



Initial Study/Proposed Mitigated Negative Declaration

North Trunk Sewer Replacement
Mendocino Avenue to Terra Linda Drive

August 2018

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Prepared for:



City of Santa Rosa
Public Works Department
Attention: Tanya Mokvyts
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Prepared by:



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1. Project Information

Project Title	North Trunk Sewer Replacement – Mendocino Avenue to Terra Linda Drive
Lead Agency Name & Address	City of Santa Rosa Transportation and Public Works Department 69 Stony Circle Santa Rosa, California 95401
Contact Person	Tanya Mokvyts, Associate Civil Engineer (707) 543-3958 TMokvyts@srcity.org
Project Location	Project would be located along portions of Lomas Avenue, Mendocino Avenue, Chanate Road, and Paulin Creek in the City of Santa Rosa, County of Sonoma. See Figure 1.
General Plan Land Use Designation	Mendocino Avenue, Chanate Road, Lomas Lane and other affected roadways have no specific General Plan designation, because they are public rights-of-way. Parcels surrounding the roadway and Paulin Creek have various General Plan land use designations, including Very Low Density Residential, Low Density Residential, Medium Density Residential, Mobile Homes, Retail & Business services, and Public/Institutional.
Zoning	Mendocino Avenue, Chanate Road, Lomas Lane and other affected roadways have no specific zoning designation, because they are public rights-of-way. Parcels surrounding the roadways and Paulin Creek have various zoning designations, including Rural Residential (RR-20 and RR-40), Planned Development (PD), Multi-Family Residential (R-3-15 and R-3-18), General Commercial (CG), and Public Institutional (PI).
Description of Project	The City of Santa Rosa is proposing to abandon an existing 12" and 15" sewer trunk within the banks of Paulin Creek, between Lomas Avenue, Mendocino Avenue, and Chanate Road, and install new sewer main and water main improvements in public right-of-way.
Surrounding Land Uses and Setting	Project improvements traverse residential and commercial uses.

1.1 Introduction

The proposed North Trunk Sewer Replacement – Mendocino to Terra Linda Drive (Project) is subject to the requirements of the California Environmental Quality Act (CEQA). The CEQA Lead Agency is the City of Santa Rosa (City). Prior to making a decision to approve the Project, the City must identify and document the potential significant environmental effects of the Project in accordance with CEQA.

The purpose of this Initial Study is:

- To provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration or a Negative Declaration;
- To disclose potential project environmental impacts; and
- To inform the CEQA Lead Agency, responsible agencies, trustee agencies, and the public regarding the potential environmental impacts of the project.

This Initial Study has been prepared under the direction of the City to satisfy the requirements of CEQA (Public Resources Code (PRC), Div. 13, Sec 21000-21189) and the CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387).

1.2 Project Background and Need

The City of Santa Rosa owns and operates a sewer collection and conveyance system that includes approximately 590 miles of sewer main (City of Santa Rosa 2014). The City's sewer collection and conveyance system is primarily gravity-driven, but includes eighteen pump stations and associated force mains in areas where wastewater must be conveyed from a lower to higher elevation. Existing pipelines range from 4 inches to 66 inches in diameter, and the collection system has a total of 15,610 manholes and 30 flow meters. Wastewater is conveyed to the Laguna Treatment Plant for tertiary-level treatment before being beneficially recycled or seasonally discharged into the Russian River via the Laguna de Santa Rosa.

The North Trunk Sewer is a primary trunk sewer that serves a large area of northeast Santa Rosa which is accessed from Chanate Road, Parker Hill Road, and Terra Linda Drive. The trunk main was originally constructed during the 1950s. The existing North Trunk Sewer (12- and 15-inch diameter) within the Project area was installed along Paulin Creek between the Chanate Road/ Paulin Creek crossing and Mendocino Avenue, where it serves properties on Strawberry Drive, Plum Drive, Lomitas Avenue, Lomitas Lane, and Mendocino Avenue. An existing sewer main on Chanate Road (10-inch diameter) serves properties along Chanate Road, Plum Drive, Lomitas Avenue, Belvedere Way and parcels to the east. These two sewer mains meet at the intersection of Mendocino Avenue and Chanate Road, where the 15-inch trunk sewer then continues down adjacent to Administration Drive toward U.S. 101.

Over the years, stream bank erosion along Paulin Creek has periodically exposed parts of the sewer line. In addition, the pipe adjacent to Paulin Creek is difficult to service due to its alignment. Although sections of this sewer were rehabilitated, repaired, and improved throughout the 1960s to 2005, the majority of this area of the City's sewer collection system is over 50 years old and was constructed from materials that are no longer in standard use, such as vitrified-clay pipe. Due to the age and location of the North Trunk Sewer alignment, inspection and maintenance of the trunk main is challenging and costly.

Therefore, the City is proposing to relocate the sewer alignment away from Paulin Creek to the road right-of-way. The segment of the North Trunk Sewer that would be relocated begins about 100 feet

upstream of the crossing of Paulin Creek and Chanate Drive near Terra Linda Drive and generally follows the alignment of Paulin Creek down to Mendocino Avenue.

1.3 Project Location

The proposed Project would be located in the eastern portion of the City of Santa Rosa, in Sonoma County, approximately 45 miles north of San Francisco. The Project area is generally bounded on the north by Lomitas Avenue and Paulin Creek, on the east and south by Chanate Road, and on the west by Mendocino Avenue (see Figure 1, Vicinity Map). The Project area includes portions of Lomitas Lane, Lomitas Avenue, Plum Drive, Strawberry Drive, a private driveway off Lomitas Avenue, and areas along Paulin Creek. Paulin Creek flows through a portion of the Project area in an east to west direction.

1.4 Project Description

The main Project components are: abandon or remove and replace existing sewer trunk, mains, and laterals; install new sewer trunk main and laterals; extend an existing water main in Chanate Road; and replace and extend an existing water main in Lomitas Avenue. Each project component is discussed in detail below.

1.4.1 Abandon or Remove and Replace Existing Sewer Trunk, Mains, and Laterals

The Project would abandon in place approximately 1,700 linear feet (LF) of existing 12-inch and 15-inch diameter vitrified clay pipe along Paulin Creek. A new trunk sewer and sewer main would be installed on Chanate Road to collect and convey the flows. In order to reroute the flows to Chanate Road, the sewer mains on Lomitas Avenue, Lomitas Lane, and Mendocino Avenue would also be abandoned. Overall, 6,090 feet of sewer pipe, as well as 32 manholes and 10 mainline cleanouts would be removed or abandoned. The existing sewer laterals would be removed and replaced with new laterals. Refer to Figure 2 Existing Infrastructure to be Abandoned or Removed.

The following existing sewer trunk, mains, and associated facilities would be abandoned in place, removed, or replaced:

- Abandon 1,700 LF of 12- and 15-inch sewer trunk along Paulin Creek;
- Abandon 130 LF of 15-inch trunk sewer on Mendocino Avenue;
- Abandon 285 LF of 6-inch sewer main on Chanate Road between Mendocino Avenue and Lomitas Avenue;
- Abandon 340 LF of 8-inch sewer main on Chanate Road between Mendocino Avenue and Lomitas Avenue;
- Abandon 550 LF of 10-inch sewer on Chanate Road between Lomitas Avenue and Belvedere Way;
- Abandon 120 LF of 12-inch sewer main on Chanate Road between Strawberry Drive and Terra Linda Drive;
- Abandon 15 LF of 12-inch sewer main on Chanate Road between Strawberry Drive and Terra Linda Drive;
- Abandon 760 LF of 15-inch trunk sewer on Lomitas Lane;
- Abandon 410 LF of 6-inch sewer main on Lomitas Lane;

- Abandon 540 LF of 6-inch sewer main on Lomitas Avenue;
- Abandon 130 LF of 15-inch trunk sewer on Lomitas Avenue;
- Abandon 140 LF of 6-inch sewer main between Lomitas Lane and the private driveway off Lomitas Avenue;
- Abandon and replace 6 sewer laterals for properties on Strawberry Drive and Plum Drive;
- Abandon 9 mainline cleanouts;
- Remove 1 mainline cleanout;
- Remove 12 manholes at various locations within the streets.
- Abandon 10 manholes along Paulin Creek (includes partial demolition to 3 feet below grade); and
- Abandon 10 manholes at various locations within the streets.

The following existing sewer mains and associated facilities would be removed and replaced in the same location:

- 430 LF of 6-inch sewer main on Mendocino Avenue would be replaced with an 8-inch sewer main;
- 540 LF of 10-inch sewer main would be replaced within Chanate Road between Lomitas Avenue and Belvedere Way; and
- 58 sewer laterals would be removed and replaced to connect the properties to the new sewer mains.

Abandonment of existing sewer mains 12 inches in diameter and larger would be accomplished by installing a concrete plug at the ends of the pipes. The pipes would be filled completely with flowable fill. Pipes smaller than 12 inches in diameter would be abandoned by filling the ends with one foot of soil and capping with an 8-inch concrete plug. Abandonment of manholes along the streets includes removing the cover, frame, and barrel sections three feet below finished grade, plugging the pipe, backfilling with soil, and restoring the pavement.

Abandonment of the trunk sewer along Paulin Creek would require filling the pipes with Portland cement sand slurry or cellular closed cell concrete material. The Project would abandon ten manholes that are within Paulin Creek's riparian vegetation. For these ten manholes, construction access would be by foot rather than by vehicle. Project construction would break the grade rings and top cone section into the manhole and fill the manhole up with a cement-sand slurry over the broken concrete to the 3 foot below grade elevation. The slurry would be delivered through hoses to be hauled by hand from a pumper truck parked in the closest road or driveway. When finished, the abandoned manholes would be covered with approximately 3 feet of soil. The construction zone around the manholes would be approximately 8 feet in diameter.

For the abandonment of sewer laterals in streets, the City's Sewer Design Standards require sewer laterals that were constructed or overlain more than five years ago to be excavated at the main to remove the wye connection. Because the new laterals would connect to the new sewer mains, the existing main would be abandoned per City Standard 507 as described in the previous paragraphs. Pipe ends would be abandoned with a concrete plug at the ends, and existing cleanouts would be removed.

1.4.2 Install New Sewer Trunk, Main, and Laterals

A new 15-inch diameter sewer trunk pipeline would be installed in a new alignment within Chanate Road. New 8-inch diameter sewer mains would be installed in Mendocino Avenue, Chanate Road, Lomitas Avenue, Lomitas Lane, Plum Drive, and Strawberry Drive. Refer to Figure 3 Proposed Infrastructure Improvements. The following new trunk, mains, and laterals would be installed:

- 323 LF of new 8-inch sewer main on Mendocino Avenue;
- 2,191 LF of new 15-inch trunk sewer on Chanate Road between Mendocino Avenue and Terra Linda Drive;
- 260 LF of new 12-inch sewer main on Chanate Road between Strawberry Drive and Terra Linda Drive;
- 656 LF of new 8-inch sewer main on Chanate Road between Lomitas Avenue and Murdoch Drive;
- 65 LF of new 8-inch sewer main on Plum Drive;
- 351 LF of new 6-inch sewer lateral on the private driveway off Lomitas Avenue;
- 482 LF of new 8-inch sewer main on Lomitas Lane;
- 1,099 LF of new 8-inch sewer main on Lomitas Avenue;
- 102 LF of new 8-inch sewer main on Strawberry Drive;
- 102 LF of new 15-inch sewer main on Strawberry Drive;
- 23 new manholes at various locations within the streets; and
- 64 new sewer laterals will connect properties to the new sewer mains.

1.4.3 Extend Existing Water Main – Chanate Road

The Project would install an 8-inch water main to connect the existing 6-inch water main on the west side of Paulin Creek on Mendocino Avenue to the existing 8-inch water main on the east side of Paulin Creek on Chanate Road. This configuration would loop the water system and eliminate the two dead ends and a blow-off on the existing water lines. The pipeline would be attached to the downstream side of the existing box culvert beneath Chanate Road.

1.4.4 Replace and Extend Existing Water Main – Lomitas Avenue

An existing 6-inch asbestos-concrete pipe water main along Lomitas Avenue from Chanate Road to Lomitas Lane, and along Lomitas Lane, would be replaced with an 8-inch PVC water main (this improvement is not shown on Figure 3). The existing pipe is beginning to fail and has required several repairs. The new 8-inch would be extended to the end of Lomitas Avenue, past Lomitas Lane. Properties along Lomitas Lane would be served by the new water main. Most of the properties are currently served by the existing pipe, but a few are served by private wells. The water main along Lomitas Avenue would not be replaced and extended at the same time as the other Project improvements.

1.5 Project Construction

Installation of new sewer laterals would use a traditional open-cut trench method. An open-cut method would also be used to install shallow sewer mains, to a depth of approximately 25 feet, along Mendocino Avenue, Chanate Road, Lomitas Lane, Lomitas Avenue, private driveway off Lomitas Avenue, Plum Drive, and Strawberry Drive. A trenchless construction method is required for portions

of the new sewer trunk in Chanate Road and new main in Strawberry Drive, where placement would be deeper than 25 feet. Trenchless construction would also be used to install pipe under Paulin Creek. No trees would be removed. The Project would restore streets to pre-project conditions.

1.5.1 Open-cut Trench Construction

Open-cut trench construction would include sawcutting existing pavement, excavating and disposing the asphalt and base materials, and excavating the trench to the required depth to install the new sewer main, lateral, or water main. Open-cut trench construction would be backfilled with imported fill, and pavement surface would be restored. The trench width would vary based on pipe diameter, but would be approximately 8 feet wide. It is anticipated that pipe installation would be executed at a rate of 80 linear feet per day.

1.5.2 Trenchless Construction

Trenchless construction methods would be required for the installation of the new sewer trunk and sewer mains in Chanate Road and Strawberry Drive due to the depths and grade tolerances required for gravity flow. Trenchless construction would also be used to install the new sewer under two Paulin Creek crossings at Chanate Road and one creek crossing on Lomitas Avenue. Two trenchless technologies would be used for this Project: front-steer guided boring; and pipe ramming.

Front-steer Guided Boring

Front-steer guided boring would be used to install pipe that is buried more than 25 feet below existing grade. This method would also be used to install the 4-inch lateral to 873 Strawberry Drive due to proximity of trees and the narrow lot size.

Construction operations for a front-steer guided boring would require two access pits: a boring shaft where the boring machine advances the horizontal shaft and casing and installs the pipe segments; and a receiving pit where the boring terminates. Each of these shafts would be about two feet deeper than the planned depth of the pipeline and includes a shoring system. The boring pit would be approximately 12 feet in diameter and the receiving pit would be approximately 8 feet in diameter. Each boring distance would be about 250 feet (see Figure 3).

Construction would begin with the boring and installation of a casing pipe from the boring pit to the receiving pit. New segments of casing pipe would be welded on as they are advanced with the bore. The new carrier pipe would then be installed by pushing the casing pipe out and cutting the segments as the carrier pipe is advanced. Following trenchless installation of the new mains and manholes, the metal shoring system at the sending/receiving pits would be removed to a depth of 4 to 6 feet below ground. The remainder of the shoring system would be abandoned in place.

The front-steer guided boring system requires space for topside equipment. This equipment would be strung out in front of or behind the shaft in an approximate 10-foot wide and 80-foot long path. The area of the equipment path would be protected from traffic behind concrete k-rail barricades. In narrow City streets, like Chanate Road, one-way traffic control may be required around boring shafts.

Pipe Ramming

Pipe ramming would be used to install a 36-inch steel casing pipe and sewer main underneath culverts where Paulin Creek crosses Chanate Road and Lomitas Avenue. The sewer main would be inserted through the casing and any void space between the casing and carrier pipe would be sealed with grout.

1.5.3 Construction Hours and Duration

Anticipated daytime work hours would be 7:30 a.m. to 6:30 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. Although not anticipated, nighttime work may be required along Chanate Road. The anticipated sequence of construction operations and the number of construction working days are summarized in Table 1.5-1. Construction of the sewer main and associated facilities is estimated to occur over approximately 286 working days (up to 14 calendar months). Construction of the water main along Lomitas Avenue would take approximately one month.

Table 1.5-1 Construction Sequence of Operations and Estimated Working Days

Operation/ Description	Units	Number of Units	Total Number of Working Days
Install Erosion Control Measures, Implement Water Pollution Control Plan	NA	NA	5
Install Sewer Pipelines			
Trenchless sewer installation	120 feet per day	931	8
Access pits	0.25 pit per day	16	64
Install sewer, open trench	80 feet per day	4700	59
Sewer lateral installation	4 per day	64	16
Install Water Main	100 feet per day	479	5
Install Manholes, Gate Valves, and Cleanouts	1 per day	35	35
Testing/ cleaning of pipelines	5 MH segments per day	25	5
Sewer abandonment	500 feet per day	6,090	13
Street restoration	300 feet per day	5,399	18
Traffic control, Weather conditions, holidays and contingency			58
TOTAL			286

1.5.4 Construction Staging

Some in-roadway staging areas would be required to facilitate trenchless construction equipment and operations. An off-site staging area would be needed to store materials and equipment when not in use. The off-site staging area is anticipated to be within one of the paved or graveled lots within the Project area and would be up to the Contractor.

1.5.5 Traffic Control

The Project area experiences high rates of traffic during typical days during the work week. Chanate Road is a well-used arterial roadway that connects Fountaingrove Parkway and Montecito Avenue in the east to Mendocino Avenue in the west.

Due to road widths on Lomitas Lane, Lomitas Avenue, Plum Drive, Strawberry Drive, and the section of Chanate Road north of Belvedere Way, one-way traffic control would likely be required for the construction of the bore shafts and the staging of construction equipment and materials. For these segments, flaggers would assist with traffic control where required. Two-way traffic lanes would be provided at all times on Mendocino Avenue and for the segment of Chanate Road between Mendocino Avenue and Belvedere Way.

The City would require the contractor to develop and implement a temporary Traffic Control Plan outlining work zones, activities, and time needed to complete the work in each zone. No work would be completed in the public right-of-way during peak hours, unless permitted by the City Traffic Engineer.

1.5.6 Construction Workers, Haul Trips, and Equipment

The number of construction-related vehicles traveling to and from the Project site would vary on a daily basis. The estimated size of the construction workforce at any one time during construction is anticipated to range between 6 and 18 workers.

Construction debris, including soil, concrete, and asphalt, would be recycled where feasible. Materials found unsuitable for reuse or recycling would be disposed of at a regional landfill. Importation of construction materials would include concrete, fill, sand slurry, aggregate base, and pipes. Table 1.5-2, Estimated Haul Volumes and Truck Trips, lists estimated quantities of the primary construction materials and related haul truck trips.

Up to 10 haul truck round trips could occur on a peak day. Therefore, on the busiest days of construction, up to approximately 28 (18 workers plus 10 haul trucks) vehicle round trips could occur.

Table 1.5-2 Estimated Haul Volumes and Truck Trips

Material	Quantity (approximate cubic yards)	Approximate Haul Truck Trips (round trips)
Project Off-haul		
Concrete (sidewalks, curbs, gutters and driveways)	43	4
Asphalt	1,970	197
Soil (trenchless installation and boring/receiving pits)	480	48
Project In-haul		
Concrete (sidewalks curbs, gutters and driveways, pipe plugs for abandonment, trench dams)	50	5
Aggregate Base (fill for permanent trench repair, includes asphalt)	1,970	197
Sand Slurry (for pipeline and manhole abandonment along Paulin Creek)	150	15

Generally, on-site construction equipment would include the following items listed in Table 1.5-3 below.

Table 1.5-3 Construction Equipment

Project Activity	Anticipated Construction Equipment
Install erosion control measures, implement Water Pollution Control Plan	Hand tools Small equipment for excavation
Install sewer pipelines	
Trenchless installation	Drill/ Bore Rig (for front-steer guided boring) Pneumatic pipe pusher (for pipe ramming) Caisson-style drill rig (for creating sending/receiving pits) Generator Dewatering Pumps Sewer Bypass Pumps
Open-cut installation	Industrial Saw Excavator, loader/ backhoe Compactor Dewatering Pumps Sewer Bypass Pumps
Lateral installation	Industrial Saw Excavator, loader/ backhoe Compactor
Install water main	Industrial Saw Excavator, loader/ backhoe Compactor
Install manholes, gate valves and cleanouts	Excavator, loader/ backhoe Hand tools
Testing/ cleaning of pipelines	Water trucks and pumps to flush water main
Sewer abandonment	Pumper trucks for concrete and sand slurry Skidsteer/loader to haul manhole frame and cover out Small equipment for excavation Hand Tools
Street restoration	Paving equipment Roller

1.6 Maintenance and Operation

Following construction, general operation and maintenance activities associated with the proposed pipelines would include annual inspections; testing, exercising and servicing of valves; and repairs of minor leaks in buried pipeline joints or segments. With the replacement of the aging trunk sewer and the relocation of the trunk sewer from the banks of Paulin Creek to City right-of-way, maintenance of the sewer system within this Project area is expected to decrease after Project implementation.

1.7 Environmental Protection Actions Incorporated into the Project

The following actions are included as part of the Project to reduce or avoid potential adverse effects that could result from construction or operation of the Project. Additional mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis. Environmental protection actions and mitigation measures, together, will be included in a Mitigation Monitoring Program at the time that the Project is considered for approval.

1.7.1 Environmental Protection Action 1 – Implement Geotechnical Design Recommendations

The Project will be designed and constructed in compliance with the site-specific recommendations made in the Project's geotechnical reports (DCM 2016, DCM 2018). This will include design in accordance with recommendations for open-cut trenching, trenchless construction, excavation dewatering, excavation shoring, pipeline foundation material, geotextile filter fabric requirements, pipeline embedment material, trench backfill material, shaft construction, and other factors. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project and will be implemented during construction.

1.7.2 Environmental Protection Action 2 – Implement Air Quality Control Measures during Construction

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the following Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures will be included in construction contract specifications and required during implementation of the Project:

- 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 or shall have at least two feet of freeboard;
- All visible mud or dirt tracked-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 shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five 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;
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

1.7.3 Environmental Protection Action 3 – Implement Climate Action Plan Measures

To ensure that the Project is consistent with the Santa Rosa Climate Action Plan, the following measures shall be incorporated into the Project design and/or be implemented during construction.

- Construction vehicle idling times shall be minimized by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes or less (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided to remind contractors of idling restrictions.
- Construction equipment shall be maintained in accordance with manufacturer's specifications.
- The contractor shall be required to implement one of the following measures, as feasible and appropriate to the construction project:
 - Substitute electrified equipment for diesel- and gasoline-powered equipment where practical.
 - Use alternative fuels for construction equipment onsite, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
 - Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.

1.7.4 Environmental Protection Action 4 - Best Management Practices for Pipeline and Manhole Abandonment along Paulin Creek

To limit impacts to waterways and riparian vegetation, the following measures shall be incorporated into the Project design and/or be implemented during construction for pipelines and manholes to be abandoned along Paulin Creek (SSMH, #6, 7, 8, 9, 10, 11, 12, 13, 14, 139, 154, and 155).

- Sand bags will be in place around manholes.
- Sand bags will be placed around any ditches or fill/vent pipes where the slurry material is placed into the sewer mains.
- Visqueen plastic will be onsite for overflow containment or for lining of clean-out pits/excavations as needed.
- Sand slurry will be delivered to each manhole by hose.
- City staff person(s) will monitor creek bank between manholes.
- The SWPPP representative will be on site for monitoring operations.
- The City will provide immediate response for containment if slurry escapes manholes or pipelines.
- City inspection and BMP staff will be present to monitor compliance with work plan and monitor waterways.
- Vac-truck and pump truck with hoses will be available on Standby with a response time of two hours.
- City will maintain erosion and sediment control measures and other protective measures in effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures throughout construction.

1.8 Property Access, Right-of-Way, and Easements

Rights of entry (ROE) on private property would be required for sewer lateral construction, residential home plumbing modifications, for access to abandon the existing sewer trunk and manholes along Paulin Creek, and to abandon the sewer and existing laterals at these properties.

A temporary construction easement would be required for the sewer lateral in the Lomitas Avenue private driveway. Additionally, a permanent easement would be required to install the lateral to 675 Plum Drive, and the 8-inch sewer main and sewer manhole at 887 Strawberry Drive. A summary of the ROE and permanent/temporary construction easements is provided in Table 1.5-4.

Table 1.5-4 Required ROE and Easements

Property	Type of Easement Required
603 Plum Drive	ROE for possible access during abandonment of existing trunk sewer
661 Plum Drive	ROE to access 675 Plum Drive Permanent easement to install (N) lateral for 675 Plum Drive and abandon SSMH No. 10
675 Plum Drive	ROE for plumbing retrofits, abandonment of (E) lateral and SS main
861 Strawberry Drive	ROE for plumbing retrofits, abandonment of (E) lateral and SS main
866 Strawberry Drive	ROE for plumbing retrofits, abandonment of (E) lateral and SS main
873 Strawberry Drive	ROE for plumbing retrofits, abandonment of (E) lateral and SS main
887 Strawberry Drive	ROE for plumbing retrofits, abandonment of (E) lateral and SS main Permanent easement for installation of (N) 8" main and SSMH No. 22
2545 Chanate Road	ROE for plumbing retrofits, abandonment of (E) lateral and SS main
2735 Chanate Road	ROE for possible access during abandonment of existing trunk sewer
2755 Chanate Road	ROE for access during abandonment of existing trunk sewer
2841 Lomitas Avenue	ROE for plumbing retrofits, abandonment of (E) lateral and cleanout
2847 Lomitas Avenue	ROE to install (N) SS lateral to 2841 Lomitas Avenue
2850 Lomitas Avenue	ROE for access to abandon existing trunk sewer along Paulin Creek
2851 Lomitas Avenue	ROE to assess plumbing retrofits and install (N) SS lateral
2855 Lomitas Avenue	ROE to assess plumbing retrofits and install (N) SS lateral and cleanout
2859 Lomitas Avenue	ROE to assess plumbing retrofits and install (N) SS lateral and cleanout
2860 Lomitas Avenue	ROE for access to abandon existing trunk sewer along Paulin Creek
2861 Lomitas Avenue	ROE to assess plumbing retrofits and install (N) SS lateral and cleanout
2863 Lomitas Avenue	ROE to assess plumbing retrofits and install (N) SS lateral
Lomitas Avenue Private Driveway	Temporary Construction Easement to install new private sewer

1.9 Required Permits or Approvals

1.9.1 City of Santa Rosa

The City will consider approval of the Project, including Project funding, design, and contracting, after adoption of the MND. In addition, the City may need to obtain:

- One-time discharge permit to sewer
- Temporary construction easements and/or Right of Entry
- Revised permanent easement agreements

1.9.2 Other Agencies

The following agencies may issue approvals for the Project, and thus need to rely upon the MND. This MND is intended to apply to all the Project approvals listed below, as well as to any other permits or approvals necessary or desirable to implement the Project.

