Exhibit A

Fulton Road Sewer Lift Station Project

Initial Study / Proposed Mitigated Negative Declaration

City of Santa Rosa

August 27, 2018

City of Santa Rosa
Fulton Road Sewer Lift Station Project

Initial Study / Proposed Mitigated Negative Declaration

Prepared for:

City of Santa Rosa
69 Stony Circle
Santa Rosa, California 95401

Prepared by:

GHD
2235 Mercury Way, Suite 150
Santa Rosa, California 95407

August 2018

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1. Project Information

Project Title	Fulton Road Sewer Lift Station
Lead Agency Name & Address	City of Santa Rosa 69 Stony Circle Santa Rosa, California 95401
Contact Person & Phone Number	Jillian Tilles, Associate Civil Engineer (707) 543-3878
Project Location	Proposed Sewer Lift Station: 1225 Fulton Road, Santa Rosa. Existing Sewer Lift Station: Southeast corner of Fulton Road and West College Avenue Proposed Pipelines: Fulton Road or West College Avenue (see Figure 1-1)
General Plan Designation	Proposed Sewer Lift Station: Very Low Density Residential Proposed pipelines: Within street right-of-way
Zoning	Proposed Sewer Lift Station: Planned Development Proposed pipelines: Within street right-of-way

1.1 CEQA Requirements

This Project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the City of Santa Rosa. 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. This Initial Study is intended to satisfy the requirements of the California Environmental Quality Act, CEQA, (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts.

Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;
6. The name of the person or persons who prepared or participated in the Initial Study.

1.2 Project Background

The Project is needed to correct operational and wet well deficiencies at the West College Sewer Lift Station. The wet well is undersized causing the pumps to cycle on and off excessively which significantly decreases motor life. The wet well also accumulates grease because of its configuration. Two of the existing pumps are antiquated and are prone to plug with debris. The site makes maintenance difficult because of limited vehicular access and limited access to perform maintenance on the pumps, piping and valves. The sewer force main in Fulton Road needs replacement because it is near the end of its useful life.

The City of Santa Rosa (City) investigated the replacement and/or relocation of the West College Lift Station in the *West College Lift Station Evaluation* (Brown and Caldwell 2015). The Evaluation identified and ranked six alternatives for the relocation of the West College Lift Station, including a No Project Alternative, two rehabilitation alternatives for the lift station at the existing site, and relocation of the lift station at three alternate sites. The City has determined that its preferred alternative is the "Church" Site at 1225 Fulton Road, about 600 feet west of the intersection of Fulton Road and West College Avenue.

1.3 Surrounding Land Uses and Existing Setting

The existing West College Lift Station is at the southeast corner of Fulton Road and West College Avenue. The interior of the site is paved and enclosed by a chain-link fence. Landscaping is on the periphery between the fence and the sidewalk. Adjacent to the site, along the east and south, are single-family residences.

The proposed lift station site would be on the southwest corner of the parcel at 1225 Fulton Road. Portions of the site are developed with a church building, parking, landscaping, and two small outbuildings. There is a garden to the west of the building. There are single family residences on the north and a mobile home park to the south. On the east side, the site is bordered by Fulton Road, a four lane arterial. A tributary to Santa Rosa Creek, traverses the west side of the parcel, with a single-family residence and agriculture use beyond the creek.

The pipeline improvements would be constructed in existing streets that traverse residential areas, with some commercial and recreational uses. Pipeline improvements along Fulton Road would be between West College and West 3rd Street, with a crossing of Santa Rosa Creek midway. Pipeline improvements along West College would be between Fulton Road and Stony Point Road. Fulton Road is a four-lane arterial. West College is a four-lane arterial, transitioning to a single lane west bound and two lanes east bound, as it approaches Stony Point Road.

1.4 Project Description

The Fulton Road Lift Station Project would abandon the existing sewer lift station at Fulton Road and West College Avenue and replace it at a site approximately 600 feet to the west. The proposed replacement site is at the southwest corner of a property that supports the Thanksgiving Lutheran Church. A new gravity sewer line would be constructed from the intersection of Fulton Road and West College Avenue along the south side of the Church property to the new site. Approximately 3,200 feet of new sewer force main would be constructed in Fulton Road from West College Avenue to West Third Street; alternately, an existing sewer force main in West College Avenue would be sliplined from Fulton Road to Stony Point Road. The Project elements, as illustrated in Figures 1-2 Project Components, are described in more detail below:

1.4.1 West College Lift Station

The existing West College Lift Station would be in use throughout construction of the new improvements to maintain current sewer system function. After the new lift station becomes operational, the existing lift station would be demolished. Demolition would remove all above-ground structure to three feet below the ground surface, holes would be punched in the walls and floors, and the structures would be backfilled with clean, compacted fill. Voids would be filled with either a flowable cement fill or cement slurry. The site would then be graded to match the surrounding topography and planted with trees, shrubs, or grasses. If the existing lift station were abandon in place, the Project would secure all structures, vaults, site fencing; remove any accessory structures that may present hazards; and provide safety features such as signs. .

1.4.2 Fulton Road Lift Station

The City proposes to acquire the property at 1225 Fulton Road and construct the relocated Lift Station in the southwest corner of the site. Acquisition would occur in 2018, however, construction is not expected to occur for 10 to 15 years. See Figure 1-3 Lift Station Site Plan. There is a possibility the existing buildings or site could be leased for other uses prior to the construction of the proposed lift station.

Submersible pumps and ancillary equipment would be installed inside a concrete structure constructed below ground. The concrete vault would be approximately 16 feet wide by 22 feet long and approximately 30 feet deep. The vault would be flush with the ground surface and topped with a traffic-rated steel lid for access during maintenance. Three 15- to 20- horsepower pumps would be installed in the concrete vault (two duty pumps and one stand-by pump). The existing pumps in the West College lift station are three 35- to 40-horsepower pumps; the Project would not increase the capacity of the lift station.

A masonry block control building (approximately 30 feet by 24 feet) would be constructed to house a diesel-powered backup generator with diesel fuel storage, a crane, and a transformer. The control building would be about 18 feet tall and would include an exhaust system to provide ventilation for the generator, and noise attenuation features, such as ventilation louvers, sound attenuation panels, and other sound insulation barriers to reduce the noise levels at the residences near the lift station. The building would have an exterior light that would be controlled by a switch when needed.

An 8-foot high chain link fence with anti-climb features such as privacy slats would be constructed around the lift station. Appropriate landscaping, such as evergreen shrubs similar to that used at the existing lift station, would be planted to help screen, and improve the visual appearance of, the structure from the church and residences.

Approximately 0.45 acre would be paved during construction of the lift station. The lift station would be accessed directly from the paved church parking area with a gate installed at the access location. An emergency access with a gate would be placed on the north side of the lift station site.

1.4.3 Sewer Pipelines

Approximately 600 feet of new 18-inch diameter gravity sewer would be installed from an existing manhole on Fulton Road, at West College Avenue, to the new lift station.

The City may replace the existing pipeline in Fulton Road or slipline the existing pipeline in West College Avenue. For the first option, approximately 3,200 feet of 8-inch or 12-inch diameter buried

force main would be installed to convey wastewater from the new lift station to Fulton Road and then south in Fulton Road to West Third Street as shown on Figure 1-2. The new force main would replace the existing 20-inch force main in Fulton Road, which would be abandoned in place or sliplined with 12-inch HDPE. If abandon is place, the pipeline would be broken every 50 feet and filled with flowable cement per City of Santa Rosa standards.

For the second option, the City may leave the existing gravity trunk line in place in Fulton Road and slipline the existing sewer force main in West College Avenue from Fulton Road to Stony Point Road, a distance of approximately 5,300 feet.

Open-trench Pipeline Construction

For pipeline segments to be installed using open-trench methods, the construction sequence would typically include excavating the trench; preparing and installing pipeline sections; installing vaults, manholes, and other pipeline components; backfilling the trench with non-expansive fills; and repaving the pipeline alignments, as appropriate.

Installation of pipelines using open-trench methods would generally progress by approximately 100 feet per day within or along roadways. Progress at intersections or major utility crossings may be slower. Pipelines would be installed at depths ranging from approximately 5 to 10 feet below ground surface. The construction corridor will require use of travel lanes and may require use of adjacent sidewalk.

Santa Rosa Creek Pipeline Crossing

The sewer force main in Fulton Road would need to cross Santa Rosa Creek. This could be accomplished either by tunneling under the creek while staying within the roadway, or by hanging the force main off the existing bridge across the creek.

The tunnelling option could use either microtunneling or jack-and-bore methods, either of which would require excavation of an entry pit and a receiving pit. Microtunneling employs the use of a drilling fluid to transport the excavated cuttings (slurry) back to a small onsite separation plant for cleaning and reuse as drilling fluid. For the jack-and-bore method, a horizontal or auger boring machine is used to drill a hole inside a steel casing to excavate and transport the muck. Hydraulic jacks are used to jack the casing forward while the ground is simultaneously excavated by the augers. Segments are successively added to the pipe string until the casing pushes through the portal in the receiving pit.

The temporary sending and receiving bore pits would be open excavations of approximately 24 feet long by 16 feet wide and 36 feet deep to be located in Fulton Road, north and south of the Santa Rosa Creek Bridge. The sending pit area would include staging for drilling and support equipment. Both pits would require dewatering.

Microtunneling may involve the use of drilling fluid or bentonite slurry, a fine clay material, as a drilling lubricant. One of the risks associated with microtunneling is the escape of drilling mud into the environment as a result of a spill, tunnel collapse or the rupture of mud to the surface, commonly known as "frac-out". The contractor would develop a comprehensive "frac-out" plan as part of the Project prior to initiating drilling activities to ensure that the potential for contamination of the surrounding area, including Santa Rosa Creek, from drilling slurry is minimized and that contingency methods are in place. The plan would address how to minimize the potential for frac-out associated with microtunnel activities; provide a method for timely detection of frac-outs; and ensure an organized, timely, and minimum impact response in the event of frac-out and release of drilling mud.

Sliplining of Pipelines

Sliplining involves the insertion of a smaller liner pipe into an existing pipe. The new liner pipe can be pulled in place using a cable and winch system; or pushed in place using a choker cable and backhoe or these two methods can be combined. Sliplining would require the installation of pipe insertion pits and pulling pits. The distance between pits would depend on the geometry and any limitations for the existing pipe. If sliplining of the existing West College or Fulton Road force mains is utilized, two to three pits would be required for pulling and pushing the liner pipe into place; pits may require shoring and dewatering. A bypass pipeline may need to be placed on the surface and buried at roadway crossings during the process. Pits would be approximately 20 feet long by 10 feet wide and approximately 10 to 15 feet deep, with a long laydown area of up to 500 feet in front of the first pit. Sliplining would proceed at approximately 500 to 1,000 feet a day, depending on the length of the laydown area.

Utility Locating and Relocations

Underground utilities along the pipeline alignments would be identified and labeled in the field prior to construction, including sanitary sewer, water, electrical, natural gas, telecommunications, storm drains, street lights, and other fiber optic lines. Potholing will be implemented along portions of the alignment to further confirm utility locations, which will include the digging of test holes to uncover utilities to help ascertain horizontal and vertical locations. Such work would be performed within the public right-of-way.

The Project would minimize displacement of existing utilities to the extent feasible. However, in some locations, existing gas, water, electrical, and fiber optic lines may need to be relocated within the road right-of-way to accommodate the Project.

Where possible, the sewer pipeline would be set back at least 10 feet from existing potable water lines. Where such separation is not feasible, pipelines would be installed with special pipe materials, greater vertical separation, and other special precautions, with approvals to be required by the City of Santa Rosa and State Water Resources Control Board Division of Drinking Water.

1.4.4 Project Construction

Construction of the Project would involve demolition, clearing, excavation, grading, dewatering, lift station construction, trenching, paving, and roadway reconstruction. The construction footprint for the Project would be less than 2 acres.

Construction Duration and Hours

Property acquisition would occur in 2018. Construction and demolition activities would occur in 10 to 15 years. Overall, construction of the new lift station would occur over two construction seasons, but active construction would last less than one year. This factors in an approximate one month curing time for the concrete where no active construction would occur, and delays for rain. Installation of the force main along Fulton Road would take approximately 4 to 6 months. Demolition of the existing West College Lift Station would take approximately one month.

Anticipated work hours would be 7:00 a.m. to 7:00 p.m. Monday through Friday. Traffic control would be present for all work within the roadways, and as needed for work related to construction of the new lift station and demolition of the existing lift station.

Construction Equipment

A variety of construction equipment would be used to build the Project. This would include, but not necessarily be limited to, excavators, backhoes, front end loaders, scrapers, graders, concrete saws, cranes, jackhammers, impact driver for shoring installation, winches, chainsaws, fork lifts, rollers, asphalt road pavers, compactors, air compressors, generator sets, and pneumatic tools. A variety of trucks including cement mixers, haul trucks, and water trucks would also be required. Site preparation, including demolition, clearing and grading of the Project site as necessary would require the removal and off-haul of materials. This would include, but not necessarily be limited to, vegetation, concrete, asphalt and fill, and certain existing utilities that would be removed and replaced.

Construction Staging Areas

The contractor would require staging areas for construction equipment and materials. The contractor would use the existing lift station site and the new lift station site for construction staging and would stage pipeline materials along the pipeline routes. Equipment, materials, and vehicles would be stored in these areas; maintenance and fueling would also be conducted at the staging sites. Construction equipment would be parked nightly in these areas. Staging at the Project Site would be coordinated with any tenant using the property and would be located in an area that minimizes the impact.

Construction Recycling

The Project contractor 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. Materials that could not be reused or composted at local facilities would be disposed of at regional landfills, such as the Redwood Sanitary Landfill in Marin County or the Potrero Hills Landfill in Solano County.

Access and Traffic Control Plan

Construction vehicles would be routed along main thoroughfares including but not limited to Highway 12, Fulton Road, West College Avenue, and Stony Point Road.

Installation of the pipeline along Fulton Road or sliplining along West College Avenue and Fulton Road would require lane closures and traffic controls. The contractor would develop a Traffic Control Plan which would include a work area access plan detailing access to each portion of the project area, including those properties which may experience temporary delay or disruption of access. Detours for emergency vehicles, bus routes and stops, and pedestrian/bike paths, if necessary, would be included in the Plan and approved by the City. The bike and pedestrian trails along either side of Santa Rosa Creek would be closed during installation of the pipeline under Santa Rosa Creek.

Construction Traffic

The Project requires the installation of a new sewer lift station and approximately 3,800 feet of pipeline, at maximum if the Fulton Road option is implemented. For the purposes of analysis, it is assumed that construction of the lift station and installation of the pipelines could overlap. It is anticipated that the majority of the pipeline installation would generally proceed at a rate of 100 feet per day, with each 100-foot pipeline segment generating a peak of approximately 75 combined worker vehicle and haul truck trips per day. If sliplining the existing force main in West College is utilized instead of installing the new force main in Fulton Road, construction traffic would be less. Approximately 10,000 cubic yards of material would need to be imported and, because much of the

Fulton Road pipeline would need to be 14 feet deep, up to 50,000 cubic yards of material would need to be exported.

Construction Dewatering

Dewatering may be required during construction of the lift station and during pipeline installation or sliplining. Groundwater discharges would most likely be directed to the City's sanitary sewer system under a one-time discharge permit. However, the City may dispose of groundwater through land application or to surface waters. Discharge to surface waters would be regulated by Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) permits from the North Coast Regional Water Quality Control Board (NCRWQCB). A dewatering plan would be developed by the contractor as part of the comprehensive Stormwater Pollution Prevention Plan (SWPPP).

Storm Water Management

Federal regulations require discharge of storm water to surface waters associated with construction activity to obtain an NPDES permit and to implement best management practices (BMPs) to reduce or eliminate storm water pollution. Because construction of the Project would disturb greater than one acre of soil, the City of Santa Rosa would be required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit). Coverage under the Construction General Permit would require development of a Storm Water Pollution Prevention Plan (SWPPP). A SWPPP would be developed and implemented as part of the Project, and is required to describe the best management practices that shall be implemented to control erosion, sedimentation, and other pollutants during and after construction of the Project.

Roadway Restoration

Following installation of the pipeline or sliplining, the roadways affected by construction would be repaired to preconstruction condition over the entire width of the public right-of-way.

1.5 Operation and Maintenance

Pumps at the lift station would operate intermittently throughout any 24-hour period. Once operational, it is anticipated that approximately two vehicle trips per month to and from the lift station would be required by City personnel for pump maintenance, similar to the existing sewer lift station.

1.6 Environmental Protection Actions Incorporated into 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.

1.6.1 Environmental Protection Action 1 – Implement Geotechnical Design Recommendations

As part of the Project design process, the City would engage a California-registered Geotechnical Engineer to conduct a design-level geotechnical study for the Project. The City will design the Project to comply with the site-specific recommendations made in the Project's geotechnical report. This will include design in accordance with the seismic and foundation design criteria, determining appropriate

method of tunneling under Santa Rosa Creek, as well as site preparation and grading recommendations included in the report. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project, and will be implemented during construction.

1.6.2 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.

1.6.3 Environmental Protection Action 3 – Secure Authority to Construct/Permit to Operate

Prior to any construction activity requiring the installation of an emergency backup diesel generator, which is a stationary source of air pollutants, the City will submit the required Authority to Construct (A/C) pre-construction permit application to the BAAQMD. The City will comply with any and all BAAQMD-required permit conditions. As part of the process, the City will prepare a BAAQMD's Health Risk Screening Analysis that demonstrates the generator would result in a health risk that is less than the BAAQMD's CEQA Thresholds. Prior to first use of the installed generator, the City will submit a Permit to Operate (P/O) application to the BAAQMD. The BAAQMD will not approve the P/O if the analysis indicates health risk over the threshold. Generator operations shall comply with BAAQMD's P/O conditions.

1.6.4 Environmental Protection Action 4 - 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 Required Agency Approvals

The following City of Santa Rosa entitlements may be required for the Project:

- A Grading Permit for work conducted outside the public right- of-way.
- A Building Permit for the lift station.
- One Time Discharge Permit
- Soil Disposal Permit

The following permits or approvals may also be required for the Project:

- U.S. Army Corps of Engineers (Corps) – Section 404 Nationwide Permit
- United States Fish and Wildlife Service (USFWS) - Section 7 Consultation
- North Coast Regional Water Quality Control Board (NCRWQCB) - 401 Water Quality Certification and Low Threat Discharge to Surface Waters Permit
- California Department of Fish and Wildlife (CDFW) - Streambed Alteration Agreement
- Bay Area Air Quality Management District – Authority to Construct/Permit to Operate
- Sonoma County Water Agency - Agreement/Easement

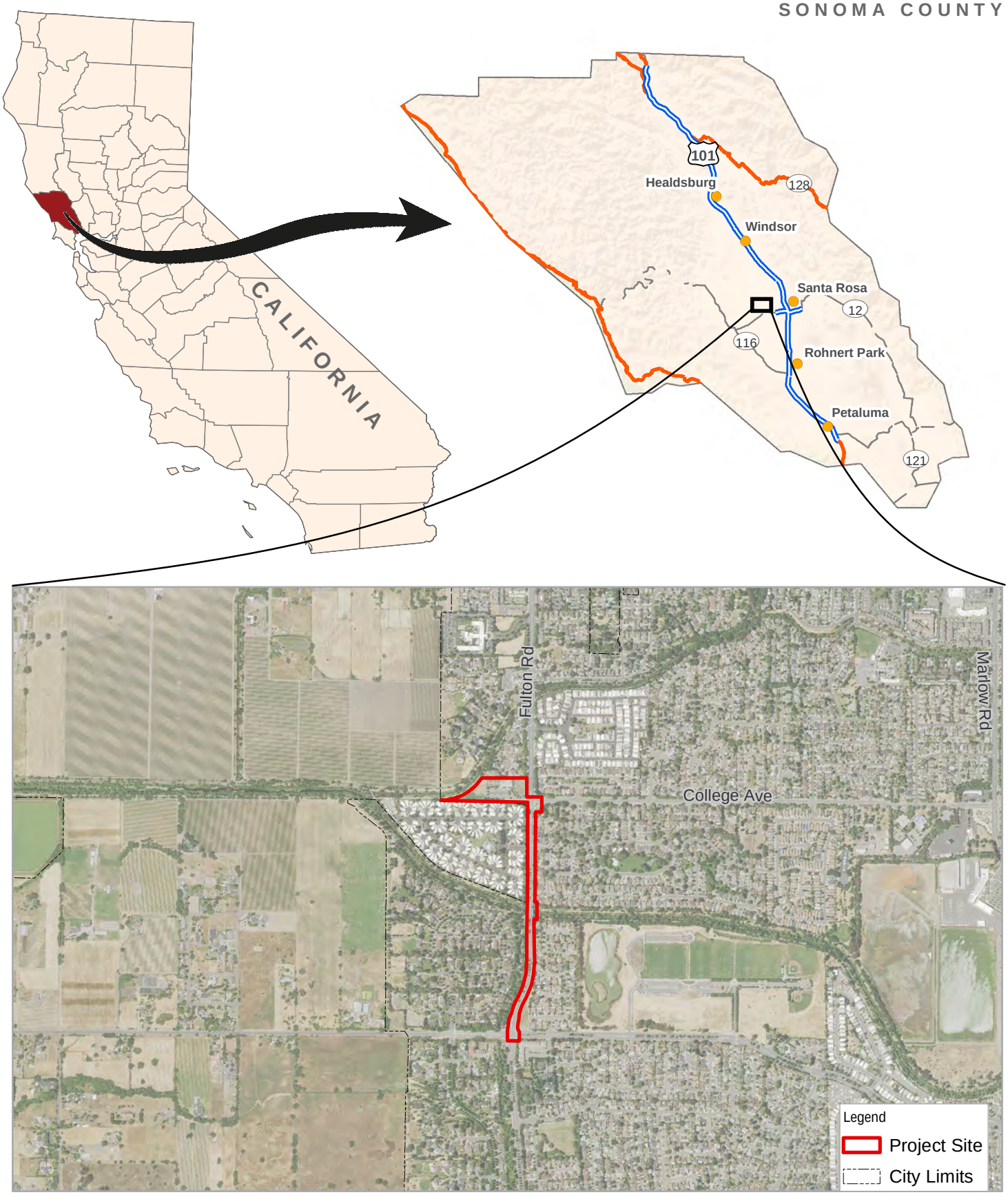
1.8 Tribal Consultation

On March 7, 2018, the City of Santa Rosa sent Lytton Rancheria of California and Federated Indians of Graton Rancheria (FIGR), a tribal consultation invitation. Subsequently, the City has exchanged phone calls and emails with FIGR with regard to the Project and Cultural Resources Study. On May 16, 2018, the City met with FIGR at the Project site to discuss the Project's potential for impacting tribal cultural resources. Subsequent to the meeting, the City provided FIGR with proposed mitigation

measures for their review. No comments on the proposed mitigation measures had been received as of August 27, 2018. The City continues to coordinate with FIGR.

