herb	-	-	OBL
<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	Speedwell	native	annual herb	-	-	FAC
<i>Vicia lutea</i>	Yellow vetch	non-native	annual herb, vine	-	-	-
<i>Vicia sativa</i>	Spring vetch	non-native	annual herb, vine	-	-	FACU
<i>Vicia tetrasperma</i>	Four seeded vetch	non-native	annual herb	-	-	-
<i>Wyethia angustifolia</i>	Narrow leaved mule ears	native	perennial herb	-	-	FACU



Appendix B-2. Wildlife Species Observed within the Study Area during Surveys in March, April, and May of 2023 and 2024.

APPENDIX B-2. WILDLIFE OBSERVED WITHIN THE STUDY AREA	
SCIENTIFIC NAME	COMMON NAME
<i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Corvus brachyrhynchos</i>	American crow
<i>Sturnus vulgaris</i>	european starling
<i>Haemorhous mexicanus</i>	house finch
<i>Spinus psaltria</i>	lesser goldfinch
<i>Buteo lineatus</i>	red-shouldered hawk
<i>Melospiza crissalis</i>	California towhee
<i>Cathartes aura</i>	turkey vulture
<i>Agelaius phoeniceus</i>	red-winged blackbird
<i>Genus Molothrus</i>	cowbird
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Baeolophus inornatus</i>	oak titmouse
<i>Melanerpes formicivorus</i>	acorn woodpecker
<i>Branta canadensis</i>	Canada goose
<i>Sciurus griseus</i>	western grey squirrel
<i>Sceloporus occidentalis</i>	western fence lizard
<i>Pseudacris regilla</i>	pacific chorus frog
<i>Thomomys bottae</i>	Botta's pocket gopher

**Note:** All species identified using the Jepson eFlora [Jepson Flora Project (eds.) 2024]; nomenclature follows Jepson eFlora [Jepson Flora Project (eds.) 2024] or Rare Plant Inventory (CNPS 2024). Sp.: "species," intended to indicate that the observer was confident in the identity of the genus but uncertain which species.



<sup>1</sup> California Native Plant Society. 2024. Rare Plant Inventory (online edition, v9.5). Sacramento, California. Online at: <http://rareplants.cnps.org/>; most recently accessed: May 2024.

FE: Federal Endangered  
FT: Federal Threatened  
SE: State Endangered  
ST: State Threatened  
SR: State Rare  
Rank 1A: Plants presumed extinct in California  
Rank 1B: Plants rare, threatened, or endangered in California and elsewhere  
Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere  
Rank 3: Plants about which we need more information – a review list  
Rank 4: Plants of limited distribution – a watch list

<sup>2</sup> California Invasive Plant Council. 2024. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: <http://www.cal-ipc.org/paif/>; most recently accessed: May 2024.

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.  
Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically  
Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically  
Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

<sup>3</sup> U.S. Army Corps of Engineers. 2022. National Wetland Plant List, version 3.6. Online at: <http://wetland-plants.sec.usace.army.mil/>

OBL: Almost always found in wetlands  
FACW: Usually found in wetlands  
FAC: Equally found in wetlands and uplands  
FACU: Usually not found in wetlands  
UPL: Almost never found in wetlands  
NL: Not listed, assumed almost never found in wetlands  
NI: No information; not factored during wetland delineation

<sup>4</sup> Lake, D [compiler]. 2024. Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties (web application). Berkeley, California: East Bay Chapter of the California Native Plant Society. Online at: <https://rareplants.ebcnps.org/>; most recently accessed: May 2024.

A1: Locally Rare Species. Species occurring in two or fewer regions in Alameda and Contra Costa counties  
A1x: Locally Rare Species. Species presumed extirpated from Alameda and Contra Costa counties  
A1?: Locally Rare Species. Species possibly occurring in Alameda and Contra Costa counties. Identification or location is uncertain  
A2: Locally Rare Species. Plants occurring in three to five regions or are otherwise threatened in Alameda and Contra Costa counties.  
B: High Priority Watch List. Plants occurring in six to nine regions in Alameda and Contra Costa counties.  
C: Second Priority Watch List. Plants occurring in ten to fifteen regions in Alameda and Contra Costa counties.  
\*: Ranks preceded by an asterisk (e.g. "\*\*A1") also have a statewide rarity ranking  
#: Ornamental plantings are not considered locally rare. The individuals in the Project Area are ornamental plantings