Regional Water Quality Control Board

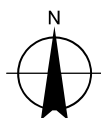
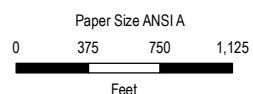
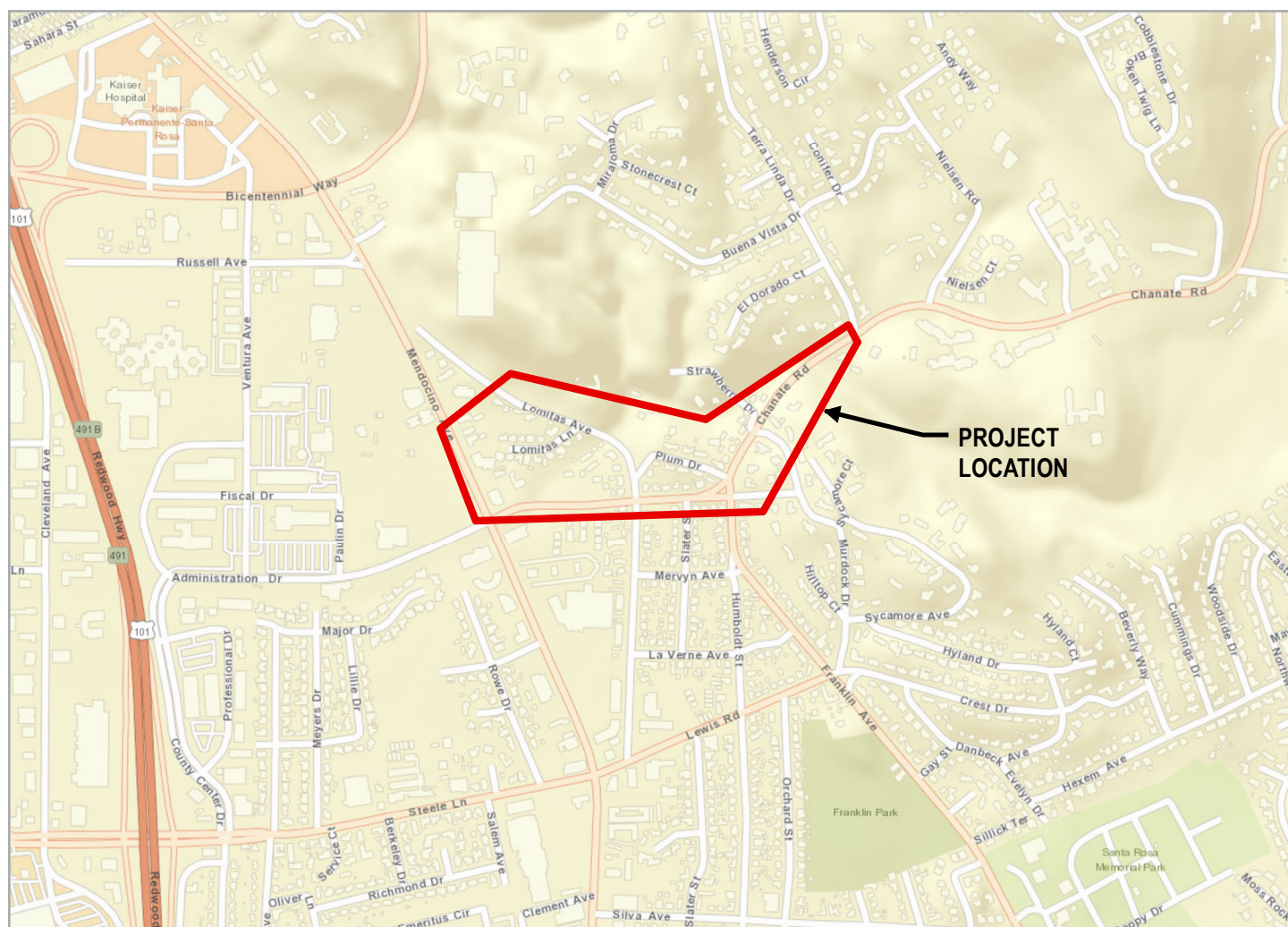
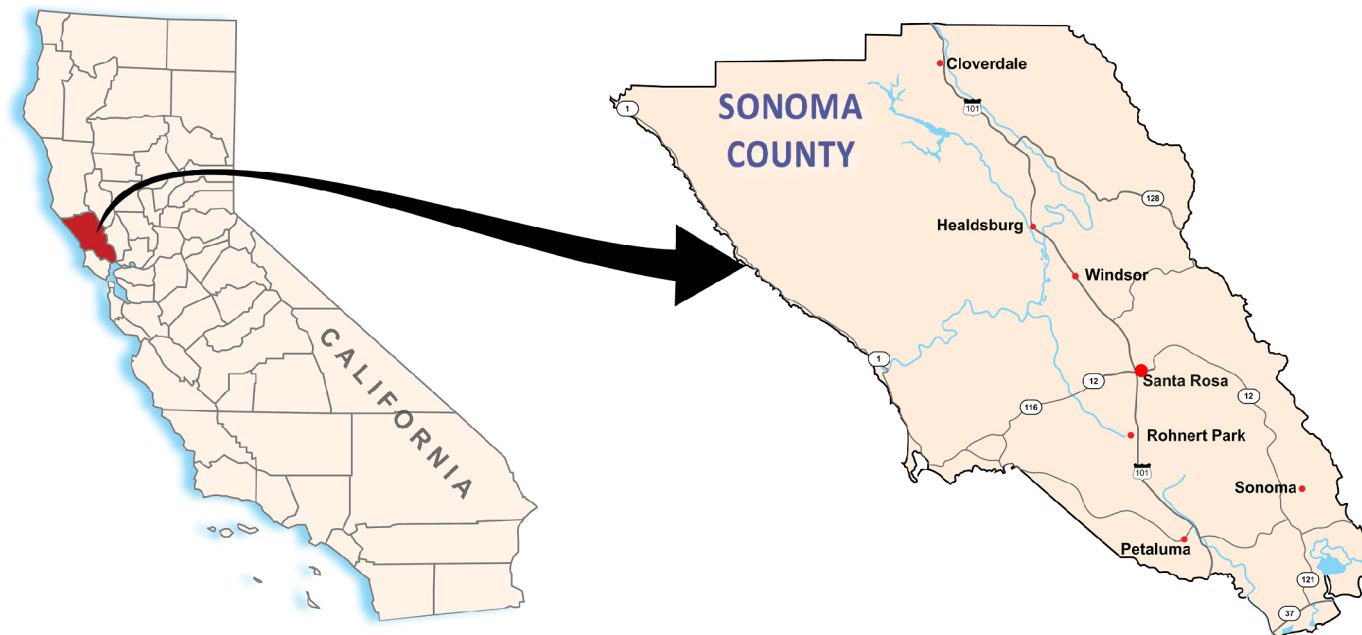
- Notice of Intent to Comply with the Terms of Policy for Waiving Waste Discharge Requirements

California Department of Fish and Wildlife

- Section 1602 Lake and Streambed Alteration Agreement

1.10 Tribal Consultation

On March 7, 2016, the City of Santa Rosa sent to Lytton Rancheria and Federated Indians of Graton Rancheria notice of the Project. No responses requesting tribal consultation were received. For a summary of the investigation and mitigation measures related to cultural and tribal resources, see Section 3.5 Cultural Resources and 3.17 Tribal Cultural Resources.



Map Projection: Lambert Conformal Conic
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US



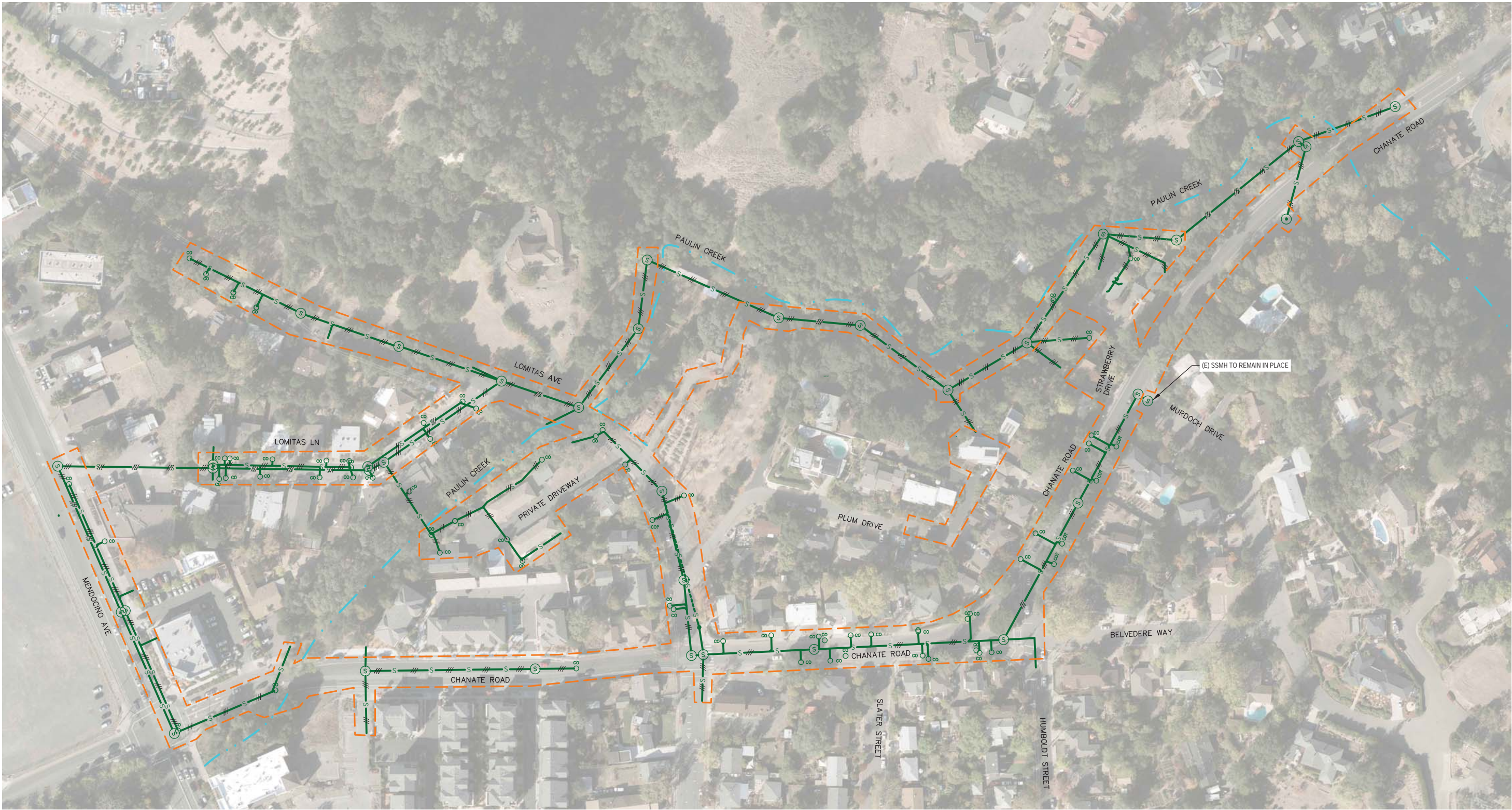
City of Santa Rosa
North Trunk Sewer Replacement Project

Project No. **8411494**
Revision No.
Date **01/16/2018**

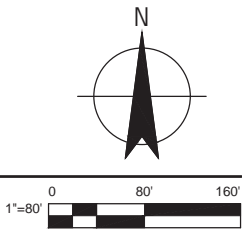
VICINITY MAP

FIGURE 1

\\ghdnet\ghd\US\Santa Rosa\Projects\02059-941\1494 North Trunk Sewer Project\06-CAD\Figures\02059-941\494_Ex_Prop_Improvements.dwg 03-30-18 09:13:57AM mmeilland



EXISTING INFRASTRUCTURE TO BE ABANDONED OR REMOVED



LEGEND

- (E) SANITARY SEWER ABANDON
- (E) SANITARY SEWER TO BE DEMOLISHED
- (E) SEWER LATERAL AND CLEANOUT
- (E) SEWER MANHOLES ABANDON/REMOVED UNLESS NOTED OTHERWISE
- CONSTRUCTION ZONE
- CREEK

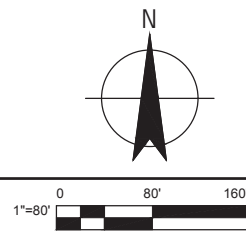
CITY OF SANTA ROSA		NORTH TRUNK SEWER REPLACEMENT PROJECT		CONTRACT NO. C00158	
EXISTING INFRASTRUCTURE TO BE ABANDONED OR REMOVED		APPROVED: Deputy Director – Engineering		SHEET 1 OF 2	
By Colleen Ferguson		DATE: FEBRUARY 2018		FILE NO. 2017-XXXX	
DWN BY: RMR		CHK BY: KG			
NO.		DATE		REVISION	
BY					

GHD Inc.
2235 Mercury Way, Suite 150
Santa Rosa, California 95407 USA
T 1 707 523 1010 F 1 707 527 8679
W www.ghd.com

FIGURE 2



PROPOSED INFRASTRUCTURE IMPROVEMENTS



LEGEND

- (N) SANITARY SEWER (OPEN TRENCH)
- (N) SANITARY SEWER (TRENCHLESS)
- SSMH CO (N) SEWER MAIN, MANHOLE AND CLEANOUT
- BORE PITS
- W (N) WATER MAIN
- CONSTRUCTION ZONE
- CREEK

FIGURE 3

2. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

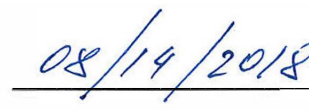
- | | | |
|--|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Agricultural & Forestry Resources | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/>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

DETERMINATION

(To be completed by the Lead Agency) On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there would 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 would be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed 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 the proposed 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 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.


City of Santa Rosa Signature


Date

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		✓		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		✓		

a) Have a substantial adverse effect on a scenic vista? (No Impact)

Scenic view corridors listed in the Santa Rosa General Plan include natural ridgelines, views of the Sonoma Mountain foothills, and natural landmarks, such as Taylor Mountain and Bennett Mountain. Views of natural ridgelines and the Sonoma Mountain foothills are partially obstructed due to intervening vegetation and development. The Project is not located along a hillside or ridgeline and would not obstruct existing views of ridgelines and foothills or other scenic vistas. No impact would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

No roads within or adjacent to the Project area are designated or eligible state scenic highways (Caltrans 2018); therefore, no impact would occur.

c) Have a substantial adverse effect on visual character? (Less than Significant with Mitigation)

None of the Project roadways are City-designated scenic roadways, with the exception of Chanate Road (from Mendocino Avenue to Fountaingrove Parkway) and the Project is not located within a designated open space area or a community separator (Santa Rosa 2009a).

The visual character of Chanate Road would be impacted during construction due to Project work and potentially due to staging areas. Construction activities in the Project area and at the off-site staging area would result in temporary changes in the visual character of the Project area for approximately 14 months for a majority of the improvements and one month for the water main in Lomitas Avenue. This would include the presence of construction equipment, trucks, and staging and laydown areas in neighborhoods adjacent to the Project site. The impact on visual character would

be less than significant due to the temporary nature of construction along any one segment, except for Chanate Road, where the impact of construction on visual character would be significant, due to its designation as a Scenic Road in the City's General Plan.

The visual character of the Project area after construction would be unaffected, because improvements would be below ground except for a short segment of water main which would be attached to a culvert; no impact would occur.

Mitigation Measures AES-1 would reduce the Project impact on visual character to a less-than-significant level by minimizing and restoring areas disturbed during construction.

Mitigation Measure AES-1: Minimize Temporary Visual Impacts along Chanate Road

The City shall avoid or substantially lessen impacts by reducing construction disturbance visible from Chanate Road. Measures shall include:

- The size of construction zones and staging areas shall be the minimum operable size. The location of such zones shall be adjusted to minimize the visual impacts.
- During construction, temporary fencing with green fabric screen or similar screening shall be placed around primary staging areas to limit the prominence of views of construction equipment and associated construction materials.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less than Significant with Mitigation)

Nighttime construction activities may be required for a portion of the work to be completed within Project area roadways. If needed, nighttime work hours are assumed to be 6:30 p.m. to 7:30 a.m. Lighting would be needed for completion of nighttime work, which could result in a temporary source of light or glare capable of impacting surrounding residential land uses. The construction impact would be significant.

Following construction, the alignment of the roadways would not change. No impact would occur.

Mitigation Measures AES-2 would reduce the impact of potential nighttime lighting and glare to a less-than-significant level through implementation of nighttime lighting controls during construction.

Mitigation Measure AES-2: Avoid Glare and Light Trespass from Nighttime Construction Lighting

The City shall require the contractor to prepare and implement a Nighttime Construction Lighting Plan for any nighttime work so as to avoid glare that would be a hazard to vehicles and to avoid light trespass onto adjacent residential uses. The lighting plan shall be developed to guide the use of lighting during Project construction in such a way as to effectively light the work area while limiting light spill onto adjoining property. The Plan shall adequately describe the work including, but not be limited to, the layout of lighting equipment and descriptions of hardware, including hoods, louvers, shields or other means to be used to control glare and light trespass onto adjoining property. Lighting systems with flood, spot, or stadium type luminaires shall be aimed downward at the work site.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
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))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
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?				✓

a - e) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, result in loss of forest land, or conflict with zoning for agriculture use or forest lands? (No Impact)

The Project would not be located on land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide importance (CDC 2014), on land enrolled in a Williamson Act contract (CDC 2013, or on land zoned for forest land, timberland, or timber production (Santa Rosa 2009). The Project would be located on roadways and adjacent to Paulin Creek and would not convert farmland or forest land to non-agricultural uses. Similarly, there are no nearby areas that could be used for staging areas that qualify as one of these farmland or forest categories. No impact would occur.

3.3 Air Quality

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			✓	
c) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			✓	
d) Expose sensitive receptors to substantial pollutant concentrations?			✓	
e) Create objectionable odors affecting a substantial number of people?			✓	

This air quality analysis utilizes the thresholds of significance, screening criteria and levels, and impact assessment methodologies presented in the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017a). As provided by the BAAQMD's CEQA Air Quality Guidelines, if the Project meets the screening criteria for an impact category, and this analysis is consistent with the methodology used to develop the screening criteria, then its air quality impact for that category may be considered less than significant.

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

The BAAQMD Bay Area 2017 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the Project (BAAQMD 2017 b). The 2017 Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan. In addition, the 2017 Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter (PM_{2.5}) and toxic air contaminants (TACs). The 2017 Clean Air Plan contains 85 individual control measures in nine economic sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. Many of these control measures require action on the part of the BAAQMD, the California Air Resources Board

(CARB), or local communities, and are not directly related to the actions undertaken for an individual infrastructure project. The Project would not prevent the BAAQMD from implementing these actions, and none apply directly to the Project. In addition, the Project would not result in a growth in population or jobs in the Project area; therefore, the Project would not exceed the growth assumptions contained in the 2017 Clean Area Plan. Implementation of the Project would not conflict with or obstruct the Bay Area 2017 Clean Air Plan. As a result, no impact would occur.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Less than Significant)

This impact question is related to localized criteria pollutant impacts. Potential localized impacts would be exceedances of State or federal standards for particulate matter (PM_{2.5}, PM₁₀), or carbon monoxide (CO). Specifically, PM_{2.5} and PM₁₀ are of concern from construction-generated dust, and carbon monoxide (CO) from operational traffic congestion, idling, and slow-moving vehicles. Extended exposure to PM can increase the risk of chronic respiratory disease (BAAQMD 2017a). PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses.

As stated in the BAAQMD's Air Quality Guidelines, PM₁₀ and PM_{2.5} from construction dust are evaluated separately from PM₁₀ and PM_{2.5} from exhaust. Please refer to Impact 3.3.c below for a discussion of cumulative regional impacts associated with PM_{2.5} and PM₁₀ from exhaust.

For construction dust, the BAAQMD recommends incorporation of best management practices (BMPs) to reduce localized dust impacts to less than significant. The Project, including staging areas, would implement the BAAQMD's BMPs through implementation of Environmental Protection Action 2. Therefore, the Project's potential to generate a localized PM₁₀ and PM_{2.5} impact during construction would be less than significant.

Localized high levels of CO (CO hotspot) are associated with traffic congestion and idling or slow-moving vehicles. The BAAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is not necessary. The Project would result in a less than significant impact to air quality for local CO if the following screening criteria are met:

- Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; or
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; or
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Vehicle trips associated with operation and maintenance of the Project would be similar to existing conditions. Following construction, the Project would not result in the need for additional operation and maintenance-related vehicle trips. Therefore, the Project would meet the screening criteria listed above; the Project-generated operational emissions would not violate or contribute substantially to an existing or projected air quality violation. The impact would be less than significant.

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

quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Less than Significant)

According to California standards, the San Francisco Bay Area Air Basin (Air Basin) is currently designated as a non-attainment area for suspended particulate matter (PM₁₀ and PM_{2.5}) and ozone (BAAQMD 2018). Under national standards, the Air Basin is currently designated as non-attainment for 8-hour ozone, and non-attainment for PM_{2.5}. The Air Basin is in attainment (or unclassified) for all other air pollutants (BAAQMD 2018). Therefore, the non-attainment pollutants of concern for this impact are ozone, PM₁₀ and PM_{2.5}. Impact b), above, analyzed the Project's potential for PM₁₀ and PM_{2.5} impacts from construction-generated dust, and found the Project would be less than significant.

Ozone is not emitted directly into the air, but is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, ROG and NO_x, react in the atmosphere in the presence of sunlight to form ozone. Therefore, the BAAQMD does not have a recommended ozone threshold, but has regional thresholds of significance for project-emitted NO_x and ROG. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD 2017a).

The majority of the construction activities would occur within a 14-month period, including three months of "contingency" for weather conditions and holidays. Therefore, it is anticipated there would be 11 months of active construction. Construction of the water main in Lomitas Avenue would occur at a later time, and last for approximately one month. The types of air pollutants generated by construction activities are typically nitrogen oxides (NO_x) and particulate matter, such as dust and exhaust. Construction activities could temporarily increase levels of PM₁₀ and PM_{2.5} downwind of construction activity. These are temporary emissions that vary considerably from day-to-day and by the type of equipment and weather. In addition, carbon monoxide (CO) and reactive organic gases (ROG) are emitted during operation of gas and diesel-powered construction equipment.

Project construction would result in regional air pollutant and precursor emissions from equipment exhaust and worker trips to the Project site. The BAAQMD's 2017 Air Quality Guidelines provides screening criteria for determining if a Project could potentially result in significant construction-phase impacts from criteria pollutants and precursors. Construction of the Project would result in a less-than-significant impact to air quality if the following screening criteria are met. The following are the BAAQMD construction screening criteria:

1. The Project is below the applicable screening level size shown in Table 1 [of the BAAQMD 2017 CEQA Air Quality Guidelines].
2. All Basic Construction Mitigation Measures are included in the Project design and implemented during construction.
3. Construction-related activities would not include any of the following:
 - (a) Demolition activities inconsistent with District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing;
 - (b) Simultaneous occurrence of more than two construction phases;
 - (c) Simultaneous construction of more than one land use type;
 - (d) Extensive site preparation; or

- (e) Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity

The BAAQMD's screening guidance does not provide construction criteria pollutant and precursor screening levels for roadway, trench or pipeline projects. For reference, the construction criteria pollutant and precursor screening levels for a light industrial or industrial park development is 11 acres. At an estimated construction footprint of slightly more than 1 acre, the Project would be less than the BAAQMD's construction criteria pollutant and precursor screening level.

Demolition activities related to the sewer replacement would not require the removal of asbestos cement pipe. Demolition activities related to the water main replacement in Lomitas Avenue may involve the removal of asbestos cement pipe. However, the project would comply with the BAAQMD District Regulation 11 and the notification requirements. The Project would not involve the simultaneous occurrence of more than two construction phases, and does not include more than one land-use type. The Project would not involve extensive site preparation or material transport. It is anticipated that the Project would import an estimated 2,135 cubic yards of sand slurry, concrete, and aggregate base, and export approximately 480 cubic yards of soil and 1,978 cubic yards of demolished paving material, for a total of 4,593 cubic yards of materials transport.

Finally, the Project implements the basic construction measures recommended by BAAQMD with Environmental Protection Action 2. The potential impact to air quality is considered less than significant.

Because the BAAQMD Guidelines does not include construction criteria pollutant and precursor screening levels for roadway, trench, or pipeline projects, construction-related air pollutant emissions were estimated for the Project using the California Emissions Model CalEEMod (version 2016.3.2). For the model, construction activities were conservatively estimated to account for approximately 11 months of construction. The results were then compared to the BAAQMD thresholds of significance for criteria pollutants. As shown in Table 3.3-1 (Construction Air Emissions Associated with Project), the estimated construction-related emissions are less than the construction thresholds of significance adopted by the BAAQMD. Because the larger 11-month construction period indicated the emissions would be less than the thresholds, there was no need to model the one-month construction estimated for the water main in Lomitas Avenue. Therefore, the impact from construction related emissions would be less than significant. In addition, as described in Section 1.7, "Environmental Protection Actions Incorporated into the Project," the Project would incorporate the BAAQMD recommended basic construction mitigation measures, consistent with General Plan policy OSC-J1.

Table 3.3-1 Construction Air Emissions Associated with Project

Parameter	ROG (lbs/day)	NO _x (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
Project Average Emissions	1.5	23.3	2.0	1.1
BAAQMD Thresholds	54	54	82	54
<i>Significant Impact?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Following construction, the Project would not include any stationary sources of air emissions. Vehicle trips associated with operation and maintenance of the sewers currently occurs under existing conditions. The Project would not result in the need for additional operation and maintenance-related vehicle trips. As such, the Project would not result in substantial long-term operational emissions of

criteria air pollutants. Therefore, the Project's contribution to a cumulative non-attainment criteria pollutant impact would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant)

The BAAQMD defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of such land uses and facilities located near the Project area include existing residences adjacent to the proposed alignment, as well as Little School House and Steele Lane Elementary School.

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known toxic air contaminant. As described in Section 1.5, "Environmental Protection Actions Incorporated into the project," Environmental Protection Action 2 would incorporate the BAAQMD recommended basic construction mitigation measures during construction. Such measures include minimizing idling times for trucks and equipment to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), ensuring that construction equipment is maintained in accordance with manufacturer's specifications, watering exposed surfaces twice a day to minimize fugitive dust emissions, and other measures. Environmental Protection Action 3 would require provisions in contractor agreements requiring the use of electric equipment and/or equipment using alternative fuels as feasible and appropriate, which would further reduce diesel-powered equipment emissions. Given the linear nature of the Project, construction activities would continually be shifting as utilities are installed or removed/abandoned and then roadway re-construction would begin. Because of the shifting of the construction activities, prolonged exposure of sensitive receptors to substantial pollutant concentrations would not occur, and with the implementation of Environmental Protection Actions 2 and 3, the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the construction-related impact would be less than significant.

Following construction, the Project would not have operational emissions of criteria air pollutants or an increase in localized vehicular emissions. Therefore, Project operation would not expose nearby sensitive receptors to substantial levels of pollutants. The exposure of sensitive receptors during operation would be less than significant.

e) Create objectionable odors affecting a substantial number of people? (Less than Significant)

During construction, odors from the use of equipment during construction activities would be intermittent and temporary. Such odors generally dissipate rapidly from the source with an increase in distance. The impact would be less than significant.