In addition, the Anthropological Studies Center (ASC) requested a review of the Native American Heritage Commission (NAHC) Sacred Lands File for information on Native American cultural resources in the Project area. NAHC responded that sacred resources may exist within the Project area and provided contact information for tribal communities that may have further information. On January 11, 2018, ASC sent letters to those on the list, which included: Dry Creek Rancheria Band of Pomo Indians, FIGR, Kashia Band of Pomo Indians of the Stewarts Point Rancheria, Lytton Rancheria of California, Middletown Rancheria, and Mishewal-Wappo Tribe of Alexander Valley. Of the responses received, FIGR and Lytton indicated tribal cultural resources likely occurred within the Project area, and they would like to receive a copy of the cultural resource report and that they would be consulting further with the lead agency. No other responses indicated they knew of historic resources in the project area. Subsequent to the response, Lytton emailed the City on March 21, 2018, acknowledging receipt of the AB 52 referral and indicating that no further consultation was necessary.

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 Resources.



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City of Santa Rosa
Fulton Road Sewer Lift Station

Vicinity Map

Project No. 11136646
Revision No. -
Date 03/21/2018

FIGURE 1-1

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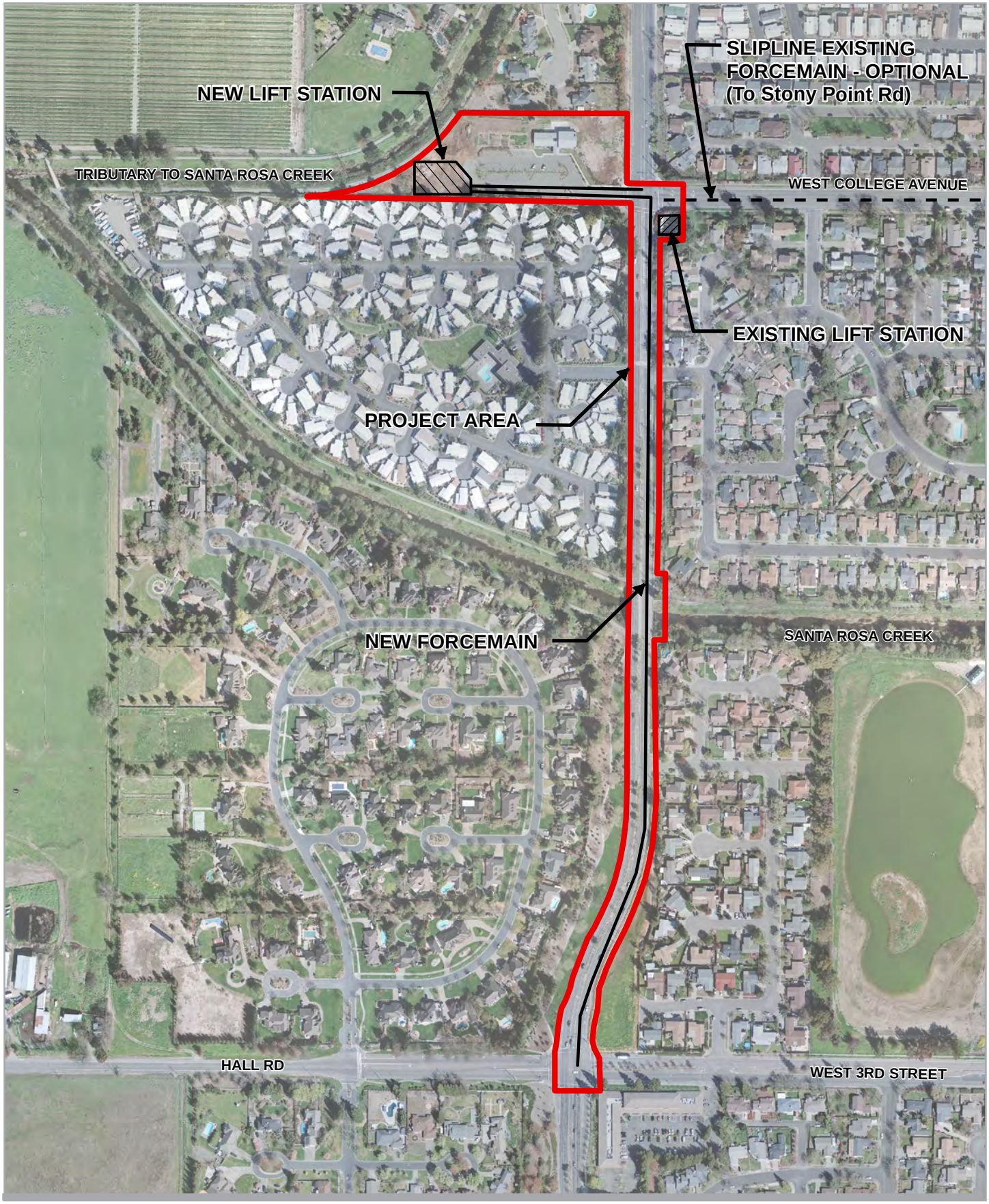
Data source: Sonoma County City Limits; NAIP orthoimagery 2014; Sources: Esri, USGS, NOAA. Created by: rmremillard



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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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City of Santa Rosa
Fulton Road Sewer Lift Station

PROJECT COMPONENTS

Project No. 11136646
Revision No. -
Date 03/21/2018

FIGURE 1-2

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Print date: 21 Mar 2018 - 09:21

Data source: . Created by: rmremillard

Source: Brown and Caldwell, West College Lift Station Evaluation, 2015

City of Santa Rosa
Fulton Road Sewer Lift Station

LIFT STATION SITE PLAN

Project No. 11136646
Revision No. -
Date 03/21/2018

FIGURE 1-3

Filename: G:\111\11136646 SR Fulton Lift Sta CEQA\04-Technical Work\Figures\InDesign\Lift Station Site Plan.indd
Print date: 21 Mar 2018 - 9:26

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:

☐ Aesthetics	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Agricultural & Forestry Resources	☐ Hydrology/Water Quality	☐ Transportation/Traffic
☐ Air Quality	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Biological Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☐ Cultural Resources	☐ Noise	☐ Mandatory Findings of Significance
☐ Geology/Soils	☐ Population/Housing	
☐ Greenhouse Gas Emissions	☐ Public Services	

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

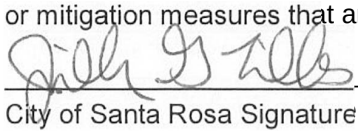
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

☒ 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 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

8/23/2018

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 (Santa Rosa 2009). The lift station would be constructed near the intersection of Fulton Road and West College Avenue, and the pipeline would be installed along Fulton Road or the sliplining would occur within West College Avenue. Neither Fulton Road nor the proposed lift station is located within a scenic vista. Therefore, implementation of the proposed Project would not result in an obstruction of or damage to an existing scenic vista. 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)

The Project is located adjacent to or within Fulton Road or West College Avenue, neither of which is a designated or eligible state scenic highway (Caltrans 2018). Furthermore, the Project site is not located along or within any of the scenic roadways designated by the City of Santa Rosa General Plan (Santa Rosa 2009). Therefore, the project would have no impact related to damaging scenic resources within a scenic highway or roadway. No impact would occur.

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

The Project would install a new lift station, adjacent to an existing church and abutting the Sequoia Gardens Mobile Home Park on a portion of the parcel that is currently vacant. West of the new lift station site is a tributary to Santa Rosa Creek and recreational trail. The existing lift station is located

on the corner of Fulton Road and West College Avenue, adjacent to existing single-family residences. The Project would also install a pipeline along Fulton Road or slipline existing pipeline along West College Avenue. The pipeline would also cross a section of Santa Rosa Creek.

Project construction and staging would occur at the West College lift station, in the parking lot of the new lift station site, and along either Fulton Road or West College Avenue. Construction would result in temporary changes to the visual character as seen from Fulton Road, West College Avenue, and a few of the mobile homes in the Sequoia Gardens Mobile Home Park due to the presence of construction equipment and construction-related activities. The Project would result in trenches, spoils stockpiles, pipe, and other associated materials and equipment would being visible at the proposed and existing lift stations, and along the proposed pipeline alignment. Construction phase impacts would be temporary and typical of utility construction, and therefore impacts to the local visual character would be less than significant.

The new Fulton Road Lift Station would include a control building constructed of masonry brick. The building would be approximately 30 feet long by 24 feet wide and approximately 18-feet-tall. The 0.45-acre parcel would be enclosed by an 8-foot chain link security fence with 1-inch mesh. The lift station and security fence would be visible from the church and could be visible from some residential buildings. It may also be partially visible by vehicles traveling along West College Avenue and Fulton Road. The addition of the lift station on the new parcel would permanently alter the visual character of the site as it was previously undeveloped. However, landscaping, including trees, would be used to screen the site from view from the adjacent Mobile Home Park, public roads, trail along the creek, and public visiting the church to minimize impacts to the visual character of the area.

The current lift station may either be demolished or abandoned in place once the new lift station has been constructed. If demolished, the site would no longer have any above-ground features and would be revegetated and landscaped resulting in a beneficial effect to the visual character of the site. Alternatively, if the site was abandoned in place the visual character would remain the same as existing conditions and no change to visual character would result. The proposed pipeline, once constructed, would be located completely underground and therefore, would not change the visual character of the site.

Therefore, as the new lift station would be screened with landscaping, the existing lift station would be demolished and revegetated or remain as existing, and pipelines would not be visible, impacts resulting from changes to the existing visual character would be less than significant.

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

The Fulton Road Lift Station would include an exterior light that would only be switched on when needed, or use motion-detection. Although the light would be a new light source that may cause glare and alter nighttime views to residences in the area as well as passing motorists, it would be designed in accordance with City standards to be shielded, downcast, low-intensity lighting.

Compliance with the City of Santa Rosa Lighting Standards would minimize impact from this single light source to the surrounding area. In addition, the light would only periodically be used. The impact would be less than significant.

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) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland)? (No Impact)

According to the California Department of Conservation (CDC), the Project is located on urban and built-up land (CDC 2014a). Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. No impact would occur.

b) Conflict with Agricultural Zoning or Williamson Act Contract? (No Impact)

The proposed lift station site is zoned PD (Planned Development) and the pipeline alignment is within existing roadways (Santa Rosa 2015). Therefore, the Project would not conflict with any agricultural zoning. Additionally, the project site is not within an area subject to a Williamson Act Contract (CDC 2014b). No impact would occur.

c, d) Conflict with Forest Land Zoning or Convert Forest Land? (No Impact)

The Fulton Road Lift Station site is zoned Planned Development (PD). Therefore, the Project would not conflict with a Forest Land Zoning or convert Forest Land to non-forest use. No impact would occur.

e) Convert Farmland or Forest? (No Impact)

The proposed Project is not located on land zoned for or currently being utilized as Farmland or Forest Land. Therefore, the Project would not convert Farmland or Forest Land to a non-agricultural or non-forest use. 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?			✓	

The air quality analysis utilizes the thresholds of significance, screening criteria and levels, and impact assessment methodologies presented in the Bay Area Air Quality Management District (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 the 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 2107 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the Project (BAAQMD 2017b). 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-greenhouse gas 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 ($PM_{2.5}$, PM_{10}), or carbon monoxide (CO). Specifically, $PM_{2.5}$ and PM_{10} 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, PM_{10} and $PM_{2.5}$ from construction dust are evaluated separately from PM_{10} 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 PM_{10} from exhaust.

Construction Impacts

For construction dust, the BAAQMD recommends incorporation of best management practices (BMPs) to reduce localized dust impacts to less than significant. As shown in Section 1.1.7, Environmental Protection Action 2 requires implementation of the BAAQMD's recommended Basic Construction Measures. Therefore, the Project incorporates the BAAQMD's recommended BMPs; the Project's potential to generate a localized PM_{10} or $PM_{2.5}$ impact during construction is less than significant.

Operational Impacts

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, and the project-generated operational emissions would not violate or contribute substantially to an existing or projected air quality violation. The impact is 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 nonattainment area for $PM_{2.5}$ and PM_{10} and ozone (BAAQMD 2018a). Under national standards, the Air Basin is currently designated as nonattainment for 8-hour ozone, and nonattainment for $PM_{2.5}$. The Air Basin is in attainment (or unclassified) for all other air pollutants (BAAQMD 2018a). Therefore, the non-attainment pollutants of concern for this impact question are ozone, PM_{10} and $PM_{2.5}$. Impact 3.3.b, above, analyzed the Project's potential for PM_{10} and $PM_{2.5}$ impacts from construction-generated dust. This analysis evaluates cumulative regional impacts associated with PM_{10} and $PM_{2.5}$ from exhaust.

Exposure to levels of ozone above current State or federal standards can lead to human health effects such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms (BAAQMD 2017a).Ozone is not emitted directly into the air, but is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, reactive organic gases (ROG) and oxides of nitrogen (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 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).

<u>Construction Impacts</u>

Overall construction activities would occur over two construction seasons with active construction anticipated to take approximately one year, with the possibility of the forcemain and lift station having overlapping construction. The types of air pollutants generated by construction activities are typically nitrogen oxides (NOx) and particulate matter, such as dust and exhaust. Construction activities could temporarily increase levels of $PM_{2.5}$ and PM_{10} 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 screening criteria are met. The following are the BAAQMD construction screening criteria:

- Construction-related activities would not include any of the following:
- Demolition activities inconsistent with District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing;
- Simultaneous occurrence of more than two construction phases;
- Simultaneous construction of more than one land use type;
- Extensive site preparation; or
- Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity

It is anticipated that the Project would import approximately 10,000 cubic yards of soils, and export approximately 50,000 cubic yards of soils during the grading and excavation phase. Therefore, the Project would involve material transport in exceedance of one of the BAAQMD's screening criteria.

Because the Project exceeds the screening criteria, it is necessary to estimate exhaust emissions associated with the Project. The Project's construction exhaust emissions were estimated using CalEEMod version 2016.3.2 and project-specific construction equipment activity. The Project's estimated average construction emissions are shown in Table 3.3-1. As shown in the table, the Project's construction emissions would not exceed the BAAQMD's recommended thresholds of significance. Therefore, the Project would result in a less-than-significant impact.

Table 3.3-1 Construction Exhaust 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	2.60	13.96	0.31	0.31
BAAQMD Thresholds	54	54	82	54
Significant Impact?	*No*	*No*	*No*	*No*

Operational Impacts

The Project would include an emergency back-up generator, which is a stationary source of air emissions. However, operation of the emergency back-up generator is regulated by BAAQMD Regulation 9 Rule 8 (Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines), and would only be run for periodic testing and emergencies. Per Regulation 9 Rule 8 Section 9-8-330, the generator may be run up to 50 hours per year for testing. It is anticipated that approximately two vehicle trips per month to and from the facility would be required by City personnel, similar to the existing sewer lift station. Therefore, 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 nonattainment criteria pollutant impact would be less than significant.

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

Sensitive receptors are defined by the BAAQMD 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. Sensitive receptors in the vicinity of the Project include residences along West College Avenue and Fulton Road. Pumpkin Patch Preschool is located approximately 0.35 mile north of the Fulton Road Lift Station site. The Little Ones Children's Center is approximately 1 mile south of the Fulton Road Lift Station Site, and 0.58 mile south of the pipelines.

Construction

The existing West College Lift Station and pipelines could have asbestos- or lead-containing materials. If present, these materials must be handled according to applicable federal, state, and local requirements to protect against the inadvertent release of asbestos fibers or lead dust into the air. Demolition activities must comply with BAAQMD Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing. If asbestos fibers or lead dust were released into the air, the impact would be significant.

Construction equipment and associated heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. As described in 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.

Project construction activities consist of the West College Lift Station demolition, Fulton Road Lift Station construction, and installation of sewer pipelines. Installation of the sewer force main is anticipated to occur at a rate of approximately 100 feet of pipe per day with the exception of the Santa Rosa Creek crossing which would be several days in one location depending on method of construction. Overall, construction activities related to the force main would be continually shifting. Because of continuous shifting of the construction activities, prolonged exposure of sensitive receptors to substantial pollutant concentrations would not occur from pipeline construction. Sliplining along West College would occur at an even faster rate. Demolition of the existing lift station would occur over approximately one month. Construction of the lift station would occur over two consecutive construction seasons, however active construction would occur for less than 1 year.

Due to the limited footprint and duration of construction activity, 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 from construction equipment exhaust. Therefore, exposure of sensitive receptors to construction equipment exhaust would be less than significant.

Operation

The primary source of operational emissions from the Project would be episodic maintenance trips to and from the Project site, which would not present a substantial source of diesel exhaust or other

TAC. In addition, the on-site emergency backup diesel generator, which is subject to BAAQMD permitting requirements and requirements of Regulation 9-8-330, would only be run for periodic testing and emergencies. As described in Environmental Protection Actions Incorporated into the Project, Environmental Protection Action 4 would require the City to comply with BAAQMD permitting processing, including implementation of BAAQMD-required permit conditions and proceeding if the BAAQMD's Health Risk Screening Analysis demonstrates that the generator would result in a less-than-significant health risk.

Per BAAQMD's regulations, hours of operation of an emergency backup diesel generator may not exceed 50 hours in a calendar year. For comparison, California's Office of Environmental Health and Hazards (OEHHA) Air Toxics Hot Spots Program Risk Assessment Guidance recommends assuming exposure for 24 hours a day, 7 days a week, for 30 years when evaluating an individual resident's cancer risk (OEHHA 2015). Therefore, the Project's operational impact would be less than significant.

Implementation of Mitigation Measure HAZ-1 would reduce impacts from inadvertent release of asbestos or lead by identifying their presence and ensuring that demolition activities are in compliance with laws regulating the proper abatement, transportation, and disposal.

Mitigation Measure HAZ-1: Assess and Manage Hazardous Materials

(See Section 3.8 Hazards and Hazardous Materials for the complete mitigation text)

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.). BAAQMD's Air Quality Guidelines provides that an odor source with five (5) or more confirmed complaints in the new source area per year averaged over three years is considered to have a significant impact on receptors. Wastewater pipelines are not typically a source of odor complaints and are not listed by BAAQMD as a potential odor source (BAAQMD 2017a).The City has not received any odor complaints regarding the existing West College Lift Station in the 3-year period of March 2015 to March 2018. A public records request (Request No. 2018-03-0062) was submitted to the BAAQMD for any odor complaints regarding the facility in the same 3-year period. The BAAQMD found no records of odor complaints regarding the facility (BAAQMD 2018b). Because odor is not an issue at the existing West College Lift Station, it is reasonable to assume that there would be no substantial adverse odor from operations of the proposed Fulton Lift Station. Therefore, the impact would be less than significant.

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?				✓

It is noted that the Project is not anticipated to be constructed for approximately 10 to 15 years and therefore, the conditions of the site may change at the time of project implementation. The below analyses is based on the present conditions of the site.

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 Incorporated)

The Project site was evaluated using online tools and site visits. Resources consulted include a *Biological Resources Assessment Fulton Road Widening* (Wildlife Research Associates and Valerius 2018), *Special-Status Species Potentially Present in the Project Area* (Winzler & Kelly 2007), Delineation of Waters of the U.S. (Valerius 2018), California Natural Diversity Database (CNDDB) completed on March 14, 2018, IPaC, and historic imagery.

Special-status Plant Species

The parcel identified as the new site for the lift station is comprised of a seasonal wetland with the remainder of the undeveloped portion of the property mostly non-native grassland with Harding grass (*Phalaris aquatica*) and wild oats (*Avena fatua*). There are some native plants including California wild rose (*Rosa californica*) and creeping wild rye (*Elymus triticoides*) and landscaped areas (Valerius 2018). The areas along Fulton Road and West College Avenue, where pipeline work is proposed, are generally developed as a roadway, however landscaped garden and ornamental plants are present along the sides of the road associated with residences. Santa Rosa Creek in the project area has a willow (*Salix* spp.) riparian plant community with some fennel (*Foeniculum vulgare*) and blackberry along the banks. There is also rock riprap along the banks. There is little to no wetland vegetation within the creek channel (Valerius 2018).

The new lift station site has been identified by the Santa Rosa Plain Conservation Strategy as an area where "mitigation for listed plants may be required". However, the seasonal wetland on the property does not provide suitable potential habitat for any of the federal or state listed vernal pool plants known to occur in the Santa Rosa Plain (Valerius 2018). While unlikely, other special-status plant species are known to occur in the general area and could be impacted by construction of the lift station, if present. Therefore, the impact would be significant.

