Sonoma Water

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Russian River County Sanitation District Headworks, Lift Stations, and Force Mains Project

DRAFT Initial Study and Mitigated Negative Declaration of Environmental Impact

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American Disabilities Act Compliance

This Initial Study and Proposed Mitigated Negative Declaration of Environmental Impact was prepared in compliance with requirements under the Americans with Disabilities Act (ADA). The ADA mandates that reasonable accommodations be made to reduce "discrimination on the basis of disability." As such, the Sonoma County Water Agency is committed to ensuring that documents we make publicly available online are accessible to potential users with disabilities, particularly blind or visually impaired users who make use of screen reading technology.

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CHAPTER 1 Introduction

1.0 Introduction

The Sonoma County Water Agency (Sonoma Water) is the project proponent and lead agency in accordance with the California Environmental Quality Act (CEQA) for the proposed Russian River County Sanitation District Headworks, Lift Stations, and Force Mains Project (Proposed Project), which is a sanitation system repair and replacement project. Sonoma Water staff has prepared this Initial Study and Mitigated Negative Declaration of Environmental Impact (IS/MND) to provide decision makers, the public, responsible agencies, and trustee agencies with information about the potential environmental impacts associated with the construction, maintenance, and operation of the Proposed Project. This IS/MND was prepared pursuant to the requirements of CEQA (California Public Resources Code sections 21000 et seq.), State CEQA Guidelines (Code of Regulations, Title 14, Division 6, Chapter 3), and Sonoma Water's Procedures for the Implementation of CEQA. After completion of the public review period for this document, this IS/MND, along with a summary of comments submitted and response, will be brought before Sonoma Water's Board of Directors for their consideration.

Sonoma Water was created in 1949 by the California Legislature as a special district to provide flood protection and water supply services. The members of the Sonoma County Board of Supervisors are Sonoma Water's Board of Directors. Sonoma Water's powers and duties authorized by the California Legislature include the production and supply of surface water and groundwater for beneficial uses, control of flood waters, generation of electricity, provision of recreational facilities (in connection with Sonoma Water's facilities), and the treatment and disposal of wastewater. Sonoma Water operates several sanitation districts in Sonoma County, including the Russian River County Sanitation District (District).

The wastewater infrastructure within the District service area was originally constructed in the 1970s and 1980s and has experienced sanitary sewer overflows and leaking pipes, prompting the District to investigate the condition of the lift stations, force mains, and headworks facility at the wastewater treatment plant (WWTP). As a result of the inspections of the sanitation system, it was determined that other vulnerabilities exist among the remainder of the infrastructure throughout the wastewater network due to deteriorating conditions.

1.1 Initial Study Review

Sonoma Water is circulating this IS/MND for a 31-day public and agency review period. Agencies and interested members of the public are invited to review and comment on the IS/MND. All comments received prior to 5:00 p.m. on the date identified for closure of the public comment period in the Notice of Availability/Intent to Adopt (Appendix A) will be considered. Please include a name, address, and telephone number of a contact person for all future correspondence on this subject.

Please send comments to:
Jeff Church, Senior Environmental Specialist
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404 Aviation Boulevard
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Or email comments to:
jeff.church@scwa.ca.gov

1.2 Summary of Findings

The IS/MND describes the Proposed Project and its environmental setting, including the Project site's existing conditions and applicable regulatory requirements. This IS/MND also evaluates potential environmental impacts from the Proposed Project to the following resources:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance

Potentially significant effects were identified for biological resources, cultural resources, geology and soils, hydrology and water quality, noise, recreation, transportation, and tribal cultural resources. The Proposed Project incorporates measures that would reduce all impacts to a less-than-significant level.

CHAPTER 2 Project Location and Description

2.0 Project Location and Description

2.1 Project Background

The District is one of eight different sanitation zones and districts managed and operated by Sonoma Water. The District services a 2,700 acre area located within the heart of the Russian River watershed near Guerneville, California. The wastewater infrastructure within the District's service area was originally constructed in the 1970s and 1980s and provides service to approximately 3,300 parcels, of which the WWTP treats wastewater for approximately 3,200 equivalent single-family dwelling units. The facilities within the District's service area include a complex gravity and pressurized force main[1] pipeline network, 11 lift stations[2], and a wastewater treatment plant located just east of Vacation Beach. Figure 1 shows the extent of the District's service area.