Facilities known to produce odors include landfills, coffee roasters, wastewater treatment facilities, etc.). The Project does not include such a facility. No operational impact would occur.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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?		✓		
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 California Department of Fish and Game or US Fish and Wildlife Service?		✓		
c) 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?				✓
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?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		✓		
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?				✓

A review of the plant and animal habitats within the Project's construction zone was conducted to determine the potential for any special-status vegetation communities, plants, or animal species to occur within the proposed Project area (Wildlife Research Associates and Jane Valerius Environmental Consulting 2017).

Information on special-status plant species was compiled through a review of the literature and database searches. Database searches for known occurrences of special-status species focused on

the Santa Rosa U.S. Geologic Service 7.5-minute topographic quadrangle. The following sources were reviewed to determine which special-status plant and wildlife species have been documented in the vicinity of the Project site:

- California Natural Diversity Database records (CNDDDB) (CDFW 2017)
- California Department of Fish and Wildlife (CDFW) Special Animals List (CDFW 2017)
- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2017)
- California Native Plant Society (CNPS) Electronic Inventory records (CNPS 2017)
- U.S. Fish and Wildlife Service (USFWS) Information on Planning and Conservation (USFWS 2017)

A reconnaissance-level site visit was conducted on April 1, 2015 to evaluate on-site and adjacent habitat types; additional surveys for special-status plants were conducted on May 15, 2015 and June 14, 2017. No direct bat roosting or nesting bird surveys were conducted as part of the habitat assessment given the time anticipated to occur before construction begins.

- 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? (Less than Significant with Mitigation)**

Special-status Plant Species

A total of 25 special-status plant species have been reported as occurring within the Santa Rosa 7.5-minute topographic quadrangle. Many species have no potential to occur, because they are restricted to areas with habitats that are not present within the study area. The plant surveys covered the flowering period for special-status plants that had the potential to occur based on the presence of potential habitat. None was observed, and no special-status plants are expected to occur. No impact would occur.

Special-status Wildlife Species

Special-status species that have been documented in the vicinity of Santa Rosa include, but are not limited to: California freshwater shrimp (*Syncaris pacifica*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), steelhead (*Onchorhynchus mykiss irideus*), foothill yellow-legged frog (*Rana boylei*), western pond turtle (*Emys marmorata*), and American badger (*Taxidea taxus*). Suitable habitat for these special-status species is not present in the Project area.

Potential suitable habitat does occur for several bats species listed as California Species of Special Concern (SSC) or Western Bat Work Group Priority species (pallid bat [*Antrozous pallidus*], Townsend's big-eared bat [*Corynorhinus townsendii townsendii*], western red bat [*Lasiurus blossevillei*], hoary bat [*Lasiurus cinereus*], and Yuma myotis [*Myotis yumanensis*]). If bats were present in trees along the alignment, tree pruning or damage would have the potential to impact individuals. The impact would be significant.

In addition, construction noise and tree pruning has the potential to impact special-status bird species which are protected under the Migratory Bird Treaty Act (MBTA). Passerines (perching birds) and raptors (birds of prey) are each protected under the MBTA and Fish and Wildlife Code Section 3503. Passerines that could potentially nest in trees in the Project area include Allen's hummingbird (*Selasphorus sasin*), oak titmouse (*Baeolophus inornatus*), olive-sided flycatcher (*Contopus borealis*), and Nuttall's woodpecker (*Picoides nuttallii*). Raptors that could potentially nest in trees in

the Project area include Cooper's hawk (*Accipiter cooperi*) and white-tailed kite (*Elanus leucurus*). If nesting passerines or raptors were present in trees along the alignment, construction noise and/or tree removals would have the potential to impact individuals. The impact would be significant.

With implementation of the Mitigation Measures BIO-1 and BIO-2, potential impacts to special-status bird and bat species would be reduced to a less-than-significant level by means of avoidance measures or protection measures.

Mitigation Measure BIO-1: Prevent Disturbance to Nesting Birds

The City shall avoid or minimize potential impacts to nesting passerines and raptors near the Project:

- Removal of vegetation or trees should be conducted outside the nesting season, which generally occurs between approximately March 1 and August 15, if feasible. Because some bird species nest in grassy and/or shrubby areas, it would be advantageous to remove any trees or vegetation during the non-nesting season.
- If vegetation removal outside of March 1 to August 15 is not feasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grasslands and adjacent trees shall be performed by a qualified biologist within seven days prior to ground breaking. If no nesting birds are observed, no further action is required and construction shall begin within one week of the survey.
- If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest until the young have fledged, as determined by a qualified biologist.
- The radius of the required buffer zone can vary depending on the species, (e.g., 75 to 100 feet for passerines and 200 to 300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.
- To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.
- After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones.

Mitigation Measure BIO-2: Prevent Disturbance of Bats

Prior to construction, the City shall have a Bat Habitat Assessment conducted by a qualified biologist. The Habitat Assessment shall evaluate the trees that would be pruned that have a breast height diameter greater than 10 inches. The Habitat Assessment shall evaluate the trees for suitable entry points and roost features, and shall provide focused daytime surveys for day-roosting bats. If a special-status bat species is found, or if suspected day roosts for special-status bats are identified, then the Habitat Assessment shall identify suitable performance measures for avoiding impacts as follows:

a) Preconstruction Surveys:

- All trees and structures suitable for use by bats shall be surveyed for signs of bats prior to Project activities.

(b) Avoidance Measures:

- If bats are discovered during the pre-construction surveys, then a buffer of 100 to 150 feet shall be maintained.
- The optimal time to remove trees is September 15 through October 15, when young would be capable of flying, and between February 15 to April 1 to avoid hibernating bats and prior to formation of maternity sites.
- If flushing of bats is necessary, it shall be done by a biologist during the non-breeding season from October 1 to March 31. When flushing bats, structures and/or trees shall be removed carefully to avoid harming individuals, and torpid bats given time to completely arouse and fly away.
- During the maternity season from April 1 to September 30, prior to construction, a qualified biologist shall determine if a bat nursery is present at any sites identified in the Bat Habitat Assessment as potentially housing bats.
- If an active nursery is present, disturbance of bats shall be avoided until the biologist determines that breeding is complete and young are reared.

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 California Department of Fish and Game or US Fish and Wildlife Service? (Less than Significant with Mitigation)

The Project would abandon ten manholes that are within Paulin Creek's riparian vegetation. For these ten manholes, construction access would be by foot rather than by vehicle. Project construction would break the grade rings and top cone section into the manhole and fill the manhole up with a cement-sand slurry over the broken concrete to the 3 foot below grade elevation. The slurry would be delivered through hoses to be hauled by hand from a pumper truck parked in the closest road or driveway. When finished, the abandoned manholes would be covered with approximately 3 feet of soil. The construction zone around the manholes would be approximately 8 feet in diameter, resulting in a temporary impact to approximately 50 square feet of riparian vegetation per manhole, or approximately 500 square feet of impact in total. No other special-status natural communities are present in the Project area. Please see Impact c) below for impacts to wetlands and waters. The construction impact would be significant.

No operational impact would occur.

Mitigation Measure BIO-3 would reduce impacts to riparian habitat to less than significant by revegetating the area and monitoring the success.

Mitigation Measure BIO-3: Restore Riparian Vegetation

The City shall compensate for temporary loss of riparian vegetation at the manholes to be abandoned along Paulin Creek by revegetating the area disturbed around each manhole. The disturbed areas shall be revegetated with species comparable to those removed from the disturbed areas. The revegetated areas shall be monitored annually for three years and shall be supplemented if necessary to achieve successfully revegetation.

- c) 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? (No impact)**

During the April 2015 survey, Paulin Creek at Chanate road was approximately 20 feet wide at the location of the box culvert, and the creek width was an average of 10 feet at the ordinary high water mark. At Lomitas Avenue, Paulin Creek was approximately 10 feet wide at the culvert and narrowed to 7 feet wide going upstream. No impacts to Paulin Creek would occur due to the Project.

Two wetlands were identified in ditches in the Project area: near 2604 Mendocino Avenue and along the north side of Lomitas Avenue just southeast of Paulin Creek. Neither of these wetlands would be impacted by the Project.

Project-related construction and operational activities would not result in the removal, fill, or hydrologic interruption of any potential jurisdictional waters of the United States. No impact would occur.

- 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)**

Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Wildlife connectivity in the Project area is generally reduced given the presence of established roadways. As described in the California Essential Connectivity Project (Spencer et al 2010), the Project area is not located within a Natural Landscape Block or Essential Connectivity Area.

Movement corridors for large and small mammals occur along Paulin Creek. Temporary disturbance to movement corridors may occur due to the abandonment of the existing sanitary sewer trunks and manholes within the banks of Paulin Creek. However, the corridor width along the banks of Paulin Creek is sufficiently wide that animals can choose another path without a substantial effect to their behavior. The impact is less than significant. Refer to impact (a) regarding bird and bat nursery sites.

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

Trees along the sewer alignment may need to be pruned for equipment access during construction, and may be damaged due to pruning or due to trenching near their roots. Although not expected, such damage could lead to loss of trees. This would be a significant impact. Conflicts with other local policies, such as policies regarding wetlands and endangered species, are evaluated in other impacts in this Biological Resources section.

Mitigation Measure BIO-4 would reduce impacts to trees to less than significant, because impacts would be avoided where possible, reduced as much as feasible, and any trees that are lost would be replaced in accordance with the City Zoning Code.

Mitigation Measure BIO-4: Pruning and Trenching Techniques to Minimize Tree Loss

The City shall retain a certified arborist to develop special trenching and pruning techniques to minimize the potential for tree impacts and tree loss along the alignment. The contractor shall implement such techniques. Construction activities within the dripline of trees adjacent to trenches shall be avoided to the extent feasible during construction. Pruning of

trees shall be completed by either a certified arborist or by the contractor under supervision of either an International Society of Arboriculture qualified arborist, American Society of Consulting Arborists consulting arborist, or a qualified horticulturalist. Pruning shall be completed to the minimum degree necessary to accommodate construction vehicles and in a manner that helps preserve tree health. If trees are damaged or lost, trees shall be replaced in accordance with the City of Santa Rosa Zoning Code. To the extent allowable, replacement trees shall be planted in the vicinity of the tree to be removed. The City shall ensure that plantings are monitored annually for three years after Project completion to ensure that the replacement plantings have developed and that the trees survive.

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? (No impact)

The Project is not within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the Project would not conflict with the provisions of an adopted habitat conservation plan. No impact would occur.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		✓		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d) Disturb any human remains, including those interred outside of formal cemeteries?		✓		

The CEQA Guidelines define a historical resource as: (1) a resource listed in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in the California Public Resources Code (PRC) Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Built environment historical resources are evaluated in impact "a" below. Historic-period and prehistoric archaeological resources are evaluated in impact "b" below.

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (No Impact)

GHD's subconsultant, the Anthropological Studies Center (ASC) at Sonoma State University, conducted a records and literature search at the Northwest Information Center on May 14, 2015, supplemented by further literature review at ASC and online. The records search found no previously recorded built environment cultural resources within the Project area. In addition, ASC conducted a pedestrian survey of accessible portions of the Project area on May 22, 2015. No built environment cultural resources were identified during the pedestrian survey. (ASC 2017).

No built environment cultural resources are present in the Project area; no impact would occur.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less than Significant with Mitigation)

Consistent with Santa Rosa General Plan policy HP-A-1, an Archaeological Resources Study was prepared for the Project (ASC 2017). The study assessed the potential for archaeological resources in the Project area through completion of the following:

- A records and literature search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS);
- Further literature review of publications, files, and maps for ethnographic, historic-era, and prehistoric resources and background information;
- Communication with the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File and contact information for the appropriate tribal communities;
- Contact with appropriate local Native American tribes; and
- A pedestrian archaeological survey of the Project area.

The records and literature search found no previously recorded prehistoric archaeological resources in the Project area or within ¼ mile of the Project area. One historic-era resource, the Chanate Historic Cemetery (P-49-002296/CA-SON-1797H) was recorded within ¼ mile of the Project area. The pedestrian archaeological survey also identified no archaeological resources¹. (ASC 2017)

The Project would not affect Chanate Historic Cemetery, as the Cemetery is approximately 1,000 feet away from the closest Project construction. No other archaeological resources have been identified within or near the Project area, so no known resources would be affected.

The western half of the Project area is located on Holocene alluvial fan deposits, so the soils in the Project area date to the Holocene and have the potential to contain buried archaeological remains. Background research indicated a moderate to high sensitivity for buried prehistoric archaeological resources. Research also indicated a moderate sensitivity for surface or buried historic-era archaeological resources in the Project area. (ASC 2017)

Archaeological monitoring was conducted during three geotechnical investigations of the Project area on April 24, 2017. No archaeological materials were identified during monitoring, and soils observed did not indicate sensitivity for cultural resources. Similarly, subsurface testing for a nearby project at the Sonoma County Administrative Office of the Courts, located approximately 1,200 west of the Project area, found no evidence of buried cultural deposits or soils that exhibited the potential for cultural deposits. (ASC 2017)

The Native American Heritage Commission (NAHC) was contacted on June 1, 2015 to request a review of their Sacred Lands file. The NAHC replied that no known Native American cultural resources in the Project area were identified in its files. Letters were sent to all the groups or individuals on the NAHC list, informing them of the Project and asking for any additional information or concerns. Letters were sent to the Federated Indians of the Graton Rancheria (FIGR) and Suki Waters. Upon request from FIGR, a copy of the original records search was sent to FIGR in 2015, and FIGR sent a tribal monitor to be present during the geotechnical investigations in 2017. Refer also to Section 3.16, Tribal Cultural Resources.

If as-of-yet unknown archaeological materials that qualify as a historical resource or unique archaeological resource as defined by CEQA are encountered during construction activities, a significant impact could occur.

Mitigation Measure CR-1 would reduce the impact to archaeological resources to a less-than-significant level because a procedure to address discovery of unanticipated resources and to

¹ A modern day flint knapping site was identified along the banks of Paulin Creek during the pedestrian survey, but the site is not of prehistoric origin (ASC 2017).

preserve and/or record those resources consistent with appropriate laws and requirements would be implemented.

Mitigation Measure CR-1: Protect Unknown Archaeological Resources

If potential archaeological resources are uncovered, the City shall halt work and workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. Prehistoric materials might include obsidian and/or chert flaked-stone tools such as projectile points, knives, or scraping implements; the debris from making, sharpening, and using them (“debitage”); culturally darkened soil containing shell, dietary bone, heat-altered rock, and carbonized plant material (“midden”); or stone milling equipment such as mortars, pestles, handstones, or milling slabs. A qualified professional archaeologist shall evaluate the find and provide appropriate recommendations. If the archaeologist determines that the find potentially qualifies as a historic resource or unique archaeological resource for purposes of CEQA (per CEQA Guidelines Section 15064.5), all work must remain stopped in the immediate vicinity to allow the archaeologist to evaluate any materials and recommend appropriate treatment. A Native American monitor shall be present for the investigation, if the local Native American tribe requests. Avoidance of impacts to the resource are preferable. In considering any suggested measures proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the City shall determine whether avoidance is feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures as recommended by the archaeologist (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project while mitigation for historic resources or unique archaeological resources is being carried out.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant with Mitigation)

Older alluvium has yielded vertebrate fossils in Sonoma County and throughout California. Such older alluvium deposits may be located below the Holocene deposits in the Project area. The possibility of encountering a paleontological resource during construction cannot be completely discounted, therefore, the impact related to the potential disturbance or damage of previously undiscovered paleontological resources, if present, is considered potentially significant.

Mitigation Measure CR-2 would reduce the impact of construction activities on potentially unknown paleontological resources to a less-than-significant level by addressing discovery of unanticipated buried resources and preserving and/or recording those resources consistent with appropriate laws and requirements.

Mitigation Measure CR-2: Protect Paleontological Resources during Construction Activities

In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), the City shall divert construction activities away from the discovery within 50 feet of the find, and notify a professional paleontologist to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment

that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they will be properly curated and preserved.

d) Disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant with Mitigation)

While there is no indication of human remains within the Project area, the possibility of encountering archaeological resources that contain human remains cannot be discounted (ASC 2017). Therefore, the impact related to the potential disturbance or damage of previously undiscovered human remains, if present, is considered potentially significant.

Mitigation Measure CR-3 would reduce the impact of construction activities on potentially unknown human remains to a less-than-significant level by addressing discovery of unanticipated remains, associated grave goods, or items of cultural patrimony consistent with appropriate laws and requirements. Implementation of Mitigation Measure CR-3 would also ensure consistency with General Plan policies regarding protection of Native American heritage.

Mitigation Measure CR-3: Protect Human Remains If Encountered during Construction

If human remains, associated grave goods, or items of cultural patrimony are encountered during construction, the City shall halt work in the vicinity of the find and notify the County Coroner immediately. The City shall follow the procedures in Public Resources Code § 5097.9 and Health and Safety Code § 7050.5. If the human remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of the determination. The Native American Heritage Commission shall then notify the Most Likely Descendant (MLD), who has 48 hours to make recommendations to the landowner for the disposition of the remains. A qualified archaeologist, the City and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects. The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects.

3.6 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
ii) 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? Refer to Division of Mines and Geology Special Publication 42.				✓
iii) Strong seismic ground shaking?			✓	
iv) Seismic related ground failure, including liquefaction?			✓	
v) Landslides?			✓	
b) Result in substantial soil erosion or the loss of topsoil?		✓		
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?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✓	
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?				✓

a, 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? Refer to Division of Mines and Geology Special Publication 42. (No Impact)

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The purpose of the Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Project does not include structures designed for human occupancy. Additionally, the proposed alignment does not cross an active Alquist-Priolo fault mapped by the California Geological

Survey (CGS 1983). The nearest known active fault is the Healdsburg-Rodgers Creek Fault, located approximately one-quarter mile east of the eastern edge of the Project area (DCM 2016). No impact would occur.

a, ii) Strong seismic ground shaking? (Less than Significant)

Future strong seismic shaking is anticipated in the area over the life of the Project, however, the impacts of seismic wave propagation on buried gravity sewer pipelines have historically been minimal. The impact of seismic ground shaking on the Project's deep gravity sewers would be less than significant (DCM 2016).

a.iii, a.iv, c, d) Subject to liquefaction or landslides, located on expansive soil, or otherwise unstable soils? (Less than Significant)

Mapping of liquefaction susceptibility in the San Francisco Bay Region indicates a moderate liquefaction potential within the Project alignment (USGS 2006). Mapping of landslide distributions in the San Francisco Bay Region indicates that the Project is located in an area of flat land and few landslides (USGS 1997). In addition, the risk of seismic-induced liquefaction or landsliding would be less than significant (DCM 2016).

Because trenches would be filled with imported fill, and the Project does not include structures intended for habitation, potentially expansive soils in the area would not present a hazard, and impacts would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant with Mitigation)

Areas to be disturbed during construction would consist predominantly of hardscapes and soils that have been highly altered from their original, natural state. As a result, the Project would result in little disturbance to native soils. The Project would require compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014), which include best management practices to prevent soil erosion. Compliance with the NPDES permit requirements would further ensure that potential impacts from soil erosion or loss of topsoil during construction would be less than significant.

Following construction, the Project would not result in soil erosion or loss of topsoil, as disturbed areas would be restored to general pre-construction conditions and no additional ground disturbance would occur. Therefore, no operational impact would occur.

As described in Section 3.9, Hydrology and Water Quality, Mitigation Measure HWQ-1 would reduce soil erosion impacts from construction activities to a less-than-significant level by ensuring implementation of erosion control best management practices and compliance with applicable waste discharge requirements.

Mitigation Measure HWQ-1: Manage Construction Stormwater

See Section 3.9, Hydrology and Water Quality for the full text of the mitigation measure.

- 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 not involve the use of septic tanks or other alternative wastewater disposal systems. No impact would occur.

3.7 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				✓
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓

In June 2012, the City of Santa Rosa adopted a community Climate Action Plan (CAP) which examines community-wide sources of GHG emissions, identifies reduction targets, and outlines strategies for reducing emissions (Santa Rosa 2012). The CAP applies to both private and public projects, including projects that are part of the City's capital improvement program. As provided in the BAAQMD's comment letter on the CAP's Supplemental EIR, the City's CAP meets the programmatic threshold for a Qualified GHG Reduction Strategy established by the BAAQMD guidelines. According to the *Bay Area Air Quality Management District CEQA Air Quality Guidelines*, a project that is consistent with an adopted qualified greenhouse gas reduction strategy can be presumed to have less-than-significant greenhouse gas emission impacts.

In August 2013, the city also adopted the *Municipal Operations Climate Action Plan* (Santa Rosa 2013). The *Municipal Operations CAP* identifies strategies that the City can use to reduce municipal greenhouse gas emissions and help meet the reduction targets established by the City for municipal operations.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (No Impact)

The evaluation of whether the Project would generate GHG emissions in a manner that would impact the environment is based on the Project's consistency with applicable GHG reduction strategies identified in the Santa Rosa CAP. Based on a review of the Santa Rosa CAP, the measures that are applicable to the Project are: Measure 6.1, Waste Reduction, Recycling, and Composting; and Measure 9.2, Construction Emissions. An evaluation of the Project's compliance with the applicable measures and implementing actions is provided below.

Measure 6.1-Waste Reduction, Recycling, and Composting

CAP Measure 6.1 includes increasing the amount of waste that is recycled and composted, including during construction. The Project would be required to develop and implement a waste reduction and recycling plan that would include measures to divert construction waste from landfills by using recycling, reuse, salvage, and other diversion programs. Therefore, the Project would be in compliance with CAP Measure 6.1.

Measure 9.2-Construction Emissions

CAP Measure 9.2 focuses on reducing emissions from heavy-duty equipment. Actions 9.2.1, 9.2.2, and 9.2.3 require minimizing idling times, construction equipment maintenance, and working with

project applicants to limit GHG emissions by substituting equipment with electric equipment instead of diesel or gasoline-powered equipment, using alternative fuels, or avoiding use of on-site generators. As mentioned in Environmental Protection Actions Incorporated into the Project, Environmental Protection Action 4, Implement Climate Action Plan Measures, all of the above listed actions are incorporated into the Project Description as measures to be implemented by the Project contractor. Therefore, the Project would be compliant with CAP Measure 9.2 and related implementing actions.

The Project is consistent with the applicable GHG reduction strategies to reduce GHG emissions, therefore there is no impact.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No Impact)

General Plan Goal OSC-M and policy OSC-M direct the City of Santa Rosa to meet local, regional, and state targets for reduction of GHG emissions through implementation of the CAP. As summarized in impact “a”, the City’s CAP is considered a qualified GHG Reduction Strategy, as established by the BAAQMD’s guidelines and consistent with State CEQA Guidelines Section 15183.5. The CAP would meet California Air Resources Board’s (CARB’s) initial Scoping Plan recommendation that local agencies reduce community-wide emissions to 15 percent below 2005 levels by 2020. The CAP would achieve community-wide emission reductions that are consistent with AB 32’s state-wide emission reduction goal for 2020.

The Project would be consistent with the Santa Rosa CAP and, by extension, the requirements of AB 32 and CARB’s Scoping Plan adopted to achieve the emission reduction requirements of AB 32 (Santa Rosa 2012). Therefore, the Project would comply with General Plan goal OSC-M and policy OSC-M-1. (Santa Rosa 2012)

In addition to the City’s CAP and General Plan, the *City’s Municipal Operations CAP* identifies GHG reduction opportunities related to the waste stream that are consistent with the Project. Waste stream reduction options identified in the *Municipal Operations CAP* include continuing to implement the City’s policies regarding waste reduction and recycling. As mentioned above in impact “a”, the Project would divert as much waste away from the landfill as possible via alternative diversion programs such as recycling, reuse, or salvage. Therefore, the Project would be consistent with applicable measures identified in the *Municipal Operations CAP*.

The Project would not conflict with the applicable adopted plans, policies, and regulations to reduce GHG emissions, therefore there is no impact.

3.8 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
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?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
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?		✓		
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?				✓
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✓

a,b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or upset and accident conditions? (Less than Significant)

Construction of the Project would include the transport and use of common hazardous materials inherent to the construction process, including petroleum products for construction equipment and vehicles, and paints, asphalt materials, concrete curing compounds, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in relatively small quantities.

In addition to the above-mentioned materials, construction would require the removal and disposal of existing sewer mains and associated facilities including: the sanitary sewer mains in Mendocino Avenue and Chanate Road and manholes at various locations within the streets and along Paulin Creek. The existing pipe to be removed or abandoned is vitrified-clay pipe, which does not contain asbestos.

Caltrans and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. Cal-OSHA also enforces hazard communication program regulations which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

Project construction would be required to implement storm water best management practices during construction in accordance with the State Water Resources Control Board General Construction Storm Water Permit. Best management practices addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes. The Project would also implement Environmental Protection Action 4 (Section 1.7.4), which includes BMPs to limit impacts to waterways.

Because the city and its contractors would be required to comply with existing and future hazardous materials laws and regulations and applicable best management practices addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during construction of the Project would be less than significant.

Following construction, operation of the Project would not result in the need for new hazardous materials that would need to be transported, used, or disposed. No operational impact would occur.

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

Little School House, Lewis Opportunity School and Adult Education Center, and Steele Lane Elementary School are located within one-quarter mile of the Project site. Construction activities are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact a) and b) above). Although construction activities could result in the inadvertent release of small quantities of hazardous construction chemicals, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials, the small quantities that would be used, and the distance to the schools. Therefore, because the City and its contractors would be

required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous materials to be potentially used by the Project, the impact related to the use of hazardous materials during construction within one-quarter mile of a school would be less than significant.

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 with Mitigation)

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." A search of the Cortese List was completed to determine if any known hazardous waste sites have been recorded on or adjacent to the Project area roadways.

The Project is not located on a hazardous materials site compiled pursuant to Government Code Section 65962.5. However, one property adjacent to the Project area, located at the northeast corner of the Chanate Road and Mendocino Avenue intersection, is known to have had releases of petroleum products in the past. The former Chevron gasoline station site was a leaking underground storage tank (LUST) site located at 2500 Mendocino Avenue. The site is currently occupied by restaurant and service uses.

Corrective actions have been completed at the former gasoline station site, and a "no further action" letter has been issued for the site by the North Coast Regional Water Quality Control Board (NCRWQCB 2010). Ground-disturbance in the vicinity of the former gasoline station near the Chanate Road/Mendocino Avenue intersection would include excavations associated with removal of existing pavement and dirt to a depth of approximately 15 feet. Given that residual contamination may be encountered in soil and/or groundwater during ground disturbance work immediately adjacent to these land uses, the impact is considered significant.

Implementation of Mitigation Measure HAZ-1 would reduce the potential for a hazardous waste-related impact from the former potentially contaminated site to a less-than-significant level, because it would require the proper handling and disposal of hazardous wastes per applicable local, state and federal regulations and/or guidelines.