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## APPENDIX C. SPECIAL-STATUS SPECIES POTENTIAL TABLE



## Appendix C. Potential for Special-status Species to Occur in the Study Area

List compiled from the CDFW BIOS database (CDFW 2024a), USFWS IPaC Report (USFWS 2024), and CNPS Electronic Inventory (CNPS 2024a) searches. For plants, the Guerneville, Healdsburg, Mark West Springs, Camp Meeker, Sebastopol, Santa Rosa, Valley Ford, Two Rock, and Cotati USGS 7.5' quadrangles were included in the search. For wildlife, the entirety of Sonoma County was considered.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<b>PLANTS</b>				
<i>Agrostis blasdalei</i> Blasdale's bentgrass	CRPR 1B	Coastal dunes, coastal bluff scrub, coastal prairie; on sandy or gravelly soil near exposed rock; often in nutrient-poor soil. Elevation range: 15 – 490 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain coastal dune, scrub, or prairie habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	FE; CRPR 1B	Freshwater marshes and swamps, riparian scrub; closely associated with other wetland species. Elevation range: 15 – 1200 feet. Blooms: May – July.	<b>Unlikely.</b> The Study Area does not contain perennial wetland (freshwater marsh, riparian marsh) habitat to support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	CRPR 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	CRPR 1B	Cismontane woodland, valley and foothill grassland, coastal bluff scrub; located on gravelly substrates, frequently derived from serpentine. Elevation range: 10 – 1625 feet. Blooms: March – June.	<b>Unlikely.</b> The Study Area does not contain woodland, scrub, or gravelly, rocky grassland habitat to support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Anomobryum julaceum</i> slender silver moss	CRPR 2B	Broadleaf upland forest, lower montane coniferous forest, North Coast coniferous forest; grows on damp soil and rocks; typically found on roadcuts. Elevation range: 330 – 3280 feet.	<b>No Potential.</b> The Study Area does not contain forest habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Arabis blepharophylla</i> coast rock cress	CRPR 4	Broadleaf upland forest, coastal bluff scrub, coastal prairie, coastal scrub; located on rocky sites, often on coastal bluffs. Elevation range: 10 – 3575 feet. Blooms: February – May.	<b>No Potential.</b> The Study Area does not contain forest or coastal scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Arctostaphylos bakeri</i> ssp. <i>Baker's manzanita</i>	FSC; SR; CRPR 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest; located on serpentine substrate. Elevation range: 240 – 975 feet. Blooms: February – April.	<b>No Potential.</b> The Study Area does not contain forest or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Arctostaphylos bakeri</i> ssp. <i>sublaevis</i> The Cedars manzanita	CRPR 1B	Closed-cone coniferous forest, chaparral; typically in canyons and on slopes in serpentine chaparral and Sargent cypress forest. Elevation range: 300 – 760 feet. Blooms: February – May.	<b>No Potential.</b> The Study Area does not contain forest or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Arctostaphylos densiflora</i> Vine Hill manzanita	SE; CRPR 1B	Chaparral; on acidic marine sands, typically the Goldridge sandy loam series and Sebastopol sandy loam series derived from sandstone. Elevation range: 50 – 100 feet. Blooms: February – April.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Arctostaphylos hispidula</i> Howell's manzanita	CRPR 4	Chaparral; typically located on serpentine or sandstone substrate. Elevation range: 390 – 4065 feet. Blooms: March – April.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon manzanita	CRPR 1B	Chaparral, cismontane woodland; highly restricted to red rhyolitic soils. Elevation range: 245 – 1215 feet. Blooms: February – April.	<b>No Potential.</b> The Study Area does not contain woodland or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE; ST; CRPR 1B	Cismontane woodland, valley and foothill grassland, chaparral; on open grassy hillsides, especially exposed shoulders with thin, volcanic clay soils. Elevation range: 245 – 900 feet. Blooms: March – May.	<b>No Potential.</b> The Study Area does not contain woodland or rocky, volcanic grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	CRPR 1B	Valley and foothill grassland, cismontane woodland; situated on rocky substrates, typically derived from metavolcanics, sometimes on serpentine substrate. Elevation range: 295 – 3100 feet. Blooms: March – June.	<b>No Potential.</b> The Study Area does not contain woodland or rocky, volcanic grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE, SE, CRPR 1B	Vernal pools, vernal swales, and mesic areas in valley grassland; highly restricted to the Santa Rosa Plain and Valley of the Moon. Elevation range: 35 – 360 feet. Blooms: March – April.	<b>Moderate Potential.</b> The Study Area contains potential seasonal wetland habitat that may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	CRPR 1B	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; situated on volcanic substrate, particularly volcanic ash. Elevation range: 360 – 3000 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Calamagrostis bolanderi</i> Bolander's reed grass	CRPR 4	Bogs and fens, broadleaf upland forest, closed-cone coniferous forest, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest; located on mesic, freshwater wetland sites. Elevation range: 0 – 1480 feet. Blooms: May – August.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh, riparian marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Calamagrostis crassiglumis</i> Thurber's reed grass	CRPR 2B	Mesic areas within coastal scrub, freshwater marshes and swamps; typically in marshy swales surrounded by scrub or grassland. Elevation range: 10 – 45 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Calamagrostis ophitidis</i> serpentine reed grass	CRPR 4	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; located in openings, often north-facing, underlain by rocky serpentine substrate. Elevation range: 290 – 3465 feet. Blooms: April – July.	<b>No Potential.</b> The Study Area does not contain forest, chaparral, or rocky, volcanic grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Calandrinia breweri</i> Brewer's Calandrinia	CRPR 4	Chaparral, coastal scrub; located on sandy or loamy substrate in areas often recently disturbed or burned. Elevation range: 30 – 3965 feet. Blooms: March – June.	<b>No Potential.</b> The Study Area does not contain chaparral or coastal scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Calochortus raichei</i> The Cedars fairy lantern	CRPR 1B	Closed-cone coniferous forest, chaparral; situated on serpentine substrates in openings and talus slopes; serpentine indicator: SE. Elevation range: 490 – 1610 feet. Blooms: May – August.	<b>No Potential.</b> The Study Area does not contain forest or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Calochortus uniflorus</i> pink star-tulip	CRPR 4	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest. Elevation range: 30 – 3480 feet. Blooms: April – June.	<b>Unlikely.</b> The Study Area does not contain forest, coastal prairie, or coastal scrub habitat to support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Calystegia collina</i> ssp. <i>oxyphylla</i> Mt. Saint Helena morning-glory	CRPR 4	Chaparral; located on serpentine barrans, slopes, and hillsides. Elevation range: 815 – 3315 feet. Blooms: April – June.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory	CRPR 1B	Coastal dunes, coastal scrub. Elevation range: 10 – 105 feet. Blooms: May – September.	<b>No Potential.</b> The Study Area does not contain coastal dune or scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Carex comosa</i> bristly sedge	CRPR 2B	Typically on lake and pond margins in coastal prairie, marshes and swamps, valley and foothill grassland (mesic/hydric). Elevation range: 0 – 425 feet. Blooms: May – September.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Castilleja ambigua</i> ssp. Johnny-nip	CRPR 4	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins. Elevation range: 0 – 1415 feet. Blooms: March – August.	<b>Moderate Potential.</b> The Study Area contains seasonal wetland habitat that may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Castilleja uliginosa</i> Pitkin Marsh Indian paintbrush	SE; CRPR 1A	Freshwater marshes and swamps; presumed extinct with last wild plant observed in 1987; highly restricted to Pitkin Marsh near Sebastopol. Elevation range: 60 feet. Blooms: June – July.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh, riparian marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	CRPR 1B	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically on dry shrubby slopes. Elevation range: 245 – 3495 feet. Blooms: February – April.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Ceanothus divergens</i> Callistoga ceanothus	CRPR 1B	Chaparral, cismontane woodland; on rocky, serpentine sites. Elevation range: 560 – 3115 feet. Blooms: February – March.	<b>No Potential.</b> The Study Area does not contain woodland or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Ceanothus foliosus</i> var. <i>vineatus</i> Vine Hill ceanothus	CRPR 1B	Chaparral; in acidic sandy soils. Elevation range: 45 – 305 feet. Blooms: March – May.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i> glory bush	CRPR 4	Chaparral; typically located within maritime influence. Elevation range: 95 – 1985 feet. Blooms: March – June, sometimes August.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Ceanothus purpureus</i> holly-leaved ceanothus	CRPR 1B	Chaparral, cismontane woodland; located on rocky, volcanic slopes. Elevation range: 395 – 3000 feet. Blooms: February – June.	<b>No Potential.</b> The Study Area does not contain woodland or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	CRPR 1B	Chaparral; located on sandy serpentine or volcanic substrates. Elevation range: 705 – 2625 feet. Blooms: February – April.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	CRPR 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland; in vernal mesic sites, often with alkali substrate. Elevation range: 5 – 1380 feet. Blooms: May – November.	<b>Moderate Potential.</b> The Study Area contains grassland habitat which may support this species. This species is tolerant of heavily invaded and disturbed grasslands.	<b>Not Present.</b> This species was not detected during two years of rare plant surveys. No further actions are recommended for this species.
<i>Chorizanthe cuspidata</i> var. <i>villosa</i> woolly-headed spineflower	CRPR 1B	Coastal scrub, coastal dunes, coastal prairie; located on sandy substrates near the beach. Elevation range: 10 – 195 feet. Blooms: May – August.	<b>No Potential.</b> The Study Area does not contain coastal dune, scrub, or prairie habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Chorizanthe valida</i> Sonoma spineflower	FE; SE; CRPR 1B	Coastal prairie; in sandy soils. Elevation range: 35 – 1000 feet. Blooms: June – August.	<b>No Potential.</b> The Study Area does not contain coastal prairie habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Cirsium andrewsii</i> Franciscan thistle	CRPR 1B	Coastal bluff scrub, broadleaf upland forest, coastal scrub; sometimes located along serpentine seeps. Elevation range: 0 – 490 feet. Blooms: March – July.	<b>No Potential.</b> The Study Area does not contain forest or coastal scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Clarkia imbricata</i> Vine Hill clarkia	FE; SE; CRPR 1B	Chaparral, valley and foothill grassland; located on acidic sandy substrate. Elevation range: 160 – 245 feet. Blooms: June – August.	<b>No Potential.</b> The Study Area does not contain chaparral or grassland underlain by acidic sandy soils to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i> serpentine bird's-beak	CRPR 4	Closed-cone coniferous forest, chaparral, cismontane woodland; typically located serpentine substrate. Elevation range: 1540 – 2975 feet. Blooms: July – August.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> Pennell's bird's-beak	FE; SR; CRPR 1B	Closed-cone coniferous forest, chaparral; located in openings in manzanita scrub and Sargent cypress forest underlain by serpentine substrate. Elevation range: 145 – 995 feet. Blooms: June – September.	<b>No Potential.</b> The Study Area does not contain forest or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	CRPR 2B	Marshes and swamps; freshwater. Elevation range: 45 – 910 feet. Blooms: July – October.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Cyripedium montanum</i> mountain lady's-slipper	CRPR 4	Broadleaf upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest. Elevation range: 600 – 7235 feet. Blooms: March – August.	<b>No Potential.</b> The Study Area does not contain forest or woodland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Delphinium bakeri</i> Baker's larkspur	FE; SE; CRPR 1B	Coastal scrub, valley and foothill grassland; located on rocky north-facing slopes derived of decomposed shale. Elevation range: 260 – 995 feet. Blooms: March – May.	<b>No Potential.</b> The Study Area does not contain coastal scrub or rocky, coastal grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Delphinium luteum</i> yellow larkspur	FE; SR; CRPR 1B	Chaparral, coastal prairie, coastal scrub; located on rocky north-facing slopes. Elevation range: 0 – 325 feet. Blooms: March – May.	<b>No Potential.</b> The Study Area does not contain maritime chaparral, coastal prairie, or coastal scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Dirca occidentalis</i> western leatherwood	CRPR 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland; located on brushy, mesic slopes in woodland and forest. Elevation range: 165 – 1285 feet. Blooms: January – April.	<b>No Potential.</b> The Study Area does not contain forest or woodland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Downingia pusilla</i> dwarf downingia	CRPR 2B	Valley and foothill grassland, vernal pools; located in mesic grassy sites, pool and lake margins. Elevation range: 3 – 1450 feet. Blooms: March – May.	<b>Moderate Potential (Unlikely).</b> While the Study Area contains seasonal wetlands, they are poor quality habitat for this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Eastwoodiella californica</i> swamp harebell	CRPR 1B	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, North Coast coniferous forest; in mesic sites in forested and grassland habitat. Elevation range: 1 – 405 feet. Blooms: June – October.	<b>No Potential.</b> The Study Area does not contain coastal wetland, perennial wetland, or riparian wetland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Elymus californicus</i> California bottle-brush grass	CRPR 4	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland; located in mesic areas. Elevation range: 50 – 1530 feet. Blooms: May – August, sometimes November.