During construction, the Project also would either install 3,200 feet of replacement pipe within Fulton Road or implement 5,300 feet of sliplining in West College Avenue. Either activity would occur within the developed roadway and is not anticipated to affect any special-status plant species. When the Project installs the pipeline across the Santa Rosa Creek, it is anticipated that the Project would stay within the existing roadway, or ornamental landscaped areas, and no special-status plants would be impacted. The staging areas would be located within already developed areas and therefore no impacts to plants in the staging areas would occur. The existing lift station is completely developed with hardscape and does not provide habitat to support special-status plants. Therefore, whether the the existing station is demolished or abandon in place, no impacts to special-status plants would occur.

Once completed, the Project would not affect any special-status plant species. No operational impact would occur.

Mitigation Measure BIO-1a: Avoid Loss of Listed or CNPS List 1B Plants and their Habitats

The City shall avoid loss of state and federally listed or proposed plant species, state candidates for listing, CNPS List 1B species, and occupied or critical habitat for these species, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the

City shall compensate for loss as required by the U.S. Fish and Wildlife Service and/or CDFW.

For ground disturbance within vegetated areas (excluding landscape and ruderal areas), reconnaissance-level surveys shall be performed by a qualified botanist or biologist to determine whether the area affected may contain suitable habitat. If habitat for listed or CNPS List 1B plants is not identified during the surveys, then no further mitigation for impacts to target species are necessary under this measure. If the area does contain potential suitable habitat, protocol-level surveys to determine presence or absence of target species shall be conducted prior to construction wherever habitats for these species would be impacted, unless the City assumes presence of the species and implements compensatory measures.

The following measures are examples of those that would be required by the U.S. Fish and Wildlife Service and/or CDFW.

- Listed or List 1B plants within the Project footprint may need to be transplanted to a mitigation site approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site.
- All staging areas may need to be located outside listed or List 1B plant habitat.

Mitigation Measure BIO-1b: Avoid Loss of Sensitive Plant Species

The City shall avoid loss of individuals of a CNPS List 2, 3, or 4 (sensitive) plant species if impacts exceed 10 percent of the known occurrences within Sonoma County. A qualified botanist or biologist shall evaluate proposed sites to determine the potential for CNPS List 2, 3, or 4 plants. If the botanist or biologist determines that the site could support special-status plant species, then surveys for sensitive plant species shall be conducted by a qualified botanist during the bloom period. If special-status plants are identified within the construction area, the City shall attempt to avoid loss by adjusting construction boundaries to avoid sensitive plants.

Special-status Wildlife Species

Wildlife species could have the potential to occur within the vicinity of the Project site. Within one mile of the site, CNDDB occurrences of western pond turtle (*Actinemys marmorata*), California Tiger Salamander (CTS), and American badger (*Taxidea taxus*) have been recorded. CTS is discussed further below. The western pond turtle is often found in rivers, lakes, streams, and ponds. Santa Rosa Creek, and its tributary, provide some habitat upstream and downstream of the Project site suitable for the western pond turtle. However, it is not anticipated that the Project would result in impacts to any areas within Santa Rosa Creek and its tributary. Installation or sliplining of pipeline would occur within the existing developed roadway. The Project would also install the pipeline across Santa Rosa Creek either by installing beneath the creek or by hanging it along the existing bridge. If placement beneath creek was the chosen method, sending and receiving pits would be located away from the creek to ensure that the creek and special-status species are not affected. However, depending on the method of installation below the creek, the process may require use of a mixture of bentonite, a fine clay material, as a lubricant. Drilling near the ground surface, or close to the bed of a surface water body, introduces the potential for “frac-out” in which the pressure of the bentonite or other drilling lubricants generates a surface rupture. The bentonite is non-toxic, but benthic vertebrates, aquatic plants and fish and their eggs can be smothered by the fine particles if bentonite were

discharged into Santa Rosa Creek. As discussed in the Project Description, the contractor would develop a comprehensive "frac-out" plan prior to initiating drilling activities to ensure that the potential for contamination of the surrounding area, including Santa Rosa Creek, from drilling slurry is minimized and that contingency methods are in place. The plan would address how to minimize the potential for frac-out associated with microtunnel activities; provide a method for timely detection of frac-outs; and ensure an organized, timely, and minimum impact response in the event of frac-out and release of drilling mud. A component of the plan would be the requirement for an on-site vacuum truck in the event of a drilling fluid spill. Development and implementation of the measures identified in the "frac-out" plan would protect aquatic species in Santa Rosa Creek, and the impact from potential "frac-out" would be less than significant. The work conducted to cross Santa Rosa Creek would be within the existing developed roadway and therefore it is not anticipated to affect the western pond turtle or other aquatic species.

A tributary to Santa Rosa Creek is located west of the new lift station site. This creek may provide the necessary habitat to support the western pond turtle. Although no work is proposed within this creek, the location of the construction abuts the western pond turtle habitat. Therefore the potential to impact this species exists and is considered potentially significant. Implementation of Mitigation Measure BIO-2 would reduce potential impacts to this species to a less than significant level.

The American badger is often found in dry, open grasslands, fields, and pastures. Although, non-native grasslands exist within the proposed lift station site, the area is surrounded by urban development on three sides. It is not anticipated that the American badger would exist in the vicinity of the site given the density of development (Shefferly 1999), however there is potential for one to occur. Implementation of Mitigation Measure BIO-3 would reduce impacts to American badgers to less than significant.

Fairy Shrimp (*California linderiella*), Coho salmon (*Oncorhynchus kisutch)*, red-bellied newt (*Taricha rivularis*), California red-legged frog (*Rana draytonii)*, Blennosperma vernal pool andrenid bee (*Andrena blennospermatis*), obscure bumble bee (*Bombus caliginosus*), and western bumble bee (*Bombus occidentalis*) were also identified as being within five miles of the Project site (CNDDB 2018). However, suitable habitat for the above-listed species is absent from the site. No vernal pools exist on the site to support fairy shrimp species. The section of Santa Rosa Creek adjacent and within the Project site was not identified as an area that supports Coho salmon and it is unlikely that the species would travel to this portion of the Creek (CDFW 2017). Red-bellied newts are normally found within redwood forest, valley-foothill woodland or mixed conifer habitats and migrates to streams to breed. Suitable forest or woodland habitat is not present within the Project site. The California red-legged frog is located at the edge of the 5-mile radius from the Project site and it is anticipated that there is not enough habitat connectivity for this species to travel to the site (USFWS 2017). Therefore, there is low potential for CRLF to be present within the Project site. The multiple bee species listed as within 5 miles of the Project site are threatened by development. The Project site is located in a developed area and does not provide vernal pools or burrows that are necessary habitat for the vernal pool andrenid bee species. No habitat is present for any bee species (Wildlife Research Associates and Valerius 2018). It is not anticipated that they would be found in proximity to the site. Therefore, a less than significant impact regarding impacts to these species during construction would occur. Once completed, the Project is not anticipated to impact any of the wildlife species with potential to occur in the vicinity. No operational impact would occur.

Mitigation Measure BIO-2:Protect Western Pond Turtle

The City shall ensure that preconstruction surveys for the western pond turtle are conducted by a qualified biologist at the new lift station site. If western pond turtles are found during preconstruction surveys, individuals shall be captured by a qualified biologist and relocated to suitable areas. If preconstruction surveys identify active nests, a qualified biologist shall establish a no-disturbance buffer zone around the nest using temporary orange exclusion fencing. The radius of the buffer zone and the duration of the exclusion shall be determined in consultation with CDFW. The buffer zone and fencing shall remain in place until the young have left the nest, as determined by the biologist.

Mitigation Measure BIO-3: Protect American Badger

The City shall ensure that preconstruction surveys for the American badger nests are conducted by a qualified biologist at the new lift station site. If badger nests are found during preconstruction surveys, nests shall be blocked and individuals given an opportunity to find or make a new nest.

California Tiger Salamander

The CTS is a federally-endangered and State-threatened species. The Project site is within Critical Habitat established for the salamander. According to the Santa Rosa Plain Conservation Strategy, the Project site may contain potential habitat for CTS.

A search of CNDDB records found documented occurrences of the CTS about 0.5 miles away from the Project site (CNDDB 2018). According to the Santa Rosa Plain Conservation Strategy, the Project site is not located within a designated CTS Preservation Area, but is located approximately 0.5 miles northeast of the Wright Preservation Bank (CDFW 2007). CTS presence however, is unlikely due to the existing development throughout a majority of the Project site.

A site-specific CTS habitat assessment has not been conducted, but potential habitat could be present along Fulton Road and the new lift station site. If construction were to impact CTS habitat this would be a significant impact. The following mitigation measure would ensure impacts to CTS and CTS habitat are reduced to a less-than-significant level.

Mitigation Measure BIO-4: Protect California Tiger Salamander

The City of Santa Rosa shall avoid loss of habitat or individuals of CTS, to the extent feasible. Where avoidance of individuals or habitat is infeasible, the City shall compensate for loss as required by the USFWS and/or CDFW. Before ground disturbance within areas of potential habitat of the listed species, reconnaissance-level surveys shall be performed to determine whether the area affected may contain potential habitat. If the area does contain potential habitat, the City shall implement compensatory measures sufficient to ensure that the Project does not substantially reduce the number or restrict the range of the population of CTS.

The following measures are examples of those that would be required by the USFWS and/or CDFW.

- Mitigation ratios for impacts to CTS habitat shall be as required by the USFWS and/or CDFW. A conservation easement shall be placed on the mitigation site to preserve the site in perpetuity as wildlife habitat. A long-term management plan shall be developed for the mitigation site to be approved by the USFWS.

- Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by the USFWS shall be implemented during work within areas where California tiger salamanders may occur.
- Initial ground disturbing construction activities in habitat shall be limited to the dry season (June through October) when salamanders are not moving between terrestrial habitat and aquatic breeding habitat.

Special-Status Birds

Construction of the Project has the potential to impact a number of special-status bird species listed as federal or State species of concern or protected under the federal Migratory Bird Treaty Act. These include the tricolored blackbird (*Agelaius tricolor*), white-tailed kite (*Elanus leucurus)* and yellow rail (*Coturnicops noveboracensis*). The Migratory Bird Treaty Act makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in 50CFR10, including nests, eggs, and young. If birds were to nest in or near the project area during construction activities, the impact would be significant. Implementation of Mitigation Measure BIO-5 would reduce the impact to a less-than-significant level. However, once construction has been completed no impacts to special-status birds would occur.

Additionally, the project area may provide suitable habitat for special-status bats as well. Nearby trees at the new lift station site, along Fulton Road and West College Avenue, and structures at the existing lift station site, may provide roosting habitat for bats. If bats were to roost in or near the project area during construction activities, the impact would be significant. Implementation of BIO-6 would reduce the impact to a less than significant level. During operation it is not anticipated that impacts to bats would occur.

Mitigation Measure BIO-5: Protect Nesting Birds

The City shall implement the following measures to prevent impacts to nesting birds:

- Grading or removal of any vegetation shall be conducted outside the nesting season, which occurs between approximately February 1 and August 31. (No survey is required for work conducted outside this period).
- If grading or vegetation removal between August 31 and February 1 is infeasible and work must occur within the breeding season, a pre-construction nesting bird (both passerine and raptor) survey of the landscaped areas and 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 work shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey.
- If 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.
- The radius of the required buffer zone can vary depending on the species, (i.e., 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 California Department of Fish and Wildlife (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-6: Prevent Disturbance of Roosting Bats

Prior to construction, the City shall have a Bat Habitat Assessment conducted for trees and structures to be trimmed or removed as part of the Project. The Habitat Assessment shall be completed by a qualified biologist (e.g., a biologist holding a California Department of Fish and Wildlife collection permit and a Memorandum of Understanding with the California Department of Fish and Wildlife allowing the biologist to handle and collect bats). 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 to roosts, which may include, but would not be limited to:

- Consultation with the California Department of Fish and Wildlife to determine appropriate measures for protecting bats with young if present, and for implementing measures to exclude non-breeding bat colonies during construction process.
- Phased removal of trees where selected limbs and branches not containing cavities are removed using chainsaws on the first day, with the remainder of the tree removed using chainsaws or other equipment on the second day.

Based on the daytime habitat assessment, and if culvert and site conditions warrant further surveys, additional surveys may be required, e.g. a night emergence survey, or radio-controlled remote vehicle with infrared camera system to determine presence of absence of bats further inside the culverts. If no bats are present during the day, the culverts may be partially blocked with appropriate mesh or netting to prevent subsequent occupation. If bats are present during the day, additional exclusion and eviction efforts would be required based on specific recommendations of a qualified bat biologist in consultation with the California Department of Fish and Wildlife.

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, including wetlands as defined by Section 404 of the Clean Water Act? (Less than Significant)

According to the delineation report, the vegetation communities present include non-native grassland at the new lift station site, landscaped plants and ornamental plants along Fulton Road, and riparian vegetation within the vicinity of Santa Rosa Creek including willow (*Salix spp.)* with some fennel (*Foeniculum vulgare*) and blackberry along the banks.

Wetlands and waters are sensitive natural communities that are evaluated below under impact “c”.

During construction, the Project would require some vegetation removal, however riparian habitat would not be affected. All work within the vicinity of the riparian habitat for Santa Rosa Creek would be conducted within the existing roadway or in the ornamental landscape area, and outside of the

edge of riparian vegetation. No trees are planned for removal. Therefore, a less-than-significant impact regarding effects to riparian habitat or sensitive natural communities would result.

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? (Less than Significant with Mitigation Incorporated)

A literature search was conducted to identify potential wetlands and other waters of the U.S. in the project area. Some of the sources consulted included:

- USGS 7.5 minute Topographic Quadrangle Map
- Detailed topographic/aerial map prepared for the project area
- Soil Survey Report
- County Hydric Soil List

A formal delineation was conducted on January 10 and February 13, 2018. The entire project area was walked and in areas where the topography or vegetation suggested that wetlands could exist were sampled per routine onsite determination methods. The complete delineation report is available in Appendix A.

A total of 0.47 acres of seasonal wetlands are located at the Church Site. Waters of the U.S. and state are located in the vicinity of the Project site within Santa Rosa Creek and its tributary. No impacts are anticipated to occur to the waters of the U.S. and state at Santa Rosa Creek. Construction of the new lift station would result in impacts to the existing seasonal wetlands. Implementation of the following mitigation measure would reduce impacts to a less-than-significant level.

Mitigation Measure BIO-6: Compensate for Loss of Wetlands and Waters

The City shall avoid fill of seasonal wetlands and waters, to the extent feasible. If fill cannot be avoided, the City shall compensate for the loss of seasonal wetland habitat through the purchase of wetland credits at a ratio of 1:1, in an approved mitigation bank within the Santa Rosa Plain so that there is no net loss in wetlands. Required permits from the U.S. Army Corp of Engineers, the North Coast Regional Water Quality Control Board, the California Department of Fish and Game, and the Sonoma County Water Agency shall be received prior to the start of any on-site construction activity. The City shall ensure any additional measures outlined in the permits are implemented.

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)

Fulton Road is already considered an existing barrier to wildlife movement, including CTS, between areas west of the roadway in the Santa Rosa Plain and more urbanized areas east of the roadway. The Project would either install the pipeline or conduct sliplining within the right-of-way. Once completed, neither alteration to the conveyance system would increase the existing barrier or create a new barrier. Similarly, installation of the new lift station would comprise a small section of land adjacent to existing development and is not anticipated to interfere with the movement of wildlife. Santa Rosa Creek may provide a movement corridor for aquatic wildlife. Installation of the pipeline across Santa Rosa Creek would be completed by tunneling or hanging the pipe off the bridge and

would not affect the water way or riparian vegetation and would not impact its function as a wildlife corridor. A less than significant impact regarding wildlife movement would occur.

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

The Santa Rosa General Plan, Citywide Creek Master Plan, and Santa Rosa Design Guidelines provide numerous goals and policies to protect biological resources. The policies require conservation of wetlands and waterways so that there is not net loss of wetlands, preservation of significant vegetation, trees, and biotic habitats, and ensuring construction adjacent to creek channels and riparian corridors is sensitive to the natural environment. As Project construction may impact certain biological resources, it would potentially conflict with applicable City policies and ordinances protecting biological resources. Implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-2, BIO-3, BIO-4, BIO-5 and BIO-6 included above would ensure impacts regarding compliance with the above listed plans are less than significant.

Additionally, the City's tree ordinance (Santa Rosa City Code Chapter 17-24, Ordinance 2858) applies to street trees and other trees within the City. However, the Project would not require any trees to be removed as a result of Project construction. Therefore the tree ordinance does not apply to the Project.

Once completed, the Project would not require ground disturbance or other activities that would conflict with policies or ordinances protecting biological resources. Therefore, no operational impact would occur.

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)

No adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan exists for the project area. 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? (Less than Significant with Mitigation Incorporated)

A cultural resource study, including a records search and a pedestrian survey, was prepared in January 2018 by the Anthropological Studies Center (ASC) at Sonoma State University. As part of the records search the California Inventory of Historic Resources and the National Register of Historic Places were consulted to see if any known historic resources were present within the project area. The records search identified no previously recorded built environment cultural resources within the project area.

The existing West College Lift Station is over 50 years old and is therefore an age-eligible building/structure for consideration on the California Inventory of Historic Resources and the National Register of Historic Places. If the structure were found to be eligible, then demolition of the structure would be considered a significant impact. Therefore, the potential impact to an age-eligible structure would be significant.

Mitigation Measure CR-1: Manage Potential Historical Resource

The City shall ensure that a qualified Architectural Historian or Historical Architect evaluate the existing West College Lift Station just prior to demolition or abandonment of the

building. This evaluation cannot be conducted adequately at the time of this IS/MND, because the lift station is not planned for demolition or abandonment for another 10 to 15 years. If the evaluation finds that the West College Lift Station qualifies as a historical resource as defined in CEQA Guidelines section 15064.5(a), then the City shall not demolish any historical part of the facility, but instead abandon the facility in place. Abandonment of the facility shall be done in accordance with the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

With regard to potential subsurface historic resources, refer to Impact b), below.

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

Consistent with General Plan policy HP-A-1, an Archaeological Resources Study was prepared for the Project (ACS 2018). The study assessed the potential for surficial and/or subsurface archaeological resources in the project area through completion of the following:

- Records and literature search at the Northwest Information Center (NWIC) administered by the State of California Office of Historic Preservation;
- Further literature review of publications 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 for information on Native American cultural resources in the area and contact information for the appropriate tribal communities;
- Contact with appropriate local Native American tribes; and
- Pedestrian archaeological survey of the project area.

The records and literature search found no previously recorded archaeological resources within the project area. However, the NAHC's review of the Sacred Lands File indicated the potential for a sacred site to be in the Project area. Refer to the Tribal Cultural Resources section for the analysis and mitigation related to this site.

In addition, ASC conducted a pedestrian survey of accessible portions of the project area on January 10 and February 15, 2018. One isolated obsidian flake was identified outside of the project area as a result of the pedestrian survey. The obsidian flake was located within a heavily disturbed, landscaped area. No archaeological resources were found within the Project site or proposed staging areas.

Further research indicates that there is a low possibility that unrecognized surficial resources are present within the project area, however, the Project area has a moderate potential for subsurface historic or pre-historic archaeological deposits within the project area. The subsurface deposits are likely obscured by alluvium from Santa Rosa Creek, landscaping vegetation, wood-chip or gravel ground cover, road and sidewalk pavement and concrete, or other factors. If unknown archaeological resources are encountered during construction activities, a significant impact could occur. Implementation of Mitigation Measure CR-1 below would reduce the impact to archaeological resources to a less-than-significant level as well as ensure consistency with the General Plan policies related to protecting Native American Heritage.

Mitigation Measure CR-2: Protect 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 Incorporated)

A review of the soils within the Project area identified several soil types present including Holocene alluvium, late Pleistocene alluvium, younger alluvium, and Pliocene beds of Huichica and Glen Ellen Formations. Older alluvium has yielded vertebrate fossils in Sonoma County and throughout California. The Project area includes older alluvium, so the possibility of encountering a paleontological resource during construction cannot be completely discounted. The impact related to the potential disturbance or damage of previously undiscovered paleontological resources, if present, would be significant. Implementation of Mitigation Measure CR-2 would reduce impacts 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-3: Protection of Paleontological Resources

In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities shall be diverted away from the discovery within 50 feet of the find, and a professional paleontologist shall be notified 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 Incorporated)

Construction would involve ground-disturbing activities within the confines of the Project site. While there is no indication human remains are present within the site, the possibility of encountering archaeological resources that contain human remains cannot be discounted. Therefore, impacts related to the potential disturbance or damage of previously undiscovered human remains, if present, is considered potentially significant.

Mitigation Measure CR-4: Protection of Human Remains

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:				
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.				✓
ii) Strong seismic ground shaking?			✓	
iii) Seismic related ground failure, including liquefaction?			✓	
iv) 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 site is not located within an Alquist-Priolo fault zone (Santa Rosa 2009). There would be no impact.

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

As discussed in the City of Santa Rosa General Plan, the project area is susceptible to strong ground shaking due to seismic activities primarily along the Healdsburg/Rodgers Creek fault, which is the nearest active fault to the project area. Earthquake engineering design as required by the Uniform Building Code would reduce the probability of damage to the facilities during a seismic event. As described in Section 1.6.1, Environmental Protection Actions Incorporated into the Project, as part of the project design process, the City would engage a California-registered Geotechnical Engineer to conduct a design-level geotechnical study for the project. The City would design the Project to comply with the site-specific recommendations made in the project's geotechnical report, and thereby reduce earthquake impacts to less than significant.

a.iii, a.iv, c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, expose people or structures to on, or off, site landslide, lateral spreading, subsidence, seismic-related ground failure, including liquefaction, or collapse? (Less than Significant)

Soils in the project area are of alluvial origin (USGS 2006a). These alluvial deposits are fine- and coarse-grained deposits from Santa Rosa Creek or that are typical of alluvial fan, floodplain, overbank, and/or inter-fluvial marshy basin deposits (USDA 1972).