Mitigation Measure HAZ-1: Manage Hazardous Wastes near the Chanate Road/Mendocino Avenue Intersection

The City shall prepare and implement a Soil and Groundwater Management Plan for excavation and dewatering activities in the vicinity of the Chanate Road/Mendocino Avenue intersection. The City shall implement the Plan. Elements of the Soil and Groundwater Management Plan shall include, but would not necessarily be limited to, the following:

- Measures to address hazardous materials and other worker health and safety issues during construction, including the specific level of protection required for construction workers. This shall include preparation of a site-specific health and safety plan in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal-OSHA regulations (8 CCR Title 8, Section 5192) to address worker health and safety issues during construction.
- Monitoring of excavation activities for soil and groundwater contamination. Monitoring shall include, at minimum, visual and organic vapor monitoring by personnel with appropriate hazardous materials training, including 40 hours of Hazardous Waste Operations and Emergency Response (HAZWOPER) training. If visual or organic

vapor monitoring indicates signs of suspected contaminated soil, then soil and groundwater samples shall be collected and analyzed to characterize soil and water quality.

- Groundwater brought to the surface as a result of construction dewatering shall be handled in a manner appropriate to construction-related permits for dewatering. If contamination is suspected or noted during the construction phase, then the groundwater shall be containerized and analyzed for contamination by a laboratory, certified by the California Environmental Protection Agency (CalEPA) Environmental Laboratory Accreditation Program (ELAP), using United States Environmental Protection Agency (USEPA)-approved analytical methods. If contaminated groundwater is encountered, precautions shall be taken to assure that the installation of piping or other construction activities do not further disperse contamination.
- All potentially contaminated materials encountered during Project construction activities shall be evaluated in the context of applicable local, state and federal regulations and/or guidelines governing hazardous waste. All materials deemed to be hazardous shall be remediated and/or disposed of following applicable regulatory agency regulations and/or guidelines. Disposal sites for both remediated and non-remediated soils shall be identified prior to beginning construction. Management of this site shall be documented in a Material Management Plan acceptable to applicable agencies. All evaluation, remediation, treatment, and/or disposal of hazardous waste shall be supervised and documented by qualified hazardous waste personnel.

e, f) 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, or within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (No Impact)

The Project is not located within the jurisdictional boundaries of the Sonoma County Comprehensive Airport Land Use Plan (Sonoma County 2016), within two miles of the Charles M. Schulz-Sonoma County Airport, or in the vicinity of a private airstrip. No impact would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

The City's adopted Emergency Operations Plan (Santa Rosa 2016) does not designate specific evacuation routes or emergency shelter locations, or include policies or procedures with which the Project would conflict. Therefore, the Project would not impair implementation of or physically interfere with the plan. No impact would occur.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (No Impact)

The Project is located within the Santa Rosa Wildland Urban Interface zone (Santa Rosa 2009c); however, it is not within a CAL FIRE designated very-high fire hazard severity zone (Santa Rosa 2009a). The Project would not include any structures that would be occupied by people and would not have above-ground features that would contribute to a fire risk. Therefore, no impact would occur.

3.9 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?		✓		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			✓	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off- site?			✓	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?			✓	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
f) Otherwise substantially degrade water quality?			✓	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✓
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓
j) Inundation by seiche, tsunami, or mudflow?				✓

a) Violate water quality standards or waste discharge requirements? (Less than Significant with Mitigation)

Water quality standards and objectives are achieved primarily through the establishment of NPDES permits and waste discharge requirements.

State Water Resources Control Board NPDES Order No. 2009-0009, as amended by Order No. 2012-0006, applies to public and private construction projects that include one or more acres of soil disturbance. Construction of the Project would disturb more than one acre of land and has the potential to degrade water quality as a result of erosion caused by earthmoving activities during construction or the accidental release of hazardous construction chemicals. New pipeline would be installed using a combination of open-trench and trenchless construction methods. Exposed soil from stockpiles, excavated areas, and other areas where ground cover would be removed could be transported elsewhere by wind or water. If not properly managed, this could increase sediment loads in receiving water bodies, thereby adversely affecting water quality. Trenchless installation of the 36-inch steel casing under Paulin Creek and the Strawberry Drive sewer would require the use of a drilling fluid to transport the excavated cuttings (slurry) back to a separation plant for cleaning and reuse as drilling fluid. If not properly managed, drilling fluids could reach receiving water bodies, thereby adversely affecting water quality. Construction of the Project would also require temporary groundwater dewatering. Often, groundwater generated during dewatering activities is relatively clean, but contains elevated levels of sediment and turbidity. In addition, an adjoining property at Chanate Road and Mendocino Avenue along the planned trunk sewer alignment is known to have had releases of hazardous substances or petroleum products associated with historical uses. Construction activities could, therefore, encounter contaminated water and may have a significant impact on water quality.

As part of its stormwater NPDES permit and pollution prevention program, the City of Santa Rosa requires incorporation of low impact development measures in accordance with the Low Impact Development (LID) Technical Design Manual (Santa Rosa 2017). The LID Manual requirements apply to linear utility projects that create 10,000 square feet or more of newly constructed, contiguous impervious surface. Because the Project would not result in the construction of new non-excluded contiguous impervious areas, the Project would not be required to incorporate low impact development facilities into the design. Following construction, the Project would not result in a new point discharge, and no other applicable waste discharge requirements are anticipated to apply to the Project. No operational impact would occur.

Mitigation Measures HWQ-1, HWQ-2, and HAZ-1 would reduce potential water quality impacts during Project construction activities to a less-than-significant level by requiring measures to control erosion and sedimentation of receiving water bodies and managing hazardous materials in groundwater near the Chanate Road/Mendocino Avenue intersection. Compliance with the requirements of the NPDES General Permit for Storm Water Discharges Associated with Construction Activity would be required. As a result, the potential impact on water quality would be less than significant with mitigation.

Mitigation Measure HWQ-1: Manage Construction Storm Water

The City shall obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. The City shall submit permit registration documents (notice of intent, risk assessment, site maps, Storm Water Pollution Prevention Plan, annual fee, and certifications) to the State Water Resources Control Board. The Storm Water Pollution Prevention Plan shall address pollutant sources, drilling fluids, non-storm water discharges

resulting from construction dewatering, best management practices, and other requirements specified in the above-mentioned Order. The Storm Water Pollution Prevention Plan shall also include dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified Storm Water Pollution Prevention Plan Practitioner shall oversee implementation of the Plan, including visual inspections, sampling and analysis, and ensuring overall compliance.

Mitigation Measure HWQ-2: Manage Construction Dewatering

The City shall evaluate reasonable options for dewatering management that would avoid discharging to a local surface water or storm drain. The following management options shall be considered:

- Reuse the water on-site for dust control, compaction, or irrigation.
- Retain the water on-site in a grassy or porous area to allow infiltration/evaporation.
- Discharge (by permit) to a sanitary sewer.

If discharging to the sanitary sewer, the City shall comply with a one-time discharge permit or other type of approval requiring, as necessary, measures for characterizing the discharge and ensuring filtering methods and monitoring to verify that the discharge is compliant with the City's local wastewater discharge requirements.

If discharging to a local surface water or storm drain, the City shall obtain coverage under Order No. R1-2009-0045, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region. The City shall submit permit registration documents to the North Coast Regional Water Quality Control Board, including development of a Best Management Practices/Pollution Prevention Plan to characterize the discharge and to identify specific measures to control the discharge, such as sediment controls to ensure that excessive sediment is not discharged, and flow controls to prevent erosion and flooding downstream of the discharge. The City shall ensure that the contractor oversees implementation of the Best Management Practices/Pollution Prevention Plan during construction dewatering activities, including visual inspections.

Mitigation Measure HAZ-1: Manage Hazardous Wastes near the Chanate Road/Mendocino Avenue Intersection

See Section 3.8 Hazards and Hazardous Materials for the full text of the mitigation measure.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (Less than Significant)**

Construction of the Project would require temporary groundwater dewatering to create reasonably dry work areas. Dewatering methods would vary along the planned alignment to account for varying groundwater levels and excavation depths. Temporary dewatering would have an effect on localized water levels in the immediate vicinity of an excavation area; however, because construction activities along the Project alignment are temporary, prolonged lowering of the groundwater levels would not occur. Therefore, no substantial deficit in aquifer volume or well interference would be expected to occur. The construction-related impact on groundwater levels would be less than significant.

Following construction, the Project would not utilize groundwater. Therefore, the Project would not create a deficit in aquifer volume or a lowering of water levels. In addition, the Project would not result in an increase in impervious areas, as the pipelines would be underground, and therefore, the Project would not interfere with groundwater recharge. No operational impact would occur.

c, e, f) Substantially alter the existing drainage pattern resulting in substantial erosion or siltation, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff on- or off- site, or degrade water quality? (No impact)

Project improvements would be located primarily within existing roadways. Areas disturbed during construction would be generally restored to pre-construction conditions, and the Project would not result in an increase in new impervious surfaces. The Project would not result in a change to drainage patterns, would not alter the course of a stream or river, would not increase surface runoff, or create substantial additional sources of polluted runoff. No impact would occur.

d) Substantially alter the existing drainage pattern resulting in substantial erosion or siltation or flooding on- or off- site? (Less than Significant)

The Project would not change stormwater drainage patterns or stormwater improvements, as the roadways would be restored to pre-project conditions. Therefore, the Project would not result in erosion, siltation, or flooding due to the alteration of existing drainage patterns. The impact would be less than significant.

g,h,i) Place housing or structures within a 100-year flood hazard area or expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (No Impact)

The Project would not be located within a 100-year flood hazard area (FEMA 2008), and does not include the construction of housing or structures for human occupancy. Additionally, the Project would not be located within a dam inundation zone (Santa Rosa 2009a). No impact would occur.

j) Inundation by seiche, tsunami, or mudflow? (No Impact)

The Project site is not located near a larger isolated body of water that may be affected by a seiche, within an area mapped as being at risk to tsunamis, or below steep slopes at risk to mudslides. No impact would occur.

3.10 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				✓
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				✓
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

a) Physically divide an established community? (No Impact)

The Project would make minor changes to the sewer system and does not include new features that would divide an established community. No impact would occur.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)

The Project would not conflict with Santa Rosa General Plan Policy PSF-G-2, which calls for the City to maintain existing levels of wastewater service by preserving and improving infrastructure, including replacing sewer mains as necessary. The Project would replace the aging pipe along Paulin Creek by putting new pipe into the road right-of-way. Specific Santa Rosa General Plan policies adopted for the purpose of avoiding environmental effects are evaluated throughout this Initial Study under the corresponding issue areas; for example, policies related to biological resources are evaluated in Section 3.4 Biological Resources. Where potential conflicts are identified, environmental protection actions and/or mitigation measures are identified. Therefore, the Project would not conflict with adopted policies and no impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan? (No Impact)

No habitat conservation plans or natural community conservation plans apply to the Project area. No impact would occur.

3.11 Mineral Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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?				✓
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?				✓

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, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

Under the Surface Mining and Reclamation Act, the State Geologist classifies areas into Mineral Resource Zones (MRZs). The Project is not located in an area classified as MRZ-2, and therefore is not located in an area of known economic mineral deposits of value to the region or state (USGS 2013).

The Santa Rosa General Plan directs the City to work with the County of Sonoma to encourage the conservation of mineral resources and the protection of access to such resources. The Sonoma County General Plan and the Sonoma County Aggregate Resources Management Plan do not identify MRZ-2 resource areas on or in the vicinity of the Project site (Sonoma County 2008, Sonoma County 2010). No impact would occur.

3.12 Noise

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?		✓		
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		
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 expose people residing or working in the project area to excessive noise levels?				✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

The Project's construction corridors are lined with residences, as well as some retail, office, and institutional uses. Traffic noise dominates the noise environment at the surrounding land uses.

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant)**

Section 17-16.120 of the City's Noise Ordinance limits permanent noise levels produced by stationary mechanical equipment to 60 dBA during daytime hours (7:30 a.m. to 6:30 p.m.), to 55 dBA during

evening hours (6:30 p.m. to 10:00 p.m.), and to 50 dBA at night (10:00 p.m. to 7:30 a.m.) at single-family residential property lines. The City Ordinance does not set limits for construction noise or traffic noise. The Project would not include new mechanical equipment noise sources that would expose existing noise-sensitive receptors surrounding the Project site to noise. Therefore, the impact would be less than significant.

Refer to impact c) below regarding policies established in the City's General Plan relative to permanent new sources of noise.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (Less than Significant with Mitigation)

Construction of the Project may generate perceptible vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams, pile drivers) are used. Construction activities would include preparation work, sewer line installation, and street restoration and finishing.

The California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV to avoid structural damage to buildings structurally sound and designed to modern engineering standards, which typically consist of buildings constructed since the 1990s; a conservative vibration limit of 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern; and a vibration limit of 0.25 in/sec PPV for historic and old buildings. While no historical buildings or buildings that are documented to be structurally weakened adjoin the Project site, details regarding the residences surrounding the Project site are not known. For the purposes of this study, therefore, groundborne vibration levels exceeding the conservative 0.3 in/sec PPV limit would have the potential to result in a significant vibration impact.

Table 3.12-1 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Construction activities, such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 3.12-1 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)	Approximate L _v at 25 feet (VdB)
Pile Driver (impact)	upper range	1.158	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	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

Source: Federal Transit Administration 2006

The vibration levels provided in Table 3.12-1 are the values projected at 25 feet; this distance reflects the closest distance from the existing residential structures to the construction area. Most structures are farther away than that to the construction area. Tunnelling may require the use of hoe rams near residential buildings. At a distance of 25 feet, a hoe ram would typically generate vibration levels of 0.09 in/sec PPV (FTA 2006), which is substantially below the 0.3 in/sec PPV threshold. The construction equipment that would generate the highest vibration levels would be pile drivers which may be used to install shoring systems. At a distance of 25 feet, vibration levels produced by a pile driver would range from 0.17 to 1.16 in/sec PPV (FTA 2006), which could exceed the 0.3 in/sec PPV threshold. The impact would be significant.

During operation, no groundborne vibration would occur, and the Project would not result in exposure of persons to or generation of excessive groundborne vibration levels. No operational impact would occur.

Mitigation Measure NOI-1 would reduce vibration impacts to less than significant by determining the sensitivity of nearby structures and requiring the use of alternate construction equipment.

Mitigation Measure NOISE-1: Manage Vibration Levels

The City shall not use heavy vibration-generating construction equipment to the extent feasible. Where heavy vibration-generating equipment must be used, the City shall prepare a vibration study conducted by a qualified acoustic scientist prior to the start of construction. The study will determine the age and sensitivity of potentially affected structures, determine whether a threshold of 0.3 or 0.5 inch/sec PPV is appropriate for each of them, and estimate the projected vibration impact at each structure. The City shall move the construction or use alternate construction equipment such that the projected Project vibration impact at each structure is less than the appropriate threshold established by the study.

c) Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (No Impact)

Based on Policy NS-B-14 of the City of Santa Rosa General Plan, a significant impact would occur if the proposed Project would result in a permanent noise level increase of 5 dBA DNL or greater at sensitive receptors located within 250 feet of the Project site.

The new pipelines, manholes, and valves would be underground and their operation would not be audible. No increase in vehicle traffic would be caused by Project operations and maintenance. No impact would occur.

d) Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (Less than Significant with Mitigation)

The duration of exposure at any given noise-sensitive receptor is a consideration in determining an impact's significance. For example, this analysis generally assumes that temporary construction noise that occurs during the day for a relatively short period of time would not be significant. This analysis assumes that most residents of average sensitivity that live in urban environments are accustomed to a certain amount of construction activity from time to time to maintain existing infrastructure. Therefore, for the purposes of this analysis, temporary exposure to construction noise during the daytime would not be considered to result in a substantial temporary increase in ambient noise levels if it is for a duration of 12 months or less. An exception to this would be construction near schools that are in session. Little House School is located adjacent to the Project alignment near

Mendocino Avenue at 2323 Chanate Road; other schools near the construction area are far enough away that they would not be substantially affected.

Noise peaks generated by construction equipment could result in speech interference in adjacent school classroom buildings if the noise level in the interior of the building were to exceed 45 to 60 dBA. A typical building can reduce noise levels by 25 dBA with the windows closed (U.S. EPA 1971). Assuming a 25 dBA reduction with the windows closed, an exterior noise level of 70 dBA adjacent to a school classroom building would maintain an acceptable interior noise environment of 45 dBA. It should be noted that construction noise levels would vary rather than be continuous in nature, because different types of construction equipment would be used throughout the construction process. Therefore, an exterior noise level of 70 dBA with windows closed during peak noise periods is used as the threshold for substantial construction noise at school classrooms.

Nighttime construction, if needed, would interfere with sleep at nearby residences. Based on available sleep criteria data, an interior nighttime level of 35 dBA is considered acceptable (U.S. EPA 1971). Assuming a 25 dBA reduction from a residential structure with the windows closed, an exterior noise level of 60 dBA adjacent to the building would maintain an acceptable interior noise environment of 35 dBA. Sleep interference thresholds apply from 10 pm to 7 am.

Nighttime construction may occur along Chanate Road, which has residences near it.

Table 3.12.2 summarizes the maximum instantaneous noise levels expected from construction equipment. The noise levels are reported as dBA L_{max} , which is the maximum noise level anticipated.

Table 3.12-2 Construction Equipment Noise Levels

Construction Equipment	Noise Level (dBA L_{max} at 50 feet)
Excavator	81
Tractor/loader/backhoe	78-84
Roller	80
Concrete/asphalt saw	90
Jackhammer	89
Generator	81
Truck-mounted drill rig	79
Bore/horizontal drill	79
Caisson drill	84
Crane	81
Small crane	76
Horizontal hydraulic jack	82
Pile driver	101
Vibratory pile driver	101
Pumps	81
Separation plant	81
Paver	77
Grinder	90
Cement and mortar mixer	80
Tractor trailer 20 yd	77
Pickup truck	75

Source: FHWA 2006, FTA 2006, USEPA 1971

Construction-phase noise generation would occur for pipeline installation, staging, and street restoration. Pipe installation would proceed at approximately 120 feet per day on average using the trenchless method, and 80 feet per day on average using the open trench method, and would generate approximately 90 dBA L_{max} at maximum at 50 feet. Water main installation would proceed

at approximately 100 feet per day on average. Final paving would proceed at about 300 feet per day on average and would generate approximately 80 dBA L_{max} at maximum at 50 feet. Pipeline construction near Little House School could generate noise levels of up to 90 dBA L_{max} at the exterior of the building, exceeding the threshold for speech interference by 20 dBA. Other schools in the area (Lewis Opportunity School and Steele Lane Elementary School) would be more than 600 feet away from the construction area and would not be subject to noise levels of 70 dBA L_{max} or more. This would be a significant impact.

If nighttime construction is required for pipeline installation, maximum noise levels would be the same as identified above and could exceed sleep interference thresholds by up to approximately 30 dBA at the closest receptors. Pipeline installation conducted at night may extend for up to approximately five nights at each location. This would be a significant impact.

Daytime construction would extend for approximately 14 months overall, but any one sensitive receptor would only be exposed to construction noise when the construction is near them. Because construction would proceed at 80 to 130 feet per day, no one receptor would be affected by construction noise over 70 dBA L_{max} for more than a week. This would be a less-than-significant impact.

Construction traffic would serve each segment of the Project alignment and use some routes more frequently, including Mendocino Avenue and Chanate Road. Construction trucks are expected to generate noise levels of approximately 65 to 70 dBA L_{eq} at 50 feet from the centerline of traffic. Although this may be somewhat louder than existing traffic noise, it would be a less-than-significant impact, because of the limited duration of substantial levels of construction traffic on a particular street and because of the ambient noise levels already present in the area.

Mitigation Measure NOI-2 would reduce construction noise levels at schools and at nighttime to a less-than-significant level by requiring the City to meet a performance standard of 70 dBA near school classrooms while school is in session and 60 dBA at residential buildings during nighttime construction.

Mitigation Measure NOI-2: Reduce Construction Noise Levels

The City shall ensure that noise levels during construction, including construction staging areas, do not exceed the following performance standards:

- A daytime exterior noise level of 70 dBA L_{eq} at school classrooms while school is in session between 7 am and 5 pm.
- An exterior noise level of 60 dBA L_{eq} at residential buildings between 10 pm and 7 am.

The contractor will determine the specific methods to meet the performance standards provided above. Specific measures that can be feasibly implemented to comply with these performance standards include, but are not limited to, the following:

- Best available noise control practices (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) shall be used for all equipment and trucks in order to minimize construction noise impacts.
- If impact equipment (e.g., jack hammers, pile drivers) is needed during Project construction, hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used. External jackets on the tools themselves shall also be used if available and feasible.

- To the extent consistent with applicable regulations and safety considerations, operation of vehicles requiring use of back-up beepers shall be avoided near sensitive receptors during nighttime hours and/or, the work sites shall be arranged in a way that avoids the need for any reverse motions of large trucks or the sounding of any reverse motion alarms during nighttime work. If these measures are not feasible, trucks operating during the nighttime hours with reverse motion alarms must be outfitted with SAE J994 Class D alarms (ambient-adjusting, or “smart alarms” that automatically adjust the alarm to 5 dBA above the ambient near the operating equipment).
- Stationary noise sources shall be located as far from sensitive noise receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used. Enclosure openings or venting shall face away from sensitive noise receptors.
- A designated Project liaison shall be responsible for responding to noise complaints during the construction phases. The name and phone number of the liaison shall be conspicuously posted at construction areas and on all advanced notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular Project meetings with the contractor. The liaison shall coordinate with the contractor to modify any construction activities that generate noise levels above the levels identified in the performance standards listed in this measure.
- A reporting program shall be required that documents complaints received, actions taken to resolve problems, and effectiveness of these actions.
- Locate equipment at the work area to maximize the distance to noise-sensitive receptors, and to take advantage of any shielding that may be provided by other on-site equipment.
- Maintain respectful and orderly conduct among workers, including worker conversation noise during the nighttime hours.
- Maintain the equipment properly to minimize extraneous noise due to squeaking or rubbing machinery parts, damaged mufflers, or misfiring engines.
- Provide advance notice to nearby residents prior to starting work at each work site, with information regarding anticipated schedule, hours of operation and a Project contact person.
- Provide a minimum 24-hour advance notice to residents within 250 feet of nighttime work.
- Schedule work and deliveries to minimize noise-generating activities during nighttime hours at work sites (e.g., no deliveries or non-essential work).
- Utilize a temporary noise barrier placed as close to the receptor (e.g., along the residential property line) or to the work site (e.g., as close as 15 to 20 feet from the loudest generating activity area) as possible.
- Utilize sound blankets.
- Limit the type of construction and construction traffic during the hours of 10 p.m. to 7 a.m. to that which can meet the performance standard.

- Offer hotel vouchers to residents who are subject to noise levels in their dwelling from nighttime construction that are measured to exceed the performance standard, even with implementation of all feasible noise reduction actions, such as those listed here.
 - Coordinate with nearby schools to schedule construction while school is not in session or limit the type of construction during school hours to that which can meet the performance standard.

With implementation of Mitigation Measure NOI-1, construction noise levels would be reduced to a less-than-significant level.

e, f) Exposure of people residing or working near a private or public airport to excessive noise levels? (No Impact)

The Project is not sensitive to aircraft noise and is not located within two miles of a public or private airport. The closest airport is the Charles M. Schulz – Sonoma County Airport, which is located approximately 5.3 miles northwest of the Project area. Therefore, the Project would not expose people to excessive aircraft noise, and no impact would occur.

3.13 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial 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)?				✓
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

- a) Induce substantial 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 or businesses in the area. The Project would not indirectly induce population growth, because it would not extend infrastructure into new areas not already served by the City, and would not increase the overall capacity of the sewer system or the treatment capacity of the Laguna Treatment Plant. Therefore, no impact to population growth would occur.

- b, c) Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere? (No Impact)**

No homes or people would be displaced as a result of Project construction or operation, and no replacement housing would be needed. Therefore, no impact would occur.

3.14 Public Services

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project 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?				✓

- a) **Would the project 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 public services? (No Impact)**

As discussed in Section 3.13, Population and Housing, implementation of the Project would not induce population growth and, therefore, would not require expanded fire or police protection facilities to maintain acceptable service ratios, response times, or other performance objectives. The Project would also not result in an increase in the City's student population, and therefore, no new or expanded schools would be required.

The Project would not result in the increased use of existing parks and other public facilities as it would not induce population growth. The Project would also not require the expansion of recreational facilities to maintain acceptable service ratios in parks, and would not require the expansion of other public facilities. No impact on public services would occur.

3.15 Recreation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				✓

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, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No impact)

The Project would not increase employees or population in the surrounding community, so the use of existing neighborhood and regional parks or other recreational facilities would not change as a result of the Project. The Project would not result in the physical deterioration of public recreational facilities, and would not require construction of parks and recreational facilities. No impact would occur.

3.16 Transportation/Traffic

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			✓	
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				✓
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e) Result in inadequate emergency access?		✓		
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?		✓		

- a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (Less than Significant)**

No specific measures of effectiveness if the circulation system have been identified in adopted plans that apply to temporary construction traffic and activity. For example, Level of Service (LOS) standards are intended to regulate long-term impacts from operation of future projects, as opposed to temporary impacts from construction. Although no construction-related conflict would occur, given

the extent of construction activities necessary for the Project, additional analysis is provided assessing the potential for construction to substantially decrease the performance and safety of the roadway.

During construction, the normal functionality of Lomitas Lane, Lomitas Avenue, Plum Drive, Strawberry Drive, and Chanate Road in the Project area would be altered due to the need for temporary lane closures. Two-way traffic lanes would be provided at all times on Mendocino Avenue and for the segment of Chanate Road between Mendocino Avenue and Belvedere Way.

In addition, construction would result in additional vehicle trips by construction workers, supply trucks, and haul trucks travelling to and from active portions of the Project construction. The number of construction-related vehicles traveling to and from the Project area would vary on a daily basis, however, as indicated in Table 1.5-1 (Estimated Haul Volumes and Truck Trips), approximately 460 haul truck trips are anticipated over the course of construction. The increased construction traffic, in combination with normal traffic and lane closures, would decrease the performance and safety of the roadway, most notably during peak commute hours. However, no work would be completed in the public right-of-way during peak hours, unless permitted by the City Traffic Engineer. Construction activities would create potential conflicts between construction vehicles and cars, school buses, and bicyclists / pedestrians sharing roadways; confusion or frustration of drivers related to construction activities and lane closures; and confusion of bicyclists and pedestrians due to temporary alterations in bicycle and pedestrian access and circulation.

As provided in Section 1.5.5 Traffic Control, the City would require the Project contractor to develop and implement a temporary Traffic Control Plan outlining work zones, activities, and time needed to complete the work in each zone. Therefore, the construction-related impact would be less than significant.

The Project would not result in any changes to roadway width or operations and would not increase vehicle trips for operations and maintenance. Therefore, no operational impact would occur.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? (No Impact)

In 1997, the Sonoma County Transportation Authority (SCTA) relinquished its position as the Congestion Management Agency of Sonoma County. As there is no applicable congestion management program, no impact would occur. Nevertheless, the Project is included in the Comprehensive Transportation Plan for the County (SCTA 2009), and no conflict with County transportation plans would occur.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (No Impact)

The proposed Project does not contain any feature or characteristic that would result in a change in air traffic patterns nor would any features be of sufficient height to affect air traffic. No impact would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The Project would not pose hazards and/or safety concerns resulting from sharp curves as the Project would not result in a change to the width or geometry of roadways in the Project area, and pavement

would be restored at the end of construction. The Project adheres to all local roadway design and construction standards, and therefore, would not increase hazards due to a design feature. No impact would occur.

e) Result in inadequate emergency access? (Less than Significant with Mitigation)

Construction activities would primarily occur within the public right-of-way, including travel lanes, sidewalks, and other areas designated as right-of-way. Due to road widths on Lomitas Lane, Lomitas Avenue, Plum Drive, Strawberry Drive, and the section of Chanate Road north of Belvedere Way, one-way traffic control would likely be required. The lane closures could result in delays for emergency response vehicles or temporarily block access to driveways and cross-streets along the pipeline routes. The impact would be significant.