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or riparian habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Erigeron biolettii</i> Streamside daisy	CRPR 3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest; on rocky, mesic. Elevation range: 95 – 3610 feet. Blooms: June – October.	<b>No Potential.</b> The Study Area does not contain forest or woodland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	CRPR 1B	Chaparral; located on volcanic or serpentine substrate. Elevation range: 260 – 3270 feet. Blooms: May – September.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Erigeron serpentinus</i> serpentine daisy	CRPR 1B	Chaparral; serpentine shrubland. Elevation range: 60 – 670 feet. Blooms: May – August.	<b>No Potential.</b> The Study Area does not contain chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Eriogonum umbellatum</i> var. <i>bahii</i> forme bay buckwheat	CRPR 4	Cismontane woodland, lower montane coniferous forest; situated on rocky substrates often derived from serpentine; serpentine indicator: BE/SI. Elevation range: 2275 – 7150 feet. Blooms: July – September.	<b>No Potential.</b> The Study Area does not contain forest or woodland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Eriophorum gracile</i> slender cottongrass	CRPR 4	Bogs and fens, meadows and seeps, upper montane coniferous forest; located in perennial acidic wetland habitat. Elevation range: 4160 – 9425 feet. Blooms: May – September.	<b>No Potential.</b> The Study Area does not contain perennial wetland habitat to support this species and the Study Area is below the documented elevational range of the species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Fritillaria liliacea</i> fragrant fritillary	CRPR 1B	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine. Elevation range: 10 – 1335 feet. Blooms: February – April.	<b>Unlikely.</b> The Study Area lacks rocky, heavy clay soils to support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Gilia capitata</i> ssp. <i>charmissonis</i> blue coast gilia	CRPR 1B	Coastal dunes, coastal scrub. Elevation range: 5 – 600 feet. Blooms: April – July.	<b>No Potential.</b> The Study Area does not contain coastal dune or scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Gilia capitata</i> ssp. <i>tomentosa</i> woolly-headed gilia	CRPR 1B	Coastal bluff scrub; rocky outcrops on the coast. Elevation range: 15 – 155 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain coastal scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	CRPR 1B	Marshes and swamps (lake margins), vernal pools. Elevation range: 30 – 7,000 feet. Blooms: April – August.	<b>No Potential.</b> The Study Area lacks large intact marshes and swamps, or vernal pools associated with this species. Closest known occurrence is more than 6.5 miles northeast of the Study Area. This species has not been documented on the Santa Rosa Plain, and only historic documentation within Sonoma County.	<b>Not Present.</b> No further recommendations for this species.
<i>Harmonia nutans</i> nodding harmonia	CRPR 4	Chaparral, cismontane woodland; located on rocky to gravelly substrates derived from volcanics. Elevation range: 240 – 3170 feet. Blooms: March – May.	<b>No Potential.</b> The Study Area does not contain woodland or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Hemizonia congesta</i> ssp. <i>congesta</i> Hayfield tarplant	CRPR 1B	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	<b>Moderate Potential.</b> The Study Area contains mesic grassland habitat which may support this species. This species is tolerant of invaded grasslands.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Hesperovax caulescens</i> hogwallow starfish	CRPR 4	Valley and foothill grassland, vernal pools; situated in the shallow margins of seasonal wetlands/vernal pools, in mesic grasslands; on heavy clay substrates. Elevation range: 505 – 1655 feet. Blooms: March – June.	<b>Unlikely.</b> This species has not been recorded in Sonoma County (CNDDDB and CNPS 2024). However, the Study Area contains seasonal wetland habitat which may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Hesperovax sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	CRPR 1B	Coastal bluff scrub, coastal dune; located on sandy bluffs and flats near the immediate coastline. Elevation range: 0 – 700 feet. Blooms: March – June.	<b>No Potential.</b> The Study Area does not contain coastal scrub or dune habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Horkelia marinensis</i> Point Reyes Horkelia	CRPR 1B	Coastal dunes, coastal prairie, coastal scrub; located on sandy flats and dunes near the coast; in open grassy sites within scrub. Elevation range: 15 – 1140 feet. Blooms: May – September.	<b>No Potential.</b> The Study Area does not contain coastal dune, scrub, or prairie habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Horkelia tenuiloba</i> thin-lobed horkelia	CRPR 1B	Broadleaf upland forest, coastal scrub, valley and foothill grassland, chaparral; in mesic openings, on sandy substrate. Elevation range: 165 – 1640 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain forest, coastal scrub, or grassland habitat underlain by sandy soils to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Hosackia gracilis</i> harlequin lotus	CRPR 4	Broadleaf upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland; located in wetlands and roadside ditches. Elevation range: 0 – 2275 feet. Blooms: March – July.	<b>Unlikely.</b> Although the Study Area contains seasonal wetlands and areas of mesic grassland, this species, on the Santa Rosa Plain, is closely associated with the fringes of perennial wetlands (freshwater marsh, riparian marsh).	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Iris longipetala</i> coast iris	CRPR 4	Coastal prairie, lower montane coniferous forest, meadows and seeps; located on mesic sites. Elevation range: 0 – 1950 feet. Blooms: March – May.	<b>No Potential.</b> The Study Area does not contain coastal prairie or forest habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Kopsiopsis hookeri</i> small groundcone	CRPR 2B	North Coast coniferous forest; located in open woods, shrublands, generally hosts on salal ( <i>Gaultheria shallon</i> ). Elevation range: 290 – 2880 feet. Blooms: April – August.	<b>No Potential.</b> The Study Area does not contain forest habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lasthenia burkei</i> Burke's goldfields	FE; SE; CRPR 1B	Vernal pools, meadows and seeps; typically located in pools and swales. Elevation range: 45 – 1950 feet. Blooms: April – June.	<b>Moderate Potential (Unlikely).</b> While the Study Area contains seasonal wetlands, they are poor quality habitat for this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Lasthenia californica</i> ssp. <i>bakeri</i> Baker's goldfields	CRPR 1B	Openings in closed-cone coniferous forest, coastal scrub, meadows and seeps, marshes and swamps. Elevation range: 60 – 520 feet. Blooms: April – October.	<b>No Potential.</b> This species is confined to coastal environments.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Lasthenia californica</i> ssp. <i>macrantha</i> perennial goldfields	CRPR 1B	Coastal bluff scrub, coastal dune, coastal scrub. Elevation range: 15 – 1690 feet. Blooms: January – November.	<b>No Potential.</b> The Study Area does not contain coastal scrub or dune habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE; CRPR 1B	Valley and foothill grassland, vernal pools, cismontane woodland; located in pools, swales, and depressions in mesic grassy sites underlain by alkaline substrate. Elevation range: 0 – 1530 feet. Blooms: March – June.	<b>Unlikely.</b> The Study Area contains seasonal wetland habitat that may support this species. However, the closest CNDDDB occurrence is over 18 aerial miles southeast of the Study Area.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Layia septentrionalis</i> Colusa layia	CRPR 1B	Chaparral, cismontane woodland, valley and foothill grassland; on sandy, serpentine substrate; typically in fields and grassy slopes. Elevation range: 330 – 3595 feet. Blooms: April – May.	<b>No Potential.</b> The Study Area does contain woodland, chaparral, or sandy, rocky grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Legenere limosa</i> legenere	CRPR 1B	Vernal pools; typically located in the deepest portions of pools. Elevation range: 3 – 2860 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains seasonal wetland habitat that may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Leptosiphon aureus</i> bristly leptosiphon	CRPR 4	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; often located on shallow, rocky substrate in foothill positions; typically, low-growing and sparse vegetation; often on edge of chaparral and shrub thickets. Elevation range: 175 – 4875 feet. Blooms: April – July.	<b>No Potential.</b> The Study Area does not contain woodland, chaparral, coastal prairie, or rocky, bare grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Leptosiphon grandiflorus</i> large-flowered leptosiphon	CRPR 4	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; typically on sandy substrate. Elevation range: 15 – 3965 feet. Blooms: April – August.	<b>No Potential.</b> The Study Area does not contain forest, woodland, coastal dune, prairie, or sandy grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	CRPR 1B	Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1640 feet. Blooms: April – May.	<b>No Potential.</b> The Study Area does not contain woodland or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Leptosiphon latisectus</i> broad-lobed leptosiphon	CRPR 4	Broadleaf upland forest, cismontane woodland; frequently situated on serpentine substrate; serpentine indicator: W1. Elevation range: 550 – 4875 feet. Blooms: April – June.	<b>No Potential.</b> The Study Area does not contain forest or woodland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Leptosiphon rosaceus</i> rose leptosiphon	CRPR 1B	Coastal bluff scrub; situated on sandy substrates. Elevation range: 0 – 325 feet. Blooms: April – July.	<b>No Potential.</b> The Study Area does not contain coastal scrub to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lessingia arachnoidea</i> Crystal Springs lessingia	CRPR 1B	Coastal sage scrub, valley and foothill grassland, cismontane woodland; typically on grassy serpentine slopes; serpentine indicator: SE. Elevation range: 60 – 200 feet. Blooms: July – October.	<b>No Potential.</b> The Study Area does not contain serpentine habitats to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Lessingia hololeuca</i> woolly-headed lessingia	CRPR 3	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; typically on clay, serpentine substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	<b>No Potential.</b> The Study Area does not contain serpentine habitats to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> Pitkin Marsh lily	FE; SE; CRPR 1B	Cismontane woodland, meadows and seeps, freshwater marsh, riparian scrub; located on acidic saturated sandy substrate. Elevation range: 110 – 215 feet. Blooms: June – July.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh, riparian marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lilium rubescens</i> redwood lily	CRPR 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, upper montane coniferous forest, North Coast coniferous forest; often located on serpentine substrates, and along roadcuts. Elevation range: 95 – 6210 feet. Blooms: April – September.	<b>No Potential.</b> The Study Area does not contain forest or chaparral habitat to support this species.	<b>No Potential.</b> The Study Area does not contain serpentine habitats to support this species.
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	FE; SE; CRPR 1B	Mesic meadows, valley and foothill grassland, vernal pools; located in swales, wet meadows, depressions, and pools in the oak savanna of the Santa Rosa Plain on heavy adobe clay substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	<b>Observed.</b> The species was detected during rare plant surveys.	<b>Present.</b> Project will avoid habitat containing this species or implement measures for mitigation. See Section 7.0 for details.
<i>Lomatium repostum</i> Napa Lomatium	CRPR 1B	Chaparral, cismontane woodland; located on volcanic (rhyolite) and serpentine substrates. Elevation range: 290 – 2700 feet. Blooms: March – June.	<b>No Potential.</b> The Study Area does not contain woodland or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Lupinus sericatus</i> Cobb Mountain lupine	CRPR 1B	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest; typically located in stands of knobcone pine-oak woodland, on open wooded slopes in gravelly substrate, sometimes serpentine. Elevation range: 890 – 4960 feet. Blooms: March – June.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Microseris paludosa</i> marsh microseris	CRPR 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation range: 5 – 300 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains grassland habitat which may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Monardella viridis</i> green monardella	CRPR 4	Broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 325 – 3285 feet. Blooms: June – September.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	CRPR 1B	Wet, mesic sites underlain by adobe and/or alkaline substrate in cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Elevation range: 15 – 5710 feet. Blooms: April – July.	<b>Moderate Potential.</b> The Study Area contains seasonal wetland habitat that may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i> many-flowered navarretia	FE, SE, CRPR 1B	Vernal pools underlain by substrate derived from volcanic ash flows. Elevation range: 95 – 3120 feet. Blooms: May – June.	<b>No Potential.</b> The Study Area lacks volcanic ash flow substrates associated with this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<p><i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> Gairdner's yampah</p>	CRPR 4	<p>Broadleaf upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools; located in vernal mesic sites. Elevation range: 0 – 1985 feet. Blooms: June – October.</p>	<p><b>Unlikely.</b> The Study Area contains mesic grassland and seasonal wetland habitat that may support this species.</p>	<p><b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.</p>