Mapping of liquefaction susceptibility in the San Francisco Bay Region indicates a moderate liquefaction potential in the project area (USGS 2006b). Liquefaction-induced settlement of soil underlying the pipeline would generally be expected to be distributed along the pipeline and the risk of differential effects that could result in pipe rupture is considered low.

Although the Project is located in a predominantly flat area with little or no potential for landslides (USGS 1997), it is adjacent to a creek where seismic-induced sloughing could occur. However, as described in Section 1.6.1, Environmental Protection Actions Incorporated into the Project, as part of the project design process, the City would engage a California-registered Geotechnical Engineer to conduct a design-level geotechnical study for the Project. The City will design the Project to comply with the site-specific recommendations made in the Project's geotechnical report. This will include design in accordance with the seismic and foundation design criteria, as well as site preparation and grading recommendations included in the report. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project, and will be implemented during construction. Therefore, impacts would be less than significant.

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

Areas to be disturbed at the existing lift station and pipelines are hardscape or soils that have been highly altered from their original natural state. Soils at the site of the new lift station site have likely been altered substantially due to grading and the channelization of the tributary to Santa Rosa Creek. 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 includes 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.

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? (Less than Significant)

According to the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Zamora, Yolo, and Pajaro soils predominate in the project area and may be moderately expansive (USDA 1972). Because the soils are only moderately susceptible to expansion, there would not be substantial risk to life or property. Standard engineering design for construction in areas subject to expansive soil would include removal of expansive soils, stabilization of soils, and other actions address the presence of expansive soils. However, as described in Environmental Protection Actions Incorporated into the Project, as part of the Project design process, the City would engaged a California-registered Geotechnical Engineer to conduct a design-level geotechnical study for the Project. The City would design the Project to comply with the site-specific recommendations made in the Project's geotechnical report. This will include design in accordance with the seismic and foundation design criteria, as well as site preparation and grading recommendations included in the report. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project, and will be implemented during construction. Therefore, impacts would be less than significant.

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 does not involve the use of septic 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?				✓

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006 requires California to reduce its GHG emissions to 1990 levels by 2020 (CARB 2014). In June 2012, the City of Santa Rosa adopted a community Climate Action Plan (CAP) which examines community-wide sources of greenhouse gas (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 SEIR, 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 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 emission 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 include: Measure 1.4-Tree Planting and Urban Forestry; and Measure 6.1-Recycling and Composting; Measure 7.2-Wastewater and Water Operations; and Measure 9.2-Construction Emissions. An evaluation of the Project's compliance with the applicable measures and implementing actions is provided below.

Measure 1.4-Tree Planting and Urban Forestry

CAP Measure 1.4 includes planting and maintaining trees on private property, streets and open space areas. Implementing Actions 1.4.2 and 1.4.3 require compliance with the City's tree preservation ordinance and provision of street trees. If the existing lift station is demolished, the site would be replanted with trees, shrubs, and/or grasses. Additionally, once the new lift station is constructed, the station would be shielded from view by planting trees around the perimeter of the station. No trees

are anticipated to be removed in order to implement the Project. Therefore, the Project would be in compliance with CAP Measure 1.4.

Measure 6.1-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 7.2-Wastewater and Water Operations

CAP Measure 7.2 focuses on improving the efficiency of water and wastewater facilities and operations serving the Santa Rosa Community. The Project would correct operational and wet well deficiencies at the West College Lift Station. The wet well is undersized causing the pumps to cycle on and off excessively which significantly decreases motor life. The wet well also accumulates grease because of its configuration. Two of the existing pumps are antiquated and are prone to plug with debris. Project implementation would allow the new sewer lift station to operate in a more efficient manner. Therefore, the Project would be compliant with CAP Measure 7.2.

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 Operation 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 is consistent 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) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less than Significant)

Construction of the lift station, installation of the pipeline, and demolition of the existing lift station would require the use of typical materials associated with construction activities – diesel fuel, gasoline, oil, hydraulic fluid, engine exhaust, solvent for welding PVC, asphalt and binders, and paint. Any hazardous materials used in construction of the Project would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials. Impacts would be temporary and less than significant.

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? (Less than Significant with Mitigation Incorporated)

The existing West College Lift Station and pipelines could have asbestos- or lead-containing materials. If present, these materials must be handled according to applicable federal, state, and local requirements to protect against the inadvertent release of asbestos fibers or lead dust into the air. If asbestos fibers or lead dust were released, the impact would be significant.

Implementation of Mitigation Measure HAZ-1 would reduce risk of inadvertent release of asbestos or lead by identifying their presence and ensuring that demolition activities are in compliance with laws regulating the proper abatement, transportation, and disposal.

Mitigation Measure HAZ-1: Assess and Manage Hazardous Materials

Prior to building demolition, the City shall ensure that a registered environmental assessor or a professional engineer perform a hazardous building materials survey of the West College Lift Station The survey shall be designed to identify any asbestos-containing materials, lead-based paint, electrical equipment containing Polychlorinated Biphenyls (PCBs), fluorescent lights containing mercury, or fluorescent light ballasts containing PCBs or di(2-ethylhexyl)phthalate (DEHP). If any friable asbestos-containing materials, lead-containing materials, or other hazardous components of building materials are identified, adequate abatement practices, such as containment and/or removal, in accordance with applicable regulations for the handling and removal of these materials, shall be implemented prior to demolition. Any PCB-containing equipment or fluorescent lights containing mercury vapors shall also be removed and disposed of in accordance with applicable regulations.

A written plan or notification of intent to demolish buildings shall be provided to the BAAQMD at least ten working days prior to commencement of demolition, even if no ACMs are present. If asbestos is detected, the demolition and removal of asbestos-containing building materials shall be subject to applicable California Occupational Safety and Health Administration (Cal/OSHA) and BAAQMD regulations (Regulation 11, Rule 2). If lead-based paint is identified, then federal and State construction worker health and safety regulations shall be followed during demolition activities, including Title 17 of the CCR, Sections 35001 through 36000. If loose or peeling lead-based paint is identified, it shall be removed by a qualified lead abatement contractor and disposed of in accordance with existing hazardous waste regulations.

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)

There are no schools within one-quarter mile of the proposed pipeline or either lift station. As indicated above, the use of ordinary equipment fuels and fluids during construction at a staging area would create a minor potential hazard. Nonetheless, the potential of a spill would remain small, and if a spill were to occur, it would be controlled, cleaned up, transported, and disposed of in accordance with county and state regulations, with minimal environmental impact. The Project's SWPPP would contain BMPs addressing spill clean-up. Any impact would be temporary and less than significant. No mitigation is necessary.

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? (No Impact)

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 the Project alignment, and none was found. No impact would occur.

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 or private airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (No Impact)

The Project is not located within an airport land use plan, within two miles of an airport, or within 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 2017b) 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 not located within the Santa Rosa Wildland Urban Interface zone, or within a CAL FIRE designated fire hazard severity zone (Santa Rosa 2009, CAL FIRE 2008). 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, f) Violate water quality standards or degrade water quality? (Less than Significant with Mitigation)

Water quality standards and objectives are achieved primarily through the establishment of NPDES permits and waste discharge requirements. Therefore, to evaluate whether construction or operation of the Project would result in a violation of water quality standards or waste discharge requirements, project compliance with potentially applicable NPDES permits or waste discharge requirements is evaluated.

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, discharge of groundwater from dewatering, or the accidental release of hazardous construction chemicals. The majority of the new forcemain would be installed using open-trench 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. Tunneling (either jack and bore or microtunneling) would be required to install a pipeline under Santa Rosa Creek along Fulton Road. If used, microtunneling employs 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. As discussed in the Project Description, a Storm Water Pollution Prevention Plan (SWPPP) would be developed as part of the Project. The SWPPP would identify the best management practices necessary to prevent adverse impact to water quality including violation of water quality standards and waste discharge requirements. The treatment provided by the storm water management measures would reduce the potential for degradation of water quality in surface waters to a less-than-significant level.

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. Although not expected, adjoining properties along the pipeline alignments may 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 overall impact on water quality. Groundwater from dewatering from lift station construction or forcemain installation would most likely be directed to the City's existing sanitary sewer system, but could be discharged to land application or to surface waters. Discharges to the sewer, to land, or to surface waters could violate water quality standards or waste discharge requirements and could be a significant impact.

Implementation of Mitigation Measure HWQ-1, would reduce potential impacts on water quality standards and waste discharge requirements from dewatering activities to a less-than-significant level by ensuring compliance with applicable waste discharge requirements and other permit requirements.

Mitigation Measure HWQ-1: Manage Construction Dewatering

If construction dewatering is required, the City and its contractor 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 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 implements the Best Management Practices/Pollution Prevention Plan during construction dewatering activities, including visual inspections to ensure overall compliance.

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 may require temporary groundwater dewatering to create reasonably dry work areas. Temporary groundwater dewatering would involve the pumping of groundwater in a localized area to lower the water level to just below the bottom of the excavation. Such temporary dewatering would have an effect on localized groundwater levels in the immediate vicinity of an excavation area; however, because construction would be temporary, prolonged lowering of the groundwater levels in any one location 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 and would not result in an increase in population or employment that would indirectly increase groundwater demand. The small increase in impervious area would not create a deficit in aquifer volume, cause the lowering of groundwater levels, or substantially interfere with groundwater recharge. The operational impact would be less than significant.

c, d, e) 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, siltation, or flooding on- or off- site, exceedance of the capacity

of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff? (Less than Significant)

Because construction of the Project would disturb greater than one acre of soil, the City of Santa Rosa would be required to obtain coverage under the Construction General Permit, which would require development and implementation of a SWPPP as part of the Project. Implementation of a construction SWPPP would limit offsite erosion and siltation.

The new lift station would not be expected to cause on- or off-site flooding given the relatively small increase in impervious surface and that on-site stormwater would be directed to the storm drain, and not allowed to leave the site. The City has determined that the existing stormwater infrastructure near the site has capacity for this small facility. The roadway surface would be returned to pre-construction conditions after the installation of the forcemain in Fulton Road, or sliplining in West College Avenue, therefore not changing the drainage patters of the existing roads. 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 is not 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 is not located within a dam inundation zone (Santa Rosa 2009). No impact would occur.

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

The Project site is not located near a large 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 construct a new sewer lift station on a currently undeveloped portion of a developed parcel of land and install a new underground forcemain or slipline existing underground forcemains on the western edge of Santa Rosa. The Project would not physically 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)

Applicable land use plans include the City of Santa Rosa General Plan and Zoning Ordinance. Specific General Plan policies and zoning restrictions adopted for the purpose of avoiding or mitigating environmental effects are evaluated in this document under the corresponding issue areas; for example, policies related to noise are evaluated in Section 3.12 Noise.

The new sewer lift station is located on a parcel with a General Plan designation of Very Low Density Residential and a zoning designation of PD (Planned Development). Public facilities such as the lift station are allowed in all General Plan land use designations and zoning designations. Therefore, no conflict would occur.

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

There are no adopted habitat conservation plans or natural community conservation plans in or near the project area. Therefore, no conflict 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 (California Geological Survey 2013). No impact would occur.

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 2016, 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 following analyses are based on the noise report prepared for the Project (Illingworth & Rodkin 2018), including a noise monitoring survey conducted from January 12 to 16, 2018. The new lift station parcel would be located near residences on the north, northwest, and south; the parcel also currently supports the Thanksgiving Lutheran Church. The existing lift station site would have adjacent residences to the east and south. The pipelines corridors are lined with residences, as well as some retail, office, and institutional uses. Traffic noise along Fulton Road and West College Avenue 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? (Less than Significant with Mitigation)

Section 17-16.120 of the City's Noise Ordinance limits noise levels produced by stationary mechanical equipment at single-family residential property lines to 60 dBA during daytime hours (7:00 a.m. to 7:00 p.m.), to 55 dBA during evening hours (7:00 p.m. to 10:00 p.m.), and to 50 dBA at night (10:00 p.m. to 7:00 a.m.). The City Ordinance does not set limits for construction noise.

The proposed project would include mechanical equipment such as pumps and a standby generator. Residential property lines would be as close as 44 feet away from where mechanical equipment may be located and 75 feet from the standby generator.

Pumps to be installed on site would have a power rating between 20 and 40 horsepower. Three of these pumps are to be installed in a 16- by 22-foot vault located 32 feet underground. The vault would be topped with a traffic-rated steel lid for access during maintenance accounting for 20 decibels worth of attenuation from the mechanical vault. Noise levels due to the operation of the pumps are calculated to reach 45 dBA at the closest residential property line. This operational noise level would not exceed the City's Noise Ordinance limits day or night.

Although no standby generator specifications were given at the time of this study, a credible worst-case scenario would expect noise levels up to 85 dBA at a distance of 3 feet. This scenario assumes only one standby generator is used with an attenuated enclosure and a maximum power rating of no more than 150 kilowatts. According to current preliminary site plans, this standby generator could possibly be located as close as 74 feet away from the nearest residential property line. At this distance, typical noise levels from an attenuated 150-kilowatt generator would be expected to be up to 46 dBA. This operational noise level would not exceed the City's Noise Ordinance limits day or night. However, because the size and specifications of the generator are not known at this time, noise levels from the emergency generator, even though temporary, could exceed the Noise Ordinance standards and be a significant impact.

Regarding exceedance of standards established in the Santa Rosa General Plan, please see Impact c) below.

Mitigation Measure NOI-1 would reduce potentially significant noise levels from a standby generator to less than significant by requiring the equipment selection and design to meet the City's Noise Ordinance standards.

Mitigation Measure NOI-1: Manage Noise Levels from Standby Generator

The City shall select a standby generator and design it's enclosure in such a manner that it's operation meets the City's Noise Ordinance standards.

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

Construction of the Project may generate excessive vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities with the potential to generate perceptible vibration levels would include the removal of pavement and soil, shoring, the compacting of backfill, and tunneling under Santa Rosa Creek on Fulton Road.

The California Department of Transportation recommends a vibration limit of 0.5 in/sec peak particle velocity (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 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 adjoin the Project area, details regarding the residences surrounding the Project area are not known. For the purposes of this study, therefore, groundborne vibration levels exceeding 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 at a distance of 25 feet from construction equipment and at the nearest sensitive receiver locations at each construction area. Major equipment anticipated during Project construction would include: an excavator, a crane, a vibratory pile driver, a loader, a forklift, dump trucks, concrete trucks, paving equipment, and a compactor. Ancillary equipment would include welders, air compressors, concrete saws, pumps, water trucks, delivery trucks, tunneling devices, and various passenger vehicles. A review of the proposed equipment and the vibration level data provided in Table 3.12-1 indicates that, with the exception of vibratory pile driving, vibration levels generated by the proposed equipment would be below the 0.3 in/sec PPV criterion used to assess the potential for cosmetic or structural damage to nearby buildings within a distance of 25 feet. Within a distance of 15 feet, vibration levels are expected to be above 0.3 in/sec PPV. Tunneling would result in less vibration than open trench construction activities because tunneling machines are not high-powered vibratory devices, and the depth of the underground tunnel increases the distance between the equipment and structures on the surface.

Table 3.12-1 Vibration Source and Received Levels for Construction Equipment

Equipment		PPV at 15 ft.[1] (in/sec)	PPV at 25 ft. (in/sec)	PPV at 50 ft.[2, 3] (in/sec)
Pile Driver (Vibratory)	upper range	**1.287**	**0.734**	**0.342**
	typical	0.298	0.170	0.079
Clam shovel drop		**0.354**	0.202	0.094
Hydromill (slurry wall)	in soil	0.014	0.008	0.004
	in rock	0.030	0.017	0.008
Vibratory Roller		**0.368**	0.210	0.098
Hoe Ram		0.156	0.089	0.042
Large bulldozer		0.156	0.089	0.042
Caisson drilling		0.156	0.089	0.042
Loaded trucks		0.133	0.076	0.035
Jackhammer		0.061	0.035	0.016
Small bulldozer		0.005	0.003	0.001

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

Notes: **Bold** = Over Limit
[1] Representing nearest residential receptor during construction of lift station.
[2] Representing nearest neighbors on Gads Hill Street during tunneling
[3] Representing nearest neighbors on Fulton Road or West College Avenue during pipeline trenching

Vibratory pile driving may be required to shore the excavated areas (e.g., open trenches and sending/receiving pits). Vibration levels would typically be below 0.3 in/sec PPV when located at a distance of 25 feet or more from sensitive structures, but if the upper range of vibration levels from vibratory pile driving occurs, the vibration levels would exceed the 0.3 in/sec PPV threshold level within a distance of approximately 75 feet. Residences along Fulton adjacent to the lift station would be within 75 feet of potential vibratory pile driving activities. Therefore, the Project has the potential to temporarily expose structures to excessive groundbourne vibration.

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.

Implementation of the following mitigation measure would reduce impacts to a less-than-significant level by determining the sensitivity of nearby structures and requiring the use of alternate construction equipment where needed to reduce vibration below significant levels.

Mitigation Measure NOI-2: 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. Because construction is expected to occur 10 to 15 years from the date of this report, it is appropriate to prepare a study at the time of construction to accommodate the aging of buildings and the change in vibration of construction equipment. 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? (Less than Significant)

Based on Policy NS-B-14 of the City of Santa Rosa General Plan, a significant impact would occur if the 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. Due to the nature of the facility and because the lift station and pipelines are replacing similar facilities in the same area, the Project would not increase operational traffic. Operational noise levels associated with the proposed pumps would reach 52 dBA DNL at the nearest residential property line assuming continuous operation over a 24-hour period. Operational noise levels would increase ambient noise levels by up to 2 dBA DNL, but this noise level increase would not be considered substantial, nor would noise levels exceed the City's normally acceptable noise level threshold of 60 dBA DNL for residences. This is a less-than-significant impact.

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

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occurring during noise-sensitive times of the day (e.g., early

morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

The City of Santa Rosa does not define allowable construction hours in the General Plan or Municipal Code, however temporary construction noise is considered a significant impact where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA L_{eq} in outdoor activity areas at noise-sensitive uses in the project vicinity for a period exceeding one year. These temporary noise thresholds are typically applied at property lines during daytime construction activities.

Construction noise would be generated by the operation of vehicles and equipment during the construction of the lift station, demolition of the existing lift station, and installation of the sewer line or sliplining. Specific construction activities would include pavement removal, excavation, shoring, pipeline installation via typical open trench methods or tunneling, sliplining, backfill operations, the repaving of the portion of the street disturbed by the project, and construction of lift station buildings. Table 3.12-2 presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet. Hourly average noise levels generated by public works-type projects typically range from 78 to 89 dBA Leq measured at a distance of 50 feet from the center of a busy construction site. The highest maximum noise levels generated by project construction would typically range from about 80 to 90 dBA Lmax at a distance of 50 feet from the noise source.

Table 3.12-2 Typical Ranges of Exterior Noise Levels at 50 Feet from Construction Sites (dBA L_{eq})

	Type of Typical Construction Project							
	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

Note: These are exterior noise levels at a distance of 50 feet from a construction site assuming different types of construction (e.g. domestic housing, etc.)
I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

The predominant sources of noise during tunneling would include excavators, trucks, a crane, and other support equipment including pumps and generators, and a crane. The construction of sending/receiving pits generates average equivalent noise levels ranging from approximately 68 to 71 dBA L_{eq} at distances of 50 feet. The operation of tunneling equipment generates an average noise level of 73 dBA L_{eq} at a distance of 50 feet. For open trench construction, the average noise level at a distance of 50 feet would be 77 dBA L_{eq}. (Illingworth & Rodkin 2018)

Proposed Lift Station

The ambient noise level during the daytime hours at the proposed lift station site is about 51 dBA L_{eq}, resulting in an impact threshold for residences to the South of 60 dBA L_{eq}. Construction noise levels at the lift station are expected to reach 88 dBA L_{eq} at the nearest residence to the south, exceeding the threshold by 28 dBA L_{eq} during peak noise construction times. Although it may take two construction seasons, active construction of the new lift station would occur for less than a year, and therefore noise impacts would be less than significant.

Existing Lift Station Demolition

The ambient noise level during the daytime hours at the existing lift station site is about 69 dBA L_{eq}at a distance of 50 feet. The nearest receptor to possible demolition noise is approximately 75 feet to the south. At this distance, ambient noise levels are 68 dBA, resulting in an impact threshold of 73 dBA Leq. At a distance of 75 feet, noise levels from demolition of the existing West College Lift Station are expected to reach 88 dBA L_{eq}, exceeding the threshold by 15 dBA L_{eq} during peak noise construction times. Demolition of the existing lift station would extend over approximately one month, and therefore noise impacts would be less than significant.

Trenching/Pipe Installation or Sliplining

Trenching is expected to occur along Fulton Road between West College Avenue and West Third Street, or alternately, sliplining would occur along West College Avenue between Fulton Road and Stony Point Road. The ambient daytime noise level along on Fulton Road is about 67 dBA L_{eq} at a distance of 104 feet from the center of the road. At a distance of 57 feet from the center of the road, the ambient daytime noise level is 70 dBA, resulting in an impact threshold of 75 dBA L_{eq} for adjacent residences. Construction noise levels expected along Fulton Road due to trenching and other construction activities are expected to reach 76 dBA L_{eq} at a distance of 57 feet, exceeding the daytime threshold at nearby residences during peak noise construction times. Noise impacts along West College Avenue from sliplining would be similar or less. Construction of the pipeline would proceed at approximately 100 feet per day, and sliplining would proceed at approximately 500-1,000 feet per day. Overall, pipeline construction would extend for four to six months, but individual receptors would be subject to construction noise only while construction was near them. Therefore, noise impacts would be less than significant.