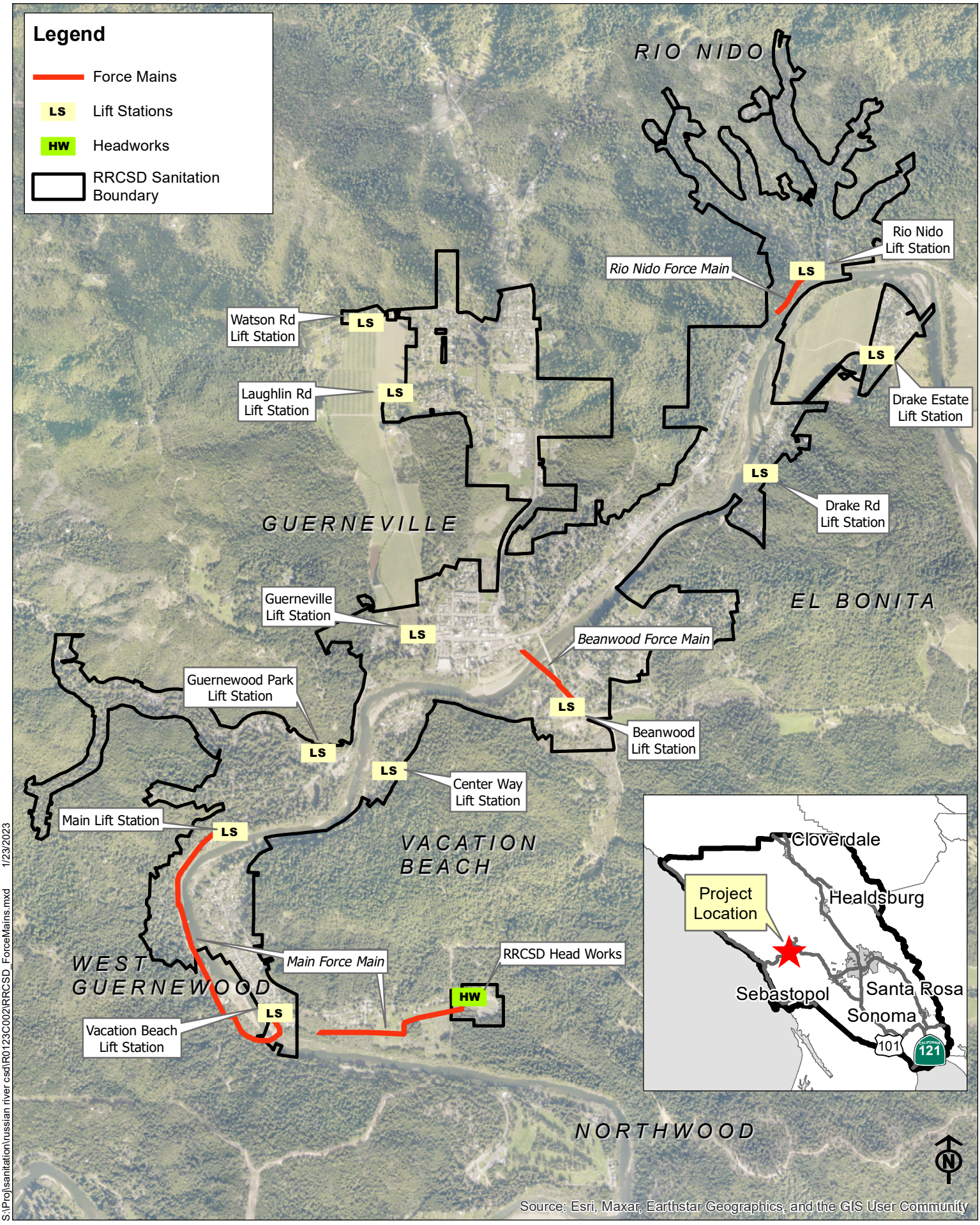
In recent years, the District has experienced sanitary sewer overflows and leaking pipes, including a portion of the force main near the Vacation Beach Lift Station that ruptured in February 2014 due to internal corrosion and was replaced with polyvinyl chloride (PVC) pipe. In November 2021, two additional leaks were discovered – one in the 12-inch force main discharging from Guerneville Lift Station and another near the location of the 2014 failure.