<p><i>Piperia candida</i> white-flowered rein orchid</p>	CRPR 1B	<p>North Coast coniferous forest, lower montane coniferous forest, broadleaf upland forest; located on forest duff, mossy banks, often decommissioned logging roads, rock outcrops, and muskeg; periodically on serpentine substrate. Elevation range: 95 – 4260 feet. Blooms: March – September.</p>	<p><b>No Potential.</b> The Study Area does not contain forest habitat to support this species.</p>	<p><b>Not Present.</b> No further actions are recommended for this species.</p>
<p><i>Pleuropogon hooverianus</i> North coast semaphore grass</p>	ST; CRPR 1B	<p>Broadleaf upland forests, meadows and seeps, freshwater marshes and swamps, North Coast coniferous forest, shaded, wet, and grassy areas in forested habitat. Elevation range: 10 – 635 feet. Blooms May – August.</p>	<p><b>No Potential.</b> The Study Area does not contain wetlands in forest habitat to support this species.</p>	<p><b>Not Present.</b> No further actions are recommended for this species.</p>
<p><i>Pleuropogon refractus</i> nodding semaphore grass</p>	CRPR 4	<p>Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, riparian forest; located in mesic settings. Elevation range: 0 – 5200 feet. Blooms: March – August.</p>	<p><b>No Potential.</b> The Study Area does not contain wetlands in forest habitat to support this species.</p>	<p><b>Not Present.</b> No further actions are recommended for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Potentilla uliginosa</i> Cunningham Marsh cinquefoil	CRPR 1A	Freshwater marshes and swamps; located in oligotrophic wetland habitat; presumed extinct. Elevation range: 95 – 130 feet. Blooms: May – August.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh, riparian marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Ranunculus lobbii</i> Lobb’s buttercup	CRPR 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in vernal inundated areas (ponds, pools). Elevation range: 45 – 1530 feet. Blooms: February – May.	<b>High Potential.</b> The Study Area contains potential seasonal wetland habitat that may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Rhynchospora alba</i> white beaked-rush	CRPR 2B	Bogs and fens, meadows and seeps, freshwater marshes and swamps. Elevation range: 195 – 6695 feet. Blooms: July – August.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Rhynchospora californica</i> California beaked-rush	CRPR 1B	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps. Elevation range: 145 – 3315 feet. Blooms: May – July.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Rhynchospora capitellata</i> brownish beaked-rush	CRPR 2B	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest/ mesic. Elevation range: 1490 – 6560 feet. Blooms: July – August.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Rhynchospora globularis</i> round-headed beaked-rush	CRPR 2B	Freshwater marshes and swamps. Elevation range: 145 – 200 feet. Blooms: July – August.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i> Point Reyes checkerbloom	CRPR 1B	Marshes and swamps; located in freshwater marsh habitat near the coast. Elevation range: 10 – 245 feet. Blooms: April – September.	<b>No Potential.</b> The Study Area does not contain perennial wetland (freshwater marsh) habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i> purple-stemmed checkerbloom	CRPR 1B	Broadleaf upland forest, coastal scrub. Elevation range: 45 – 280 feet. Blooms: May – June.	<b>No Potential.</b> The Study Area does not contain forest or coastal scrub habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Silene scouleri</i> ssp. <i>scouleri</i> Scouler's catchfly	CRPR 2B	Coastal bluff scrub, coastal prairie, valley and foothill grassland; situated on rocky slopes and bluffs. Elevation range: 0 – 1950 feet. Blooms: sometimes March – May, typically June – August, sometimes September.	<b>No Potential.</b> The Study Area does not contain coastal scrub, coastal prairie, or rocky grassland habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Thamnotia vermicularis</i> whiteworm lichen	CRPR 2B	Chaparral, valley and foothill grassland, on rocks derived from sandstone. Elevation range: 90 to 295 feet.	<b>No potential.</b> The Study Area does not contain rocks derived from sandstone.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Trifolium amoenum</i> showy rancheria clover	FE; CRPR 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine. Elevation range: 15 – 1365 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains seasonal wetland habitat which may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	CRPR 1B	Broadleaf upland forest, cismontane woodland, coastal prairie; situated on habitat margins underlain by gravelly substrates. Elevation range: 340 – 1985 feet. Blooms: April – October.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or coastal prairie habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Trifolium hydrophilum</i> saline clover	CRPR 1B	Marshes and swamps, mesic portions of alkali vernal pools, mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	<b>Moderate Potential.</b> The Study Area contains seasonal wetland habitat which may support this species.	<b>Not Present.</b> This species was not detected during two years of focused rare plant surveys. No further actions are recommended for this species.
<i>Triphysaria floribunda</i> San Francisco owl's-clover	CRPR 1B	Coastal prairie, valley and foothill grassland; located on serpentine and non-serpentine substrate. Elevation range: 30 – 520 feet. Blooms: April – June.	<b>No Potential.</b> The Study Area does not contain coastal prairie or coastal grassland to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Triquetrella californica</i> coastal triquetrella	CRPR 1B	Coastal bluff scrub, coastal scrub, valley and foothill grassland; grows within 100 feet of the coastline in scrub and grasslands on open gravel substrates of roads, hillsides, bluffs, and slopes. Elevation range: 30 – 325 feet.	<b>No Potential.</b> This species is known from sites directly on the coastline.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Triteleia lugens</i> dark-mouthed triteleia	CRPR 4	Broadleaf upland forest, chaparral, lower montane coniferous forest, coastal scrub. Elevation range: 325 – 3250 feet. Blooms: April – June.	<b>No Potential.</b> The Study Area does not contain forest or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Usnea longissimi</i> Methuseiah's beard lichen	CRPR 4	Broadleafed upland forest, North Coast coniferous forest, on tree branches; usually on old growth hardwoods and conifers. Elevation range 165 – 4790 feet.	<b>No Potential.</b> The Study Area does not contain broadleafed upland forest or north coast coniferous forest habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Viburnum ellipticum</i> oval-leaved viburnum	CRPR 2B	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 705 – 4595 feet. Blooms: May – June.	<b>No Potential.</b> The Study Area does not contain forest, woodland, or chaparral habitat to support this species.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<b>WILDLIFE</b>				
<b>Mammals</b>				
<i>Antrozous pallidus</i> pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Moderate Potential.</b> The Study Area does contain a few trees that could support roosting pallid bats.	<b>Presence Unknown.</b> Recommendations to reduce potential impacts to bats are described in section 7.
<i>Corynorhinus townsendii</i> Townsend's western big-eared bat	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	<b>Unlikely.</b> The Study Area does not have structures that could support roosting Townsend's big-eared bats.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Lasiurus blossevillii</i> western red bat	SSC, WBWG High	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	<b>Moderate Potential.</b> The Study Area does contain riparian areas or broad-leaved trees that could support this species.	<b>Presence Unknown.</b> Recommendations to reduce potential impacts to bats are described in section 7.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Myotis volans</i> long-legged myotis	WBWG High	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices, buildings, mines, and caves are important day roosts.	<b>Moderate Potential.</b> The Study contains some large trees that may be suitable for this species.	<b>Presence Unknown.</b> Recommendations to reduce potential impacts to bats are described in section 7.
<i>Bassariscus astutus</i> ringtail	SFP	Widely distributed throughout most of California; absent from some portions of the Central Valley and northeastern California. Found in a variety of habitats including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands, and montane conifer forests usually under 4,600 feet elevation. Typically uses cliffs or larger trees for shelter. Usually found in or near riparian areas.	<b>Unlikely.</b> The Study Area does not contain forests or rocky outcroppings that this species would use for shelter. It is in an agricultural setting and not near documented occurrences.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Taxidea taxus</i> American badger	SSC	Most abundant in drier open stages of most shrub, woodland, and herbaceous vegetation types. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	<b>Moderate Potential.</b> The Study Area does contain a few structures and trees that could support roosting pallid bats.	<b>Presence Unknown.</b> Recommendations to reduce potential impacts to badgers are described in section 7.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Birds</i>				
<i>Agelaius tricolor</i> tricolored blackbird	SC (E), SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	<b>No Potential.</b> Suitable habitat for nesting is absent in the Study Area.	<b>Not Present.</b> No further recommendations for this species.
<i>Ammodramus savannarum</i> grasshopper sparrow	SSC	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	<b>Unlikely.</b> This species favors open grasslands with scattered shrubs but the habitat in the study area is more grazed than the species prefers.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Aquila chrysaetos</i> golden eagle	BGEPA, SFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	<b>Unlikely.</b> This species has not been documented to nest near the Study Area and no suitable nesting habitat is present. The species may occasionally forage or transit over or in the Study Area.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Ardea alba</i> great egret	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	<b>No Potential to Nest.</b> The Study Area lacks clusters of trees in proximity to aquatic features with extended inundation periods. The species may occasionally forage onsite.	<b>Not Present.</b> Suitable habitat for nesting is not present. The species may occasionally forage in the area. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Ardea herodias</i> great blue heron	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	<b>No Potential to Nest.</b> The Study Area lacks clusters of trees in proximity to aquatic features with extended inundation periods. The species may occasionally forage onsite.	<b>Not Present.</b> Suitable habitat for nesting is not present. The species may occasionally forage in the area. No further recommendations for this species.
<i>Asio flammeus</i> short-eared owl	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	<b>Unlikely to Nest.</b> The Study Area lacks elevated areas with herbaceous vegetation that would support nesting.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<p><i>Asio otus</i> long-eared owl</p>	<p>SSC</p>	<p>Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.</p>	<p><b>Unlikely.</b> The Study Area does not have suitable habitat to support this species.</p>	<p><b>Presumed Absent.</b> No further recommendations for this species.</p>
<p><i>Athene cunicularia</i> burrowing owl</p>	<p>SSC</p>	<p>Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.</p>	<p><b>Moderate Potential (wintering).</b> Suitable burrows for occupation and nesting are absent. Widely regarded to only be a winter visitor to Sonoma County. The project will be completed during the summer months and will not effect wintering habitat.</p>	<p><b>Presumed Absent.</b> See Section 7 for recommendations.</p>
<p><i>Brachyramphus marmoratus</i> marbled murrelet</p>	<p>FT, SE</p>	<p>Primarily coastal marine, but breeds in old-growth redwood stands containing platform-like branches along the coast. Migrates daily from inland nests and roosts to forage in the Pacific Ocean.</p>	<p><b>No Potential.</b> Suitable forests for nesting are not present. No saltwater habitats are present that would facilitate foraging.</p>	<p><b>Not Present.</b> Suitable habitat for this species is not present. No further recommendations for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Buteo swainsoni</i> Swainson's hawk	ST	Summer resident in Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	<b>Unlikely.</b> The trees in the Study Area could support nesting, however, this species has not been documented to nest within five miles of the Study Area and because it typically exhibits high site fidelity for nesting locations, colonization of the Study Area is unlikely.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Charadrius alexandrinus nivosus</i> western snowy plover	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	<b>No Potential.</b> Suitable beaches for nesting are not present. No saltwater habitats are present that would facilitate foraging.	<b>Not Present.</b> Suitable habitat for this species is not present. No further recommendations for this species.
<i>Circus cyaneus</i> northern harrier	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	<b>Unlikely.</b> Habitat in the study area is unlikely to support nesting or foraging because it is of limited extent.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<p><i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo</p>	<p>FT, SE</p>	<p>Summer resident in California with limited breeding to Central Valley and southern California. Historical breeding as north as Sebastopol, Sonoma County. Breeds in dense riparian forests, typically with early successional vegetation. Nests in densely-foliated deciduous trees and shrubs. Forages predominantly on caterpillars.</p>	<p><b>No Potential.</b> The Study Area lacks dense vegetation and riparian habitat.</p>	<p><b>Not Present.</b> Suitable habitat is not present. No further recommendations for this species.</p>
<p><i>Contopus cooperi</i> olive-sided flycatcher</p>	<p>SSC</p>	<p>Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.</p>	<p><b>Unlikely.</b> The Study Area does not contain nesting habitat for this species.</p>	<p><b>Presumed Absent.</b> No further recommendations for this species.</p>