Following construction, all disturbed pavements would be restored. The Project would not change to the width or geometry of roadways in the Project area. Therefore, the Project would have no operational impact.

Mitigation Measure TR-1 would reduce the temporary impact of construction activities on emergency access to a less-than-significant level by requiring the City and its contractors to have ready at all times the means necessary to accommodate access by emergency vehicles, as well as notifying emergency responders in advance of construction activities.

Mitigation Measure TR-1: Maintain Emergency Access and Notify Emergency Responders

The City shall provide adequate emergency access to all properties along the corridor during the construction process. At locations where the access to a nearby property is temporarily blocked, the contractor shall be required to have ready the means necessary to accommodate access by emergency vehicles to such properties, such as plating over excavations. As construction progresses, emergency providers shall be notified in advance of the timing, location, and duration of construction activities and the locations and durations of any temporary lane closures.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (Less than Significant with Mitigation)

Project-related construction activities would temporarily impact an existing bus stop on Mendocino Avenue at Chanate Road and could decrease performance for City Bus Routes 1 and 19 due to delays. Additionally, the Project has the potential to temporarily impact access for pedestrians and bicyclists during construction. The impact would be significant.

Following construction, the Project would not change to the width or geometry of roadways, sidewalks, or bike lanes in the Project area, and vehicle trips would not increase due to operations and maintenance. Therefore, the Project would have no operational impact.

Mitigation Measure TR-2 would reduce the temporary impact of construction activities on the performance and safety of public transit, bicycle, and pedestrian facilities to a less-than-significant level by ensuring the maintenance of adequate and safe access during construction.

Mitigation Measure TR-2: Reduce Construction Impacts on Transit, Bicycle, and Pedestrian Facilities

The City shall ensure that pedestrian and bicycle access and circulation shall be maintained during Project construction where safe to do so. Where it is unsafe to maintain pedestrian and bicycle facilities at their current location, temporary signage will be used to guide users to alternate temporary paths and/or detours. Temporary signage and other traffic control measures necessary to inform users of construction conditions shall be utilized. Transit stops impacted by construction shall be temporarily relocated (with proper signage) within the temporary construction zone, if necessary, to maintain the existing transit service throughout the segment.

3.17 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
k) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
l) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American tribe.

a, b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less than Significant with Mitigation)

On March 7, 2016, the City notified the Federated Indians of Graton Rancheria and the Lytton Rancheria of California regarding the initiation of the Project in accordance with Assembly Bill 52 (AB52). No response was received.

As described in Section 3.5, Cultural Resources, an Archaeological Resources Study was prepared for the Project (ASC 2017). The study included: a records and literature search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS); communication with the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File; additional contact with appropriate local Native American tribes; and a pedestrian archaeological survey of the Project area.

No sacred lands were identified in the Project area by the NAHC records search. The NAHC listed groups and individuals who might provide additional information. ASC sent letters to those groups and individuals. Upon request from FIGR, a copy of the original records search was sent to FIGR in

2015, and FIGR sent a tribal monitor to be present during the geotechnical investigations in 2017. No archaeological materials were identified during monitoring, and soils observed did not indicate sensitivity for cultural resources (ASC 2017).

Although it is unlikely, the potential does exist to encounter as-of-yet unknown tribal cultural resources materials during project-related construction activities. If such resources were to represent “tribal cultural resources” as defined by CEQA, any substantial change to or destruction of these resources would be a potentially significant impact; therefore, the following mitigation is included.

Mitigation Measure TCR-1: Minimize Impacts to Unknown Tribal Cultural Resources

If potential tribal cultural resources are uncovered, the City shall halt work, and workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. The District shall notify California Native American tribes culturally affiliated with the project area. The City, in coordination with Native American tribes, shall determine if the resource qualifies as a tribal cultural resource under CEQA. If it does, then all work must remain stopped in the immediate vicinity to allow evaluation of any materials. The City shall ensure that qualified resources are avoided, protected in place, or moved to an appropriate location in accordance with the requests of Native American tribes, to the extent feasible. Work may proceed on other parts of the project while mitigation for tribal cultural resources is being carried out.

3.18 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
e) 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?				✓
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	
g) Comply with federal, state, and local statutes and regulations related to solid waste?				✓

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (No Impact)

During construction, groundwater generated during dewatering operations would be treated at the City's Laguna Treatment Plant. The discharge of groundwater to the Laguna Treatment Plant would be temporary in nature and would not substantially alter existing wastewater characteristics or result in the need for new treatment methods. Following construction, the Project would not convey wastewater to the Laguna Treatment Plant without altering water quality or flows. In addition, the Project would not result in an increase in employees or population in the community and would not increase the amount of wastewater generated. Therefore, the Project would not cause an exceedance of any wastewater treatment requirements, and no impact would occur.

- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (No Impact)**

As described above under item a), the Project would not alter wastewater characteristics or result in an increase in the generation of wastewater aside from groundwater generated during construction dewatering operations. Similarly, the Project would not result in an increased demand for water. Therefore, the Project would not require or result in the construction of other water or wastewater treatment facilities or expansion of existing facilities outside of those included and analyzed in this document. No impact would occur.

- c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (No Impact)**

The Project is being designed to minimize displacement of existing utilities to the extent feasible. In some locations, existing storm drain pipelines may need to be relocated within the road right-of-way to accommodate the Project. Such relocations, if needed, would be a functional replacement and would not require or result in the construction of other facilities or expansion of existing facilities outside of those included and analyzed in this document. Utility relocations would be located within the same area as proposed for the Project.

Construction related discharges of groundwater would be directed to the sanitary sewer system and would not require new on-site or off-site storm water drainage facilities.

The Project would not cause increased impervious surfaces and therefore would not increase the need for stormwater drainage facilities, and no new storm drains would be required. No impact would occur.

- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (No Impact)**

During construction, City water supplies could potentially be used for pipeline installation and dust control activities. Construction-related water demands would be short-term and small in volume and would be sufficiently served by existing entitlements. Following construction, the Project would not result in an increased demand for water. Therefore, no new water supply entitlements or facilities would be required, and no impact would occur.

- e) 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? (No Impact)**

As described above under item a), the Project would not result in an increase in the generation of wastewater. Because there would be no increase in wastewater discharges, the Project would not impair the ability of City's Laguna Treatment Plant to continue serving existing commitments. No impact would occur.

- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (Less than Significant)**

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. Construction wastes would include, but not be limited to, demolished asphalt pavement, concrete, and excavated soils. Construction waste with no

practical reuse or that cannot be salvaged or recycled would be disposed of at a local landfill. Active permitted regional landfills include the Redwood Sanitary Landfill (26 million cubic yards remaining capacity), Potrero Hills Landfill (13.9 million cubic yards remaining capacity), Vasco Road Landfill (8 million cubic yards remaining capacity), and Keller Canyon Landfill (63.4 million cubic yards remaining capacity) (CalRecycle 2016). Solid waste generated by the Project would represent a small fraction of the daily permitted tonnage of these facilities. Therefore, the Project's construction-related solid waste disposal needs would be sufficiently accommodated by existing landfills, and the impact would be less than significant.

Following construction, Project operation would not generate additional solid waste. No operational impact would occur.

**g) Comply with federal, state, and local statutes and regulations related to solid waste?
(No Impact)**

The City has entered into a franchise agreement to provide construction and demolition debris collection service within the City in accordance with Municipal Code Chapter 9-12. The existing franchise agreement requires that the franchisee recycle 50 percent of all construction and demolition debris collected within the City. Compliance with applicable statutes and regulations regarding construction waste would be conditionally required as part of Project. Therefore, no impact would occur.

No applicable federal solid waste regulations would apply to the Project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The Project would not conflict with or impede implementation of such programs.

Following construction, Project operation would not generate additional solid waste. Therefore, no operational impact would occur.

3.19 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Does the project have the potential to 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, 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?		✓		
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)?		✓		
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?		✓		

- a) Does the project have the potential to 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, 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 with Mitigation)**

As evaluated in this IS/Proposed MND, the Project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

Environmental protection actions are in place (see Section 1.7, Environmental Protection Actions Incorporated into the Project, of this IS/Proposed MND) to reduce impacts related to air quality and geologic hazards. Additionally, mitigation measures are listed herein to reduce impacts related to aesthetics, biological resources, cultural resources, hydrology and water quality, noise, and transportation/traffic. With implementation of the required mitigation measures, impacts would be less than significant.

- 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 with Mitigation)**

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative impact analysis in this IS/MND uses the list approach. A search was undertaken for reasonably foreseeable projects in the vicinity of the Project area that may have overlapping or cumulative impacts with the proposed Project, using the City’s Planning and Economic Development website (Santa Rosa 2018). The website does not identify specific nearby projects with potentially overlapping impacts in the Project area.

Nevertheless, substantial construction is expected to occur over the next several years in the general area due to rebuilding after the October 2017 Tubbs Fire. The closest fire-damaged properties are approximately a half mile from the Project area. Mendocino Avenue and Chanate Road may be used for construction traffic for the rebuilding effort.

As summarized in Section 3 of this IS/MND, the Project would not result in impacts on agriculture and forest resources, land use and planning, mineral resources, population and housing, public services, and recreational facilities. Therefore, implementation of the Project would not contribute to related cumulative impacts.

An analysis of potential cumulative impacts on aesthetics, air quality, greenhouse gas emissions, biological resources, cultural resources and tribal cultural resources, geology/soils, hazards/hazardous materials, hydrology/water quality, noise, transportation/traffic, and utilities/service systems is provided below.

Aesthetics

As discussed in Section 3.1, Aesthetics, the Project would have impacts on the existing visual character of Chanate Road due to the occurrence of construction activities and the presence of staging areas. The Project also would impact adjacent residences due to construction lighting during nighttime hours.

Rebuilding from the Tubbs Fire would be about half a mile away and therefore the Project would not have a considerable contribution to a significant cumulative impact relative to visual character or construction lighting along Chanate Road.

Air Quality and Greenhouse Gas Emissions

By its nature, air pollution and greenhouse gas emissions are largely a cumulative impact, in that individual projects are rarely sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project’s individual emissions contribute to existing cumulatively significant adverse air quality impacts. As discussed in Section 3.3, Air Quality, the Project would not conflict with or obstruct applicable air quality plans or exceed BAAQMD thresholds of significance for criteria air pollutants. Therefore, the Project would not contribute to a significant cumulative impact on air quality. As described in Section 3.7, Greenhouse Gas Emissions, any increases in Project-related greenhouse gas emissions would be minimal and would not impede the State in meeting Assembly Bill 32 (AB 32) greenhouse gas reduction goals. Therefore, the Project’s contribution to cumulative

greenhouse gas impacts would not be cumulatively considerable, and therefore would be less than significant.

Biological Resources

As discussed in Section 3.4, Biological Resources, the Project has the potential to impact nesting birds, bats, riparian vegetation, and trees. If the Project's impact on nesting birds and bats were to overlap with impacts from the rebuilding effort, such impacts would be reduced to a less-than-significant level with implementation of Mitigation Measure BIO-1 (Prevent Disturbance of Nesting Birds) and BIO-2 (Prevent Disturbance of Bats), which would require pre-construction surveys and avoidance measures. With implementation of these measures, the Project's contribution to cumulative impacts related to nesting birds and bats would not be cumulatively considerable, and therefore would be less than significant. Additionally, the Project would disturb riparian vegetation and trees. However, if the Project's impacts were to overlap with impacts of the rebuilding effort, with implementation of Mitigation Measure BIO-3 (Restore Riparian Vegetation) and BIO-4 (Trenching Technique to Minimize Tree Loss), the contribution of Project impacts would not be cumulatively considerable. Therefore, the cumulative impact on biological resources would be less than significant.

Cultural Resources and Tribal Cultural Resources

If Project impacts were to overlap with those from the Tubbs Fire rebuilding, the cumulative effect of the Project plus cumulative projects could be significant. As discussed in Section 3.5, Cultural Resources, record searches and meetings were undertaken to ensure that cultural resources, human remains, and paleontological resources that could be impacted by Project implementation were identified and mitigation measures are included that would reduce impacts to a less-than-significant level. With implementation of the mitigation measures, the Project's contribution to this cumulative impact would not be cumulatively considerable, and therefore less than significant.

Geology and Soils

The nature of geologic impacts is site-specific. Therefore, geologic hazards do not accumulate as impacts on resources do. As discussed in Section 1.7.1, Environmental Protection Action 1-Implement Geotechnical Design Recommendations, the Project would be designed and constructed in compliance with the site-specific recommendations made in the Project's geotechnical reports. With compliance with the recommendations of the Project-specific geotechnical report and applicable State and local regulation and policies, the Project's geologic-related impacts would be less than significant. Because of the localized nature of geologic and soil impacts, no significant cumulative impacts would occur.

Hydrology and Water Quality

As described in Section 3.9, Hydrology and Water Quality, the Project would be subject to existing permits and waste discharge requirements applicable to construction activities and groundwater dewatering, which would minimize Project-related water quality impacts to a less-than-significant level. Rebuilding activities from the Tubbs Fire would also be required to comply with applicable regulations, similar to the proposed Project. For this reason and because water quality impacts from the rebuilding effort would be at least half mile away, the potential cumulative impact on hydrology and water quality would be less than significant.

Noise

As discussed in Section 3.12, Noise, the Project would have impacts related to construction noise. Rebuilding efforts from the Tubbs Fire would occur at least half a mile away, and therefore would not

have overlapping impacts with the Project. In addition, the Project's impact related to construction vibration, noise, and traffic would be reduced to a less-than-significant level with implementation of Mitigation Measures NOI-1 (Manage Construction Vibration) and NOI-2 (Reduce Construction Noise Levels). With implementation of these measures, the Project's contribution to cumulative construction noise impacts would not be cumulatively considerable, and therefore would be less than significant.

Transportation / Traffic

As described in the Section 3.16, the Project could impact emergency access to adjacent properties along active construction corridors. The Project also would impact the performance of public transit and temporarily disrupt mobility and access for pedestrians and bicyclists.

Construction traffic from the rebuilding efforts after the Tubbs Fire could have similar impacts on Mendocino Avenue and Chanate Road; therefore, the cumulative impacts could be significant. However, the impacts of the Project on emergency access and bicycle and pedestrian access would be reduced to a less-than-significant level with implementation of Mitigation Measure TR-1 (Maintain Emergency Access and Notify Emergency Responders) and TR-2 (Reduce Construction Impacts on Transit, Bicycle, and Pedestrian Facilities). Mitigation Measure TR-1 would reduce the impact of construction activities on emergency access to a less-than-significant level by providing access by emergency vehicles to all properties within the construction corridor, as well as notifying emergency responders in advance of construction activities. Mitigation Measure TR-2 would reduce the impact of Project construction on the performance and safety of public transit, bicycle, and pedestrian facilities by continuing to allow access when feasible and providing signage and detours as needed to ensure pedestrian connectivity and safety. With implementation of these measures, the Project's contribution to cumulative transportation impacts would not be cumulatively considerable, and therefore less than significant.

Utilities and Service Systems

As summarized in Section 3.17, Utilities and Service Systems, the Project would not result in impacts related to wastewater treatment requirements, or result in the need for new water or wastewater treatment facilities, government facilities, expansion of off-site storm water drainage facilities, expanded water supplies or entitlements, or conflict with solid waste regulations. Therefore, implementation of the Project would not contribute to any related cumulative impacts.

Construction of the Project would result in a slight temporary increase in solid waste disposal needs during construction, which would include disposal of construction wastes at a local landfill, such as Redwood Sanitary Landfill. As summarized in Section 3.17, Utilities and Service Systems, regional landfills have sufficient permitted capacity and would be expected sufficiently accommodate the Project needs into the foreseeable future; therefore, the potential cumulative impact would be less than significant.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

As discussed in the analysis throughout Section 3 of this IS/MND, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings with implementation of Environmental Protection Actions and mitigation measures.

4. References

- Anthropological Studies Center (ASC) at Sonoma State University. 2017. Archaeological Survey Report and Additional Sensitivity Assessments for the North Trunk Sewer Replacement Project, Santa Rosa, Sonoma County, California. July.
- Bay Area Air Quality Management District (BAAQMD). 2017a. California Environmental Quality Act Air Quality Guidelines. May.
- BAAQMD. 2017b. Final 2017 Clean Air Plan: Spare the Air-Cool the Climate. April 19.
- BAAQMD. 2018. Air Quality Standards and Attainment Status. Accessed Website on February 9, 2018 at: <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>.
- California Department of Conservation (CDC). 2013. *Sonoma County Williamson Act FY 2013/2014*. Accessed website on February 5, 2018 at: <ftp://ftp.consrv.ca.gov/pub/dlrp/wa/>
- California Department of Conservation (CDC). 2014. *Sonoma County Important Farmland 2012*. October. Accessed website on February 5, 2018 at: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/>
- California Department of Resources Recycling and Recovery (CalRecycle), 2016, *Facility/Site Summary Details: Central Disposal Site (49-AA-0001)*.
- California Geologic Survey (CGS). 1983. *Special Studies Zone, Santa Rosa Quadrangle*. July 1.
- California Department of Transportation. 2018. California Scenic Highway Mapping System: Sonoma County. Accessed Website on February 5, 2018 at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/
- DCM. 2016. Seismic Vulnerability Technical Memorandum. October 28.
- Federal Emergency Management Agency (FEMA). 2008. *Flood Insurance Rate Map, Map Number 06097C0729E*. December 2.
- Federal Highway Administration. 2006. Construction Noise Handbook.
- Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment.
- North Coast Regional Water Quality Board (NCRWQCB). 2010. No Further Action Memorandum.
- Santa Rosa, City of. 2017. Storm Water Low Impact Development Technical Design Manual. Updated 2017.
- Santa Rosa, City of. 2009a. *Santa Rosa General Plan 2035*. November 3.
- Santa Rosa, City of. 2012. Climate Action Plan. June 5.
- Santa Rosa, City of. 2013. Municipal Operations Climate Action Plan. August 6.
- Santa Rosa, City of. 2016. Local Hazard Mitigation Plan. October.
- Sonoma, County of. 2008. *Sonoma County General Plan 2020*. September 23.
- Sonoma, County of. 2016. Comprehensive Airport Land Use Plan. Accessed February 5, 2018 at: <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Airport-Land-Use-Plan/>.
- Sonoma, County of. 2010. *Sonoma County Aggregate Resources Management (ARM) Plan*. Chapter 7 Adopted Management Plan. December 7.

- Wildlife Research Associate and Jane Valerius Environmental Consulting. 2017. Habitat Assessment: North Trunk Sewer Replacement Project.
- U.S. Environmental Protection Agency. 1971. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*, PB 206717.
- U.S. Geological Survey (USGS). 1997. Summary Distribution of Slides and Earth Flows in Sonoma County, California.
- USGS. 2006. Open-File Report 00-444 and 2006-1037. Interactive Liquefaction Susceptibility Map.
- USGS. 2013. Update of Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-Consumption Region, Sonoma, Napa, Marin, and Southwestern Solano Counties, California.

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Appendices

Appendix A Habitat Assessment

Habitat Assessment

NORTH TRUNK SEWER REPLACEMENT PROJECT SANTA ROSA, SONOMA COUNTY, CA

July 28, 2017

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Habitat Assessment

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SUMMARY

The North Trunk Sewer proposed project, located along Paulin Creek, in the eastern portion of the City of Santa Rosa, Sonoma County, is to abandon an existing 12” and 15” sanitary sewer trunk within Paulin Creek bank, between Lomitas Avenue and Mendocino Avenue and install new sanitary sewer main and water main improvements.

This Habitat Assessment presents the findings of our literature review (including scientific literature and previous reports detailing studies conducted in the area) and the California Department of Fish and Wildlife’s (CDFW) Natural Diversity Data Base (CNDDB) for reported occurrences of special-status vegetation communities, plants and animals.

Based on our sit visit, three vegetation communities, comprising four wildlife habitat types, occur within the entire study area. The vegetation communities are landscaped and developed areas, willow and oak riparian, and non-native grassland.

As part of this Habitat Assessment, we also evaluated the potential for occurrence of 25 special-status plant species, and 41 special-status wildlife species, including bats, as well as the potential for California tiger salamander and California red-legged frog to occur in the project area. No focused surveys for any special-status wildlife species were conducted as part of this assessment. Seasonal surveys were conducted for special-status plants in 2015 and 2017.

To reduce impacts to special-status biological resources, we recommend the following:

- Consultation with the California Department of Fish and Wildlife (CDFW) is recommended to determine if access to the manholes and filling of the sanitary sewer and manholes along Paulin Creek will require a Streambed Alteration Agreement. The manholes are above top of bank but may be considered to be within the riparian canopy of the creek.
- Bat habitat assessment if trees are to be removed
- Nesting bird survey within one week of the removal of nesting habitat

INTRODUCTION

GHD Engineering contracted with Jane Valerius Environmental Consulting and Wildlife Research Associates to prepare a habitat assessment for the North Trunk Sewer Replacement Project, located in the northeastern portion of the City of Santa Rosa, Sonoma County, California.

This habitat assessment was conducted to determine the potential for special-status plant and animal species to occur within the parcel boundary and to identify the limitations to potential development, such as removal of trees and potential impacts to Paulin Creek.

Based on this review and limitations of the present surveys, the following are action items to be addressed prior to ground breaking:

- Consultation with the California Department of Fish and Wildlife (CDFW) is recommended to determine if access to the manholes and filling of the sanitary sewer and manholes along Paulin Creek will require a Streambed Alteration Agreement. The manholes are above top of bank but may be considered to be within the riparian canopy of the creek.
- Bat habitat assessment if trees are to be removed
- Nesting bird survey within one week of the removal of nesting habitat

Site Location

The project area is located in Section 11 in the northcentral portion of the Santa Rosa 7.5-minute topographic quadrangle. The project encompasses an area from Mendocino Avenue on the west with Chanate Road forming the southern and western boundaries. The project area includes portions of Lomitas Lane, Lomitas Avenue, Plum Drive and Strawberry Drive (Figure 1). Paulin Creek flows through a portion of the project area in an east to west direction. The project area includes two culverted crossing along Chanate Road and one along Lomitas Avenue.

Project Description

The purpose of this project is to abandon existing 12" and 15" sanitary sewer trunks within the banks of Paulin Creek, between Lomitas Avenue and Mendocino Avenue and install new sanitary sewer improvements. The following are the specifics of the project:

- Install 15" sanitary sewer trunk within Chanate Rd;
- Install a new manhole in Chanate Road and connect the existing SSMH 155 to the new 15" sanitary sewer trunk in Chanate Road and abandon the existing 12" sanitary sewer main from SSMH 155 to SSMH 154, SSMH 154 and existing 12" SS main from SSMH 154 to SSMH 14;
- Install another new manhole upstream on Chanate Road east on Paulin Creek;
- Install 8" sanitary sewer main within Strawberry Drive including 6 sanitary sewer lateral connections to private homes;
- Install new section of 8" sanitary sewer main within Plum Drive as necessary for sanitary sewer lateral connection to 675 Plum Drive;
- Install 8" sanitary sewer main in Lomitas Lane and Lomitas Avenue to Chanate Road (reverse the flow) in order to abandon 15" sanitary sewer trunk, connect sanitary sewer private laterals the new main;
- Remove and replace existing 6" sanitary sewer main with 8" sanitary sewer main within Mendocino Avenue, connect to the existing SSMH #70 (reverse the flow) in order to abandon 15" sanitary sewer trunk;

- Install 8” water main in order to loop the system within Chanate Road;
- Connect 8 sanitary sewer laterals to the existing 10” sanitary sewer main within Chanate Road between Plum Drive and Murdoch Drive;
- Replace existing 10” sanitary sewer main within Chanate Road between Lomitas Avenue and Belvedere Way with a new 10” sanitary sewer main and connect sanitary sewer laterals;
- Abandon all required existing SS facilities per City Standards.

The manholes above the top of bank of Paulin Creek will be abandoned in place per the City standard. The sanitary sewer is filled with a sand and/or slurry and then the manholes caved in at the top three feet and are then backfilled. It is recommended that some type of protective barrier, such as a plywood fence, or something strong enough to hold any slurry overflow, be placed around the manholes adjacent to the creek to ensure that no material is deposited into the creek. Any extra material will be cleaned up and the area reseeded.

An off-site staging area will be needed to store materials and equipment when not in use. A potential staging area for this project is the gravel lot located on the north side of Administration Drive between Mendocino Avenue and Fiscal Drive. This gravel lot was also used for a previous sewer improvement project on Administration Drive in 2014. Additional staging will occur along the streets.

METHODS

Information on special-status plant species was compiled through a review of the California Natural Diversity Data Base (CNDDB 2017) for the Santa Rosa 7.5-minute topographic quadrangle, the California Department of Fish and Wildlife’s (CDFW) Special Animals List (CDFW 2017), State and Federally Listed Endangered and Threatened Animals of California (CDFW 2017), the California Native Plant Society’s on-line electronic inventory of rare and endangered plants of California, and the USFWS Information on Planning and Conservation (IPaC) list (USFWS 2017).

Trish Tatarian, Wildlife Research Associates, and Jane Valerius, Jane Valerius Environmental Consulting, conducted a survey of the project area on April 1, 2015. Additional surveys for special status plants were conducted on May 15, 2015 and June 14, 2017. These surveys covered the flowering period for special status plants that had the potential to occur in the project area based on presence of potential habitat.

Trish evaluated the parcel for small mammal burrows, and surveyed for suitable potential habitat for nesting birds and roosting bat habitat using 8 x 42 roof-prism binoculars, noting presence of cavities, old bird nests and squirrel nests in trees. The reconnaissance-level site visit was intended only as an evaluation of on-site and adjacent habitat types, and no special-status animal species surveys were conducted as part of this effort.

On April 1, 2015 and June 14, 2017 Jane Valerius conducted a delineation of waters of the U.S. and state, including wetlands, for the project study area. Figure 2 shows the wetlands and waters of the U.S. and state and their location in relation to the project construction. No wetlands or waters of the U.S. and state will be impacted by the project.

EXISTING CONDITIONS

The project area is located within the San Francisco Bay Coastal Bioregion (Welsh 1994). This bioregion is located within central California and encompasses the San Francisco Bay and the Sacramento Delta, extending from the Pacific Ocean to the eastern portion of the tule marsh zone, which is defined by Highway 99 (Welsh 1994). Habitats within this bioregion include both mesic (moist) habitats, such as freshwater marsh, and xeric (dry) habitats, such as chaparral, and are typical of a Mediterranean type climate.

The 2,106 linear-foot project ranges in elevation between 157 feet in the west and 201 feet in the east, and is situated on the eastern slope of Parker Hill. Chanate Creek flows from east to the west. Surrounding land uses consist of rural and urban residences located along Chanate Creek.