The District has conducted inspections of the sanitation system and discovered other vulnerabilities among the remainder of the infrastructure throughout the wastewater network, including the lift stations, force mains, and headworks facility at the WWTP. These inspections along with the November 2021 leak led to an emergency replacement conducted in September 2022 of approximately 900 feet of Main Force Main near the Vacation Beach Lift Station, which ties into segments of the Main Force Main that would be replaced in this Proposed Project.

A section of the Main Force Main was constructed through open-cut trenching methods across the Russian River and is buried at a relatively shallow depth (approximately 17 to 20 feet below ground surface) underneath the river channel and streambanks, and crosses seismically unstable terrain. Due to the relatively high probability of a major earthquake in the San Francisco Bay Area in the next 25 years (USGS 2003), the Main Force Main river crossing is vulnerable to potential ground deformation, liquefaction, and lateral spread of soil around the

[1] A force main is a pressurized sewer pipe that conveys wastewater under pressure from the discharge side of the pump. Force mains are used where gravity is not enough to move sewage or stormwater runoff through a sewer line.

[2] A wastewater lift station is a pumping station that moves wastewater from a lower elevation to a higher elevation through a force main.



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Sonoma Water

Russian River County Sanitation District

Head Works, Lift Stations, and Force Mains Project

Figure 1

0 1,000 2,000 Feet

pipeline. Any damage to the force main would result in a severe limitation in sanitation services for residents and businesses in the District service area.

In 2018, *the RRCSD Local Hazard Mitigation Plan* (LHMP) was prepared for the District and approved by the Federal Emergency Management Agency (RRCSD 2018). The LHMP aims to identify hazards to limit damage to infrastructure and facilities that occur as a result of natural disasters. It includes an assessment of the geologic, seismic, flood, fire, and other hazards present within the District's service area. The LHMP contains liquefaction susceptibility maps showing the approximate locations of liquefaction zones in the District's service area. The zones are categorized from "Very High" to "Very Low" liquefaction susceptibility. The LHMP recommends installation of seismically resistant pipes in the Very High and High liquefaction zones.

The LHMP also established a program to identify new projects that will mitigate system vulnerabilities to these hazards. The Proposed Project would restore and improve the structural integrity of the District's sanitation system while also reducing the seismic vulnerability.