<p><i>Coturnicops noveboracensis</i> yellow rail</p>	<p>SSC</p>	<p>Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.</p>	<p><b>No Potential.</b> Suitable marshes and/or wet meadows with dense vegetation are absent in the Study Area.</p>	<p><b>Not Present.</b> Suitable habitat for nesting and foraging is not present. No further recommendations for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Cypseloides niger</i> black swift	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. No modern nesting records in Napa County.	<b>No Potential.</b> Cliffs, bluffs and waterfalls are absent in the Study Area.	<b>Not Present.</b> Suitable habitat for nesting is not present. No further recommendations for this species.
<i>Elanus leucurus</i> white-tailed kite	SFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	<b>Moderate Potential.</b> The Study Area contains some trees that may be suitable to support nesting by this species.	<b>Presence Unknown.</b> See section 7 for recommendations.
<i>Falco peregrinus anatum</i> American peregrine falcon	SE, SFP	Year-round resident and winter visitor. Occurs near water, including coastal areas, wetlands, lakes and rivers. Usually nests on sheltered cliffs or tall man-made structures. Preys primarily on waterbirds.	<b>No Potential to Nest.</b> Cliffs and other structures that could support nesting are absent in the Study Area. The species may occasionally forage over or in the Study Area.	<b>Not Present.</b> No further recommendations for this species.
<i>Geothlypis trichas sinuosa</i> San Francisco (saltmarsh) common yellowthroat	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	<b>No Potential to Nest.</b> Vegetation that could support nesting are absent in the Study Area. The species may occasionally forage over or in the Study Area.	<b>Presumed Absent.</b> No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Haliaeetus leucocephalus</i> bald eagle	BGEPA, SE, SFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	<b>No Potential to Nest.</b> Trees in proximity to foraging areas that could support nesting are absent in the Study Area.	<b>Not Present.</b> Suitable habitat for nesting and foraging is not present. The species may occasionally fly over the Study Area. No further recommendations for this species.
<i>Icteria virens</i> yellow-breasted chat	SSC	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow ( <i>Salix</i> spp.), blackberry ( <i>Rubus</i> spp.), and California grape ( <i>Vitis californicus</i> ).	<b>Unlikely.</b> Riparian areas with open canopies that would be likely to support nesting are not present in the Study Area. The species	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Lanius ludovicianus</i> loggerhead shrike	SSC	Year-round resident in open woodland, grasslands, savannah, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	<b>Unlikely.</b> The Study Area has some potential to support birds passing through but the active farming activities on most of the site make it unlikely to support this species. Because of this and because the species is only rarely observed in the immediate vicinity of the Study Area (eBird 2024), it is unlikely to be present.	<b>Presumed Absent.</b> No additional recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<p><i>Laterallus jamaicensis coturniculus</i> California black rail</p>	<p>ST, SFP</p>	<p>Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.</p>	<p><b>No Potential to Nest.</b> Vegetation types that could support nesting are absent in the Study Area.</p>	<p><b>Not Present.</b> Suitable habitat for nesting is not present. No further recommendations for this species.</p>
<p><i>Melospiza melodia samuelis</i> San Pablo song sparrow</p>	<p>SSC</p>	<p>Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed (<i>Salicornia</i> spp.), with gumplant (<i>Grindelia</i> spp.) and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.</p>	<p><b>No Potential to Nest.</b> Vegetation that could support nesting is absent in the Study Area.</p>	<p><b>Not Present.</b> Suitable habitat for nesting is not present. No further recommendations for this species.</p>
<p><i>Nycticorax nycticorax</i> black-crowned night heron</p>	<p>no status (breeding sites protected by CDFW)</p>	<p>Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.</p>	<p><b>No Potential to Nest.</b> Clusters of trees and emergent vegetation that could support nesting are absent. Foraging areas are very limited.</p>	<p><b>Not Present.</b> Suitable habitat for nesting is not present. The species may occasionally forage over or in the Study Area. No further recommendations for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<p><i>Passerculus sandwichensis alaudinus</i> Bryant's savannah sparrow</p>	<p>SSC</p>	<p>Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas, including grasslands. Also uses drier, more upland coastal grasslands. Nests near the ground in taller vegetation, including along levees and canals.</p>	<p><b>No Potential to Nest.</b> Study Area is further from the coast than typical for this species.</p>	<p><b>Not Present.</b> No further recommendations for this species.</p>
<p><i>Progne subis</i> purple martin</p>	<p>SSC</p>	<p>Summer resident. Inhabits woodlands and low-elevation coniferous forests. Nests in old woodpecker cavities and man-made structures (bridges, utility towers). Nest is often located in tall, isolated tree or snag.</p>	<p><b>No Potential to Nest.</b> Trees and other structures in proximity to foraging habitat that could support nesting are absent in the Study Area.</p>	<p><b>Not Present.</b> Suitable habitat for nesting is not present. No further recommendations for this species.</p>
<p><i>Rallus obsoletus obsoletus</i> California Ridgway's (clapper) rail</p>	<p>FE, SE, SFP</p>	<p>Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on mollusks and crustaceans.</p>	<p><b>No Potential to Nest.</b> Habitat and associated vegetation types that could support nesting are absent in the Study Area.</p>	<p><b>Not Present.</b> Suitable habitat for nesting and foraging is not present. No further recommendations for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Riparia riparia</i> bank swallow	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	<b>No Potential to Nest.</b> Vertical banks that could support nesting are absent in the Study Area.	<b>Not Present.</b> Suitable habitat for nesting is not present. No further recommendations for this species.
<i>Setophaga petechia brewsteri</i> (Brewster's) yellow warbler	SSC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting is variable, but dense willow growth is typical. Occurs widely on migration.	<b>Unlikely.</b> Riparian areas and dense vegetation of adequate height around regular inundated streams to support nesting are not present in the Study Area.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Strix occidentalis caurina</i> northern spotted owl	FT,ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with stands of mature conifers. In Napa County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	<b>No Potential to Nest.</b> Forests that could support nesting or foraging are absent in the Study Area.	<b>Not Present.</b> Suitable habitat is not present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	SSC	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	<b>No Potential to Nest.</b> Emergent wetlands that could support nesting or foraging are absent in the Study Area.	<b>Not Present.</b> Suitable habitat is not present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Reptiles and Amphibians</i>				
<p><i>Ambystoma californiense</i> California tiger salamander – Sonoma County DPS</p>	<p>FE, ST</p>	<p>Occurs in grasslands, oak savannah, and open woodlands with a mosaic of vernal pools or similar seasonal wetlands. Requires vernal pools or similarly inundated waters for breeding and larvae. Adults are fossorial utilizing small mammal burrows for estivation.</p>	<p><b>High Potential.</b> There are multiple nearby occurrences for this species documented in the CNDDDB (CDFW 2024). These occurrences are not separated from the Study Area by barriers that would preclude it from dwelling in its uplands. Suitable breeding habitat is absent from the Study Area.</p>	<p><b>Assumed Present.</b> See Section 7 for further recommendations.</p>
<p><i>Dicamptodon ensatus</i> California giant salamander</p>	<p>SSC</p>	<p>Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.</p>	<p><b>No Potential.</b> No cool streams or moist forests are present in the Study Area.</p>	<p><b>Not Present.</b> Suitable habitat for this species is not present. No further recommendations for this species.</p>
<p><i>Emmys marmorata</i> northwestern pond turtle</p>	<p>SSC</p>	<p>A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.</p>	<p><b>Moderate Potential.</b> There is potential foraging habitat in the Study Area. Colgan creek provides connectivity with the Laguna de Santa Rosa, which has documented occurrences of western pond turtle.</p>	<p><b>Presence Unknown.</b> See section 7 for recommendations.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Rana boylei</i> foothill yellow-legged frog	SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partial-sunlight, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on invertebrates (aquatic and terrestrial).	<b>No Potential.</b> The Study Area does not contain rocky streams.	<b>Not Present.</b> Suitable habitat (rocky streams) for this species is not present. No further recommendations for this species.
<i>Rana draytonii</i> California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	<b>Unlikely.</b> This species is generally considered to be absent from the Santa Rosa Plain and there are no nearby occurrences.	<b>Presumed Absent.</b> No further recommendations for this species.
<i>Taricha rivularis</i> red-bellied newt	SSC	Inhabits coastal forests from southern Sonoma County northward, with an isolated population in Santa Clara County. Redwood forest provides typical habitat, though other forest types (e.g., hardwood) are also occupied. Adults are terrestrial and fossorial. Breeding occurs in streams, usually with relatively strong flows.	<b>No Potential.</b> No streams or forests are present in the Study Area.	<b>Not Present.</b> Suitable habitat (rocky streams with surrounding forests) for this species is not present. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Fishes</i>				
<i>Eucyclogobius newberryi</i> tidewater goby	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches. Requires fairly still but not stagnant water and high oxygen levels.	<b>No Potential.</b> The Study Area does not contain brackish or estuarine waters.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Hysteroecarpus traskii</i> pomu Russian River tule perch	SSC	Found in lower elevation streams of the Russian River basin. Requires clear, flowing water with abundant cover. They also require deep (greater than three feet) pool habitat.	<b>No Potential.</b> The Study Area does not contain riverine or perennial stream habitat for this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lampetra ayresi</i> river lamprey	SSC	Lower Sacramento River, San Joaquin River and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, Ammocoetes need sandy backwaters or stream edges, good water quality and temps less than 25 degrees Celsius.	<b>No Potential.</b> The Study Area does not contain suitable anadromous or estuarine waters.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Lavinia symmetricus parvipinnis</i> Gualala roach	SSC	Known from the Gualala River watershed in predominantly warmer waters. Presumably prefers pools, but may favor stream margins when pike-minnows are present. Feeds on filamentous algae, crustaceans, and insects.	<b>No Potential.</b> The Study Area is not on the Gualala River or contain riverine habitat.	<b>Not Present.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Mylopharodon conocephalus</i> hardhead	SSC	Known from mid-elevation streams in the Sacramento, San Joaquin, Napa River, and Russian River drainages. Prefer clear, deep pools with sand-gravel-boulder bottoms and slow water velocity.	<b>No Potential.</b> The Study Area does not contain riverine or perennial stream habitat for this species.	<b>Not Present.</b> No further actions are recommended for this species.
<i>Oncorhynchus kisutch</i> coho salmon – central CA coast ESU	FE, SE	Occurs in inland and coastal rivers, and marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also requires riparian cover to contribute to cool, well-aerated water. Federal listing applies to populations between Punta Gorda and San Lorenzo River. State listing applies populations south of San Francisco Bay only.	<b>Unlikely.</b> The Study Area contains Colgan Creek, which may provide connectivity to anadromous waters, though the lower reaches of the Laguna de Santa Rosa are generally considered not suitable for salmonids. The project will not impact Colgan Creek and will occur during the summer and will therefore have no effect on salmonids.	<b>Presumed absent.</b> No further actions are recommended for this species.
<i>Oncorhynchus mykiss irideus</i> steelhead - central CA coast DPS	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	<b>Unlikely.</b> The Study Area contains Colgan Creek, which may provide connectivity to anadromous waters, though the lower reaches of the Laguna de Santa Rosa are generally considered not suitable for salmonids. The project will not impact Colgan Creek and will occur during the summer and will therefore have no effect on salmonids.	<b>Presumed absent.</b> No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<p><i>Oncorhynchus tshawytscha</i> Chinook salmon - California coastal ESU</p>	<p>FT</p>	<p>This ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps &gt;27 degrees C lethal to adults.</p>	<p><b>Unlikely.</b> The Study Area contains Colgan Creek, which may provide connectivity to anadromous waters, though the lower reaches of the Laguna de Santa Rosa are generally considered not suitable for salmonids. The project will not impact Colgan Creek and will occur during the summer and will therefore have no effect on salmonids.</p>	<p><b>Presumed absent.</b> No further actions are recommended for this species.</p>
<p><i>Pogonichthys macrolepidotus</i> Sacramento splittail</p>	<p>SSC</p>	<p>Formerly endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. A freshwater species, but tolerant of moderate salinity (10-18 parts per thousand).</p>	<p><b>No Potential.</b> The Study Area does not contain riverine or estuarine waters that would support this species.</p>	<p><b>Not Present.</b> No further actions are recommended for this species.</p>
<p><i>Spirinchus thaleichthys</i> longfin smelt</p>	<p>FC, ST, SSC</p>	<p>Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.</p>	<p><b>No Potential.</b> The Study Area does not contain riverine or estuarine waters that would support this species.</p>	<p><b>Not Present.</b> No further actions are recommended for this species.</p>