Vegetation Communities

A total of three vegetation communities occur along the 2,106 linear-foot project. A description of each community is presented below.

Landscaped/Developed Areas: The majority of the project area includes landscaped residential yards and landscaped businesses. Landscape plants include a wide variety of non-native ornamental trees, shrubs and herbaceous plants such as oleander (*Nerum oleander*), fig (*Ficus* sp.), Cottoneaster (*Cottoneaster* sp.), agapanthus (*Agapanthus* sp.), garden iris (*Iris* sp.), and calla lily (*Zantedeschia aethiopica*).

Willow and Oak Riparian: The willow and oak riparian vegetation community is associated with Paulin Creek which occurs within the project study area. Trees associated with this type include red willow (*Salix laevigata*) as the dominant species, along with some arroyo willow (*Salix lasiolepis*) and coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizeni*), valley oak (*Quercus lobata*), black oak (*Quercus kelloggii*), Northern California black walnut (*Juglans hindsii*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*). Understory shrubs include poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), snowberry (*Symphoricarpos albus* ssp. *laevigatus*). Non-native Himalayan blackberry (*Rubus armeniacus*) is common along the creek banks along with periwinkle (*Vinca major*) and English ivy (*Hedera helix*). Within the study area the creek is mostly devoid of wetland vegetation with the exception of a few areas that have wetland plants such as cattails (*Typha latifolia*), sedges (*Cyperus eragrostis*, *Carex nudata*), spreading rushes (*Juncus patens*), and non-native yellow iris (*Iris pseudacorus*). Giant reed (*Arundo donax*), a highly invasive non-native species, was observed in a few locations.

Non-Native Grassland: Non-native grassland occurs in open, undeveloped lots and as an understory to the willow riparian. Non-native grasses observed include wild oats (*Avena barbata*, *A. fatua*), bromes (*Bromus diandrus*, *B. hordeaceus*), hare barley (*Hordeum murinum* ssp. *leporinum*), ryegrass (*Festuca perennis*), large quaking grass (*Briza maxima*), and Harding grass (*Phalaris aquatica*). Non-native and weedy forbs include fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus*), English plantain (*Plantago lanceolata*), field hedge parsley (*Torilis arvensis*), geraniums (*Geranium dissectum*, *G. molle*, *G. robertianum*), bur clover (*Medicago polymorpha*), and filarees (*Erodium cicutarium*, *E. botrys*, *E. brachycarpum*).

Waters of the U.S. and State

The project area is located in Reach 3 of Paulin Creek, between Chanate Road and Mendocino Avenue. As described in the Citywide Creek Master Plan Natural Resources Assessment (City of Santa Rosa 2007), Paulin Creek at the headwaters is fairly narrow with pools and riffles. In 2015, during the April survey, Paulin Creek at Chanate Road was approximately 20 feet at the location of the box culvert. The creek width reduces to an average of 10-feet wide at the ordinary high water mark and is lined with boulders and cobblestone. Plant species include red willow, coast live oak, valley oak, black oak, live oak, box elder. Northern California black walnut and Oregon ash. Between Chanate Road and Lomitas Avenue, Paulin Creek supports a step-pool pattern in the creek channel and a wider, relatively undisturbed riparian corridor. Paulin Creek at Lomitas Avenue was approximately 10 feet wide at the culvert and narrowed to 7 feet wide going upstream. There was 100% canopy cover with a depth of 6-10 inches in April.

There is a narrow 1-foot wide wetland ditch located in an undeveloped lot near 2604 Mendocino Avenue and 307 Lomitas Lane that occurs within the project area. There is also a dry 1-foot wide ditch along the north side of Lomitas Avenue just southeast of Paulin Creek that drains into Paulin Creek. Both of these ditch features were mapped as part of the formal wetland delineation.

Figure 2 shows the wetlands and waters of the U.S. and state and their location in relation to the project construction. No wetlands or waters of the U.S. and state will be impacted by the project.

Wildlife Habitats

The value of a site to wildlife is influenced by a combination of the physical and biological features of the immediate environment. Species diversity is a function of diversity of abiotic and biotic conditions and is greatly affected by human use of the land. The wildlife habitat quality of an area, therefore, is ultimately determined by the type, size, and diversity of vegetation communities present and their degree of disturbance. Wildlife habitats are typically distinguished by vegetation type, with varying combinations of plant species providing different resources for use by wildlife. The following is a discussion of the wildlife species supported by the on-site habitats, as described by *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). The California Wildlife Habitat Relationship (CWHR) habitat classification scheme was developed by the CDFW to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians.

Valley-Foothill Riparian: This habitat corresponds to the willow and oak riparian vegetation community and contains food for wildlife species such as chestnut-backed chickadee (*Poecile rufescens*), Stellar's jay (*Cyanocitta stelleri*), and white-breasted nuthatch (*Sitta carolinensis*). These species are bark gleaners, eating insects that are in the bark of trees, as well as catching insects in flight. The spotted towhee (*Pipilo maculatus*) and California towhee (*Melospiza crissalis*) glean insects from the foliage on the ground, such as under leaf litter and plants. Anna's hummingbirds (*Calypte anna*) use vines growing around trees for nectar and for insects that are attracted to the nectar. Other species, such as the great horned owl (*Bubo virginianus*) and Cooper's hawk (*Accipiter cooperii*), use the tall trees as roosting and foraging sights during the day. The western gray squirrel (*Sciurus griseus*) and gray fox (*Urocyon cinereoargenteus*) both feed on truffles, mushrooms, fruits, and nuts within the forest. Several of the trees were of a diameter large enough to support roosting bats species, such as long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*) and pallid bat (*Antrozous pallidus*), a California Species of Special Concern (SSC).

Individual Trees: Individual trees are foraging and nesting habitat for passerines, and roosting habitat for bats. Smaller passerines, such as black-capped chickadee (*Poecile atricapillus*), bushtit (*Psaltiriparus minimus*), plain titmouse (*Baeolophus inornatus*) and acorn woodpecker (*Melanerpes formicivorus*) may nest and forage in the larger trees, feeding on insects on the bark. No large cavities that may support the larger raptors, such as great horned owl (*Bubo virginianus*), were observed in any of the trees. Cavities in the oak trees may provide potential nesting habitat for tree swallows (*Tachycineta bicolor*) and white-breasted nuthatch (*Sitta carolinensis*).

Bats that use trees fall into three categories: 1) solitary, obligate tree-roosting bats that roost in the foliage or bark such as Western red-bat (*Lasiurus blossevillei*), a California Species of Special Concern (SSC), or hoary bat (*Lasiurus cinereus*); 2) colonial tree-roosting bats that form groups of varying size in tree cavities or beneath exfoliating bark, such as silver-haired bats (*Lasionycteris noctivagans*), and 3) more versatile bat species that will use a wide variety of roosts from buildings to bridges to trees, such as various *Myotis* species, pallid bat (*Antrozous pallidus*), another SSC species, and others.

Solitary-roosting bats consist either of females either alone or with young, or solitary males. Colonial-roosting bats may form maternity colonies in tree cavities or crevices, caves, mines, bridges, or other man-made structures. During the day, these roosts provide shelter and protection for adult females and their young, which remain in the roost while females forage at night, returning to nurse and care for their young. Greater impacts to bats can occur as a result of removal of trees that support cavity-roosting bat species than those that provide habitat for solitary foliage-roosting species.

Non-native grasslands: The non-native grasslands within the project area are small and do not provide a distinct habitat type for wildlife. Rather it is an edge habitat for the Valley foothill riparian habitat.

Landscape: As with the non-native grasslands within the project area, the landscape habitat does not provide a distinct habitat type, based on the available size. Any trees or shrubs in the landscape area likely provide nesting structure of small birds, depending on the proximity to human disturbances.

Movement Corridors

Wildlife movement includes migration (i.e., usually one way per season), inter-population movement (i.e., long-term genetic flow) and small travel pathways (i.e., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement among populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations comprising a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Potentially low frequency genetic flow may lead to complete isolation, and if pressures are strong, potential extinction (McCullough 1996; Whittaker 1998).

As described in the *California Essential Connectivity Project* (Spencer, et al. 2010), the study area is located in North Coast Ecoregion (Spencer et al. 2010). The natural drainages in the area (e.g., Matanzas Creek) flow north into the Russian River and west into the Pacific Ocean. The Study Area is not within a Natural Landscape Block (defined as relatively natural habitat blocks that support native biodiversity). The study area is not located in an Essential Connectivity Area (defined as areas that are essential for ecological connectivity between blocks) (Spencer, et al. 2010).

Movement corridors for large and small mammals occur along Paulin Creek. Temporary disturbance to movement corridors may occur due to the abandonment of existing 12" and 15" sanitary sewer trunks within the banks of Paulin Creek. However, the corridor width along the banks of Paulin Creek are sufficient that animals can choose another path without a substantial effect to their behavior.

SPECIAL-STATUS BIOLOGICAL RESOURCES

Certain vegetation communities, and plant and animal species are designated as having special-status based on their overall rarity, endangerment, restricted distribution, and/or unique habitat requirements. In general, special-status is a combination of these factors that leads to the designation of a species as sensitive. The Federal Endangered Species Act (FESA) outlines the procedures whereby species are listed as endangered or threatened and established a program for the conservation of such species and the habitats in which they occur. The California Endangered Species Act (CESA) amends the California Fish and Wildlife Code to protect species deemed to be locally endangered and essentially expands the number of species protected under the FESA.

Special-status Vegetation Communities

One special-status vegetation community, valley needlegrass grassland, is recorded to occur in the area based on CNDDDB search for the one topographic quadrangle, Santa Rosa (CNDDDB 2017). There is no valley needlegrass grassland within the project area and no special-status vegetation communities, based on the CNDDDB, were observed within the project area. The willow-oak riparian is not a special status plant community but it is considered a sensitive natural community because of its value as wildlife habitat. This type is also protected and regulated by CDFW and RWQCB.

Special-status Plant Species

The CDFW has compiled a list of "Special Plants" (CDFW 2017), which include California Special Concern species. These designations are given to those plant species whose vegetation communities are seriously threatened. Although these species may be abundant elsewhere they are considered to be at some risk of extinction in California. Although Special Concern species are afforded no official legal status under FESA or CESA, they may receive special consideration during the planning stages of certain development projects and adverse impacts may be deemed significant under the California Environmental Quality Act (CEQA).

A total of 25 special-status plant species have been reported occurring on the Santa Rosa topographic quadrangle (CNDDDB 2017). See Appendix B for a list of the species evaluated. The majority of these species are not expected to occur within the project study area due to lack of habitat. The site does not have any serpentine, rhyolitic, sandy or alkaline soils and there is no coastal scrub, coastal prairie, closed-cone coniferous forest, North Coast coniferous forest, lower montane coniferous forest, chaparral, meadows and seeps or marshes and swamps within the proposed development area.

Surveys for special status plants were conducted on April 1 and May 15, 2015 and June 14, 2017. These surveys covered the flowering period for special-status plants that had the potential to occur within the project area based on the presence of potential habitat. No special-status plants were observed during the appropriately timed surveys and none are expected to occur. The surveys were conducted in a normal rainfall year and if special status plants were present they would have been identifiable.

Special-status Animal Species

Special-status animal species include those listed by the USFWS (2017) and the CDFW (2017). The USFWS officially lists species as either Threatened or Endangered, and as candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (*e.g.*, bald eagle, golden eagle), the Migratory Bird Treaty Act (MBTA), and state protection under CEQA Section 15380(d). In addition, many other species are considered by the CDFW to be Species of Special Concern; these are listed in Shuford and Gardali (2008), Williams (1986), and Thomson et al. (2016). Although such species are afforded no official legal status under the California Endangered Species Act, they are on a watch for conservation planning and management as it pertains to the California Environmental Quality Act and as such, they may receive special consideration during the planning and CEQA review stages of certain development projects. The CDFW further classifies some species under the following categories: "fully protected", "protected fur-bearer", "protected amphibian", and "protected reptile". The designation "protected" indicates that a species may not be taken or possessed except under special permit from the CDFW; "fully protected" indicates that a species can be taken for scientific purposes by permit only.

Of the nine (9) special-status animal species identified as potentially occurring in the vicinity of the project area, including within a 3 mile radius (CNDDDB 2017), several additional species were evaluated for their potential to occur within the study area, based on: 1) review of the Information for Planning and Conservation (IPaC) for the study area (USFWS 2017), 2) the "Special Animals" list (CDFW 2017) that includes those wildlife species whose breeding populations are in serious decline, and 3) the habitat present on site. For those species with no suitable potential habitat on the site (*i.e.* fish), no further analysis was conducted. See Appendix C for a list of the 41 species evaluated. Several of these species have a high potential for occurrence at the project site and are discussed below. Species that have no likelihood to occur on site but are prominent in today's regulatory environment (*e.g.*, California tiger salamander) are also discussed below.

California Tiger Salamander (*Ambystoma californiense*) (CTS)

Status: Federally listed Endangered in Sonoma County with Critical Habitat, and Draft Recovery Plan and State listed Threatened by CDFW

The *Santa Rosa Plain Conservation Strategy* (SRPCS) (Federal Register Notice 70: 74137) was created in 2005 to mitigate potential adverse effects on listed species on the Plain (USFWS 2005). The purpose of the Conservation Strategy was threefold: (1) to establish a long-term conservation program sufficient to mitigate

potential adverse effects of future development on the Plain, and to conserve and contribute to the recovery of the listed species and the conservation of their sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for incidental take of CTS and listed plants that may occur in the course of carrying out a broad range of activities on the Plain.

General Ecology and Distribution: As adults, CTS spend most of the year underground in the burrows of California ground squirrels (*Spermophilus beecheyi*) and pocket gophers, feeding on insects (Loredo, et al. 1996; Stebbins 1985). Upland terrestrial habitat for Ambystomids is usually within 300 meters (984 feet) of aquatic breeding sites, but movements have been reported as far away as 800 meters (2,246 feet) (Trenham 2001, Madison and Farrand 1998). Following heavy winter rains (normally December-March) adults emerge briefly to lay their eggs in ponds, preferring vernal pools, alkali sinks or cattle troughs that have muddy bottoms or contain some algal growth in the water for hiding in, but are devoid of fish. Although no studies have been conducted on the water quality requirements, it has been noted that turbid water may be preferred (reduces predation), and water quality can prevent the transformation into the adult stage.

Project Area Occurrence: No surveys were conducted for this species as part of this habitat assessment. The project area is located outside the species range. The table below addresses the regulatory ruling per federal and state documents, including the federal listing (USFWS 2002), the state listing (CDFW 2012), the SRPCS (USFWS 2005), the Critical Habitat (USFWS 2011) and the Draft Recovery Plan (USFWS 2014). No further action is required.

Table 1: Proposed Project and the Regulations Pertaining to the California Tiger Salamander

	Does the Study Area Occur in the range covered by Document?
USFWS	No
CDFW	No
SRPCS	No
Critical Habitat	No
Recovery Plan	No

California Red-legged Frog (*Rana draytonii*) (CRF)

Status. Federally listed Threatened with Critical Habitat, California Species of Special Concern.

General Ecology and Distribution. California red-legged frogs breed primarily in ponds, but will also breed in slow moving streams, or deep pools in intermittent streams. Inhabited ponds are typically permanent, at least 2 feet (0.6 meters) in depth, and contain emergent and shoreline vegetation. Sufficient pond depth and shoreline cover are both critical, because they provide means of escape from predators of the frogs (Stebbins 2003, Tatarian 2008). Non-breeding CRF have been found in both aquatic and upland habitats. Although the majority of individuals prefer dense, shrubby or emergent vegetation, closely associated with deep (>0.7 meters) still, or slow moving water, some individuals use habitats that are removed from aquatic habitats (Tatarian 2008).

Project Area Occurrence. No surveys were conducted for this species as part of this habitat assessment. The proposed project is within the species range. Review of occurrences within a one-mile radius, as required by the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005), reveals no populations have been reported; however, that may mean that not all private lands have

been surveyed for this species. This species has been reported approximately 5 miles southeast of the project site (CRF 757) (CNDDDB 2017). No further action is required.

Foothill Yellow-legged Frog (*Rana boylei*) (FYF)

Status: Federal and State Species of Concern

General Ecology and Distribution: This species typically inhabits rocky streams, preferring streams with cobble sized substrates (Hayes and Jennings 1988). Occupied drainages range from sea level to 2,040 meters (6,700 feet) (Hayes and Jennings 1988). Streams in woodland, chaparral or forest with little to no bank vegetation cover are also preferred (Stebbins 2003). *R. boylei* prefers small to moderate sized streams with at least some cobble-sized substrate (Thomson et al. 2016).

Project Area Occurrence: Although suitable aquatic habitat occurs on the site there is no connection to other populations based on the urbanization of the stream. Therefore, no further action is required.

Western Pond Turtle (*Emys marmorata*) (WPT)

Status: California Species of Special Concern

General Ecology and Distribution: This medium sized turtle ranges in size to just over 8 inches (21cm) with a low carapace that is generally olive, brownish or blackish (Stebbins 2003, Thomson et al. 2016). Primary habits include permanent water sources such as ponds, streams and rivers. It is often seen basking on logs, mud banks or mats of vegetation, although wild populations are wary and individuals will often plunge for cover after detecting movement from a considerable distance. Although it is an aquatic species with webbed feet, it can move across land in response to fluctuating water level, an apparent adaptation to the variable rainfall and unpredictable flows that occur in many coastal California drainage basins (Rathbun, *et al.* 1993). In addition, it can over-winter on land or in water or remain active in the winter, depending on environmental conditions (Rathbun, *et al.* 1993; Thomson et al. 2016). Females travel from aquatic sites into open, grassy areas to lay eggs in a shallow nest (Holland 1992; Rathbun, *et al.* 1993). Nests have been reported from 2-400 meters or more away from water bodies (Thomson et al. 2016).

Project Area Occurrence: No surveys were conducted for this species as part of this habitat assessment. This species has been reported in Brush Creek, Matanzas Creek, and Santa Rosa Creek, with no hydrologic connectivity (CNDDDB 2017). The proposed work will be conducted on the banks of Paulin Creek with no suitable nesting habitat. No further action is required.

Nesting Passerines – including Bewick’s wren, California towhee and golden-crowned sparrow, among others

Status: Protected under the Federal Migratory Bird Treaty Act and CDFW Code 3503.

General Ecology and Distribution: As early as February, passerines begin courtship and once paired, they begin nest building, often around the beginning of March. Nest structures vary in shapes, sizes and composition and can include stick nests, mud nests, matted reeds and cavity nests. For example, black phoebes may build a stick nest under the eaves of a building. Depending on environmental conditions, young birds may fledge from the nest as early as May and, if the prey base is large, the adults may lay a second clutch of eggs.

Project Area Occurrence: No surveys were conducted for these species as part of this habitat assessment. Several passerine (perching birds) species may nest on the site in the various habitats, including, but not limited to, Bewick’s wren in blackberry shrubs and Steller’s jay in the trees. A nesting bird survey shall be conducted before removal of any of these habitats, and seasonal restrictions put into place for occupied habitats, to ensure no take of individuals will occur. See below for further details.

Nesting Raptors –red-shouldered hawk (*Buteo lineatus*), Cooper’s hawk (*Accipiter cooperi*)

Status: Protected under the Federal Migratory Bird Treaty Act and CDFW 3503.5

General Ecology and Distribution: Raptors nest in a variety of substrates including, cavities, ledges and stick nests. For example, Cooper's hawks are small bird hunters, hunting on the edges of forests in broken forest and grassland habitats where passerines forage for seeds and insects. Nests occur in heavily forested areas near a water source. Research sites on nesting Cooper's hawks rarely show the nests more than a quarter of a mile away from water, whether it is a cattle tank, stream or seep (Snyder and Snyder 1975). Trees typically used by Cooper's hawks include coast live oaks, cottonwoods, and black oaks (Call 1978), as well as second growth conifer stands or deciduous riparian areas. Most raptors build stick nests, except for American kestrels that nest in cavities. In general, the breeding season for raptors occurs in late March through June, depending on the climate, with young fledging by early August

Project Area Occurrence: No surveys were conducted for these species as part of this habitat assessment. Foraging and nesting habitat for raptors, such as red-shouldered hawk and Copper's hawk, among others, occurs throughout the project area. See below for further details.

Roosting bats – including pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*) and hoary bat (*Lasiurus cinereus*)

Status: California Species of Special Concern (SSC), as well as Fish and Wildlife Code Sections 86, 2000, 2014, 3007, Title 14, Sections 15380, 15382

Within California, 25 bats species occur, of which 11 are classified as SSC (CDFW 2017). One SSC bat species that often roosts in structures or suitable trees in those areas where they occur is the pallid bat (*Antrozous pallidus*). Removal of occupied roosts without prior humane eviction or other actions approved by the CDFW would result in “take”, defined under the CESA as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill”.

In addition to the SSC bat species above, non-SSC species are also afforded consideration under the California Environmental Quality Act (CEQA), primarily when significant local breeding populations may be impacted. This includes two more common and widely-distributed bat species, Yuma myotis (*Myotis yumanensis*) and Brazilian free-tailed bat (*Tadarida brasiliensis*), which can form very large colonies, often in features such as those found in buildings.

General Ecology and Distribution: Bats in this region of California are not active year-round and their activity periods can be split into two distinct seasons, the maternity season and the winter season. During the maternity season, non-volant young (those not capable of flight) of colonial bats remain in the roost until late summer (end of August), after which they may disperse from the natal roost or remain into or throughout the winter. During the winter season, bats typically enter torpor, rousing only occasionally to drink water or opportunistically feed on insects. The onset of torpor is dependent upon environmental conditions, primarily temperature and rainfall.

California bats include colonial and solitary roosting species. Colonial bats are those that roost in groups of dozens to many thousands. Pallid bats, an SSC species, are eclectic in their roosting habitat selection, and to some extent distribution, and can be found in crevices and small cavities in rock outcrops, tree hollows, mines, caves, and a wide variety of man-made structures such as buildings, bridges and culverts, generally in lower to mid-elevation sites. This species forms maternity colonies, composed of dozens to sometimes hundreds of females and their young, and smaller bachelor colonies composed of males and not-yet reproductive females. Non-SSC species, include Brazilian free-tailed bats (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), big brown bat (*Eptesicus fuscus*), and other *Myotis* species. These species may form significant local breeding populations in roosts of sufficient size, which usually occur in buildings, bridges or culverts, but occasionally in large tree hollows.

Obligate tree-roosting bats include another SSC species that could occur in the project area; western red bat (*Lasiurus blossevillii*). An obligate tree-roosting species, *L. blossevillii* uses tree foliage, typically of large-

leafed trees such as cottonwood (*Populus fremontii*) and others, but is also associated with orchards where suitable canopy density occurs. *L. blossevillei* females roost singly and with 2-6 pups during maternity season, and there is evidence that *L. blossevillei* is often faithful to selected trees. Suitable potential tree canopy habitat is present within the alignment for this species, as well as for a non-SSC tree-roosting species, hoary bat (*Lasiurus cinereus*). Obligate tree-roosting bat species, and to some extent, colonial bats, may switch tree roosts frequently, particularly after young are volant, but are sometimes faithful for longer periods (weeks). See below for further details.

IMPACTS AND MITIGATION MEASURES

This section summarizes the potential biological impacts within the study area. The analysis of these impacts is based on a single reconnaissance-level survey of the study area, a review of existing databases and literature, and personal professional experience with biological resources of the region. Potential impacts to special-status biotic resources are identified as resulting from *either*; a) parcel subdivision, and b) construction of individual residences. Mitigations for these biological impacts are provided below.

Project Direct Impact. Wetlands and Waters of the U.S. and State have been mapped for Paulin Creek and adjacent areas (Figure 2). Based on the design provided for review for this report there will be no direct impacts to any wetlands or waters of the U.S. and state for the proposed project. However, the manholes located above the top of bank of Paulin Creek will be abandoned in place per the City standard. The sanitary sewer will be filled with a sand and/or slurry and then the manholes caved in at the top three feet and are then backfilled. The direct impacts are not known at this time. The project will avoid the bed and bank areas of Paulin Creek but some of the riparian vegetation may be impacted.

Project Mitigation: Any impacts to the bed, bank or riparian of Paulin Creek may require a Streambed Alteration Agreement from CDFW. Consultation with the CDFW is recommended to determine if access to the manholes and filling of the sanitary sewer and manholes along Paulin Creek will require a Streambed Alteration Agreement. The manholes are above top of bank but may be considered to be within the riparian canopy of the creek. If impacts are minor and temporary no mitigation may be required. It is recommended that some type of protective barrier, such as a plywood fence, or something strong enough to hold any slurry overflow, be placed around the manholes adjacent to Paulin Creek to ensure that no material is deposited into the creek. Any extra material will be cleaned up and the area reseeded. All best management practices for erosion and sediment control will be in place prior to any placement of slurry.

Significance after Mitigation: Less than Significant.

Project Direct Impact: Passerines and raptors nesting in the riparian trees and the lowlands within the project area could be impacted if construction occurs during the nesting season (March through August).

Project Mitigation: The following mitigation measures should be followed in order to avoid or minimize impacts to passerines and raptors that may potentially nest in the trees:

- 1) Grading or removal of nesting trees should be conducted outside the nesting season, which occurs between approximately February 1 and August 31.
- 2) If grading between August 31 and February 1 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grasslands and adjacent trees shall be performed by a qualified biologist within 7 days of ground breaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent “take” of individual birds that could begin nesting after the survey.
- 3) If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged, as determined by a qualified biologist.

- 4) The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.
- 5) To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.

After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones.

Significance after Mitigation: Less than Significant

Project Direct Impact: Removal of trees may cause **direct mortality of roosting bats**, if the trees provide suitable roosting habitat and are removed during seasonal periods of inactivity (maternity season or winter).

Colonial bats that roost in trees are seasonally inactive (e.g. non-volant young during maternity season or torpid bats during winter months). Unlike with buildings however, bats cannot readily be humanely evicted from trees. This is because many trees have numerous cavities, crevices, or large areas of exfoliating bark that cannot be fitted with one-way exits, or cannot even be safely worked on due to poor condition or lack of accessibility. This is particularly true of snags due to their extremely poor condition, however snags provide some of the most preferred and substantial bat tree roost habitat.

Conducting visual cavity surveys is only rarely possible due to difficulty with access and number of trees and night emergence surveys of potential roost trees is generally only feasible logistically and economically, where a few habitat trees occur, because only 1-2 trees can be surveyed each night per observer. Also, because bats tend to switch tree roosts more frequently than more stable roosts such as caves, mines, rock outcrops, buildings, bridges, or culverts, negative results have extremely limited temporal validity (24-48 hours), which would result in multiple mobilizations by tree cutters in order to remove trees immediately after a negative survey. In the event a tree is found to be occupied, a method for safely getting the bats out of the tree will still be needed.

Project Mitigation: To prevent take of individual roosting bats a bat habitat assessment of the trees to be removed should be conducted by a qualified bat biologist. Specific recommendations based on the habitats on the site will be made to prevent direct impacts to individuals that may be roosting on the site.