Santa Rosa Creek Tunneling

Tunneling is expected to occur just north of Santa Rosa Creek along Fulton Road. The daytime ambient noise level in this area is about 67 dBA L_{eq} at a distance of 104 feet from the center of Fulton Road. At a distance of 50 feet from the center of the road, the ambient daytime noise level is 69 dBA L_{eq} resulting in an impact threshold of 74 dBA L_{eq} for adjacent residences. Construction levels due to tunneling in this area are expected to reach up to 73 dBA L_{eq} at a distance of 50 feet. The nearest residence to the tunneling area on Fulton Road has the potential to be within 45 and 75 feet from tunneling activities. At these distances, noise levels due to tunneling would be expected to be between 70 and 74 dBA L_{eq}. If tunneling activities occur at a distance of 65 feet or greater from the nearest property line, noise levels will remain under the construction noise impact threshold. In any case, the noise associated with tunneling would extend for a few weeks, and therefore would be less than significant.

Daytime noise levels at receptors bordering the several Project areas are expected to exceed 60 dBA L_{eq} and exceed the ambient noise environment by at least 5 dBA L_{eq} at noise sensitive uses in the project vicinity. However, construction activities are anticipated to extend for one year or less at a

given sensitive receptor. As the construction would be temporary, the project would, therefore, have a less-than-significant impact.

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

There are no airports or private airstrips in the vicinity of the Project site. The Project is not within an airport land use plan. Therefore, 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 City has initiated the Project to increase reliability of the lift station. The Project would therefore not result in population growth, but would make the existing system more efficient and easier to maintain. The Project would not provide additional residential buildings and no permanent job opportunities would be created from the Project that would then require employees to move to Santa Rosa. No impact would occur.

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

No housing or people would be displaced as a result of the proposed Project. No impact regarding the displacement of housing or people, or requiring construction of replacement housing 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 or facilities to maintain acceptable service ratios, response times, or other performance objectives. The Project would 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 increase in parks and other public facilities as it would not induce population growth. The Project would not require the expansion of recreational facilities to maintain acceptable service ratios or 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 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 needed for the Project, additional analysis is provided which assesses the potential for construction to substantially decrease the performance and safety of the roadway.

During construction, the normal functionality of Fulton Road in the project area would be altered due to the need for temporary lane closures. 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 site. The number of construction-related vehicles traveling to and from the Project site would vary on a daily basis, however, as described above in Section 1.1.5, Project Construction, at the peak of the construction phase, the Project may require 75 trips of combined employee and haul trips per day. 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. Construction activities would create potential conflicts between construction vehicles and cars, school buses, and bicyclists / pedestrians. However, the Project contractor would be required to prepare and implement a Traffic Control Plan, as described in the Project Description. This plan would include a work area access plan detailing access to each portion of the project area, including those properties which may experience temporary delay or disruption of access. Detours for emergency vehicles, bus routes and stops and pedestrian/bike paths, if necessary, would be included in the Plan and approved by the City With the implementation of the Traffic Control Plan, a less-than-significant impact would occur.

Operation and maintenance of the lift station and pipelines would be similar to the operation and maintenance of the existing lift station and pipelines. No increase in trips related to pump maintenance would occur, although vehicles would be required to slightly alter their route to the new location. Therefore, a less-than-significant impact during the operational phase 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 2016), and no conflicts 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 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)

Operation of the Fulton Road Lift Station would not increase traffic hazards. The lift station would be located adjacent to the existing Thanksgiving Lutheran Church. Access to and from the site would be gained from the parking lot of the church. Entry to and exit from the parking lot is controlled by a stop light. Therefore, entry and exit to the site would not introduce new hazards or incompatible uses to the site or project area. Once installed, the pipelines would be located completely underground and would not pose a hazard to any vehicle, bicyclist, or pedestrian in the vicinity. No impact would occur.

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

Construction of the lift station and installation of the pipeline may temporarily slow emergency response times. Fulton Road and West College Avenue would remain open during construction activities, however there would be lane closures to accommodate construction. However, the lane closures could result in delays for emergency response vehicles or temporarily block access to cross streets. The contractor would develop a Traffic Control Plan as part of the Project, which would include notification of emergency responders and a work area access plan detailing access to each portion of the project area, including those properties which may experience temporary delay or disruption of access. With implementation of the Traffic Control Plan, a less-than-significant impact would occur.

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 Incorporated)

There are four transit agencies that serve Santa Rosa. *Golden Gate Transit* is oriented mainly to commuters traveling to Marin County and San Francisco. Because Golden Gate bus routes are not along the proposed pipeline alignment, construction of the pipelines would not impact Golden Gate Transit.

Sonoma County Transit is the primary transit system that serves the County. Route 20 East includes Fulton Road and may be affected by construction.

Sonoma-Marin Area Rail Transit also has two stations within City limits, however, neither the stations nor the rail line is in the vicinity of the Project and therefore would not be impacted.

Santa Rosa City Bus operate 15 routes within the City limits. Route 6, which includes Fulton Road, and West College Avenue, may be affected by construction. There are three City Bus stops posted in or adjacent to the construction area.

The contractor would develop a Traffic Control Plan as part of the Project which would facilitate the movement of traffic and transit during construction. One bus stop along the western side of Fulton Road would be directly affected, if installation of the pipeline within Fulton Road takes place. The bike lanes along both sides of Fulton Road and West College Avenue, may also be temporarily affected. The Traffic Control Plan would ensure that public transit is uninterrupted and would move bus stops and implement detours if necessary.

Furthermore, the installation of the pipeline across Santa Rosa Creek may result in a temporary impact regarding the users of the Santa Rosa Creek Trail (both on the north and south sides of the Creek) in the vicinity of Fulton Road. It is anticipated that this section of Fulton Road would be under construction for a period of 30 days and would temporarily impact trail access. This would temporarily be in conflict with the General Plan policies that support alternative modes of transportation. Implementation of Mitigation Measure TR-1 would reduce this impact to a less-than-significant level.

Mitigation Measure TR-1: Santa Rosa Creek Trail Pedestrian Access

The City shall ensure that a traffic flagger is available to assist bicyclists and pedestrians crossing Fulton Road from the Santa Rosa Creek Trail, if feasible. If construction does not allow for bicyclist and pedestrian access across Fulton Road, a trail detour shall be put in place for the duration of construction. The approximately 4.5-mile detour would extend from

Willowside Road to Stony Point Road, where the pedestrians and bicyclists could resume use of the Santa Rosa Creek Trail.

Operation of this Project would not conflict with the Santa Rosa Bicycle and Pedestrian Master Plan. Bike lanes on either side of Fulton Road and West College Avenue would continue to operate, similar to existing conditions. Once construction is completed, the Santa Rosa Creek Trail would continue to be available to the public as an alternative mode of public transportation. The General Plan policies also encourage alternative modes of transportation. The Project would not conflict with the above mentioned plans or with any other alternative transportation plans, policies, or programs set forth by the City, county, or state during operation. Maintenance of the new lift station would be consistent with existing conditions. The Project does not conflict with such plans, policies, and/or programs. A less than significant impact would occur.

3.17 Tribal 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 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)?		✓		
b) 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 Incorporated)

On March 7, 2018, the City notified the Lytton Rancheria of California and the Federated Indians of Graton Rancheria (FIGR), regarding the Project in accordance with Assembly Bill 52 (AB52). Each tribe replied within 30 days of the notification letter. The FIGR requested consultation for the Project under AB52 as there is potential for tribal cultural resources to occur at or near the Project site.

As described in Section 3.5, Cultural Resources, an Archaeological Resources Study was prepared for the Project (ASC 2018). 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.

The records search, conducted by the NAHC, of the Sacred Lands File found that sacred resources exist within the project area. The NAHC listed groups and individuals who might provide additional information.

ASC sent letters to those groups and individuals on January 10, 2018. Although several responses were received, none provided specific mitigation measures regarding the sacred site, but it was suggested that the site has potential for tribal cultural resources to be found within the project area. Letters to the respective Native American groups and individuals were sent out again by ASC on February 15, 2018 with an updated project area map. On March 5, 2018, the FIGR replied that the general area has tribal cultural resources, some of which still likely remain intact while some may be redeposited and spread throughout the area. During the May 16, 2018, site visit FIGR indicated the current conceptual location for the lift station would likely avoid known tribal cultural resources. However, the proposed layout is conceptual, and construction of the project may not occur for 10 to 15 years. At this time, it is not known the type or extent of sacred resources or tribal cultural resources that may be present on the site; therefore, we conclude that the project would potentially have a significant impact on a tribal cultural resource, if such a resource is present within the area to be disturbed. However, Mitigation Measure TCR-1 would mitigate this impact to a less-than-significant level.

Mitigation Measure TCR-1: Protect Tribal Cultural Resources

The City shall solicit additional information and coordinate with the Federated Indians of Graton Rancheria (FIGR) as design details are developed prior to construction. This will include notification of, and opportunity to observe, geotechnical exploration that may occur in support of the design process. Additional information will be collected and analyzed to determine the appropriate measures to avoid or protect tribal cultural resources during construction. This information will be coordinated with the Tribes seeking further consultation for this Project.

A Native American monitor shall be present during construction, if the local Native American tribe requests. If potential tribal cultural resources are uncovered during construction, the City shall halt work and workers shall avoid altering the materials and their context. Project personnel shall not collect cultural materials. A representative of the FIGR will be notified, if not already present. If, after coordination with the Tribe, the City determines that the find potentially qualifies as a tribal cultural resource for purposes of CEQA (either per CEQA Guidelines Section 15064.5 or per the City), all work must remain stopped in the immediate vicinity to allow evaluation of any materials and recommendation of appropriate treatment. Avoidance of impacts to the tribal cultural resource is preferable. In considering any suggested measures to mitigate impacts to tribal cultural 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 Tribe (e.g., reburial of resources) shall be instituted. 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? (Less than Significant with Mitigation Incorporated)

Dewatering may be required during construction of the lift station or during installation of the pipeline. Discharge of the groundwater could potentially violate treatment requirements causing a significant impact.

Following construction the Project would not alter the existing amount of wastewater generated nor result in the need for new treatment methods. The Project would not directly or indirectly induce population growth in the community and would not increase the amount of wastewater generated.

Therefore, the Project would not cause an exceedance of wastewater treatment requirements. A less-than-significant impact would occur.

Mitigation Measure HWQ-1 would require compliance with a Discharge Permit from the Laguna Treatment Plant, ensuring that discharge of groundwater from dewatering would not cause a significant impact relative to wastewater treatment requirements.

Mitigation Measure HWQ-1 Manage Construction Dewatering

(See Hydrology and Water Quality section for complete text of mitigation measure)

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 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 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 would not cause an increased burden or 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 entitlements or facilities would be required. 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? (Less than Significant)

As described above under item "a," the Project would not result in an increase in the generation of wastewater, except for a temporary discharge of groundwater from dewatering. Because there would be no increase in wastewater discharges, the Project would not impair the ability of the Laguna Treatment Plant to continue serving existing commitments. A less-than-significant 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. The

Project contractor 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. Materials that could not be reused or composted at local facilities would be disposed of at regional landfills, such as the Redwood Sanitary Landfill in Marin County or the Potrero Hills Landfill in Solano County. The Redwood Sanitary Landfill has a remaining capacity of 26,000,000 cubic yards and the Potrero Hills Landfill has a remaining capacity of 13,872,000 cubic yards (CalRecycle 2018). Construction of the Project is not anticipated to generate a significant amount of waste. 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, operation of the Project 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 of Santa Rosa has required that any person or entity who engages in providing demolition debris collection within the City is required to enter into a non-exclusive franchise agreement 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 the Project (Santa Rosa 2017a). 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 1.6, Environmental Protection Actions Incorporated into the Project, of this IS/Proposed MND) to reduce impacts related to air quality, greenhouse gas emissions, and geologic hazards. Additionally, mitigation measures are listed herein to reduce impacts related to aesthetics, air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, transportation/traffic, and tribal cultural

resources. 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 "summary of projections" approach (outlined in CEQA Guidelines section 15130 (b)(1)(B)), because construction is not anticipated to occur for another 10 to 15 years, and cumulative projects with impacts that overlap those of the Project cannot be reasonably or reliably estimated that far in the future.

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

An analysis of potential cumulative impacts on aesthetics, air quality, greenhouse gas emissions, biological resources, cultural resources, geology/soils, hazards/hazardous materials, hydrology/water quality, noise, transportation/traffic, and utilities/service systems is provided below. The analysis of cumulative impacts relative to these resources sections utilizes the evaluations in the Santa Rosa General Plan 2035 EIR (Santa Rosa 2009)[1]. The Fulton Road Sewer Lift Station Project is consistent with the General Plan and is the type of public works project that was included in the evaluations of the 2035 buildout conditions in the General Plan EIR. Therefore, an analysis of the Project's cumulative impacts were included in the General Plan EIR, the relevant results of which are summarized here.

Air Quality

General Plan 2035 EIR impacts 4.D-1 and 4.D-4 identify significant and unavoidable impacts on air quality relative to conflicts with the Bay Area Ozone Strategy and the emissions of toxic air contaminants. The Fulton Road Sewer Lift Station Project would not increase operational trips and would not have operational emissions of toxic air contaminants, and therefore would not contribute to any such conflicts or generate toxic air contaminants. Therefore, the Project would not contribute to significant cumulative impacts on air quality.

Biological Resources

General Plan 2035 EIR impact 4.F-5 identifies a significant impact relative to conflicts with the Santa Rosa Plain Strategy due to development of the City through 2035. The General Plan EIR identifies Mitigation Measure 4.F-5 which requires compliance with the Santa Rosa Plain Strategy. Because this IS/MND also requires compliance with the Strategy through implementation of Mitigation

[1] The Santa Rosa General Plan 2035 EIR can be found on the City's website at: https://srcity.org/392/General-Plan

Measure BIO-4 (Protect California Tiger Salamander), the Fulton Road Sewer Lift Station Project would not contribute to a significant cumulative impact relative to conflicts with adopted habitat conservation plans.

Transportation/Traffic

General Plan 2035 EIR impacts 4.C-1 and 4.C-6 identify significant and unavoidable impacts on the level of service of traffic on arterials and freeways due to development through 2035. The Fulton Road Sewer Lift Station Project would not increase operational trips, and therefore would not contribute to level of service impacts on either arterials or freeways in the area. Therefore, the Project would not contribute to significant cumulative impacts on these resources.

All Other Impacts/Sections

For all other resource sections (Aesthetics, Cultural Resources, Geology/Soils, Hazards/Hazardous Materials, Hydrology/Water Quality, Noise, and Utilities/Services Systems), the General Plan EIR does not identify significant impacts or the need for mitigation measures in addition to implementation of the City's adopted General Plan policies. Because the Fulton Road Sewer Lift Station Project must comply with the City's General Plan policies by virtue of it's being a City project, the Project would not contribute to significant cumulative impacts on these resources.

In summary, the Project would not contribute to significant cumulative impacts.

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 this IS/MND, the Project, with the incorporation of recommended mitigation measures, would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings.

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SSU Anthropological Resource Center – Cultural Resource Study

Appendices

Appendix A - Wetland Report

DELINEATION OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS, FOR THE FULTON ROAD LIFT STATION PROJECT W. COLLEGE AVENUE TO THIRD STREET SANTA ROSA, SONOMA COUNTY, CALIFORNIA

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FEBRUARY 2018

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Section 2 - Description of Site Characteristics	2
General Description	2
Topography and Hydrology	2
Soils	2
Vegetation	3
Section 3 - Methods	4
Section 4 - Results	5
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Appendices
Appendix A – Delineation Data Forms
Appendix B – Soils Maps
Appendix C – Site Photographs

Figures
Figure 1. Location Map
Figure 2: Project on USGS quadrangle
Figures 3, 4 & 5: Delineation of Waters of the United States, including Wetlands (3 sheets)

SECTION 1 – INTRODUCTION AND BACKGROUND INFORMATION

This wetland delineation report has been conducted on behalf of GHD for the City of Santa Rosa who is the project proponent for the Fulton Road Lift Station Project located between W. College Avenue south to Third Street (Figure 1). Jane Valerius Environmental Consulting prepared this report under contract to GHD, Inc. The delineation study area includes an approximately 0.5-mile project site.

This delineation was conducted according to the 1987 Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers (2008), and U.S. Army Corps of Engineers, San Francisco District (2007) guidelines. Data sheets, soils map and site photographs from the delineation are provided in Appendices A, B and C respectively. The delineation should be considered preliminary until the U.S. Army Corps of Engineers, San Francisco District, issues a jurisdictional determination of the extent of jurisdictional waters, including wetlands, in the delineation/project study area. A total of 0.47 acres of seasonal wetlands and 0.08 acres of waters of the U.S. and state were mapped for the delineation/project study area (see wetland delineation maps attached) for a total of 0.55 acres.

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Santa Rosa, CA 95407
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SECTION 2 – DESCRIPTION OF SITE CHARACTERISTICS

General Description

The area known as the Church Site is a potential site for the lift station and is located on a property across Fulton Road from the existing lift station site. The property is owned by the Thanksgiving Lutheran Church of Santa Rosa and has an existing driveway, buildings and a parking lot. The western portion of the property that borders Piner Creek is undeveloped and mostly covered by 12" or deeper layers of wood chips placed as mulch. The site is characterized mostly as nonnative grassland with Harding grass (*Phalaris aquatica*) and wild oats (*Avena fatua*), but there are some native plants including California wild rose (*Rosa californica*) and creeping wild rye (*Elymus triticoides*). The area identified as a potential wetland is dominated by Himalayan blackberry (*Rubus armeniacus*) which on the 2016 wetland plant list has facultative (FAC) wetland plant status.

The portion of the project along Fulton Road consists of Fulton Road and sidewalks with adjacent residences and landscaped vegetation. The project crosses over Santa Rosa Creek which has a riparian vegetation cover. There is little to no wetland vegetation within Santa Rosa Creek. A pedestrian and bicycle pathway occurs along the north bank of the creek.

Topography and Hydrology

The project area is mostly flat. The northern portion of the site is adjacent to a branch of Santa Rosa Creek and the project crosses the southern branch of Santa Rosa Creek between W. College Avenue and Third Street (Figures 1 and 2).

Santa Rosa Creek is the hydrologic connection for the project area. Santa Rosa Creek is a perennial creek and qualifies as a waters of the U.S. and state. Santa Rosa Creek flows into the Laguna de Santa Rosa by way of the Santa Rosa Flood Control Channel to the west of the project site. The Laguna de Santa Rosa in turn connects to the Russian River and ultimately the Pacific Ocean.

Soils

Soils at the Church Site consists mostly of a Pajaro clay loam, overwash 0-2% slopes and Yolo loam overwash, 0 to 5%. The Pajaro clay loam is characterized as somewhat poorly drained with a high capacity to transmit water. The Yolo loam is characterized as well drained with a high capacity to transmit water. There is a small portion of the site where there is some Yolo sandy loam, overwash 0-5% slopes. This soil is characterized as well drained with a high capacity to transmit water.

At the Church site there is a thick layer of mulch consisting of wood chips and garden waste from the adjacent Church garden. The mulch can be seen in aerial photos as well as the site photos in Appendix C.

Pajaro series soils consist of somewhat poorly drained fine sandy loams. These soils are underlain by mixed alluvial material derived from a variety of sedimentary sources. The soils are on low terraces and on alluvial flood plains and fans in valley areas.

Yolo series soils consist of well-drained loams underlain by recent alluvium from sandstone and shale. These soils are on alluvial fans and flood plains. They are mainly in the valley areas of the County.

Vegetation

Vegetation at the Church site consists of non-native grassland comprised mostly of Harding grass and other non-native grasses. The seasonal wetland mapped at this site is dominated by Himalayan blackberry vines with some poison hemlock (*Conium maculatum*) and stickwort (*Dittrichia graveolens*). The Church site also includes a vegetable garden and a mowed lawn. At the time of the site visits the grasses had been mowed and there were numerous piles of chipped wood and other mulch in stockpiles within the grassland/lawn area.

The area along Fulton Road has landscaped garden and ornamental plants associated with residences along the road. Santa Rosa creek in the project area has a willow (*Salix* spp.) riparian plant community with some fennel (*Foeniculum vulgare*) and blackberry along the banks. There is also rock riprap along the banks. There is little to no wetland vegetation within the creek channel.

A field of non-native grassland occurs along the eastern side of Fulton Road, north of Third Street and south of Santa Rosa Creek. Plant species noted in this area include oats (*Avena* spp.), bromes (*Bromus diandrus, B. hordaeceus*), ryegrass (*Festuca perennis*), annual blue grass (*Poa annua*), clover (*Trifolium* spp.), cut-leaf geranium (*Geranium dissectum*), dwarf lupine (*Lupinus bicolor*), curly dock (*Rumex crispus*), and calendula (*Calendula* sp.).

SECTION 3 – METHODS

Literature Review

Prior to the delineation field survey, literature pertinent to identifying potential wetlands and other waters of the United States in the project area was reviewed, including the USGS 7.5 minute topographic quadrangle map for the area, the detailed topographic/aerial photograph base map prepared for the project area, the soil survey report, and the county hydric soils list.