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
<i>Invertebrates</i>				
<p><i>Syncaris pacifica</i> California freshwater shrimp</p>	<p>FE, SE</p>	<p>Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.</p>	<p><b>No Potential.</b> The Study Area does not contain suitable perennial stream habitat for this species. The Study Area is outside the documented range of occurrence for this species.</p>	<p><b>Not Present.</b> No further actions are recommended for this species.</p>

**\*Key to status codes:**

FC	Federal Candidate for Listing
FE	Federal Endangered
BGEPA	Bald and Golden Eagle Protection Act Species
FT	Federal Threatened
SC (E/T)	State Candidate for Listing (Endangered/Threatened)
SE	State Endangered
SFP	State Fully Protected Animal
SR	State Rare
SSC	State Species of Special Concern
ST	State Threatened
CRPR 1A	CNPS CRPR 1A: Plants presumed extinct in California
CRPR 1B	CNPS CRPR 1B: Plants rare, threatened or endangered in California and elsewhere
CRPR 2A	CNPS CRPR 2A: Plants presumed extirpated in California, but more common elsewhere
CRPR 2B	CNPS CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 3	CNPS CRPR 3: Plants about which CNPS needs more information (a review list)
CRPR 4	CNPS CRPR 4: Plants of limited distribution (a watch list)
WBWG	Western Bat Working Group High or Medium-high Priority Species

**Potential to Occur:**

No Potential: Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

**Results and Recommendations:**

Present: Species was observed on the site or has been recorded (i.e. CNDDDB, other reports) on the site recently.

Assumed Present: Species is assumed to be present on-site based on the presence of key habitat components.

Assumed Present without Impact: Species assumed present; however, project activities will not have an impact on the species.

Presumed Absent: Species is presumed to not be present due to a lack of key habitat components.

Not Present: Species is considered not present due to a clear lack of any suitable habitat and/or local range limitations.

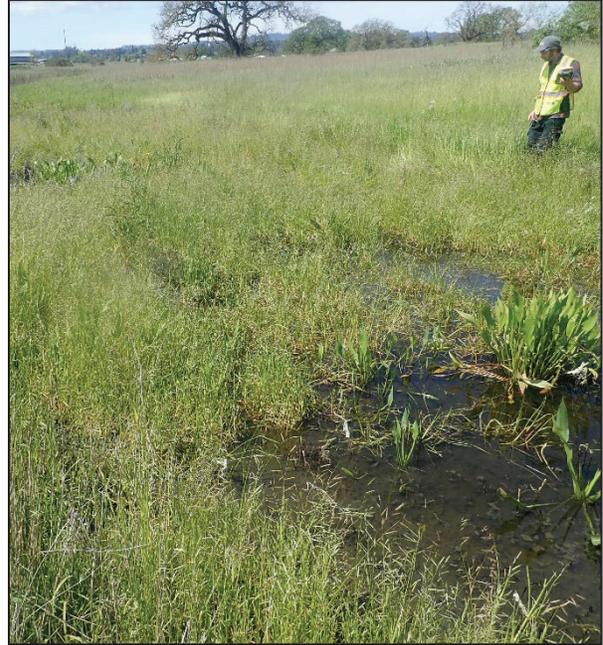
Not Observed: Species was not observed during dedicated/formal surveys.

Presence Unknown: Species has the potential to be present, but no dedicated surveys to determine absence/presence were performed.

## APPENDIX D. REPRESENTATIVE PHOTOS OF THE STUDY AREA



Photograph 1. Non-native grassland within the Study Area. Photograph taken on April 25, 2024, facing south.



Photograph 2. Seasonal wetland swale. Photograph taken on April 25, 2024, facing west.



Photograph 3. Wetland ditch, showing hydrophytic plant species and algal matting. Photograph taken on April 25, 2024, facing north.



Photograph 4. Seasonal wetland swale. Photograph taken on April 25, 2024, facing west.



Photograph 5. Maintenance well and upland non-native grassland. Photograph taken April 25, 2024, facing south.



Photograph 7. Seasonal wetland swale. Photograph taken April 25, 2024, facing southwest.



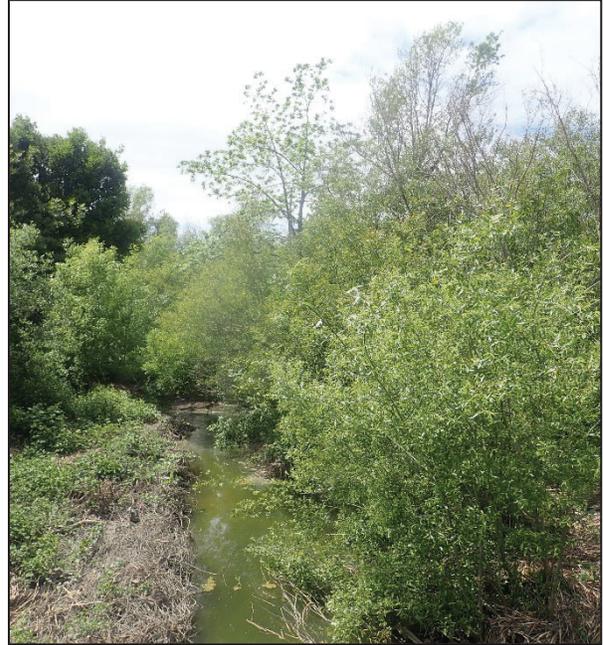
Photograph 6. Upland ditch. Photograph taken April 25, 2024, facing northeast.



Photograph 8. Upland non-native grassland. Photograph taken April 25, 2024, facing northwest.



Photograph 9. Seasonal wetland. Photograph taken on March 21, 2024, facing west.



Photograph 11. Colgan Creek Flood Control Channel (Intermittent Stream). Photograph taken April 25, 2024, facing west.



Photograph 10. Riparian vegetation along Colgan Creek Flood Control Channel. Photograph taken April 25, 2024, facing west.



Photograph 12. Seasonal wetland that drains into Colgan Creek. Colgan Creek Riparian in background. Photograph taken April 25, 2024, facing south.



Photograph 13. Wetland ditch, along Meadow Lane. Photograph taken March 21, 2024, facing west.



Photograph 15. Sebastopol meadowfoam (*Limnanthes vinclulans*; FE, SE, CRPR 1B) population in the northernmost seasonal wetland swale.



Photograph 14. Wetland ditch, along Meadow Lane. Photograph taken March 21, 2024, facing southwest.



Photograph 16. Sebastopol meadowfoam population in the northernmost seasonal wetland swale. Photograph taken April 25, 2024, facing north.

## APPENDIX D. CULTURAL RESOURCES STUDY

Available at the City for review by qualified individuals only.



## APPENDIX E. NOISE AND VIBRATION TECHNICAL MEMORANDUM





## MEMORANDUM

**Date:** 28 June 2024 **Job No.:** 21202-18

**To:** Geoff Reilly, Senior Environmental Planner, WRA, Inc.

**From:** Johnathan Rizzo-Mosbaugh, Environmental Scientist, Baseline Environmental Consulting

**Subject:** **Construction Noise and Vibration Technical Study, Llano Trunk Rehabilitation Project, Santa Rosa, California**

### INTRODUCTION

Baseline Environmental Consulting (Baseline) has prepared this technical study to evaluate the potential noise and vibration impacts associated with construction of the proposed Llano Trunk Rehabilitation Project (Project) located along the border of the City of Santa Rosa (City) and unincorporated Sonoma County (County) in California. The proposed Project includes the rehabilitation of the existing Llano Road Trunk pipeline, a critical City wastewater collection facility, which carries approximately two thirds of the City's wastewater flow to the Laguna Wastewater Treatment Plant. The existing pipeline is nearly 50 years old and must be rehabilitated to prevent failure of the system and/or more impactful actions that would be associated with replacement.

The scope of the Project includes rehabilitation of approximately 8,170 linear feet of the 66-inch reinforced concrete pipe trunk sewer. It also includes condition assessment of the existing manholes along the alignment and rehabilitation of the manholes as recommended at the conclusion of the condition assessment field investigation. To implement the Project, a temporary bypass pumping facility will be required and will include temporary bypass pumps, associated manifold and valving assemblies, and approximately 9,200 linear feet of triple barrel 18-inch diameter high-density polyethylene (HDPE) bypass pipelines. The HDPE pipelines will be installed in predominantly undeveloped areas adjacent to Llano Road and Meadow Lane. All effects of the Project will be temporary because the project footprint will be restored after conclusion of the Project.

This technical memorandum includes an overview of fundamental noise and vibration concepts, a description of the existing sensitive receptors and noise conditions in the Project vicinity, and an analysis of the potential noise and vibration impacts associated with construction of the Project. This study will be used to support an Initial Study and Mitigated Negative Declaration for the proposed Project.

## **NOISE AND VIBRATION CONCEPTS**

### **Noise Concepts and Terminology**

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used, and monitoring results are reported in A-weighted decibels (dBA). Decibels and other acoustical terms are defined in **Table 1**.

A typical method for determining a person’s subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people:<sup>1</sup>

- A 3-dBA change is considered barely noticeable.
- A 5-dBA change is considered clearly noticeable, but not dramatic.
- A 10-dBA change is perceived as a doubling or halving in loudness.