In general, removal of bat habitat trees must only be conducted during seasonal periods of bat activity, which are in this region, between March 1 (or after evening temperatures rise above 45F and/or no more than 1/2" of rainfall within 24 hours occurs), and April 15, or between August 31 and October 15 (or before evening temperatures fall below 45F and/or more than 1/2" of rainfall within 24 hours occurs).

REFERENCES

- ALSOP III, F. 2001. BIRDS OF NORTH AMERICA, WESTERN REGION. SMITHSONIAN HANDBOOKS. LONDON, NEW YORK.
- BAICICH, P. AND C. HARRISON. 1997. A GUIDE TO NESTS, EGGS AND NESTLINGS OF NORTH AMERICAN BIRDS. SECOND EDITION. NATURAL WORLD ACADEMIC PRESS. SAN DIEGO. 347 PP.
- CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG). 1988B. CALIFORNIA'S WILDLIFE - AMPHIBIANS AND REPTILE. VOLUME I. CALIFORNIA DEPARTMENT OF FISH AND GAME. EDITORS, ZEINER, D.C., W.F. LAUDENSLAYER, JR., AND K.E. MAYER.
- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). 2017A. SPECIAL ANIMALS. NATURAL DIVERSITY DATA BASE, WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. JANUARY.
- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). 2017B. STATE AND FEDERALLY LISTED ENDANGERED AND THREATENED ANIMALS OF CALIFORNIA. NATURAL DIVERSITY DATA BASE, WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. JANUARY.
- CALIFORNIA NATURAL DIVERSITY DATA BASE (CNDDB). 2017. REPORTED OCCURRENCES FOR THE SANTA ROSA 7.5-MINUTE TOPOGRAPHIC QUADRANGLE. WILDLIFE CONSERVATION DIVISION. SACRAMENTO, CALIFORNIA. JANUARY.
- CALL, MAYO W. 1978. NEST SURVEYS. TECHNICAL NOTES-316. BUREAU OF LAND MANAGEMENT
- CALPIF (CALIFORNIA PARTNERS IN FLIGHT). 2002. VERSION 2.0. THE OAK WOODLAND BIRD CONSERVATION PLAN: A STRATEGY FOR PROTECTING AND MANAGING OAK WOODLAND HABITATS AND ASSOCIATED BIRDS IN CALIFORNIA (S. ZACK, LEAD AUTHOR). POINT REYES BIRD OBSERVATORY, STINSON BEACH, CA. [HTTP://WWW.PRBO.ORG/CALPIF/PLANS.HTML](http://www.prbo.org/calpif/plans.html)
- CITY OF SANTA ROSA. 2007. SANTA ROSA CITYWIDE CREEK MASTER PLAN NATURAL RESOURCE ASSESSMENT. FEBRUARY. 293 PP.
- FELLERS, G. AND P. KLEEMAN. 2007. CALIFORNIA RED-LEGGED FROG (*RANA DRAYTONII*) MOVEMENT AND HABITAT USE: IMPLICATIONS FOR CONSERVATION. J. OF HERPETOLOGY VOL .41 (2): 271-281.
- GRINNELL, J. AND A. MILLER. 1944. THE DISTRIBUTION OF THE BIRDS OF CALIFORNIA. ARTEMESIA PRESS, LEE VINING, CALIFORNIA.
- HAYES, M., AND M. JENNINGS. 1988. HABITAT CORRELATES OF DISTRIBUTION OF THE CALIFORNIA RED-LEGGED FROG AND THE FOOTHILL YELLOW-LEGGED FROG: IMPLICATIONS FOR MANAGEMENT. IN R. SARZO, K. SEVERSON, AND D. PATTON (TECHNICAL COORDINATORS). *PROCEEDINGS IF THE SYMPOSIUM ON THE MANAGEMENT OF AMPHIBIANS, REPTILES AND SMALL MAMMALS IN CALIFORNIA*. U.S.D.A. FOREST SERVICE, ROCKY MOUNTAIN RANGE AND EXPERIMENT STATION, FORT COLLINS, COLORADO. GENERAL TECHNICAL REPORT (RM-166): 1-458.
- HOLLAND, D.C. 1992. A SYNOPSIS OF THE DISTRIBUTION AND CURRENT STATUS OF THE WESTERN POND TURTLE (*CLEMMYS MARMORATA*) IN OREGON. REPORT PREPARED FOR NON-GAME DIVISION OREGON DEPARTMENT OF FISH AND WILDLIFE.
- JENNINGS, M.R. AND M.P. HAYES. 1994. AMPHIBIAN AND REPTILE SPECIES OF SPECIAL CONCERN IN CALIFORNIA. PREPARED FOR THE CALIF. DEPT. OF FISH AND GAME INLAND FISHERIES DIV. RANCHO CORDOVA, CALIF. NOVEMBER 1. 255 PP.
- LOREDO, I., D. VAN VUREN AND M. MORRISON. 1996. HABITAT USE AND MIGRATION BEHAVIOR OF THE CALIFORNIA TIGER SALAMANDER. JOURNAL OF HERPETOLOGY VOL 30 (2): 282-285.
- MADISON, D. AND L. FARRAND. 1998. HABITAT USE DURING BREEDING AND EMIGRATION IN RADIO-IMPLANTED TIGER SALAMANDERS, *AMBYSTOMA TIGRINUM*. COPEIA 2: 402-410.
- MAYER, K.E. AND W. F. LAUDENSLAYER, JR. EDS. 1988. A GUIDE TO WILDLIFE HABITATS OF CALIFORNIA. CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION. SACRAMENTO. 166 PP.
- MCCULLOUGH, D. 1996. METAPOPOPULATIONS AND WILDLIFE CONSERVATION. ISLAND PRESS. 429PP.
- RATHBUN, G.B., M.R. JENNINGS, T.G. MURPHEY AND N.R. SIEPEL. 1993. STATUS AND ECOLOGY OF SENSITIVE AQUATIC VERTEBRATES IN LOWER SAN SIMEON AND PICO CREEKS, SAN LUIS OBISPO COUNTY, CALIFORNIA. UNPUBLISHED REPORT, NATIONAL ECOLOGY RESEARCH CENTER, PIEDRAS BLANCAS RESEARCH STATION, SAN SIMEON, CALIFORNIA. UNDER COOPERATIVE AGREEMENT (14-16-0009-91-1909).
- SAWYER, J.O. , T. KEELER-WOLF AND JULIE EVENS. 2008. A MANUAL OF CALIFORNIA VEGETATION SECOND EDITION. CALIFORNIA NATIVE PLANT SOCIETY, SACRAMENTO. 471 PP.

- SHUFORD, W. D., AND T. GARDALI, EDITORS. 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.
- STEBBINS, R. C. 2003. A FIELD GUIDE TO WESTERN REPTILES AND AMPHIBIANS. 3RD EDITION, HOUGHTON MIFFLIN COMPANY.
- SPENCER, W.D., P. BEIER, K. PENROD, K. WINTERS, C. PAULMAN, H. RUSTIGIAN-ROMSOS, J. STRITTHOLT, M. PARISI, AND A. PETTLER. 2010. CALIFORNIA ESSENTIAL HABITAT CONNECTIVITY PROJECT: A STRATEGY FOR CONSERVING A CONNECTED CALIFORNIA. PREPARED FOR CALIFORNIA DEPARTMENT OF TRANSPORTATION, CALIFORNIA DEPARTMENT OF FISH AND GAME, AND FEDERAL HIGHWAYS ADMINISTRATION.
- TATARIAN, P. 2008. MOVEMENT PATTERNS OF CALIFORNIA RED-LEGGED FROG (*RANA DRAYTONII*) IN AN INLAND CALIFORNIA ENVIRONMENT. *HERPETOLOGICAL CONSERVATION AND BIOLOGY* 3(2):155-169
- THOMSON, R.C., A.W. WRIGHT AND H.B. SHAFFER. 2016. CALIFORNIA AMPHIBIAN AND REPTILE SPECIES OF SPECIAL CONCERN. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE AND UNIVERSITY OF CALIFORNIA PRESS. XV + 390 PP.
- THORP, R. AND J. LEONG. 1998. SPECIALIST BEE POLLINATORS OF SHOWY VERNAL POOL FLOWERS. PAGES 169-179 IN: C.W. WITHAM, E.T. BAUDER, D. BELK, W.R. FERREN JR., AND R. ORNDUFF (EDITORS). *ECOLOGY, CONSERVATION, AND MANAGEMENT OF VERNAL POOL ECOSYSTEMS – PROCEEDINGS FROM A 1996 CONFERENCE*. CALIFORNIA NATIVE PLANT SOCIETY, SACRAMENTO, CA.
- U.S. FISH AND WILDLIFE SERVICE (USFWS). 2017. INFORMATION FOR PLANNING AND CONSERVATION (IPAC) AS OF 1/6/2017.
- U.S. FISH AND WILDLIFE SERVICE (USFWS). 2014. SONOMA COUNTY CALIFORNIA TIGER SALAMANDER – CORE AND MANAGEMENT AREA BOUNDARIES. JUNE 24.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2011. REVISED DESIGNATION OF CRITICAL HABITAT FOR THE SONOMA COUNTY DISTINCT POPULATION SEGMENT OF CALIFORNIA TIGER SALAMANDER. *FEDERAL REGISTER* VOL 79 (169): 54346- 54371. AUGUST 11.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2010. ENDANGERED AND THREATENED WILDLIFE AND PLANTS; REVISED DESIGNATION OF CRITICAL HABITAT FOR THE CALIFORNIA RED- LEGGED FROG. *FEDERAL REGISTER* VOL. 75(51): 12816-12959.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2009. PROPOSED RULE: DESIGNATION OF CRITICAL HABITAT FOR THE SONOMA COUNTY DISTINCT POPULATION SEGMENT OF CALIFORNIA TIGER SALAMANDER (*AMBYSTOMA CALIFORNIENSE*). *FEDERAL REGISTER* VOL. 74(158): 41662 – 41673. AUGUST 18.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2007. PROGRAMMATIC BIOLOGICAL OPINION (PROGRAMMATIC) FOR U.S. ARMY CORPS OF ENGINEERS (CORPS) PERMITTED PROJECTS THAT MAY AFFECT CALIFORNIA TIGER SALAMANDER AND THREE ENDANGERED PLANT SPECIES ON THE SANTA ROSA PLAIN, CALIFORNIA (CORPS FILE NUMBER 223420N). NOVEMBER 19.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2005. SANTA ROSA PLAIN CONSERVATION STRATEGY. FINAL. DECEMBER 2005.
- U.S. FISH AND WILDLIFE SERVICE (USFWS) 2003. INTERIM GUIDANCE ON SITE ASSESSMENT AND FIELD SURVEYS FOR DETERMINING PRESENCE OR A NEGATIVE FINDING OF THE CALIFORNIA TIGER SALAMANDER. SACRAMENTO FIELD OFFICE. OCTOBER 30.
- U.S. FISH AND WILDLIFE SERVICE (USFWS). 2002. ENDANGERED AND THREATENED WILDLIFE AND PLANTS: LISTING THE SONOMA COUNTY DISTINCT POPULATION SEGMENT OF THE CALIFORNIA TIGER SALAMANDER AS ENDANGERED. *FEDERAL REGISTER* VOL. 67, NO. 140. JULY 22.
- WELSH, H. 1994. BIOREGIONS: AN ECOLOGICAL AND EVOLUTIONARY PERSPECTIVE AND A PROPOSAL FOR CALIFORNIA. *CALIFORNIA FISH AND GAME* (80) 3:97-124.
- WHITTAKER, R. 1998. *ISLAND BIOGEOGRAPHY: ECOLOGY, EVOLUTION AND CONSERVATION*. OXFORD UNIVERSITY PRESS. 285PP.
- WILLIAMS, D.F. 1986. MAMMALIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA. CALIFORNIA DEPARTMENT OF FISH AND GAME. WILDLIFE MANAGEMENT DIVISION ADMINISTRATIVE REPORT 86-1.

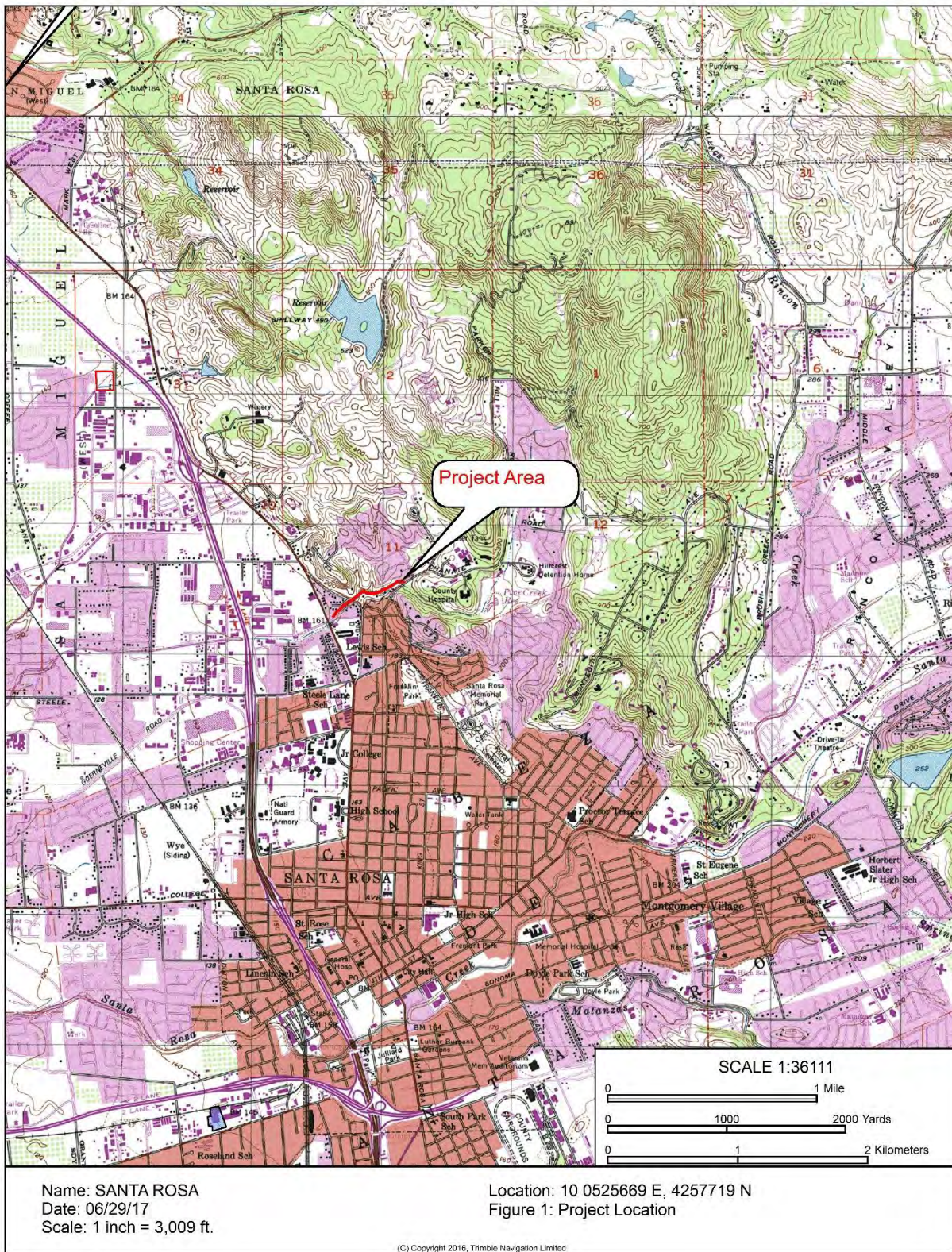
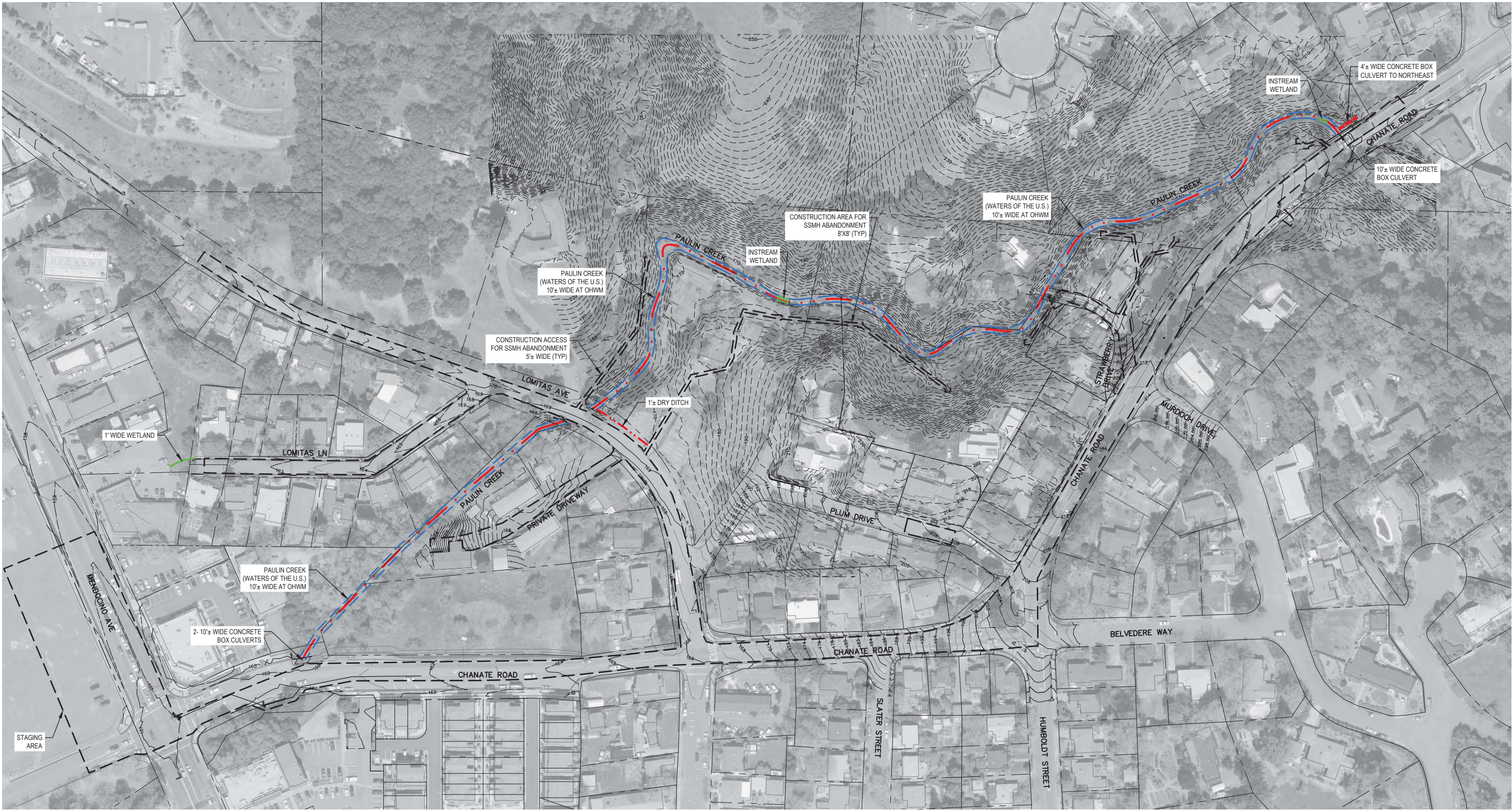
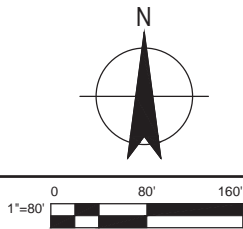


FIGURE 1: LOCATION MAP

N:\US\Santa Rosa\Projects\02059 - City of Santa Rosa\02059-8411494 North Trunk Sewer Project\06-CAD\Sheets\Plans for biologs\02059-8411494_Waters of US Delineation Map.dwg 07-19-17 03:37:26PM sndove



DELINEATION MAP



LEGEND

- WATERS OF THE U.S. (0.52 AC)
- WETLAND (0.005 AC)
- STAGING AREA (0.60 AC)
- PROJECT BOUNDARY (4.50 AC)

CITY OF SANTA ROSA NORTH TRUNK SEWER REPLACEMENT PROJECT DELINEATION OF WATERS OF THE U.S., INCLUDING WETLANDS	SCALE: AS SHOWN	DATE: JULY 2017	CHK BY: KG	APPROVED: Deputy Director – Engineering By Colleen Ferguson Date	NO.	DATE	REVISION	BY
	DWN BY: SD							
CONTRACT NO. CXXXXX		SHEET 1 OF 1		FILE NO. 2017-XXXX				

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Figure 3. Example of sewer main to be abandoned.



Figure 4. Sewer main to be abandoned at Strawberry Drive.



Figure 5. Outlet into Paulin Creek at Chanate Drive.



Figure 6. Paulin Creek from top of access area.

APPENDIX A: FEDERAL, STATE AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES

Federal Endangered Species Act (FESA) - U.S. Fish and Wildlife Service

Pursuant to ESA, the U.S. Fish and Wildlife Service (USFWS) has regulatory authority over federally listed species. Under ESA, a permit to “take” a listed species is required for any federal action that may harm an individual of that species. Take is defined under Section 9 of ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” Under federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Section 7 of ESA requires all federal agencies to consult with USFWS to ensure that their actions are not likely to “jeopardize the continued existence” of any listed species or “result in the destruction or adverse modification” of designated critical habitat. No federal approvals or other actions are anticipated as being required to implement the project at this time. Therefore, consultation under Section 7 of ESA is not expected. However, if USACE determines that wetlands and/or other waters of the United States on the project site are subject to protection under Section 404 of the CWA, or any other federal action becomes necessary, consultation under Section 7 of ESA would be required.

For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain a permit for incidental take under Section 10(a) of ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan (HCP) that includes components to minimize and mitigate impacts associated with the take. The permit is known as an incidental take permit. The project proponent must obtain a permit before conducting any otherwise-lawful activities that would result in the incidental take of a federally listed species.

Clean Water Act Sections 404 and 401 - U.S. Army Corps of Engineers

USACE regulates the discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. Waters of the United States are defined as waters where use, degradation, or destruction could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are somehow connected to any of these waters or their tributaries. Wetlands are defined as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands falling under USACE jurisdiction must demonstrate the presence of three specific wetland parameters: hydric soils, hydrophytic vegetation, and sufficient wetland hydrology. Generally, wetlands include swamps, marshes, bogs, and similar areas. Lakes, rivers, and streams are defined as “other waters.” Jurisdictional limits of these features are typically noted by the ordinary high-water mark (OHWM). The OHWM is the line on the shore or bank that is established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in soils, lack of woody or terrestrial vegetation, the presence of litter or debris, or other characteristics of the surrounding areas.

Isolated ponds or seasonal depressions had been previously regulated as waters of the United States. However, in *Solid Waste Agency of Northwestern Cook County (SWANCC) v. United States Army Corps of Engineers et al.* (January 8, 2001), the U.S. Supreme Court ruled that certain “isolated” wetlands (e.g., non-navigable, isolated, and intrastate) do not fall under the jurisdiction of the CWA and are no longer under USACE jurisdiction (although isolated wetlands are regulated by the State of California under the Porter-Cologne Water Quality Control Act—see discussion below). Some circuit courts (e.g., *U.S. v. Deaton*, 2003; *U.S. v. Rapanos*, 2003; *Northern California River Watch v. City of Healdsburg*, 2006), however, have ruled that the SWANCC opinion does not prevent CWA jurisdiction if a “significant nexus” such as a hydrologic connection exists, whether it be human-made (e.g., roadside ditch) or natural tributary to navigable waters, or direct seepage from the wetland to the navigable water, a surface or underground hydraulic connection, an ecological connection (e.g., the same bird, mammal, and fish populations are supported by both the wetland and the navigable water), and changes to chemical concentrations in the navigable water due to water from the wetland.

Section 404 prohibits the discharge of dredged or fill material into waters of the United States (including wetlands) without a permit from USACE. With respect to the proposed project, the discharge of dredged or fill material includes the following activities:

- placement of fill that is necessary for the construction of any structure or infrastructure in a water of the United States;
- the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction;
- site-development fills for recreational, industrial, commercial, residential, or other uses; and
- construction of causeways or road fills.

The regulations and policies of USACE, the U.S. Environmental Protection Agency (EPA), and USFWS mandate that the filling of wetlands be avoided unless it can be demonstrated that no practicable alternatives (to filling wetlands) exist. If the placement of fill into waters of the U.S., including wetlands, meets certain criteria the project be permitted under one of the Nation Wide Permits (NWP), which is an expedited permit process.

Section 401 of the CWA requires an applicant for any federal permit that may result in a discharge into waters of the United States to obtain a certification from the state that the discharge will comply with provisions of the CWA. The regional water quality control boards (RWQCBs) administer this program. Any condition of water quality certification would be incorporated into the USACE permit. The state has a policy of no net loss of wetlands and typically requires mitigation for impacts on wetlands before it will issue a water quality certification.

Essential Fish Habitat - National Marine Fisheries Service

Essential Fish Habitat (EFH) is regulated through the National Marine Fisheries Service (NMFS), a division of the National Oceanic and Atmospheric Administration (NOAA). Protection of EFH is mandated through changes implemented in 1996 to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to protect the loss of habitat necessary to maintain sustainable fisheries in the United States. The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). NMFS further defines essential fish habitat as areas that "contain habitat essential to the long-term survival and health of our nation's fisheries" (NMFS 2007). EFH can include the water column, bottom substrate types such as gravels suitable in size for salmonid spawning, and vegetation and woody structures that provided habitat for rearing. Under regulatory guidelines issued by NMFS, any federal agency that authorizes, funds, or undertakes action that may affect EFH is required to consult with NMFS (50 CFR 600.920).

California Environmental Quality Act (CEQA)

CEQA is a California statute passed in 1970, shortly after the United States federal government passed NEPA, to institute a statewide policy of environmental protection. CEQA does not directly regulate land uses, but instead requires state and local agencies within California to follow a protocol of analysis and public disclosure of environmental impacts of proposed projects and adopt all feasible measures to mitigate those impacts.

The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. According to CEQA, all state and local agencies must give major consideration to environmental protection in regulating public and private activities, and should not approve projects for which there exist feasible and environmentally superior mitigation measures or alternatives.

California Endangered Species Act (CESA) – California Department of Fish and Wildlife

The California Endangered Species Act (CESA) (FGC §§ 2050–2116) is administered by the California Department of Fish and Wildlife. The CESA prohibits the “taking” of listed species except as otherwise

provided in state law. The CESA includes FGC Sections 2050–2116, and policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat. The CESA requires mitigation measures or alternatives to a proposed project to address impacts to any State listed endangered, threatened or candidate species, or if a project would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy. Section 86 of the FGC defines take as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Unlike the ESA, CESA applies the take prohibitions to species under petition for listing (state candidates) in addition to listed species. Section 2081 of the FGC expressly allows DFW to authorize the incidental take of endangered, threatened, and candidate species if all of the following conditions are met:

- The take is incidental to an otherwise lawful activity.
- The impacts of the authorized take are minimized and fully mitigated.
- Issuance of the permit will not jeopardize the continued existence of the species.
- The permit is consistent with any regulations adopted in accordance with §§ 2112 and 2114 (legislature-funded recovery strategy pilot programs in the affected area).
- The applicant ensures that adequate funding is provided for implementing mitigation measures and monitoring compliance with these measures and their effectiveness.