Field Survey and Map Preparation

A formal delineation was conducted by Jane Valerius, botanist and wetland ecologist and Jenna Rais, biologist, with GHD on January 10 and February 13, 2018. The entire project area was walked. Areas in which the topography or vegetation suggested that wetlands could exist were sampled using the routine onsite determination method procedures described in the 1987 Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory 1987). The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* U.S. Army Corps of Engineers (2008), U.S. Army Corps of Engineers, San Francisco District (2000) delineation guidelines and the U.S. Army Corps of Engineers San Francisco District November 2007 *Information Requested for Verification of Corps Jurisdiction* guidance was also used as part of the on-site wetlands analysis and report preparation.

The State of California 2016 Wetland Plant List (Lichvar et. al. 2016) was used to determine the wetland status for the plant species for the sample data points. A soil pit was excavated at each of the ten (10) delineation sample points (Appendix A) to a depth of 12 inches. The sample points were established in representative wetlands and adjoining non-wetlands. In most cases an adjoining nonwetland sample point was established near the wetland data point to "bracket" the wetland data point, as a means to identify the wetland-nonwetland boundary.

Creeks and drainages within the project area designated as other waters of the United States have an ordinary high water mark (OHWM) that defines the extent of the Corps' jurisdiction of that feature. An OHWM refers to "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR Section 328.3[e]). The width of the drainage was visually estimated and the average width of the OHWM was recorded for areas designated as other waters.

Wetland areas were mapped on aerial photos provided by GHD, Inc. Final graphics we also produced by GHD, Inc.

SECTION 4 – RESULTS

This section describes the results of the field survey. The preliminary jurisdictional features and data point locations are shown on the attached Delineation Maps (Figure 3, 4 and 5). Wetland delineation data sheets completed at the sample points are provided in Appendix A. A selection of site photographs is provided in Appendix C.

A total of 0.47 acres of seasonal wetlands and 0.08 acres of waters of the U.S. and state were mapped for the delineation/project study area for a total of 0.55 acres.

The project area is located within the Santa Rosa Plain. However, the seasonal wetland on the Church site does not provide suitable potential habitat for any of the federal and state listed vernal pool plants known to occur in the Santa Rosa Plain. Therefore the 2 years of protocol level surveys would not be required for this site.

This wetland delineation is considered to be preliminary until verified by the USACE. The USACE will provide a preliminary jurisdictional determination that is based on the current conditions of the site, a review of available digital photographic imagery, and a review of other data based on a field survey. When a preliminary jurisdictional determination (PJD) is conducted it may be subject to future revision if new information or a change in field conditions becomes subsequently apparent. Typically delineations are considered to be valid for only 5 years, unless site conditions change.

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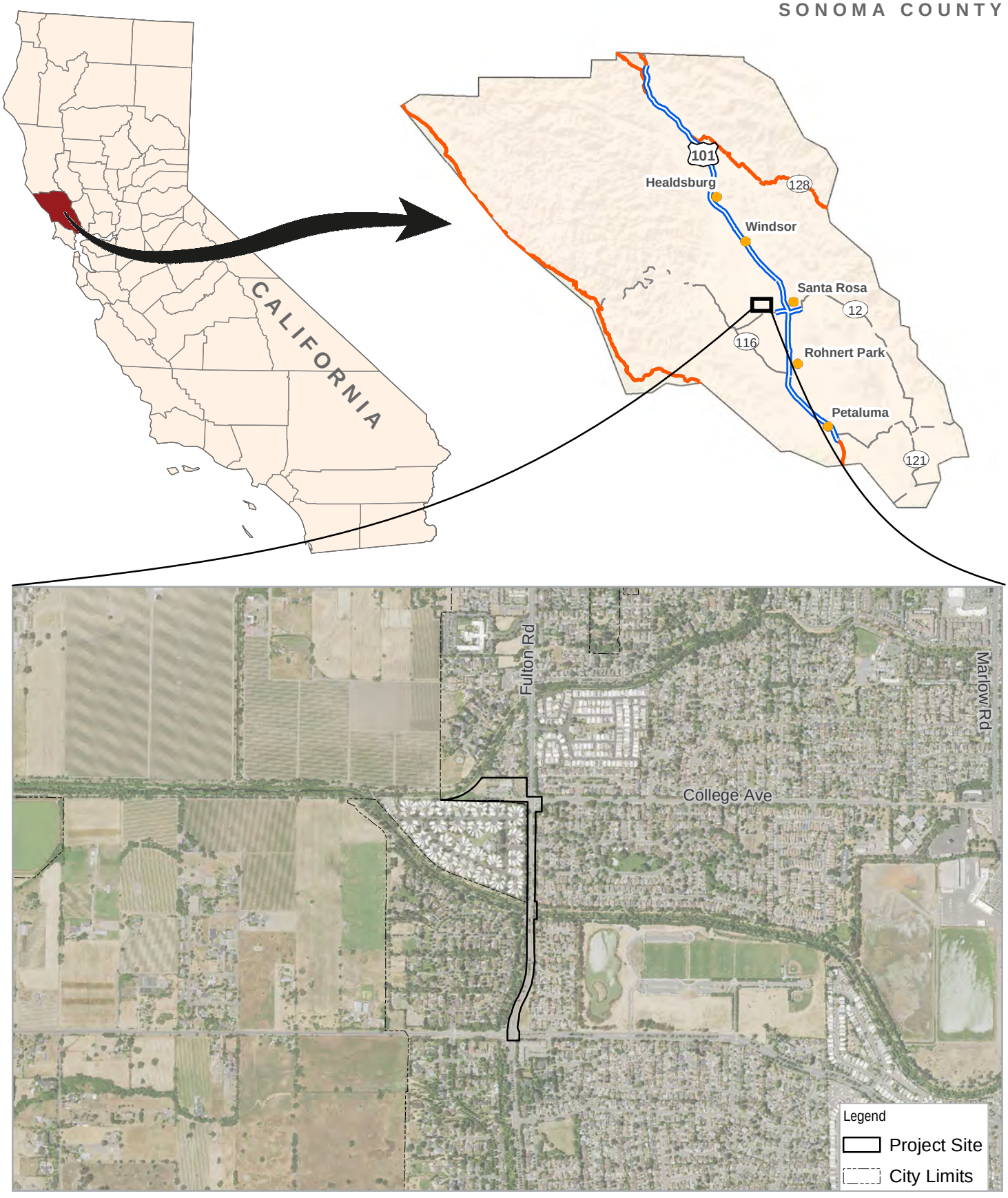


Paper Size ANSI A

0 0.1 0.2 0.3

Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

N

GHD

City of Santa Rosa
Fulton Road Lift Station CEQA

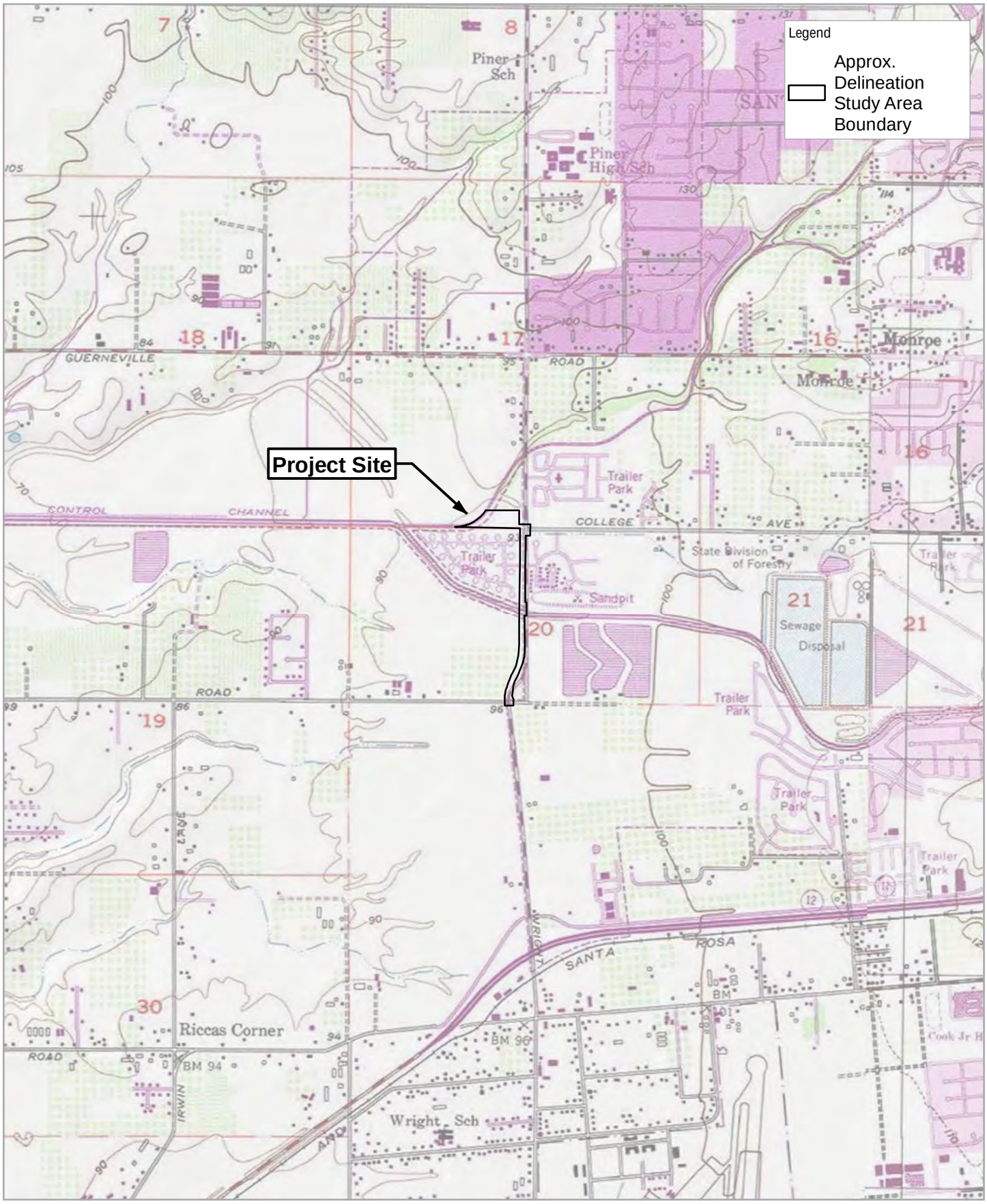
Vicinity Map

Project No. 11136646
Revision No. -
Date 03/01/2018

FIGURE 1

\\ghdnet\ghd\US\Santa Rosa\Projects\111\11136646 SR Fulton Lift Sta CEQA\08-GIS\Maps\Deliverables\11136646_01_Vicinity.mxd
Print date: 05 Mar 2018 - 09:40

Data source: Sonoma County City Limits; NAIP orthoimagery 2014; Sources: Esri, USGS, NOAA. Created by: jclark2



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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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GHD

City of Santa Rosa
Fulton Road Lift Station CEQA

USGS Quad

Project No. 11136646
Revision No. -
Date 03/01/2018

FIGURE 2

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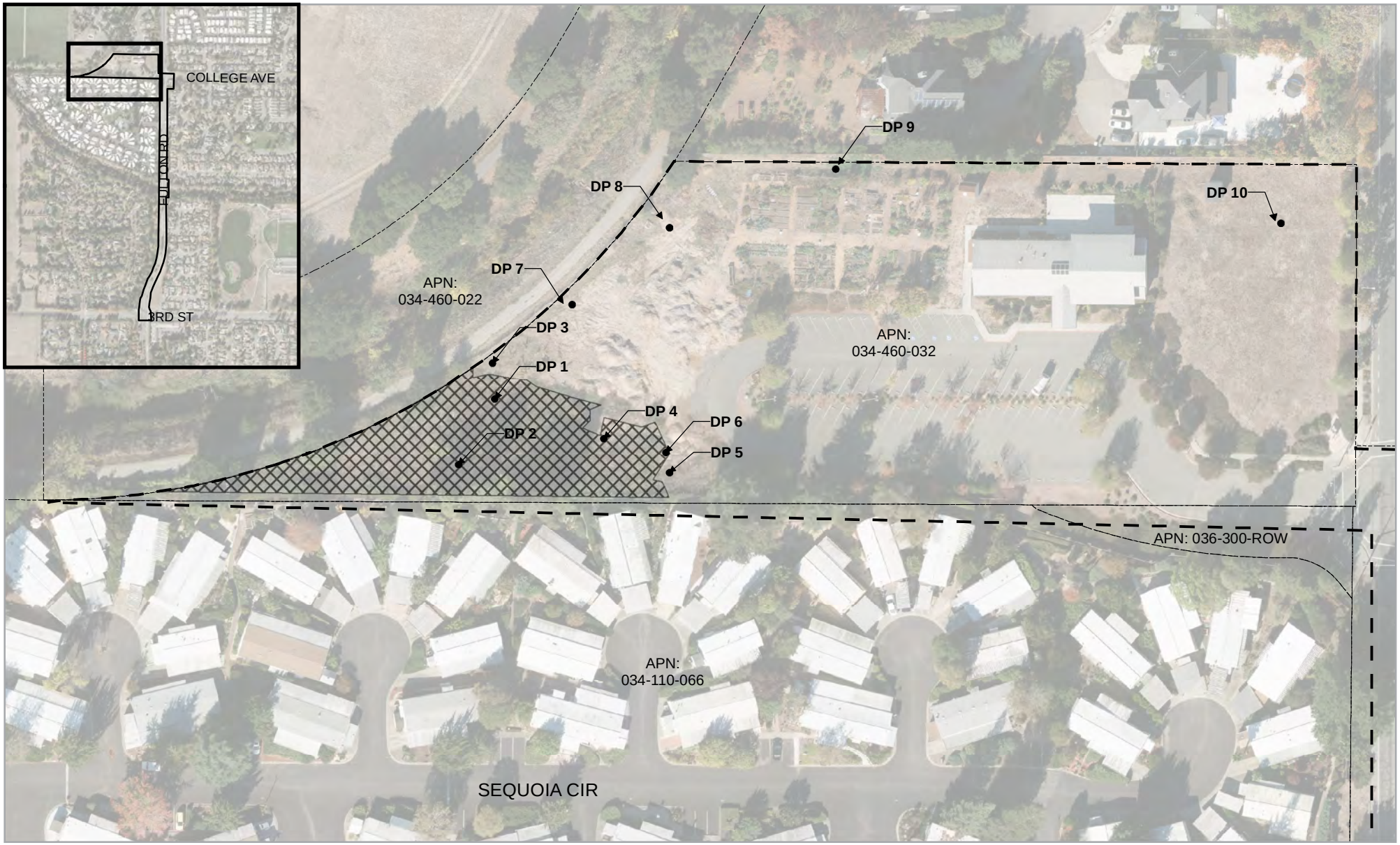

Legend

- Data Point
- Wetland
- Parcel Boundary
- Approx. Delineation Study Area Boundary

Paper Size ANSI A

0 25 50 75 100

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

N

City of Santa Rosa
Fulton Road Lift Station CEQA

Delineation of Waters of the US
Including Wetlands
Church Site

Project No. 11136646
Revision No. B
Date 03/05/2018

FIGURE 3

\\ghdnet\ghd\US\Santa Rosa\Projects\111\11136646 SR Fulton Lift Sta CEQA\08-GIS\Maps\Deliverables\11136646_03_Wetland_ChurchSite.mxd
Print date: 05 Mar 2018 - 09:30

Data source: Sonoma County Parcels, 2017; Santa Rosa Imagery, 2015; GHD field biologists, January 10th 2018 . Created by: jclark2

Legend

- Waters of the U.S. and State
- Santa Rosa Creek OHWM
- Parcel Boundary
- Approx. Delineation Study Area Boundary

Paper Size ANSI B

0 25 50 75 100

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

N

GHD

City of Santa Rosa
Fulton Road Lift Station CEQA

Delineation of Waters of the US Including Wetlands Fulton Road North

Project No. 11136646
Revision No. -
Date 03/05/2018

FIGURE 4

\\ghdnet\ghd\US\Santa Rosa\Projects\111\11136646 SR Fulton Lift Sta CEQA\08-GIS\Maps\Deliverables\11136646_04_Wetland_FultonRdN.mxd
Print date: 05 Mar 2018 - 09:54

Data source: Sonoma County Parcels, 2015; Santa Rosa Imagery, 2015; GHD field biologists, January 10th 2018 . Created by: jclark2

Legend

- Waters of the U.S. and State
- Santa Rosa Creek OHWM
- Parcel Boundary
- Approx. Delineation Study Area Boundary

Paper Size ANSI B

0 25 50 75 100

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

N

GHD

City of Santa Rosa
Fulton Road Lift Station CEQA

Delineation of Waters of the US Including Wetlands Fulton Road South

Project No. 11136646
Revision No. -
Date 03/05/2018

FIGURE 5

\\ghdnet\ghd\US\Santa Rosa\Projects\111\11136646 SR Fulton Lift Sta CEQA\08-GIS\Maps\Deliverables\11136646_05_Wetland_FultonRdS.mxd
Print date: 05 Mar 2018 - 09:55

Data source: Sonoma County Parcels, 2015; Santa Rosa Imagery, 2015; GHD field biologists, January 10th 2018 . Created by: jclark2

Appendix A -
Wetland Data Sheets

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Rd Lift Station City/County: Santa Rosa/Sonoma Sampling Date: January 10, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 1

Investigator(s): Valerius, Jenna Rais Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): planar Slope (%): 0-5

Subregion (LRR): _____ Lat: 38.4455096 Long: -122.7720280 Datum: _____

Soil Map Unit Name: Yolo loam, overwash, 0 to 5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓MULCH, or Hydrology ___ significantly disturbed? no Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? no (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks:

Area has received mulch in top layer of soil.

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Rubus armeniacus	85	Y	FAC
2. Dittrichia graveolens	10	N	NL
3.			
4.			
5.			
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/1	100					loam	MULCH
2-12"	10YR 3/2	85	5YR 4/6	15	C	M	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Rd Lift Station City/County: Santa Rosa/Sonoma Sampling Date: January 10, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 2

Investigator(s): Valerius, Rais Section, Township, Range:

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): planar Slope (%): 0-5%

Subregion (LRR): Lat: 38.44537665 Long: -122.7721266 Datum:

Soil Map Unit Name: Yolo loam, overwash, 0-5% NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓ MULCH, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks:

MULCHED

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Quercus agrifolia	1%	N	UPL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Rubus armeniacus	80%	Y	FAC
2. Conium maculatum	10%	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10% % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 2/1	100%					Loam	MULCH
4"-12"	10YR 3/2	85%	5YR 4/6	15%	C	M	cl/lm	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Top layer appears to be mulch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Rd Lift Station City/County: Santa Rosa/Sonoma Sampling Date: January 10, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 3

Investigator(s): Valerius, Rais Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Planar Slope (%): 0-5

Subregion (LRR): _____ Lat: 38.445582G Long: -122.772354 Datum: _____

Soil Map Unit Name: Yolo loam, drained, 0-5% NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓ MLRA, or Hydrology ___ significantly disturbed? ~~no~~ Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Phalaris aquatica	95%	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 5% % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: Area has been mowed

US Army Corps of Engineers

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 3/1	100	—				loam	mulch
10"-12"	10YR 3/2	100	—				clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks: Area has been mulched

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Rd Lift Station City/County: Santa Rosa/Sonoma Sampling Date: January 10, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 4

Investigator(s): Valerius Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): planar Slope (%): 0-5

Subregion (LRR): _____ Lat: 38.4454292 Long: -122.7717457 Datum: _____

Soil Map Unit Name: Yolo loam, overwash, 0-5% slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓ mulch or Hydrology ___ significantly disturbed? ~~no~~ Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks:

Same as parcels 1 and 2

Areas have been mulched "Type 1" consists of chipped mulch.