2.2 Project Location and Regional Setting

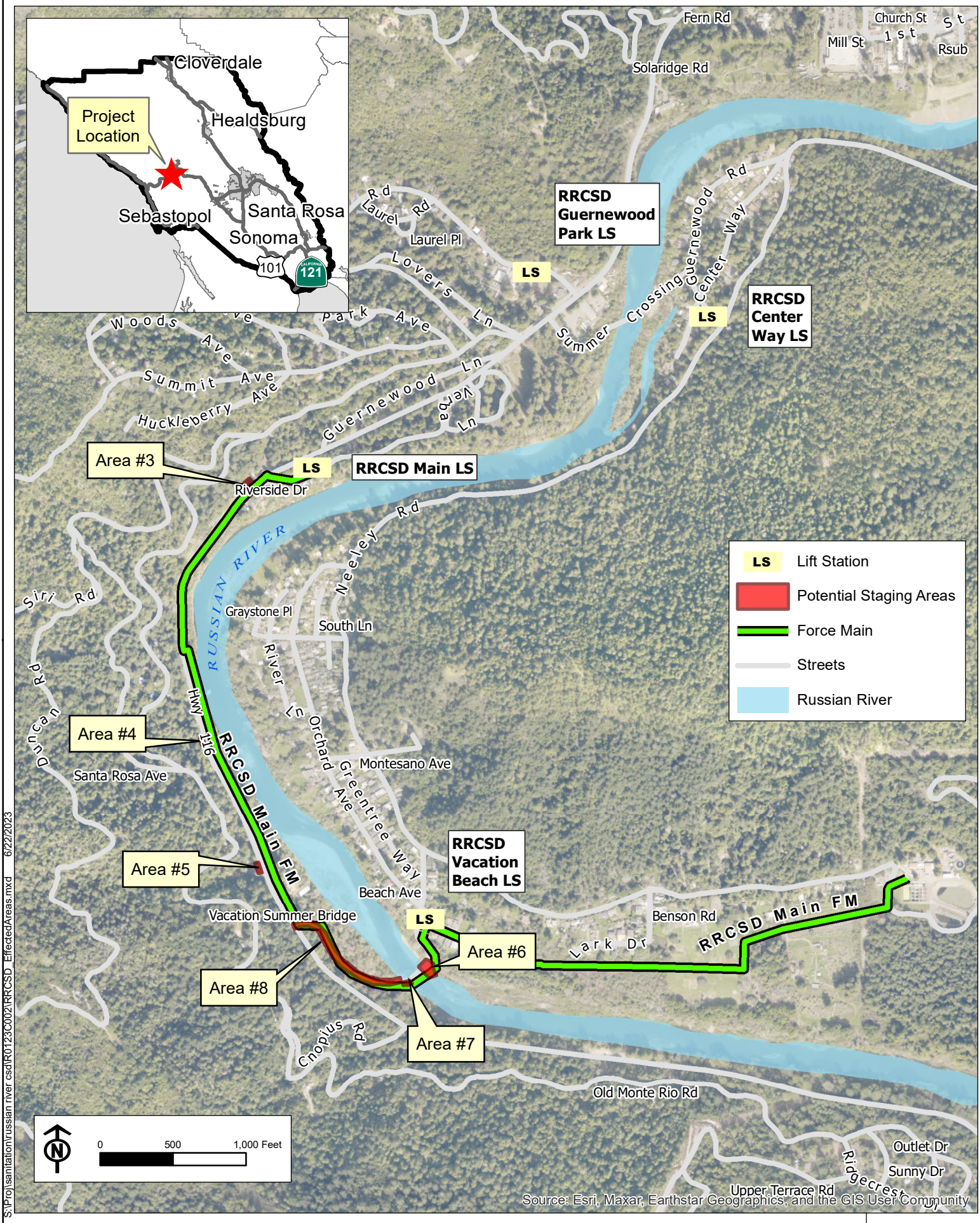
The Proposed Project is located approximately 60 miles northwest of San Francisco within the District's service area, which encompasses the unincorporated areas of Rio Nido, Guerneville, Guernewood Park, and Vacation Beach in Sonoma County (Figure 1).

The Proposed Project area is distributed throughout the District, with segments of three existing metallic force mains to be replaced at the northern, central, and southern ends of the service area (Figures 2 through 6). Most of the District's force mains run parallel to or cross the Russian River. The existing 11 lift stations to be rehabilitated are evenly distributed throughout the service area and pump wastewater towards the headworks facility at the WWTP (Figures 2 through 6). The Proposed Project will be described further in subsequent sections of this report.

2.3 Project Purpose and Need

The overall purpose of the Proposed Project is to reduce potential sanitary sewer overflows and leaking pipes and loss of sanitation service resulting from failures of deteriorating infrastructure or damage due to ground deformation, liquefaction, or lateral ground movement caused by a moderate or severe earthquake. To maintain safe and reliable sanitation service during a seismic event, the proposed project would also improve the ability of the Main Force Main to withstand the effects of ground deformation, liquefaction, and lateral spread hazards at the Russian River crossing.

The benefits of rehabilitating the public sewer system in the Russian River communities are expected to include improved system reliability, reduced overall sewer operation and maintenance costs for the District, alleviated groundwater and surface water contamination risks, reduced emergency infrastructure repairs, reduced electrical hazards, reduced damages due to flooding, and improvements to public health and safety and the environment.