**Table 1. Definition of Acoustical Terms**

<b>Term</b>	<b>Definition</b>
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise “level.” This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency response of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Maximum Sound Levels (Lmax)	The maximum sound level measured during a given measurement period.
Equivalent Noise Level (Leq)	The average A-weighted noise level during the measurement period. For this evaluation, Leq refers to a 1-hour period unless otherwise stated.

<sup>1</sup> Charles M. Salter Associates, Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

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Term	Definition
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The existing level of environmental noise at a given location from all sources near and far.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources: Charles M. Salter Associates, Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No.0123, September.

**General Information on Vibration**

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. Typically, ground-borne vibration generated by human activities attenuates rapidly with distance from the source of the vibration.

Several different methods are used to quantify vibration. Vibration amplitudes are usually expressed as either Peak Particle Velocity (PPV) or as Root Mean Square (RMS) velocity. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration event. Thus, RMS is more appropriate for evaluating human response to vibration. PPV and RMS are described in units of inches per second (in/sec), and RMS is also described in vibration decibels (VdB).

**ENVIRONMENTAL SETTING**

**Existing Ambient Noise Conditions**

As mentioned above, the proposed HDPE pipelines would be installed in predominantly undeveloped areas adjacent to Llano Road and Meadow Lane. The primary source of noise in the Project vicinity is traffic on Todd Road, which intersects Llano Road within the northern

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section of the Project. Based on the 2020 noise contours included in the Santa Rosa General Plan,<sup>2</sup> the ambient noise level from traffic adjacent to Todd Road is approximately 60 dba. Therefore, the maximum ambient noise level associated with traffic along the Project alignment is 60 dba.

### Existing Sensitive Receptors

Noise-sensitive receptors are locations where people are more susceptible to elevated noise levels than others due to the amount of noise exposure and the types of activities typically involved. Sensitive receptors include residences, schools, places of worship, hospitals, convalescent homes, hotels, libraries. Noise-sensitive receptors near the Project include single-family homes located as close as 54 feet from the pipeline alignment.

Vibration-sensitive receptors are locations where people are more susceptible to the adverse effects of vibration. These include residences and other buildings where people normally sleep, as well as buildings that have the potential for activity interference (e.g., schools and places of worship). In certain situations, vibration also can cause structural damage. Vibration-sensitive receptors near the Project are the same single-family homes identified as noise-sensitive receptors.

### Regulatory Framework

#### *Federal Transit Administration*

The Federal Transit Administration (FTA) has developed a general construction noise threshold of 90 dBA Leq at the nearest noise-sensitive receptor.<sup>3</sup> According to the FTA, if the combined noise level in 1 hour from the two noisiest pieces of equipment exceeds the 90 dBA threshold at a noise-sensitive receptor, then there may be a substantial adverse reaction.

The FTA has developed vibration thresholds to prevent disturbances to (i.e., annoyance of) building occupants based on the frequency of a vibration event, as shown in **Table 2**.<sup>4</sup> Vibrations that exceed the vibration thresholds could result in potential disturbance to people or activities. For construction activities, FTA's recommended vibration threshold for the disturbance of residences is 80 VdB.

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<sup>2</sup> City of Santa Rosa, 2009. Santa Rosa General Plan 2035. November 3.

<sup>3</sup> Federal Transit Administration (FTA), 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No.0123, September.

<sup>4</sup> Federal Transit Administration (FTA), 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No.0123, September.

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**Table 2. Vibration Thresholds for Disturbance to Building Occupants**

Land Use	Maximum RMS Velocity (VdB)		
	Frequent Events	Occasional Events	Infrequent Events
Buildings where vibration would interfere with operations	65	65	65
Residences and buildings where people normally sleep	72	75	80
Institutional land uses with primarily daytime use	75	78	83

Note: Frequent events = more than 70 events per day; Occasional events = 30 - 70 events per day; Infrequent events = less than 30 events per day.

Source: FTA, 2018.

**California Department of Transportation**

The California Department of Transportation (Caltrans) has developed vibration thresholds based on PPV values to evaluate the potential impact of construction vibration on structures.<sup>5</sup> Construction vibrations that exceed the vibration thresholds could result in potential damage to structures. For construction activities, Caltrans’ recommends vibration threshold for damage to older residential structures is 0.3 in/sec.

**Table 3. Vibration Thresholds for Damage to Structures**

Land Use	Maximum Peak Particle Velocity (in/sec)	
	Transient Source	Continuous or Frequent Intermittent Source
Extremely fragile historic buildings, ruins	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern commercial buildings	2.0	0.5

Note: Transient sources create a single isolated vibration event (e.g., blasting). Continuous/frequent intermittent sources include impact pile drivers, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans, 2020.

<sup>5</sup> California Department of Transportation (Caltrans), 2020. Transportation and Construction Vibration Guidance Manual.

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### ***City of Santa Rosa General Plan***

The Noise and Safety Element of the Santa Rosa General Plan<sup>6</sup> includes policies and programs to guide the City in maintaining acceptable community noise levels. None of the policies or programs apply to construction noise.

### ***City of Santa Rosa Noise Ordinance***

Chapter 17-16 of the City's municipal code outlines noise standards associated with land-use development. None of these standards apply to construction noise.

### ***Sonoma County General Plan***

The Noise Element of the Sonoma County General Plan<sup>7</sup> includes goals and policies to guide the County in maintaining acceptable community noise levels. Policy NE-1c includes noise criteria for recurring impulse tones such as pile drivers. There are no other policies that would apply to construction noise.

## **SIGNIFICANCE THRESHOLDS**

The City and County have not established criteria for assessing construction noise and vibration impacts. Therefore, in this analysis the following FTA and Caltrans thresholds are used to evaluate the significance of potential noise and vibration impacts to nearby single-family homes associated with implementation of the Project:

- Construction Noise Threshold = 90 dBA Leq
- Construction Vibration Disturbance Threshold = 80 VdB
- Construction Vibration Damage Threshold = 0.3 in/sec

## **ANALYSIS AND FINDINGS**

### **Construction Noise**

Construction of the Project is anticipated to begin in June 2025 and is expected to occur over a period of approximately 5 months. As construction progresses along the Project alignment, noise from construction activities would temporarily affect different sensitive receptors. Construction noise levels would vary from day-to-day, depending on the number and type of equipment being used, the types and duration of activity being performed, the distance

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<sup>6</sup> City of Santa Rosa, 2009. Santa Rosa General Plan 2035. November 3.

<sup>7</sup> Sonoma County Permit and Resource Management Department, 2012. Sonoma County General Plan 2020. As Amended on October 23, 2012.

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between the noise source and the receptor, and the presence of barriers (if any) between the noise source and receptor.

To evaluate noise levels during construction, the Project applicant provided a list of construction equipment that would be used for the Project (e.g., excavator and backhoe). The types of construction equipment that would be used for the Project and the associated noise calculations are included in **Attachment A**.

In accordance with the FTA guidance,<sup>8</sup> construction noise impacts were evaluated by quantifying the maximum noise levels that would result from simultaneous operation of the two noisiest pieces of equipment near the boundary of the Project closest to a noise-sensitive receptor. Modeling the potential noise impact at the closest noise-sensitive receptor is conservative because it represents a worst-case scenario for all nearby sensitive receptors exposed to noise during Project construction. The Project’s construction noise level was estimated at the nearest noise-sensitive receptor, a single-family home, located at 3944 Llano Road approximately 54 feet east of the Project alignment. As shown in **Table 4**, Project construction would not generate noise levels above the FTA’s 90 dBA Leq threshold at the nearest noise-sensitive receptor. Therefore, Project construction would not generate a substantial temporary increase in ambient noise levels in the Project vicinity and this impact would be less than significant.

**Table 4. Potential Noise Impact at Nearest Sensitive Receptor from Project Construction**

Source	Maximum Noise Level (dBA Leq)	Noise Threshold (dBA Leq)	Exceed Threshold?
Construction	84	90	No

Source: Noise calculations included in **Attachment A**.

**Construction Vibration**

Construction can result in varying degrees of ground vibration depending on the type of equipment and activity. The primary types of equipment that could generate substantial ground vibration during project construction and the associated vibration calculations are included in **Attachment A**. To evaluate the Project’s potential vibration effects on nearby sensitive receptors, it was assumed that the equipment that could generate substantial ground vibration would be used the near boundary of the Project closest to a vibration-sensitive receptor. Modeling the potential vibration impact at the closest vibration-sensitive receptor is

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<sup>8</sup> Federal Transit Administration (FTA), Office of Planning and Environment. 2006. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06.

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conservative because it represents a worst-case scenario for all nearby sensitive receptors exposed to vibration during Project construction.

The Project’s construction vibration levels were estimated at the nearest vibration-sensitive receptor, a single-family home, located at 3944 Llano Road approximately 54 feet east of the Project alignment. As shown in **Table 5** and **Table 6**, Project construction would not generate vibration levels above the disturbance and damage thresholds, respectively, at the nearest vibration-sensitive receptor. Therefore, Project construction would not generate excessive vibration levels that would disturb nearby residents or damage older residential structures and this impact would be less than significant.

**Table 5. Potential Vibration Disturbance Impact at Nearest Sensitive Receptor from Project Construction**

Ground Vibration Equipment	Maximum Vibration Level (VdB)	Disturbance Threshold (VdB)	Exceed Threshold?
Loaded Trucks	76	80	No

Source: Vibration calculations included in **Attachment A**.

**Table 6. Potential Vibration Damage Impact at Nearest Sensitive Receptor from Project Construction**

Ground Vibration Equipment	Maximum Vibration Level (in/sec)	Damage Threshold (in/sec)	Exceed Threshold?
Loaded Trucks	0.02	0.3	No

Source: Vibration calculations included in **Attachment A**.