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Rubus armeniacus	80	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Same as 1+2								MULCH IN TOP LAYER

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

MULCH

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Rd Lift Station City/County: Santa Rosa/Sonoma Sampling Date: January 10, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 5

Investigator(s): Valerius Rais Section, Township, Range:

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): planar Slope (%): 0-5%

Subregion (LRR): Lat: 38.445362° Long: -122.771571° Datum:

Soil Map Unit Name: Yolo, Riverwash, 0-5% NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil Mixed, or Hydrology ___ significantly disturbed? ~~no~~ Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Rosa sp. - planted ornamental	40%	Y	NL
2. Conium maculatum	30%	Y	FACW
3. grasses - unknown	10%	N	unkn
4.			
5.			
6.			
7.			
8.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 30% % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR3/1	100	—				loam	mulch
0-1"	10YR3/1	100	—				loam	loam to clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Rd Lift Station City/County: Santa Rosa/Sonoma Sampling Date: January 10, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 6

Investigator(s): Valerius, Rais Section, Township, Range:

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): planar Slope (%): 0-5%

Subregion (LRR): Lat: 38.445424 Long: -122.771301 Datum:

Soil Map Unit Name: Yo/o loam, oreswest, 0-5% NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓/Mullit, or Hydrology ___ significantly disturbed? no Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? no (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: same as 1+2

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Rubus armeniacus		Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)

Total Number of Dominant Species Across All Strata: ___ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								MULCH in top layer
								loam to clay loam
								w/ Redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Lift Station City/County: Santa Rosa/Sonoma Sampling Date: Feb. 13, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 7

Investigator(s): Jane Valerius, Jenna Rais Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): planer Slope (%): 0-2

Subregion (LRR): _____ Lat: 38.445689 Long: -122.771955 Datum: _____

Soil Map Unit Name: Pajaro clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ___, or Hydrology ___ significantly disturbed? ~~no~~ Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

Site was moved

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Phalaris aquatica	50	Y	FACU
2. Lactuca serriola	5	N	FACU
3. Raphanus sativus	5	N	NL
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR2/2	100					Mulch	
8-18	10YR3/2	90	10YR3/8	10	C	M	CL	Clay loam - native soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro indicators

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Lift Station City/County: Santa Rosa/Sonoma Sampling Date: Feb. 13, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 8

Investigator(s): Jane Valerius, Jenna Rais Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR): _____ Lat: 38.445887 Long: -122.771655 Datum: _____

Soil Map Unit Name: Pajaro clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation mowed, Soil _____, or Hydrology _____ significantly disturbed? no Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

Data point taken in low swale area next to storm drain

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Phalaris aquatica	30	Y	FACU
2. Conium maculatum	5	N	FACW
3. Cichorium intybus	5	N	FACU
4. Geranium dissectum	5	N	NL
5. Raphanus sativus	5	N	NL
6. Grasses (mowed)	50	Y	Unknown
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					CL	native soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? Yes ___ No ✓ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Lift Station City/County: Santa Rosa/Sonoma Sampling Date: Feb. 13, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 9

Investigator(s): Jane Valerius, Jenna Rais Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0 - 2

Subregion (LRR): _____ Lat: 38.446018 Long: -122.771145 Datum: _____

Soil Map Unit Name: Pajaro clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation Mowed, Soil _____, or Hydrology _____ significantly disturbed? ~~no~~ Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:

Data point taken along north fence next to garden

VEGETATION

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Phalaris aquatica	70	Y	FACU
2. Rumex crispus	5	N	FAC
3. Geranium dissectum	5	N	NL
4. Grasses (mowed)	20	Y	Unkn
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					CL	native soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? Yes ___ No ✓ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM

Project/Site: Fulton Lift Station City/County: Santa Rosa/Sonoma Sampling Date: Feb. 13, 2018

Applicant/Owner: City of Santa Rosa State: CA Sampling Point: 10

Investigator(s): Jane Valerius, Jenna Rais Section, Township, Range: _____

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): planar Slope (%): 0-2

Subregion (LRR): _____ Lat: 38.445842 Long: -122.769877 Datum: _____

Soil Map Unit Name: Pajaro clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation mowed, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (no) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

mowed lawn

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
	___ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Grasses (mowed)	85	Y	Unkn
2. Vicia sativa	5	N	FACU
3. Heranium dissectum	5	N	NL
4. Raphanus sativus	5	N	NL
5. _____			
6. _____			
7. _____			
8. _____			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
	___ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Mulch	
4-12	10YR 3/2	70	2.5YR 3/6	30	C	M	CL	native soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): none

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Redox may be a result of irrigation for lawn

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix B - Soils Maps

Soil Map—Sonoma County, California
(1225 Fulton Rd, Santa Rosa, CA)

Map Scale: 1:1,670 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 11, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PcA	Pajaro clay loam, overwash, 0 to 2 percent slopes	3.4	78.5%
YmB	Yolo sandy loam, overwash, 0 to 5 percent slopes	0.1	1.8%
YoB	Yolo loam, overwash, 0 to 5 percent slopes	0.8	19.7%
Totals for Area of Interest		**4.3**	**100.0%**

Map Scale: 1:2,350 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 11, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PcA	Pajaro clay loam, overwash, 0 to 2 percent slopes	3.4	100.0%
Totals for Area of Interest		**3.4**	**100.0%**

Map Scale: 1:2,440 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 11, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PcA	Pajaro clay loam, overwash, 0 to 2 percent slopes	5.5	100.0%
Totals for Area of Interest		**5.5**	**100.0%**

Appendix C -
Site Photographs

SITE PHOTOGRAPHS

Photo 1: Wetland area at Church Site, north end. Location of data points 1 and 3. January 10, 2018.

Photo 2: Wetland area at east end. Mulch in foreground. Location of data points 5 and 6. January 10, 2018.

SITE PHOTOGRAPHS

Photo 3: Church site looking east across mowed field. Location of data points 7, 8 and 9. February 13, 2018

Photo 4: Northeast corner of Church site at data point 10. February 13, 2018

SITE PHOTOGRAPHS

Photo 5: Santa Rosa Creek looking west. January 10, 2018.

Appendix B - Noise Study

FULTON ROAD LIFT STATION NOISE AND VIBRATION ASSESSMENT

Santa Rosa, California

April 5, 2018

Prepared for:

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Prepared by:

Torrey Dion and
Michael S. Thill

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
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Petaluma, CA 94954
(707) 794-0400

Project: 18-001

INTRODUCTION

The proposed Fulton Road Lift Station will replace the West College Lift Station currently located southeast of the intersection of West College Road and Fulton Road in Santa Rosa, California. The West College Lift Station will be in use for another 15-20 years until the time that the proposed Fulton Road Lift Station replaces it. Along with the construction of a new lift station, 2,400 feet of new sewer line will be installed within the Fulton Road right-of-way via microtunneling, and 150 feet of 12-inch Force Main will be installed near the intersection of Fulton and West Third Street.

The proposed lift station site is bounded by single family housing to the south and north. The Thanksgiving Lutheran Church is located along the northern border of the site. Single family housing also exists on either side of Fulton Road. A commercial property exists on the southeast corner of the intersection of Fulton Road and West Third Street.

This report evaluates the project's potential to result in significant noise and vibration impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. The report is divided into two sections: 1) the Setting Section provides a brief description of the fundamentals of environmental noise and ground-borne vibration, summarizes applicable regulatory criteria, and discusses the results of the ambient noise monitoring survey completed to document existing noise conditions; and, 2) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents measures, where necessary, to mitigate the impacts to a less-than-significant level.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the *sound level meter*. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The *Day/Night Average Sound Level* (L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise – Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for single- and multi-family dwellings are set by the State of California at 45 dBA DNL. Typically, the highest steady traffic noise level during the daytime is about equal to the DNL and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is, therefore, possible when exterior noise levels are about 57 to 62 dBA DNL with open windows and 65 to 70 dBA DNL if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed; those facing major roadways and freeways typically need special glass windows.

Effects of Noise – Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The DNL as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA DNL. At a DNL of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the DNL increases to 70 dBA, the percentage of the population highly annoyed increases to about 25 to 30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a DNL of 60 to 70 dBA. Between a DNL of 70 to 80 dBA, each decibel increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the DNL is 60 dBA, approximately 30 to 35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Fundamentals of Ground-borne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous vibration levels produce.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.
The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of

0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

TABLE 3 Reactions of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013.

Regulatory Background - Noise

The State of California and the City of Santa Rosa have established regulatory criteria that are applicable in this assessment. The State of California Environmental Quality Act (CEQA) Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. The CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(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, if the project would expose people residing or working in the project area to excessive noise levels; or

(f) For a project within the vicinity of a private airstrip, if the project would expose people residing or working in the project area to excessive noise levels.

CEQA does not define what noise level increase would be considered substantial. Typically, project-generated noise level increases of 3 dBA DNL/CNEL or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (60 dBA DNL/CNEL for residential land uses). Where noise levels would remain at or below the normally acceptable noise level standard with the project, noise level increases of 5 dBA DNL/CNEL or greater would be considered significant.

City of Santa Rosa General Plan 2035. The City of Santa Rosa's General Plan[1] includes the Noise and Safety Element, which provides guidelines to achieve the goal of maintaining an acceptable community noise level. The following goals and policies are applicable to the proposed project:

NS-B **Maintain an acceptable community noise level to protect the health and comfort of people living, working and/or visiting in Santa Rosa, while maintaining a visually appealing community.**

NS-B-3 Prevent new stationary and transportation noise sources from creating a nuisance in existing developed areas. Use a comprehensive program of noise prevention through planning and mitigation, and consider noise impacts as a crucial factor in project approval.

The Land Use Compatibility Standards specify normally acceptable levels for community noise in various land use areas.

NS-B-4 Require new projects in the following categories to submit an acoustical study, prepared by a qualified acoustical consultant:

- All new projects proposed for areas with existing noise above 60 dBA DNL. Mitigation shall be sufficient to reduce noise levels below 45 dBA DNL in habitable rooms and 60 dBA DNL in private and shared recreational facilities. Additions to existing housing units are exempt.

- All new projects that could generate noise whose impacts on other existing uses would be greater than those normally acceptable (as specified in the Land Use Compatibility Standards).

[1] *Santa Rosa General Plan 2035*, November 3, 2009.

NS-B-5 Pursue measures to reduce noise impacts primarily through site planning. Engineering solutions for noise mitigation, such as sound walls, are the least desirable alternative.

NS-B-14 Discourage new projects that have potential to create ambient noise levels more than 5 dBA DNL above existing background, within 250 feet of sensitive receptors.

Santa Rosa Noise Ordinance. The City of Santa Rosa has adopted a quantitative noise ordinance in Chapter 17-16 of the Santa Rosa Noise Ordinance. Section 17-16.120 regulates noise from stationary machinery and equipment:

> *It is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than five decibels.*

The ambient base noise levels for residential, office, commercial, and industrial areas are established in Section 17-16.030. The applicable ambient noise level criteria are shown in Table 4.

TABLE 4 Santa Rosa Noise Ordinance Ambient Base Noise Levels

Land Use Zone	Daytime Level (7:00 a.m. to 7:00 p.m.)	Evening Level (7:00 p.m. to 10:00 p.m.)	Nighttime Level (10:00 p.m. to 7:00 a.m.)
Single-Family Residential (R1 and R2)	55 dBA	50 dBA	45 dBA
Multi-Family Residential	55 dBA	55 dBA	50 dBA
Office and Commercial	60 dBA	60 dBA	55 dBA
Intensive Commercial	65 dBA	65 dBA	55 dBA
Industrial	70 dBA	70 dBA	70 dBA

Source: Santa Rosa Noise Ordinance 17-16.030.

The Noise Ordinance defines ambient noise as follows:

> *Ambient noise is the all-encompassing noise associated with a given environment usually a composite of sounds from many sources near and far. For the purpose of this chapter, ambient noise level is the level obtained when the noise level is averaged over a period of 15 minutes without inclusion of noise from isolated identifiable sources at the location and time of day near that at which a comparison is to be made.*

Existing Noise Environment

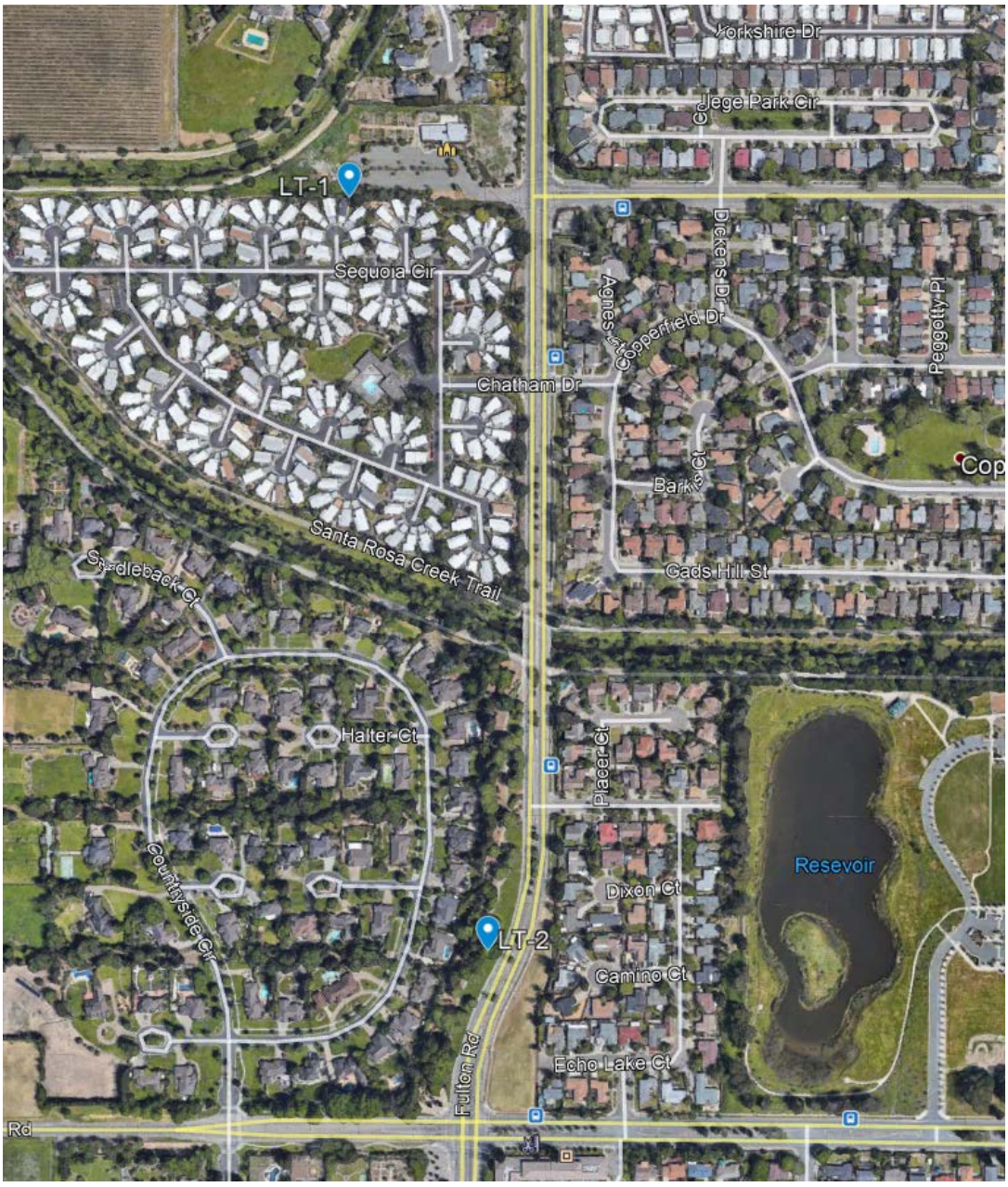
The lift station site is located west of Fulton Road and north of single family residences within Sequoia Gardens. Single-family residences are also located to the north of the proposed lift station, and single-family residences also border Fulton Road on either side of where sewer line construction is proposed. The Thanksgiving Lutheran Church exists directly east of the proposed lift station.

A noise monitoring survey was performed in the study area beginning on Friday, January 12, 2018 and concluding on Tuesday, January 16, 2018. The monitoring survey included two long-term measurements as shown in Figure 1. Traffic noise along Fulton Road dominates the noise environment at the surrounding land uses.

Long-term noise measurement LT-1 was made in the center of the Church Site, along the southern property boundary. LT-1 was approximately 125 feet north of the centerline of Sequoia Circle and 560 feet west of the centerline of Fulton Road. This location was selected to characterize the ambient noise environment at the nearest receptors to the lift station site. During the weekend, daytime hourly average noise levels at this location typically ranged from 50 to 56 dBA L_{eq}, and nighttime hourly average noise levels ranged from 37 to 52 dBA L_{eq}. During weekdays, daytime hourly average noise levels at this location typically ranged from 44 to 55 dBA L_{eq}, and nighttime hourly average noise levels ranged from 37 to 54 dBA L_{eq}. The day-night average noise level over the monitoring period was, on average, 54 dBA DNL. The daily trends in noise levels at LT-1 are shown in Figures 2 and 3.

LT-2 was positioned in a tree approximately 104 feet from the centerline of Fulton Road and 10 feet above the ground. This measurement characterized the ambient noise conditions along the segment of Fulton Road where the new sewer line will be installed. During the weekend, daytime hourly average noise levels at this location typically ranged from 61 to 67 dBA L_{eq}, and nighttime hourly average noise levels ranged from 53 to 66 dBA L_{eq}. Weekday, daytime hourly average noise levels ranged from 60 to 68 dBA L_{eq}, and weekday, nighttime hourly average noise levels ranged from 54 to 66 dBA L_{eq}. The day-night average noise level over the monitoring period was, on average, 68 dBA DNL. The daily trends in noise levels at LT-2 are shown in Figures 4 and 5.