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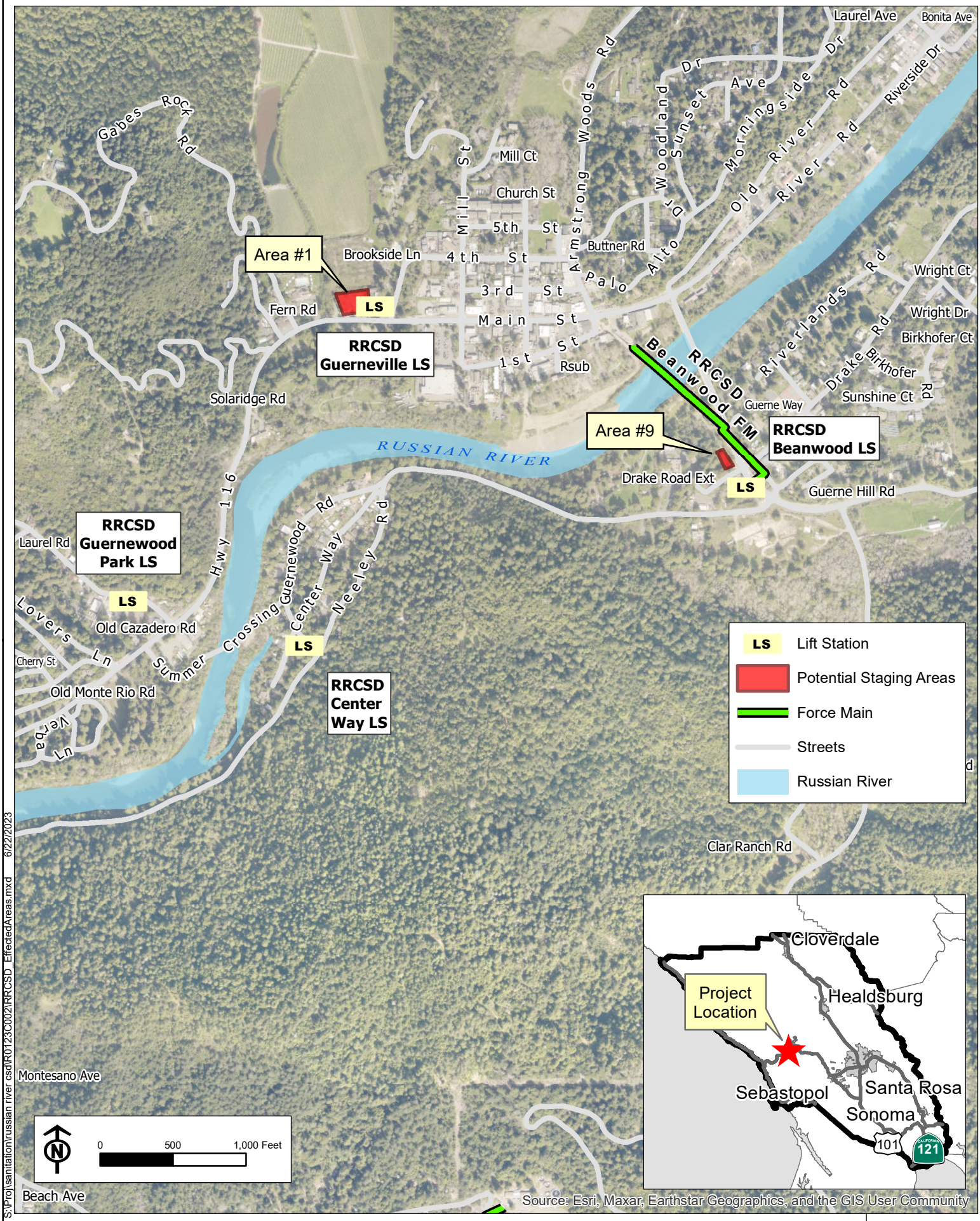
Main Force Main, Main Lift Station, and Vacation Beach Lift Station Project and Staging Areas