**ATTACHMENT A**  
**CONSTRUCTION NOISE AND VIBRATION CALCULATIONS**

Construction Noise Calculations for Potential Adverse Effects

Source	Noise Generating Equipment (Project Applicant List) <sup>1</sup>	Noise Generating Equipment (USDOT List) <sup>2</sup>	Acoustical Usage Factor <sup>2</sup>	Maximum Noise Level @ 50 feet (Lmax) <sup>3</sup>	Typical Noise Level @ 50 feet (dBA) <sup>4</sup>	Ground Absorption Constant (G)	Reference Distance (D <sub>1</sub> )	Distance to Receptor (D <sub>2</sub> )	Noise Level at Receptor (dBA <sub>2</sub> )	Maximum Noise Level at Receptor (dBA Leq)	Noise Threshold (dBA Leq)	Buffer Distance to Threshold
		Unit:	%	dB Leq	dB Leq	unitless	feet	feet	dB Leq	dB Leq	dB Leq	feet
Construction	Doosan P185 Portable Air Compressor	Compressor (air)	40	80	76	0	50	54	75			
	Air Compressor 185	Compressor (air)	40	80	76	0	50	54	75			
	Cat 335 Excavator	Excavator	40	85	81	0	50	54	80			
	Honda 6500 Portable Power	Generator (<25 KVA, VMS Signs)	50	82	79	0	50	54	78			
	Generator	Generator (<25 KVA, VMS Signs)	50	82	79	0	50	54	78			
	Dodge Ram 5500	Pickup Truck	40	55	51	0	50	54	50			
	Dodge Ram 3500	Pickup Truck	40	55	51	0	50	54	50			
	Refrigeration Truck	Flat Bed Truck	40	84	80	0	50	54	79			
	CIPP Boiler Truck/Trailer	Flat Bed Truck	40	84	80	0	50	54	79			
	TV Truck	Flat Bed Truck	40	84	80	0	50	54	79			
	Vactor Jetter/Combo Cleaner	Flat Bed Truck	40	84	80	0	50	54	79			
	Semi Trucks	Flat Bed Truck	40	84	80	0	50	54	79	84	90	29
	Resin Static Mixer	All other Equipment>5 HP	50	85	82	0	50	54	81			
	Conveyor/Pinch Roller Trailer	All other Equipment>5 HP	50	85	82	0	50	54	81			
	Fusion Machine	All other Equipment>5 HP	50	85	82	0	50	54	81			
	Llанда 7000 psi Pressure Washer	Pneumatic Tools	50	85	82	0	50	54	81			
	Resin Pump/Heat Exchanger	Pumps	50	77	74	0	50	54	73			
6" Gorman Rupp Circulation Pumps	Pumps	50	77	74	0	50	54	73				
Vacuum Pump	Pumps	50	77	74	0	50	54	73				
12" Bypass Pumps	Pumps	50	77	74	0	50	54	73				
Cat 624 Loader	Front End Loader	40	80	76	0	50	54	75				
John Deere 410 Backhoe	Backhoe	40	80	76	0	50	54	75				

Notes:

Noise level at the receptor calculated based on the following equation:<sup>4</sup>

$$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$$

Where:

dBA<sub>2</sub> = Noise level at receptor

dBA<sub>1</sub> = Noise level at reference distance

D<sub>1</sub> = Reference distance

D<sub>2</sub> = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

<sup>1</sup> The type of construction equipment is based on construction equipment list provided by the applicant.

<sup>2</sup> U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

<sup>3</sup> Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

<sup>4</sup> California Department of Transportation, 1998. Technical Noise Supplement (TENS), Equation N-2141.2. October.

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$$L = 10 * \log_{10}(10^{(L_1/10)} + 10^{(L_2/10)})$$

L = Combined noise level

L<sub>1</sub> = Noise level for first noisiest piece of equipment

L<sub>2</sub> = Noise level for second noisiest piece of equipment

**Construction Vibration Calculations for Potential Disturbance**

Typical Ground-Borne Vibration Equipment	Unit:	Typical Vibration Level <sup>1</sup> (RMS <sub>1</sub> )	Receptor Type	Vibration Threshold	Reference Distance (D <sub>1</sub> )	Receptor Distance (D <sub>2</sub> )	Equipment Used for Project?	Vibration Level @ Receptor (RMS <sub>2</sub> )	Buffer Distance to Threshold
		VdB	--	VdB	feet	feet	--	VdB	feet
Pile Driver (impact)		104	Residence	80	25	54	No	--	--
Pile Driver (sonic)		93	Residence	80	25	54	No	--	--
Vibratory Roller		94	Residence	80	25	54	No	--	--
Hoe Ram		87	Residence	80	25	54	No	--	--
Large bulldozer		87	Residence	80	25	54	No	--	--
Caisson drilling		87	Residence	80	25	54	No	--	--
Loaded trucks		86	Residence	80	25	54	Yes	76	40
Jackhammer		79	Residence	80	25	54	No	--	--
Small bulldozer		58	Residence	80	25	54	No	--	--

**Notes:**

"--" = not applicable

Vibration levels at a distance was calculated based on the following equation:<sup>2</sup>

$$RMS_2 = RMS_1 - 30 * \log_{10}(D_2/D_1)$$

where

RMS<sub>1</sub> is the reference vibration level at a specified distance

RMS<sub>2</sub> is the calculated vibration level

D<sub>1</sub> is the reference distance

D<sub>2</sub> is the distance from the equipment to the receiver

<sup>1</sup> Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-4. September.

<sup>2</sup> Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Equations 7-3. September.

**Construction Vibration Calculations for Potential Building Damage**

Typical Ground-Borne Vibration Equipment	Typical Vibration Level <sup>1</sup> (PPV <sub>1</sub> )	Receptor Type	Vibration Threshold	Reference Distance (D <sub>1</sub> )	Receptor Distance (D <sub>2</sub> )	Equipment Used for Project?	Vibration Level @ Receptor (PPV <sub>2</sub> )	Buffer Distance to Threshold
Unit:	in/sec	--	in/sec	feet	feet	--	in/sec	feet
Pile Driver (impact)	0.644	Older Residential Structure	0.3	25	54	No	--	--
Pile Driver (sonic)	0.17	Older Residential Structure	0.3	25	54	No	--	--
Vibratory Roller	0.21	Older Residential Structure	0.3	25	54	No	--	--
Hoe Ram	0.089	Older Residential Structure	0.3	25	54	No	--	--
Large bulldozer	0.089	Older Residential Structure	0.3	25	54	No	--	--
Caisson drilling	0.089	Older Residential Structure	0.3	25	54	No	--	--
Loaded trucks	0.076	Older Residential Structure	0.3	25	54	Yes	0.02	10
Jackhammer	0.035	Older Residential Structure	0.3	25	54	No	--	--
Small bulldozer	0.003	Older Residential Structure	0.3	25	54	No	--	--

Notes:

"--" = not applicable

Buffer distance to vibration threshold for building damage calculated based on the following equation:<sup>2</sup>

$$D_2 = (PPV_1 / PPV_2)^{1.5} * D_1$$

Where:

PPV<sub>1</sub> = Vibration level at reference distance

PPV<sub>2</sub> = Vibration threshold for building damage

D<sub>1</sub> = Reference distance

D<sub>2</sub> = Distance to Receptor

<sup>1</sup> Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-4. September.

<sup>2</sup> Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Equations 7-2. September.

**Table 7-4 Vibration Source Levels for Construction Equipment (FTA 2018)**

<b>Equipment</b>	<b>PPV @ 25 feet</b>	<b>RMS @ 25 feet</b>
Pile Driver (impact) upper range	1.518	112
Pile Driver (impact) typical	0.644	104
Pile Driver (sonic) upper range	0.734	105
Pile Driver (sonic) typical	0.17	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall) in soil	0.008	66
Hydromill (slurry wall) in rock	0.017	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

## EQUIPMENT HOURS

Construction Off-Road Equipment Activity (Total Hours per Month)																							
Phase	Equipment Type	CalEEMod Equipment	Default Fuel Type	Custom Fuel Type	Custom Horsepower	Custom Engine Tier	2025																
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec					
Garney -	Cat 335 Excavator	Excavator	Diesel	Diesel	115	Tier 4 Final																	
Garney -	Cat 624 Loader	Rubber Tired Loader	Diesel	Diesel	200	Tier 4 Final						160	160	160	160	160							
Garney -	John Deere 410 Backhoe	Tractors/Loaders/Backhoes	Diesel	Diesel	116	Tier 4 Final						160	160	160	160	160							
Garney -	Signal Boards	Signal Boards	Diesel	Diesel	6	Average						720	720	720	720	720							
Manhole Rehab	Dodge Ram 5500	Off-Highway Truck	Diesel	Diesel	410	Average						0	0	12	360	36							
Manhole Rehab	Dodge Ram 3500	Off-Highway Truck	Diesel	Diesel	410	Average						0	0	12	360	36							
Manhole Rehab	Doosan P185 Portable Air Compressor	Air Compressor	Diesel	Diesel	49	Tier 4 Final						0	0	12	360	36							
Manhole Rehab	Llanda 7000 psi Pressure Washer	Pressure Washer	Diesel	Gasoline	24	Tier 4 Final						0	0	12	360	36							
Manhole Rehab	Honda 6500 Portable Power	Generator Set	Diesel	Gasoline	24	Tier 4 Final						0	0	12	360	36							
CIPP	Resin Static Mixer	Other Construction Equipment	Diesel	Electric	10	Average						0	0	24	96	24							
CIPP	Reach Lift	Forklifts	Diesel	Diesel	63	Average						0	9	3	12	3							
CIPP	Conveyor/Pinch Roller Trailer	Other Construction Equipment	Diesel	Electric	10	Average						0	0	48	192	48							
CIPP	Refrigeration Truck	Off-Highway Truck	Diesel	Diesel	350	Average						0	0	24	96	24							
CIPP	Generator	Generator Sets	Diesel	Diesel	84	Average						0	0	192	768	192							
CIPP	Air Compressor 185	Air Compressor	Diesel	Diesel	49	Average						0	0	192	768	192							
CIPP	Resin Pump/Heat Exchanger	Pump	Diesel	Electric	10	Average						0	0	24	72	24							
CIPP	CIPP Bailer Truck/Trailer	Off-Highway Truck	Diesel	Diesel	400	Average						0	0	72	288	72							
CIPP	Semi Trucks	Off-Highway Trucks	Diesel	Diesel	400	Average						0	0	24	48	24							
CIPP	6" Gorman Rupp Circulation Pumps	Pump	Diesel	Diesel	80	Average						0	0	36	144	36							
CIPP	Light Towers	Other Construction Equipment	Diesel	Diesel	12	Average						0	0	60	240	60							
CIPP	Vacuum Pump	Pump	Diesel	Electric	5	Average						0	0	24	96	24							
Bypass	12" Bypass Pumps	Pumps	Diesel	Diesel	225	Average						0	0	1440	1440	1440							
Bypass	Reach Lift	Forklifts	Diesel	Diesel	110	Average						0	0	84	0	84							
Bypass	Light Tower	Other Construction Equipment	Diesel	Gas	10	Average						0	0	240	240	240							
Bypass	Fusion Machine	Other Construction Equipment	Diesel	Diesel	16	Average						0	210	0	0	0							
CCTV & Cleaning	Vactor Jetter/Comba Cleaner	Off-Highway Truck	Diesel	Diesel	400	Average						0	0	60	60	60							
CCTV & Cleaning	TV Truck	Off-Highway Truck	Diesel	Diesel	350	Average						0	0	40	40	40							