FIGURE 1 Noise Measurement Locations



Source: Google Earth

FIGURE 2

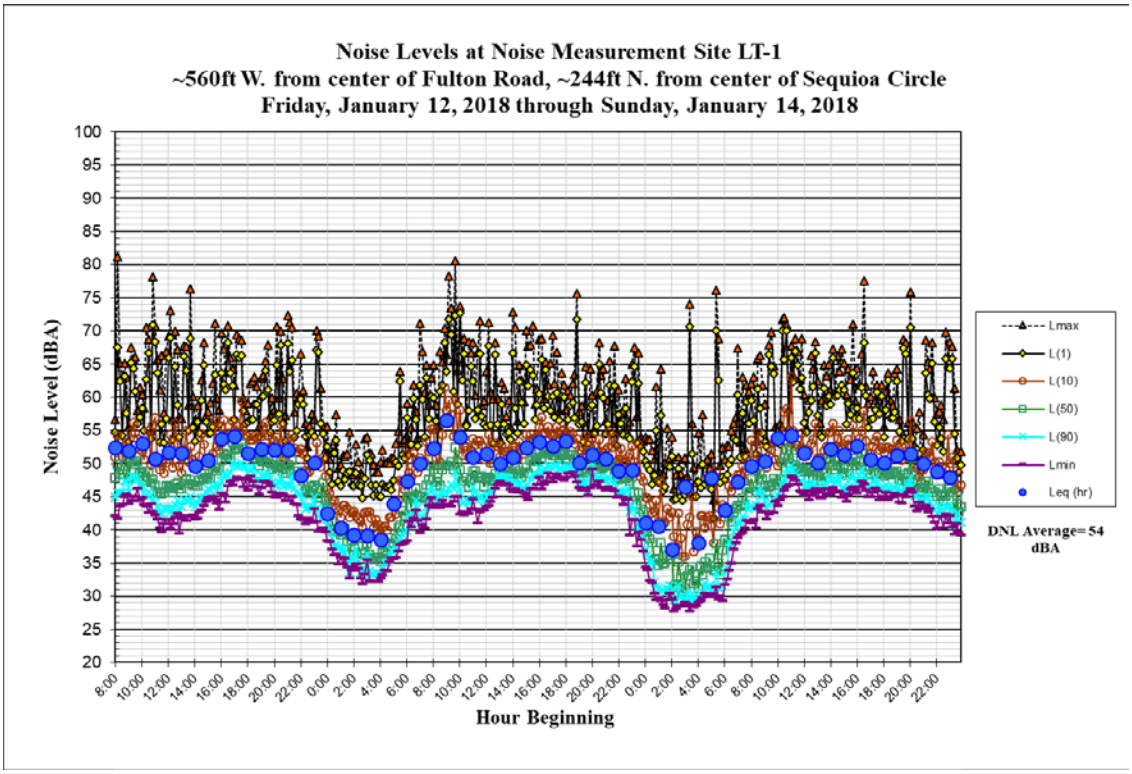


FIGURE 3

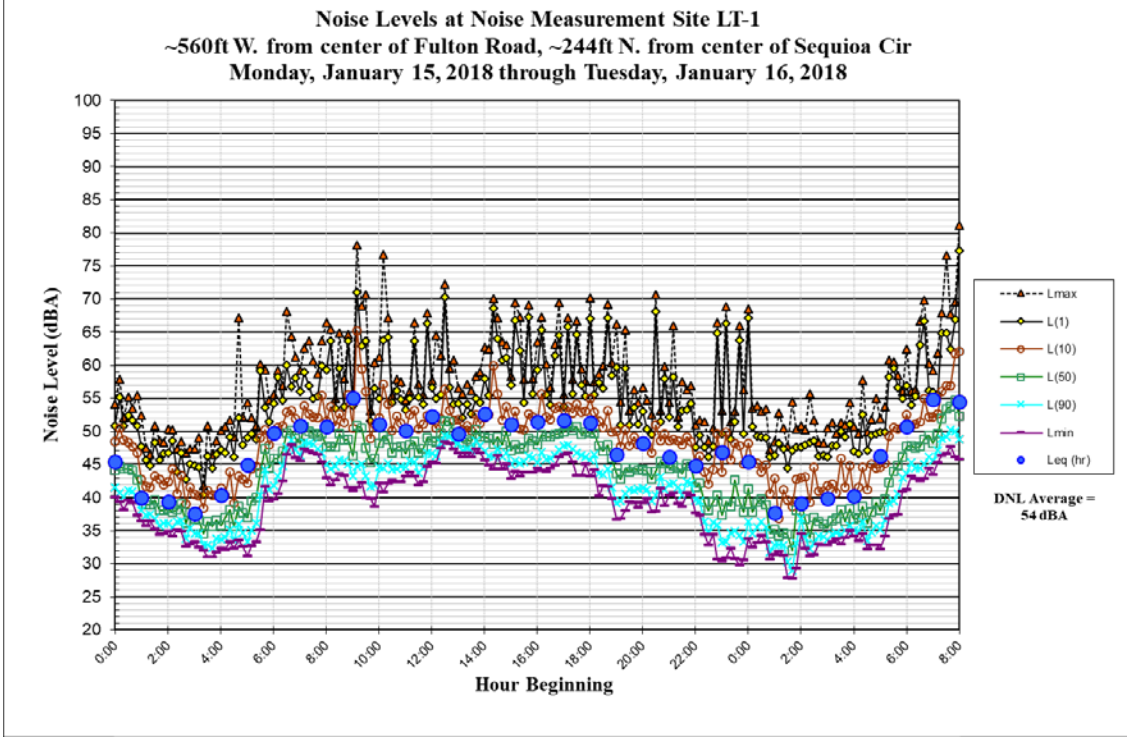


FIGURE 4

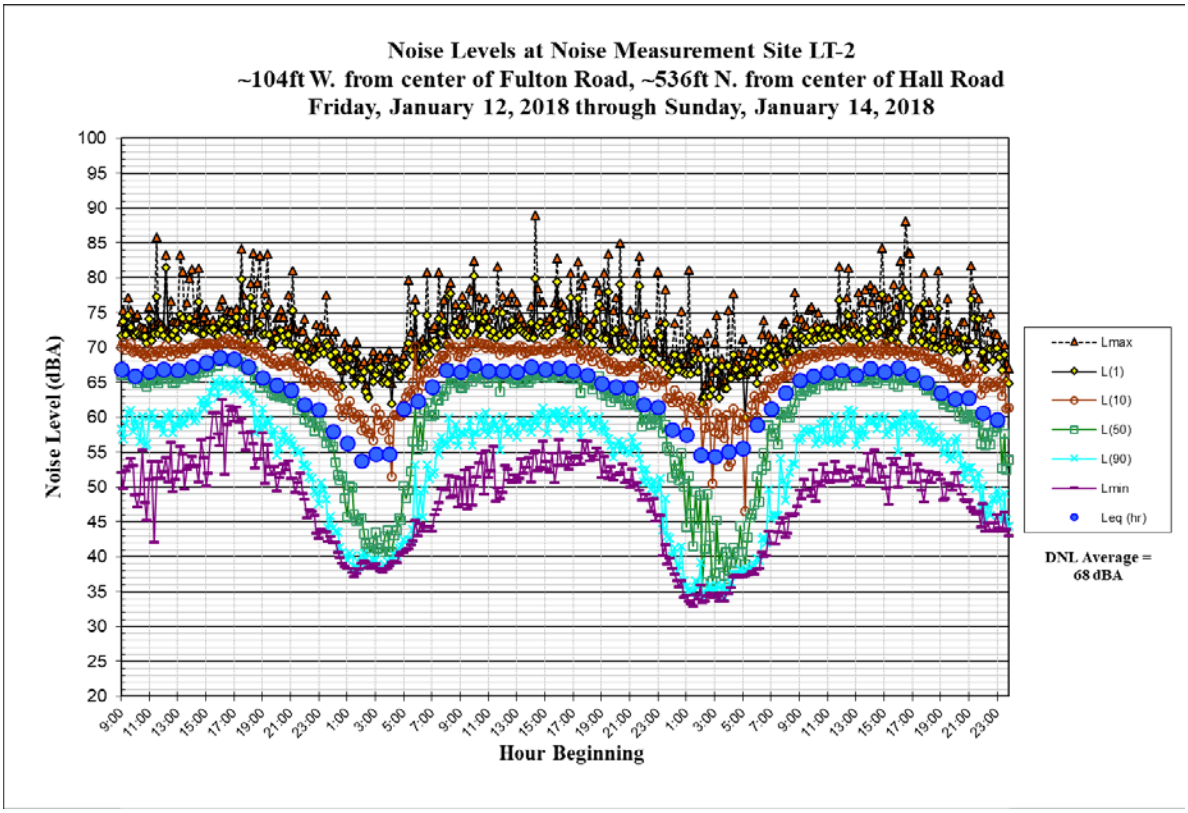
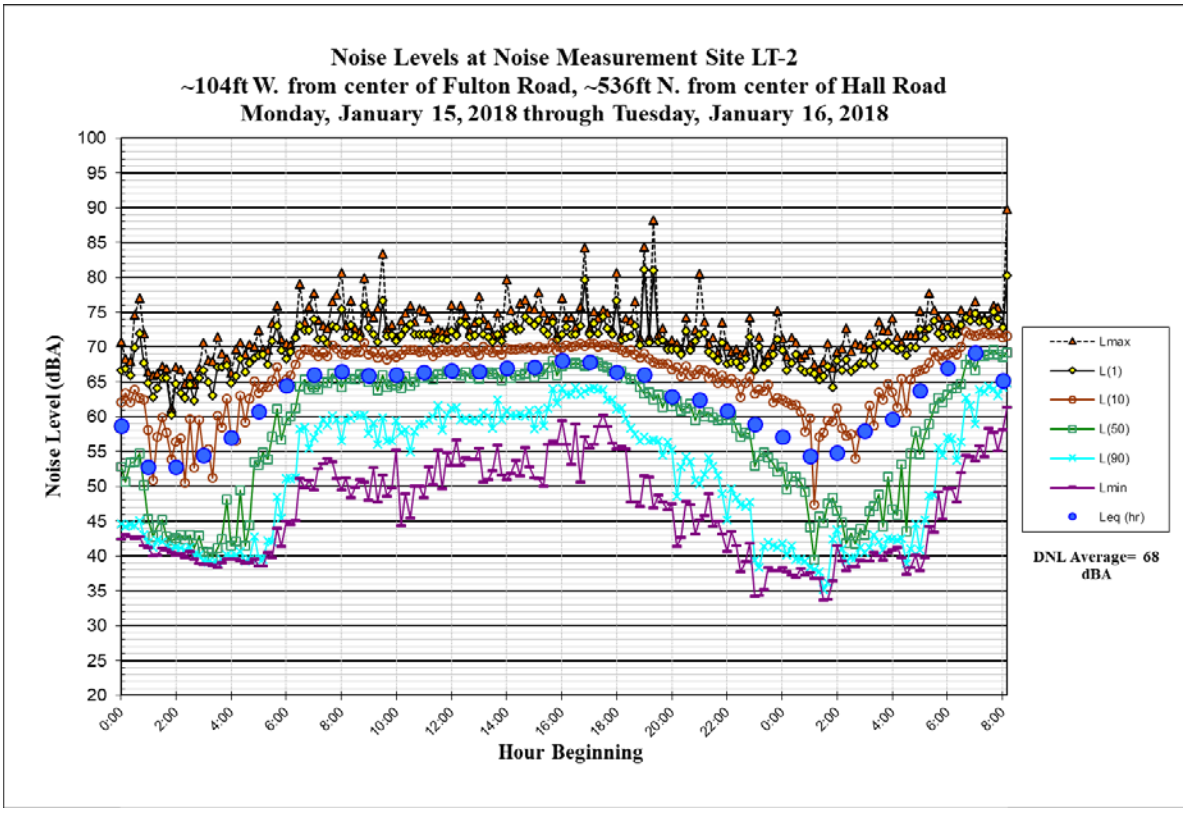


FIGURE 5



NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise resulting from the project:

- A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code.

- A significant impact would be identified if the construction of the project would expose persons to excessive vibration levels. Ground-borne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in cosmetic damage to normal buildings.

- A significant impact would be identified if traffic generated by the project or project improvements/operations would substantially increase noise levels at sensitive receivers in the vicinity. The City of Santa Rosa discourages new projects that have potential to create ambient noise levels more than 5 dBA DNL above existing background, within 250 feet of sensitive receptors.

- A significant noise impact would be identified if construction-related noise would temporarily increase ambient noise levels at sensitive receptors. Hourly average noise levels exceeding 60 dBA $L_{eq,}$ and the ambient by at least 5 dBA L_{eq}, for a period of more than one year would constitute a significant temporary noise increase at adjacent residential land uses.

Impact 1: **Noise Levels in Excess of Standards.** The proposed project could potentially generate noise in excess of standards established in the City's Municipal Code at the nearby sensitive receptors. **This is a potentially significant impact.**

Section 17-16.120 of the City's Noise Ordinance limits noise levels produced by stationary mechanical equipment at single-family residential property lines to 60 dBA during daytime hours (7:00 a.m. to 7:00 p.m.), to 55 dBA during evening hours (7:00 p.m. to 10:00 p.m.), and to 50 dBA at night (10:00 p.m. to 7:00 a.m.).

The proposed project would include mechanical equipment such as pumps and a standby generator. According to preliminary plans, residential property lines are as close as 44 feet away from where possible mechanical equipment may be located. The Thanksgiving Lutheran Church property line is as close as 150 feet from where possible mechanical equipment may be located.

Pumps to be installed on site will have a power ratings between 20 and 40 horsepower. Three of these pumps are to be installed in a 16 by 22 foot vault located 32 feet underground. The vault will be topped with a traffic-rated steel lid for access during maintenance Accounting for 20 decibels worth of attenuation from the mechanical vault, noise levels due to the operation of the pumps are

calculated to reach 45 dBA at the closest residential property line. This operational noise level would not exceed the City's Noise Ordinance limits day or night.

Although no standby generator specifications were given at the time of this study, a credible worst-case scenario would expect noise levels up to 85 dBA at a distance of 3 feet. This scenario assumes only one standby generator is used with an attenuated enclosure and a maximum power rating of no more than 150 kilowatts. According to current preliminary site plans, this standby generator could possibly be located as close as 74 feet away from the nearest residential property line. At this distance, noise levels from an attenuated 150-kilowatt generator would be expected to be up to 46 dBA. This operational noise level would not exceed the City's Noise Ordinance limits day or night.

Although the equipment mentioned above is expected not to exceed the City's Noise Ordinance limits, if different or supplemental equipment is implemented, City Noise Ordinance levels may be exceeded. This is a potentially significant impact.

Mitigation Measure: Mechanical equipment shall be located, selected, and designed to reduce impacts at the nearest residences to meet the City's noise level requirements. Mechanical pumps with a power rating of no more than 40 horsepower should be installed to ensure noise ordinance levels are met at nearby sensitive receptors. A standby generator should be selected with an attenuated enclosure located inside the lift station building. The generator should have a noise rating of no more than 85 dBA at a distance of 3 feet. Using these mitigation measures and maintaining noise levels identified in Section 17-16.120 of the City's Noise Ordinance and policy NS-B-14 of the Santa Rosa General Plan would result in a less-than-significant impact.

Impact 2: **Exposure to Excessive Ground-borne Vibration.** Construction-related vibration caused by some types of demolition and construction activities could be in excess of allowable limits at the existing residences located adjacent to the project areas. **This is a significant impact.**

Construction of the project may generate excessive vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities with the potential to generate perceptible vibration levels would include the removal of pavement and soil, shoring, and the compacting of backfill. Microtunneling utilizes a remote controlled microtunneling boring machine (MTBM) and jacking frames to bore an underground tunnel and install pipe segments between the launch shaft and receive shaft. Microtunneling will most likely occur on the northeast corner on the intersection of Fulton Road and Santa Rosa Creek.

For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for 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 has been used for buildings that are found to be structurally sound but where structural damage is a major concern. For historic and old buildings, the limit is 0.25 in/sec PPV (see Table 3 above for further explanation). 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 were not provided at the time of this study. For the purposes of this study, therefore, ground-borne vibration levels exceeding the conservative 0.3 in/sec PPV limit for residences would have the potential to result in a significant vibration impact.

Table 5 presents typical vibration levels that could be expected at a distance of 25 feet from construction equipment and at the nearest sensitive receiver locations to each construction area. Major equipment anticipated during project construction would include: an excavator, a crane, a vibratory pile driver, a loader, a forklift, dump trucks, concrete trucks, paving equipment, and a compactor. Ancillary equipment would include welders, air compressors, concrete saws, pumps, water trucks, delivery trucks, a microtunneling device, and various passenger vehicles. A review of the proposed equipment and the vibration level data provided in Table 5 indicates that, with the exception of vibratory pile driving, vibration levels generated by the proposed equipment would be below the 0.3 in/sec PPV criterion used to assess the potential for cosmetic or structural damage to nearby buildings within a distance of 25 feet. Within a distance of 15 feet, vibration levels are expected to be above 0.3 in/sec PPV. Microtunneling results in less vibration than open trench construction activities because the MTBM is not a high-powered vibratory device, and the depth of the underground tunnel increases the distance between the equipment and structures on the surface and reduces vibration.

TABLE 5 Vibration Source and Received Levels for Construction Equipment

Equipment		PPV at 15 ft.[1] (in/sec)	PPV at 25 ft. (in/sec)	PPV at 50 ft.[2, 3] (in/sec)
Pile Driver (Vibratory	upper range	**1.287**	**0.734**	**0.342**
	typical	0.298	0.170	0.079
Clam shovel drop		**0.354**	0.202	0.094
Hydromill (slurry wall)	in soil	0.014	0.008	0.004
	in rock	0.030	0.017	0.008
Vibratory Roller		**0.368**	0.210	0.098
Hoe Ram		0.156	0.089	0.042
Large bulldozer		0.156	0.089	0.042
Caisson drilling		0.156	0.089	0.042
Loaded trucks		0.133	0.076	0.035
Jackhammer		0.061	0.035	0.016
Small bulldozer		0.005	0.003	0.001

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

Notes: **Bold = Over Limit**

[1] Representing nearest residential receptor during construction of lift station.

[2] Representing nearest neighbors on Gads Hill Street during microtunneling

[3] Representing nearest neighbors on Fulton Road during pipeline trenching

Vibratory pile driving may be required to shore the excavated areas (i.e., wet wells, open trenches, and launch / receive shafts). Vibration levels would typically be below 0.3 in/sec PPV when located at a distance of 25 feet or more from sensitive structures, but if the upper range of vibration levels from vibratory pile driving occurs, the vibration levels would exceed the 0.3 in/sec PPV threshold level within a distance of approximately 75 feet. Residences along Fulton adjacent to the lift station would be within 75 feet of potential vibratory pile driving activities.

Mitigation Measures:
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. Because construction is expected to occur 10-15 years from the date of this report, it is appropriate to prepare a study at the time of construction to accommodate the aging of buildings and the change in vibration of construction equipment. 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.

Implementation of these measures would reduce the impact to a less-than-significant level.

Impact 3: **Permanent Noise Level Increase.** The proposed project would not result in a substantial permanent noise level increase at the existing noise-sensitive land uses in the project vicinity. **This is a less-than-significant 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. Due to the nature of the facility, project generated traffic increases are expected to be negligible. For reference, a 5 dBA DNL noise increase would be expected if the project would triple existing traffic volumes along a roadway. Therefore, the project-generated traffic would not cause a permanent noise increase at the surrounding noise-sensitive receptors. Operational noise levels associated with the proposed pumps would reach 52 dBA DNL at the nearest residential property line assuming continuous operation over a 24-hour period. Operational noise levels would increase ambient noise levels by up to 2 dBA DNL, but this noise level increase would not be considered substantial, nor would noise levels exceed the City's normally acceptable noise level threshold of 60 dBA DNL for residences. This is a less-than-significant impact.

Mitigation Measure: None required.

Impact 4: **Temporary Demolition and Construction Noise.** Existing noise-sensitive land uses would be exposed to a temporary increase in ambient noise levels due to project construction activities. **The incorporation of construction best management practices as project conditions of approval would result in a less-than-significant temporary noise impact.**

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

The City of Santa Rosa does not define allowable construction hours in the General Plan or Municipal Code, however temporary construction noise would be considered a significant impact where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA L_{eq} in outdoor activity areas at noise-sensitive uses in the project vicinity for a period exceeding one year. This criteria would be applied for during the day. Nighttime construction is not anticipated for this project.

Construction noise would primarily consist of the operation of vehicles and equipment during the construction of the lift station, sewer line, and demolition of the existing lift station. Specific construction activities would include pavement removal, excavation, shoring, pipeline installation via typical open trench methods or microtunneling, backfill operations, the repaving of the portion of the street disturbed by the project, construction of lift station buildings, and demolition of the existing lift station. Table 6 presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet. Hourly average noise levels generated by public works-type projects typically range from 78 to 89 dBA L_{eq} measured at a distance of 50 feet from the center of a busy construction site. The highest maximum noise levels generated by project construction would typically range from about 80 to 90 dBA L_{max} at a distance of 50 feet from the noise source (Table 7).

TABLE 6 Typical Ranges of Exterior Noise Levels at 50 Feet from Construction Sites (dBA L_{eq})

	Type of Typical Construction Project							
	Domestic Housing		**Office Building, Hotel, Hospital, School, Public Works**		**Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station**		**Public Works Roads & Highways, Sewers, and Trenches**	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.
Note: These are exterior noise levels at a distance of 50 feet from a construction site assuming different types of construction (e.g. domestic housing, etc.)
Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

TABLE 7 Construction and Demolition Equipment, 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Noise data from microtunneling activities were collected by Illingworth & Rodkin, Inc. in August 2013 and October 2013[2]. The predominant sources of noise during the construction of the sending/receiving pits include excavators, trucks, a crane, and other support equipment including

[2] Illingworth & Rodkin, Inc., Construction Noise Monitoring (Microtunneling Operations) – SBSA 48-inch Force Main Project Site JS2, October 22, 2013.

pumps and generators. The construction of sending/receiving pits generates average equivalent noise levels ranging from approximately 68 to 71 dBA L_{eq} at distances of 50 feet. The predominant sources of noise during drilling can include trucks, a centrifuge, a separator plant, a diesel generator, blowers, a small bobcat forklift, and a crane. The operation of microtunneling equipment generates an average noise level of 73 dBA L_{eq} at a distance of 50 feet. The measured noise data indicate that the results of the construction noise modeling completed for the project represent a credible worst-case scenario.

Construction noise sources during open trench construction activities would primarily consist of the operation of vehicles and equipment during pavement removal, excavation, pipeline installation, backfill operations, and the repaving of the portion of the street disturbed by the project. Noise measurements of open trench construction activities were made by Illingworth & Rodkin, Inc. in July 2010[3]. Various types of equipment were operating on the construction site including loaders, excavators, and dump trucks. Noise measurements were conducted at both the heading, where excavation of the trench was occurring, and at the dumpsite where the trench was being filled. The average noise level at a distance of 50 feet was 77 dBA L_{eq}. The measured noise data indicate that the results of the construction noise modeling completed for the project represent a credible worst-case scenario.

Proposed Lift Station Project Area
The ambient noise level during the daytime hours at the proposed lift station site is about 51 dBA L_{eq}, resulting in an impact threshold for southern residences of 60 dBA L_{eq}. Construction noise levels at the lift station are expected to reach 88 dBA L_{eq} at the nearest residence to the south, exceeding the threshold by 28 dBA L_{eq}.

Existing Lift Station Project Area (Demolition)
The ambient noise level during the daytime hours at the existing lift station site is about 69 dBA L_{eq} at a distance of 50 feet. The nearest receptor to possible demolition noise is approximately 75 feet to the south. At this distance, ambient noise levels are 68 dBA, resulting in an impact threshold of 73 dBA L_{eq}. At a distance of 75 feet, noise levels from demolition of the existing West College Lift Station are expected to reach 88 dBA L_{eq}, exceeding the threshold by 15 dBA L_{eq}.

Trenching/Pipe Installation Project Area
Trenching is expected to occur along Fulton Road between West College Avenue and West Third Street. The ambient daytime noise level along on Fulton Road is about 67 dBA L_{eq} at a distance of 104 feet from the center of the road. At a distance of 57 feet from the center of the road, the ambient daytime noise level is 70 dBA, resulting in an impact threshold of 75 dBA L_{eq} for adjacent residences. Construction noise levels expected along Fulton Road due to trenching and other construction activities are expected to reach 76 dBA L_{eq} at a distance of 57 feet, exceeding the daytime threshold at nearby residences.

Santa Rosa Creek Microtunneling
Microtunneling is expected to occur just north of Santa Rosa Creek along Fulton Road. The daytime ambient noise level in this area is about 67 dBA L_{eq} at a distance of 104 feet from the

[3] Illingworth & Rodkin, Inc. Construction Noise Measurement Memo for SFPUC BDPL-5 Peninsula Project. August 2, 2010.

center of Fulton Road. At a distance of 50 feet from the center of the road, the ambient daytime noise level is 69 dBA L_{eq} resulting in an impact threshold of 74 dBA L_{eq} for adjacent residences. Construction levels due to microtunneling in this area are expected to reach up to 73 dBA L_{eq} at a distance of 50 feet. The nearest residence to the microtunneling area on Fulton Road has the potential to be within 45 and 75 feet from microtunneling activities. At these distances, noise levels due to microtunneling would be expected to be between 70 and 74 dBA L_{eq}. If microtunneling activities occur at a distance of 65 feet or greater from the nearest property line, noise levels will remain under the construction noise impact threshold.

Either shoring piles or foundation piles may be considered for the construction of the lift station. During pile driving, hourly average noise levels would be higher than typical construction noise levels. At the lift station, pile driving could occur within 15 feet from the nearest southern residences. During impact pile driving, maximum instantaneous noise levels would reach 115 dBA L_{max} at the nearest residences. During vibratory pile driving, maximum instantaneous noise levels would reach 105 dBA L_{max} at the nearest residences. Typically, hourly average noise levels (L_{eq}) during impact pile driving are 10 to 15 dBA less than maximum noise levels and during vibratory pile driving are about equal to the maximum noise levels.

Daytime noise levels at receptors bordering the several project areas are expected to exceed 60 dBA L_{eq} and exceed the ambient noise environment by at least 5 dBA L_{eq} at noise sensitive uses in the project vicinity. However, due to the construction of both the Fulton Road force main and lift station lasting less than one year, as well as the demolition of the existing lift station lasting less than one year, temporary construction related noise would be considered a less-than-significant impact with the incorporation of the construction best management practices**.**

Construction Best Management Practices

Develop a construction noise control plan, including, but not limited to, the following available control standards:

- Limit construction hours to between 7:00 a.m. and 7:00 p.m., Monday through Friday, and to between 8:00 a.m. and 5:00 p.m. on Saturdays.

- Lift station wells and vaults shall be located as far as feasible from residential land uses to minimize daytime construction noise levels. Trenching and microtunneling on Fulton Road shall be located as far as feasible from residential land uses to maintain daytime construction noise levels below 74 dBA L_{eq} and to minimize nighttime construction noise levels.

- 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, pavement breakers, rock drills) 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.

- Stationary noise sources related to construction 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.

- Operate the equipment mindful of the residential uses nearby.

- Maintain respectful and orderly conduct among workers.

- 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.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.

- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

If pile driving occurs, the following best management practices should be included:

- During pile driving, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.

- During pile driving activities, install “acoustical blankets” to provide shielding for receptors located within 100 feet of the site, or use of a noise attenuating shroud on the pile driving hammer.

Mitigation Measure: None required.