Figure 2



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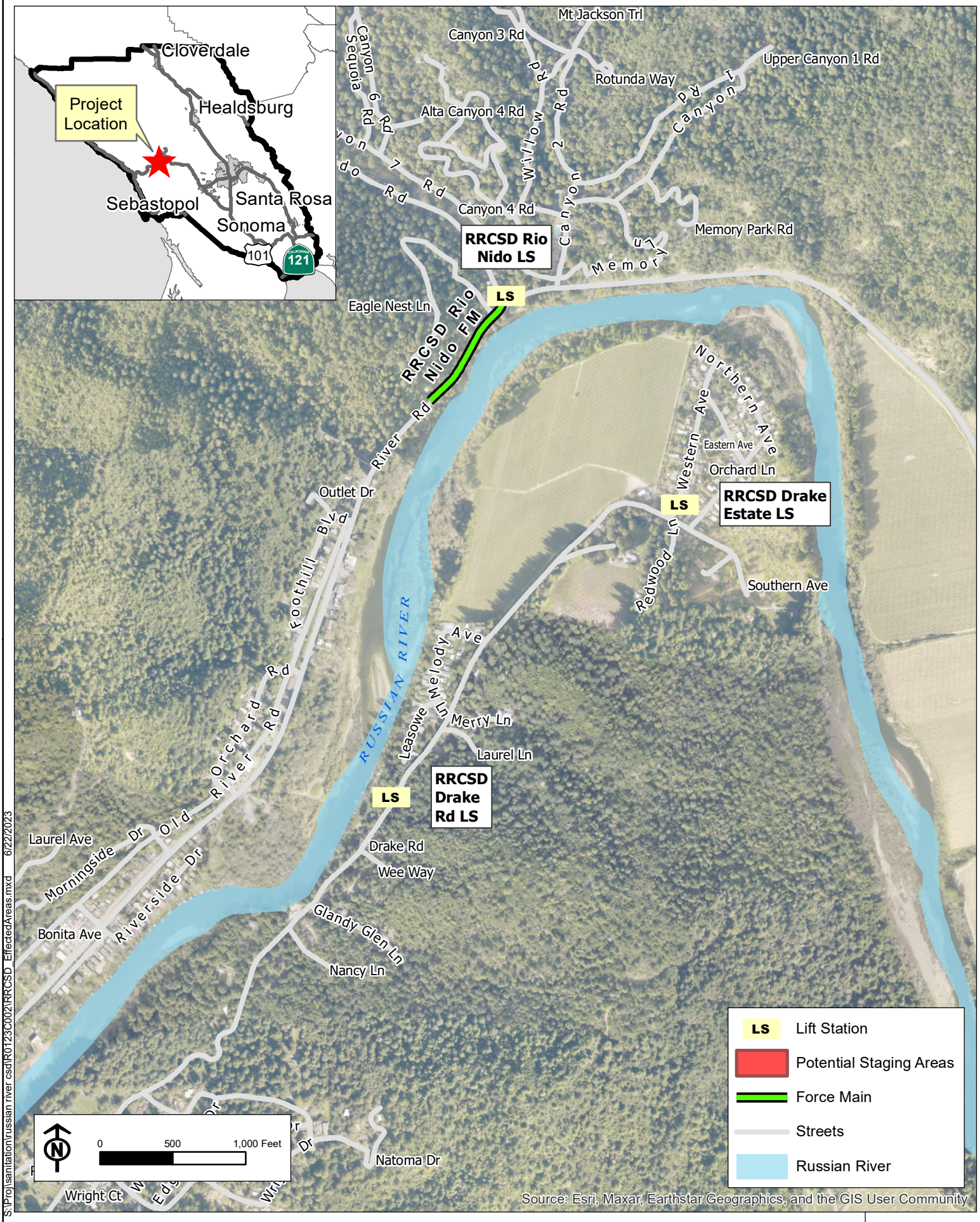
Center Way, Guernewood Park, Guerneville, and Beanwood Lift Stations and Beanwood Force Main Project and Staging Areas