The CESA provides that if a person obtains an incidental take permit under specified provisions of the ESA for species also listed under the CESA, no further authorization is necessary under CESA if the federal permit satisfies all the requirements of CESA and the person follows specified steps (FGC § 2080.1).

Species Protection under California Department of Fish and Wildlife

The CDFW is established under the Fish and Game Code (FGC) (FGC § 700) and states that the fish and wildlife resources of the state are held in trust for the people of the state by and through CDFW (FGC § 711.7(a)). All licenses, permits, tag reservations and other entitlements for the take of fish and game authorized by FGC are prepared and issued by CDFW (FGC § 1050 (a)).

Provisions of the FGC provide special protection to certain enumerated species such as:

- § 3503 protects eggs and nests of all birds.
- § 3503.5 protects birds of prey and their nests.
- § 3511 lists fully protected birds.
- § 3513 protects all birds covered under the federal Migratory Bird Treaty Act.
- § 3800 defines nongame birds.
- § 4150 defines nongame mammals.
- § 4700 lists fully protected mammals.
- § 5050 lists fully protected amphibians and reptiles.
- § 5515 lists fully protected fish species.

In addition, the Native Plant Protection Act (NPPA), directs the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." As a result, the NPPA allows the California Fish and Game Commission to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants.

Waters of the State - California Regional Water Quality Control Board

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 Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the USACE under Section 404. “Waters of the State” are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to

impact “Waters of the State,” are required to comply with the terms of the Water Quality Certification determination.

If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to “Waters of the State,” the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat - California Department of Fish and Wildlife

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of the State Fish and Wildlife Code. 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 California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, 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 ESD 1994). Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

California Native Plant Society (CNPS)

The California Native Plant Society (CNPS) is a statewide non-profit organization dedicated to the monitoring and protection of sensitive species in California. The CNPS publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California, focusing on geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California. The list serves as the candidate list for listing as threatened and endangered by the CDFG. The Inventory assigns plants to the following categories:

- A. Presumed Extinct in California
- B. Rare or endangered in California and elsewhere
- Rare or endangered in California, more common elsewhere
- Plants for which more information is needed
- Plants of limited distribution.

Additional rarity, endangerment, and distribution codes are assigned to each taxa.

Plants on Ranks 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and the Department recommends they be addressed in CEQA projects (CEQA Guidelines Section 15380). However, a plant need not be in the Inventory to be considered a rare, threatened, or endangered species under CEQA. In addition, the DFG recommends, and local governments may require, protection of plants which are regionally significant, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Ranks 3 and 4.

Appendix B: Potentially Occurring Special-Status Plant Species in the Study Area

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	-/-/1B	Broadleafed upland forest (openings), chaparral, cismontane woodland. Blooms April-July. Elevation: 120-2000m.	None. No habitat present in study area.
<i>Amsinckia lunaris</i> Bent-flowered fiddleneck	-/-/1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. March-June. Elevation: 3-500m	None. Not observed during surveys. No species of <i>Amsinckia</i> were observed.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon Ridge manzanita	-/-/1B	Chaparral on rhyolitic soils and cismontane woodland. Blooms February to April (sometimes May). Elevation: 75-370m.	None. No habitat present in study area. No species of manzanita in study area.
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	FE/CT/1B	Openings in chaparral, cismontane woodland, valley and foothill grassland on serpentinite or volcanic, rocky or clay soils. Blooms March to May. Elevation: 75-275m.	None. No habitat present in study area. Not observed during surveys.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot	-/-/1B	Chaparral, cismontane woodland, valley and foothill grassland, sometimes on serpentinite. March-June. Elevation: 90-1555m.	None. Not observed during surveys. Typical habitat not present.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE/CE/1B	Valley and foothill grassland (mesic), vernal pools. Blooms March to May. Elevation: 10-110m.	None. Not observed during surveys. Typical habitat not present in study area.
<i>Brodiaea leptandra</i> Narrow-anthered brodiaea	-/-/1B	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland on volcanic soils. Blooms May to July. Elevation: 110-915m.	None. No habitat present in study area. Not observed during surveys.
<i>Calochortus uniflorus</i> Pink star tulip	-/-/4	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest. Blooms April to June. Elevation: 10-1070m.	None. No habitat present in study area. Not observed during surveys.
<i>Carex albida</i> White sedge	FE/-/-	Freshwater wetlands, freshwater marshes and swamps, bogs and fens, riparian woodlands. Blooms May to June. Elevation: 35-65m.	None. No habitat present in study area. Not observed during surveys.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	-/-/1B	Closed-cone coniferous forest, chaparral, cismontane woodland on volcanic or serpentinite. Blooms February to June. Elevation: 75-1065m.	None. No habitat present in study area. No <i>Ceanothus</i> shrubs in study area.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Ceanothus divergens</i> Calistoga ceanothus	-/-/1B	Chaparral on serpentinite or volcanic, rocky soils. Blooms February to April. Elevation 170-950m.	None. No habitat present in study area. No <i>Ceanothus</i> shrubs in study area.
<i>Ceanothus purpureus</i> Holly-leaved ceanothus	-/-/1B	Chaparral, cismontane woodland on volcanic, rocky soils. Blooms February to June. Elevation: 120-640m.	None. No habitat present in study area. No <i>Ceanothus</i> shrubs in study area.
<i>Ceanothus sonomensis</i> Sonoma Ceanothus	-/-/1B	Chaparral on sandy, serpentinite or volcanic soils. Blooms February to April. Elevation: 215-800m.	None. No habitat present in study area. No <i>Ceanothus</i> shrubs in study area.
<i>Fritillaria liliacea</i> Fragrant fritillary	-/-/1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland often on serpentinite. Blooms February to April. Elevation: 3-410m.	None. Not observed during surveys. Typical habitat not present in study area.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> White seaside tarplant	-/-/1B	Valley and foothill grassland sometimes on roadsides. Blooms April to November. Elevation: 20-560m.	None. Not observed during surveys. No species of <i>Hemizonia</i> were observed in the study area.
<i>Lasthenia burkei</i> Burke's goldfields	FE/CE/1B	Meadows and seeps (mesic), vernal pools. April-June. Elevation: 15-600m.	None. Not observed during surveys. No habitat present in study area.
<i>Layia septentrionalis</i> Colusa layia	-/-/1B	Chaparral, cismontane woodland, valley and foothill grassland on sandy or serpentinite soils. Blooms April to May. Elevation: 100-1095m.	None. Not observed during surveys. No habitat present in study area.
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	-/-/1B	Chaparral, cismontane woodland, usually volcanic. Blooms March to May. Elevation: 100-500m.	None. Not observed during surveys. No habitat present in study area.
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	FE/CE/1B	Meadows and seeps, valley and foothill grassland, vernal pools/vernally mesic. April-May. Elevation: 15-305m.	None. Not observed during surveys. No habitat present in study area.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	-/-/1B	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic. Blooms April to July. Elevation: 5-1740m.	None. Not observed during surveys. Typical habitat not present in study area.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i> Many flowered navarretia	FE/-/1B	Volcanic ash flow vernal pools. Blooms May to June. Elevation: 30-950 m.	None. Not observed during surveys. No habitat present in study area.

Scientific Name Common Name	Status USFWS/ CDFW/ CNPS rank	Habitat Affinities and Blooming Period/Life Form	Potential for Occurrence
<i>Ranunculus lobbii</i> Lobb's aquatic buttercup	-/-/4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland and vernal pools in mesic sites. Blooms February to May. Elevation: 15- 470m.	None. Not observed during surveys. No habitat present in study area.
<i>Trifolium amoenum</i> Showy Rancheria clover	FE/-/1B	Coastal bluff scrub, valley and foothill grassland, sometimes on serpentinite. Blooms April to June. Elevation: 5-415m.	None. Not observed during surveys. Typical habitat not present in study area.
<i>Trifolium hydrophilum</i> Saline clover	-/-/1B	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. April-June. Elevation: 0-300m.	None. Not observed during surveys. Typical habitat not present in study area.
<i>Triquetrella californica</i> Coastal triquetrella	-/-/1B	Coastal bluff scrub, coastal scrub/soil. Elevation: 10-100m.	None. Not observed during surveys. No habitat present in study area.
SPECIAL STATUS/SENSITIVE NATURAL COMMUNITIES			
<i>Valley Needlegrass Grassland</i>			None

NOTES:

U.S. FISH AND WILDLIFE SERVICE

- FE = federally listed Endangered
FT = federally listed Threatened

CALIFORNIA DEPT. OF FISH AND WILDLIFE

- CE = California listed Endangered
CR = California listed as Rare
CT = California listed as Threatened

CALIFORNIA NATIVE PLANT SOCIETY -

Rank 1B: Plants rare and endangered in California and elsewhere

Rank 4: Plant of limited distribution – a watch list.

Appendix C: Potentially Occurring Special-Status Animal Species in the Project Area

Common Name Scientific Name	Status USFWS CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
Invertebrates			
Blennosperma vernal pool andrenid bee <i>Andrena blennospermatis</i>	-/-	Oligolectic (specialist pollinator) on vernal pool Blennosperma and nests the uplands around vernal pools.	None: No vernal pools present.
Obscure Bumble bee <i>Bombus caliginosus</i>	-/-	Food plants include <i>Baccharis</i> , <i>Circium</i> , <i>Lupinus</i> , <i>Lotus</i> , <i>Grindelia</i> and <i>Phacelia</i>	None: no food plants observed in project area.
Western bumble bee <i>Bombus occidentalis</i>	-/-	Bumblebees will visit a range of different plant species and are important generalist pollinators of a wide variety of flowering plants and crops.	None: no food plants observed in project area.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE	The adult flight period is late February to mid-April, with the peak flight period occurring in March and early April. Eggs are laid in small clusters or strings on the upper or lower surface of broadleaf stonecrop (<i>Sedum spathulifolium</i>). Larvae hatch from the eggs within 5-7 days of being laid.	None: no host plant present.
California linderiella <i>Linderiella occidentalis</i>	-/-	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	None: No vernal pools present.
California freshwater shrimp <i>Syncaris pacifica</i>	FE/CE	Endemic to Marin, Napa and Sonoma counties in low elevation and low gradient streams with moderate to heavy riparian cover.	None: no suitable habitat present
Fish			
steelhead - Central California Coast DPS <i>Onchorhynchus mykiss</i>	FT/SSC	Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	None: no suitable habitat present and no connectivity to streams with known occurrences.
Amphibians			
California giant salamander <i>Dicamptodon ensatus</i>	-/SSC	Known from wet coastal forests near streams and seeps. Larvae found in cold, clear streams and adults known from wet forests under rocks and logs near streams and lakes.	None: no suitable habitat present.
California tiger salamander <i>Ambystoma californiense</i>	FT/ST	Breeds in vernal pool and ponds and spends most of life terrestrially in small mammal burrows. Species occurs more than 3 miles to the west and south of the site (CNDDDB 2017).	None: Outside species range.
foothill yellow-legged frog <i>Rana boylei</i>	-/SSC	Prefers permanent stream pools, and creeks with emergent and/or riparian vegetation.	None: no suitable habitat present.
California red-legged frog <i>Rana draytonii</i>	FT/-	Prefers semi-permanent and permanent stream pools, ponds and creeks with emergent and/or riparian vegetation. Occupies upland habitat especially during the wet winter months. Species occurs to the northeast of the site (CNDDDB 2017).	Moderate: suitable potential breeding and dispersal habitat present.
Reptiles			

Common Name Scientific Name	Status USFWS CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
Western pond turtle <i>Emys marmorata</i>	SC/SPT	Prefers permanent, slow-moving creeks, streams, ponds, rivers, marshes and irrigation ditches with basking sites and a vegetated shoreline. Requires upland sites for egg-laying. Species occurs to the northwest and east of the site outside the watershed (CNDDDB 2017).	None: no suitable habitat present.
Birds			
Cooper's hawk <i>Accipiter cooperi</i>	MB/ SSC	Nests primarily in deciduous riparian forests. May also occupy dense canopied forests from gray pine-oak woodland to ponderosa pine. Forages in open woodlands.	Moderate: Suitable nesting habitat present.
Western grebe <i>Aechmophorus occidentalis</i>	BCC	Breeds on large bodied freshwater lakes and marshes with emergent vegetation. Nest is built on floating plants or submerged snag, among emergent vegetation.	None: no suitable habitat present
tricolored blackbird <i>Agelaius tricolor</i>	BCC/ SSC	Nests primarily in dense freshwater marshes with cattail or tules, but also known to nest in upland thistles. Forages in grasslands.	None: no suitable habitat present
Rufous-crowned sparrow <i>Aimophila ruficeps</i>	BCC	Nests constructed on the ground or in a small depression; occasionally near the base of a shrub up to about 1.5 feet off the ground. Often well concealed under grass, leaves, or rocks. Habitat occurs in dry, open hillsides covered with grasses, rocks, and scattered shrubs, including coastal sagebrush, open chaparral, scrub oaks, pinyon pine, and other woody plants.	None: no suitable habitat present due to domestic pets.
Bell's sparrow <i>Amphispiza belli</i>	BCC	Nests in dense stands of chamise and chaparral.	None: no suitable habitat present
Short-eared owl <i>Asio flammeus</i>	BCC/-	Nests in open areas in grasslands, marshes, or dunes on the ground sheltered by tall grasses, reeds or bushes.	None: no suitable habitat present
burrowing owl <i>Athene cunicularia hypugea</i>	BCC/ SSC	Nests in open, dry grasslands, deserts, prairies, farmland and scrublands with abundant active and abandoned small mammal burrows. Prefers short grasses and moderate inclined hills.	None: no suitable habitat present; lack of ground squirrel burrows
Oak titmouse <i>Baeolophus inornatus</i>	BCC/ SSC	Breeds in cavities in oak woodlands, gleaning insects from the bark. Occurs from southern Oregon to northern Mexico along the Central Valley and xeric coastal foothills.	High: suitable nesting habitat present
Yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT/SE	Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles or wild grape.	None: No suitable nesting habitat present.
olive-sided flycatcher <i>Contopus borealis</i>	BCC/ SSC	Nests in open conifer or mixed oak woodland. Nests on horizontal branches, among a cluster of twigs and needles.	High: suitable nesting habitat present
White-tailed kite <i>Elanus leucurus</i>	MB/SFP	Inhabits low rolling foothills and valley margins with scattered oaks and river bottom- lands or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows and marshes for foraging close to isolated, dense-topped trees for nesting and perching	High: suitable nesting habitat present

Common Name Scientific Name	Status USFWS CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
American peregrine falcon <i>Falco peregrinus anatum</i>	BCC/FP	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers or marshes. Forages on shorebirds and small passerines.	None: no suitable habitat present
bald eagle <i>Haliaeetus leucocephalus</i>	BCC/CFP	Nests in tall snags near water and forages on fish. This species winters near large bodies of waters with fish.	None: no suitable habitat present
Least bittern <i>Ixobrychus exilis</i>	BCC/-	Nests in freshwater or brackish marshes with tall emergent vegetation. Creates nesting platform in dense stands of vegetation.	None: no suitable habitat present
Short-billed dowitcher <i>Limnodromus griseus</i>	BCC/-	Winters on coastal mud flats and brackish lagoons. In migration prefers saltwater tidal flats, beaches, and salt marshes. Found in freshwater mud flats and flooded agricultural fields.	None: no suitable habitat present
Lewis's woodpecker <i>Melanerpes lewis</i>	BCC/SSC	Found in open forest and woodland, often logged or burned, including oak, coniferous forest, riparian woodland, orchards, less often pinyon-juniper. Closely associated with open ponderosa pine forest in western North America. Most commonly uses pre-made or natural cavities. Wintering areas must provide storage sites for grain or mast.	None: no suitable nesting habitat present
long-billed curlew <i>Numenius americanus</i>	BCC/SSC	Nests at high elevations in grasslands adjacent to lakes or marshes. Winters along the coast on mudflats or in interior valleys in grasslands and agricultural fields.	None: no suitable habitat present
Fox sparrow <i>Passerella iliaca</i>	BCC/-	Nests in forests and chaparral on the ground or in low crotches of bushes or trees.	None: no suitable breeding habitat present. Occurs in the winter.
Nuttall's woodpecker <i>Picoides nuttallii</i>	BCC/-	Found primarily in oak woodlands and riparian woods. Cavity nester.	High: suitable nesting habitat present
rufous hummingbird <i>Selasphorus rufus</i>	BCC/-	Nests in chaparral, coniferous forest, scrub habitats and riparian habitats. Nests are placed on a downward drooping structure.	None: Outside species breeding range.
Allen's hummingbird <i>Selasphorus sasin</i>	BCC/-	Nests in wooded areas, meadows, or thickets along shaded streams, on a branch low down on stem, although placement height varies between 10 inches and 90 feet.	High: suitable nesting habitat present
northern spotted owl <i>Strix occidentalis caurina</i>	FT, BCC/CT	Dense coniferous and hardwood forest, shaded, steep sided canyons.	None: no suitable habitat present
Lesser yellowlegs <i>Tringa flavipes</i>	BCC/-	Breeds in open boreal forest with shallow wetlands. Winters in wide variety of shallow fresh and saltwater habitats.	None: no suitable habitat present
Mammals			

Common Name Scientific Name	Status USFWS CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
Pallid bat <i>Antrozous pallidus</i>	-/SSC	Day roosts in crevices and cavities in rock outcrops, mines, caves, buildings, bridges, properly-designed bat houses, as well as hollows and cavities in a wide variety of tree species. May roost alone, in small groups (2 to 20 bats), or in 100s in maternity roosts, with males and non-reproductive subadults in other, smaller roosts.	Moderate: suitable roosting habitat present.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	-/SSC, WBWG:H	Day roosts in cave analogs; mines, buildings, bridges, sometimes large tree hollows. Particularly sensitive to roost disturbance, this species has declined throughout its range in California; very few maternity roosts are known in California. Females form maternity colonies, males roost singly, and all disperse widely after maternity season. During winter, roosts in cold, but non-freezing roosts, which may include man-made structures.	None: no suitable roosting habitat.
Western red bat <i>Lasiurus blossevillii</i>	-/SSC, WBWG:H	Solitary roosting, except when females are with young (from 2 to 6 are born). Roosts almost exclusively in foliage, under overhanging leaves, in woodland borders, rivers, agricultural areas including orchards, and urban areas with mature trees. Typically found in large cottonwoods, sycamores, walnuts and willows associated with riparian habitats. Forages over mature orchards, oak woodland, low elevation conifer forests, riparian corridors, non-native trees in urban and rural residential areas, and around strong lighting.	High: suitable potential roosting habitat occurs in the oak woodlands on site.
Hoary bat <i>Lasiurus cinereus</i>	-/-, WBWG:M	Roosts singly except when females are with young (from 2 to 4 are born) in dense foliage of medium to large coniferous and deciduous trees. Highly migratory, occurs from sea level to tree line in Sierra Nevada. Summer records predominantly male. Forages along stream and river corridors, open water bodies, meadows, and open forest above canopy.	High: suitable potential roosting habitat occurs in the oak woodlands on site.
California myotis <i>Myotis californicus</i>	-/-	Females give birth to one young. Typically roosts alone or in small groups in almost every habitat from desert to mountains, but most abundant at lower to mid-elevations. Roosts in crevices in rocks, slabs, hollow trees, exfoliating bark, buildings, mines. In trees may exhibit low roost fidelity, switching frequently. Emerges early in evening, forages along tree margins, canopy edge, over water, along trails and higher above ground in open habitat. Typically hibernates.	High: suitable potential roosting habitat occurs in the oak woodlands on site.

Common Name <i>Scientific Name</i>	Status USFWS CDFW	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence
Yuma myotis <i>Myotis yumanensis</i>	-/-, WBWG:M	Forms often large maternity colonies, females giving birth to one young. Generally confined to lower elevations from sea level to up to 1,300 m in central Sierra Nevada and 2,000 m in southern Sierra Nevada. Males roost singly. Primarily a crevice roosting species in natural habitat, forms large maternity colonies in large spaces in man-made roosts, e.g. buildings. Also uses bridges, caves, mines, tree cavities, bat houses, abandoned swallow nests, exfoliating bark. Emerges early and forages almost exclusively over quiet water – ponds, pools, reservoirs, swimming pools. Appears to migrate, may hibernate in colder portions of their range.	High: suitable potential roosting habitat occurs in the oak woodlands on site.

U.S. FISH AND WILDLIFE SERVICE (USFWS)

FE = federally listed Endangered
 FT = federally listed Threatened
 FC = federal candidate for listing
 BCC = Bird of Conservation Concern
 MBTA = Migratory Bird Treaty Act.

CALIFORNIA DEPT. OF FISH AND WILDLIFE (CDFW)

CE = California listed Endangered
 CT = California listed as Threatened
 SSC = California Special Concern species

WESTERN BAT WORK GROUP (WBWG)- PRIORITY

California includes multiple regions where a species may have different WBWG Priority ranks, therefore the CNNDDB includes categories for Medium-High, and Low-Medium Priority.

Appendix D: Plant species observed on April 1 and May 15, 2015 and June 14, 2017.

Scientific Name	Common Name
<i>Acer negundo</i>	Box elder
<i>Agapanthus</i> sp.	Agapanthus*-ornamental
<i>Agoseris grandiflora</i>	California dandelion
<i>Arbutus menziesii</i>	Madrone
<i>Artemisia douglasiana</i>	Mugwort
<i>Arundo donax</i>	Giant reed*
<i>Avena barbata</i>	Wild oats*
<i>Avena fatua</i>	Oats*
<i>Brassica nigra</i>	Black mustard*
<i>Briza maxima</i>	Large quaking grass*
<i>Briza minor</i>	Small quaking grass*
<i>Bromus diandrus</i>	Ripgut brome*
<i>Bromus hordaeceus</i>	Soft chess*
<i>Bromus</i> sp.	Brome*
<i>Carduus pycnocephalus</i>	Italian thistle*
<i>Carex densa</i>	Dense sedge
<i>Carex nudata</i>	Naked sedge
<i>Cerastium glomeratum</i>	Chickweed*
<i>Convolvulus arvensis</i>	Bindweed*
<i>Cottoneaster</i> sp.	Cotoneaster*
<i>Cynosurus echinatus</i>	Dogtail grass*
<i>Cyperus papyrus</i>	Papyrus*
<i>Erodium botrys</i>	Broad-leaved filaree*
<i>Erodium brachycarpum</i>	Foothill filaree*
<i>Erodium cicutarium</i>	Red-stemmed filaree*
<i>Erodium moschatum</i>	White stemmed filaree*
<i>Eschscholzia californica</i>	California poppy
<i>Euphorbia peplus</i>	Petty spurge
<i>Festuca bromoides</i>	Six weeks fescue*
<i>Festuca myuros</i>	Rattail fescue*
<i>Festuca perennis</i>	Ryegrass*
<i>Ficus</i> sp.	Fig*
<i>Foeniculum vulgare</i>	Fennel*
<i>Fraxinus latifolia</i>	Oregon ash
<i>Galium aparine</i>	Cleavers
<i>Geranium dissectum</i>	Cut-leaf geranium*
<i>Geranium molle</i>	Dove-foot geranium*
<i>Geranium robertianum</i>	Roberts geranium*
<i>Hedera helix</i>	English ivy*
<i>Helminthotheca echioides</i>	Bristly ox-tongue*
<i>Heteromeles arbutifolia</i>	Toyon
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley*
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley*
<i>Hypochaeris radicata</i>	Rough cats-ear*
<i>Iris pseudacorus</i>	Yellow iris*
<i>Iris</i> sp.	Garden iris*
<i>Juglans hindsii</i>	Northern California black walnut

Scientific Name	Common Name
<i>Juncus occidentalis</i>	Western rush
<i>Juncus patens</i>	Spreading rush
<i>Juncus tenuis</i>	Slender rush
<i>Lactuca serriola</i>	Prickly lettuce*
<i>Lamium amplexicaule</i>	Henbit deadnettle*
<i>Lamium purpureum</i>	Purle dead nettle*
<i>Lathyrus latifolius</i>	Perennial pea*
<i>Lysimachia arvensis</i>	Scarlet pimpernel*
<i>Malva parviflora</i>	Cheeseweed mallow*
<i>Marah fabaceus</i>	Manroot
<i>Medicago polymorpha</i>	Bur clover*
<i>Myosotis</i> sp.	Forget-me-not*
<i>Nerum oleander</i>	Oleander* - ornamental
<i>Oxalis oregana</i>	Redwood sorrel
<i>Oxalis pes-caprae</i>	Bermuda buttercup*
<i>Pentagramma triangularis</i>	Gold back fern
<i>Phalaris aquatica</i>	Harding grass*
<i>Pinus radiata</i>	Monterey pine*
<i>Plantago lanceolata</i>	English plantain*
<i>Populus fremontii</i>	Fremont cottonwood
<i>Portulaca oleracea</i>	Common purslane*
<i>Prunus</i> sp.	Fruit tree*
<i>Quercus agrifolia</i>	Coast live oak
<i>Quercus kelloggii</i>	Black oak
<i>Quercus lobata</i>	Valley oak
<i>Quercus wislizeni</i>	Interior live oak
<i>Rubus armeniacus</i>	Himalayan blackberry*
<i>Salix laevigata</i>	Red willow
<i>Salix lasiolepis</i>	Arroyo willow
<i>Sanicula crassicaulis</i>	sanicle
<i>Scirpus microcarpus</i>	Panicked bulrush
<i>Senecio vulgaris</i>	Common groundsel*
<i>Sequoia sempervirens</i>	Coast redwood
<i>Stachys ajuoides</i>	Hedge nettle
<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	Common snowberry
<i>Taraxacum officinale</i>	Dandelion*
<i>Torilis arvensis</i>	Field hedge parsley*
<i>Toxicodendron diversilobum</i>	Poison oak
<i>Typha latifolia</i>	Cattail
<i>Vicia americana</i>	American vetch
<i>Vicia bengalhensis</i>	Purple vetch*
<i>Vicia sativa</i>	Spring vetch
<i>Vinca major</i>	Periwinkle*
<i>Zantedeschia aethiopica</i>	Calla lily*

Species with an * are non-native.

Appendix E: Wildlife species observed on April 1, 2015.

<i>Species Detected</i>		Habitats in which Detected	
<i>Scientific Name</i>	Common Name	NNG	Riparian
Birds			
<i>Aphelocoma californica</i>	Western Scrub-Jay		X
<i>Buteo lineatus</i>	Red-shouldered hawk		X
<i>Cathartes aura</i>	Turkey Vulture		X
<i>Cyanocitta stelleri</i>	Steller's jay		X
<i>Hylatomus pileatus</i>	Pileated woodpecker		X
<i>Pipilo crissalis</i>	California towhee		X
<i>Pipilo maculatus</i>	Spotted towhee		X
<i>Psaltiriparus minimus</i>	Bushtit		X
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker		X
<i>Thryomanes bewickii</i>	Bewick's wren		X
<i>Zonotrichia atricapilla</i>	Golden-crowned sparrow		X
Mammals			
<i>Urocyon cinereoargenteus</i>	Gray fox	X	X
<i>Odocoileus hemionus californicus</i>	Black-tailed deer	X	X