Figure 3



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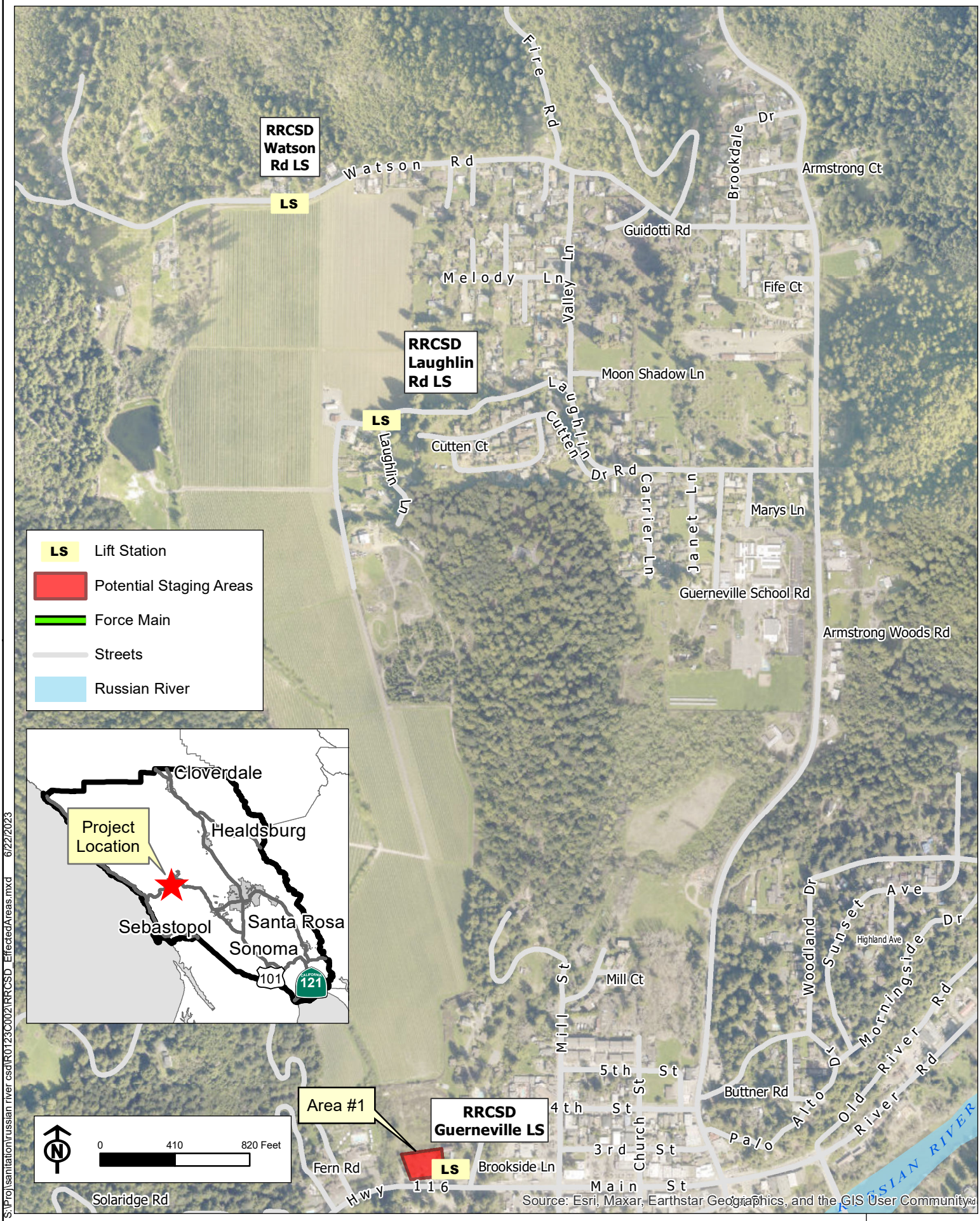
Drake Road, Drake Estates, and Rio Nido Lift Stations and Rio Nido Force Main Project Areas

Figure 4



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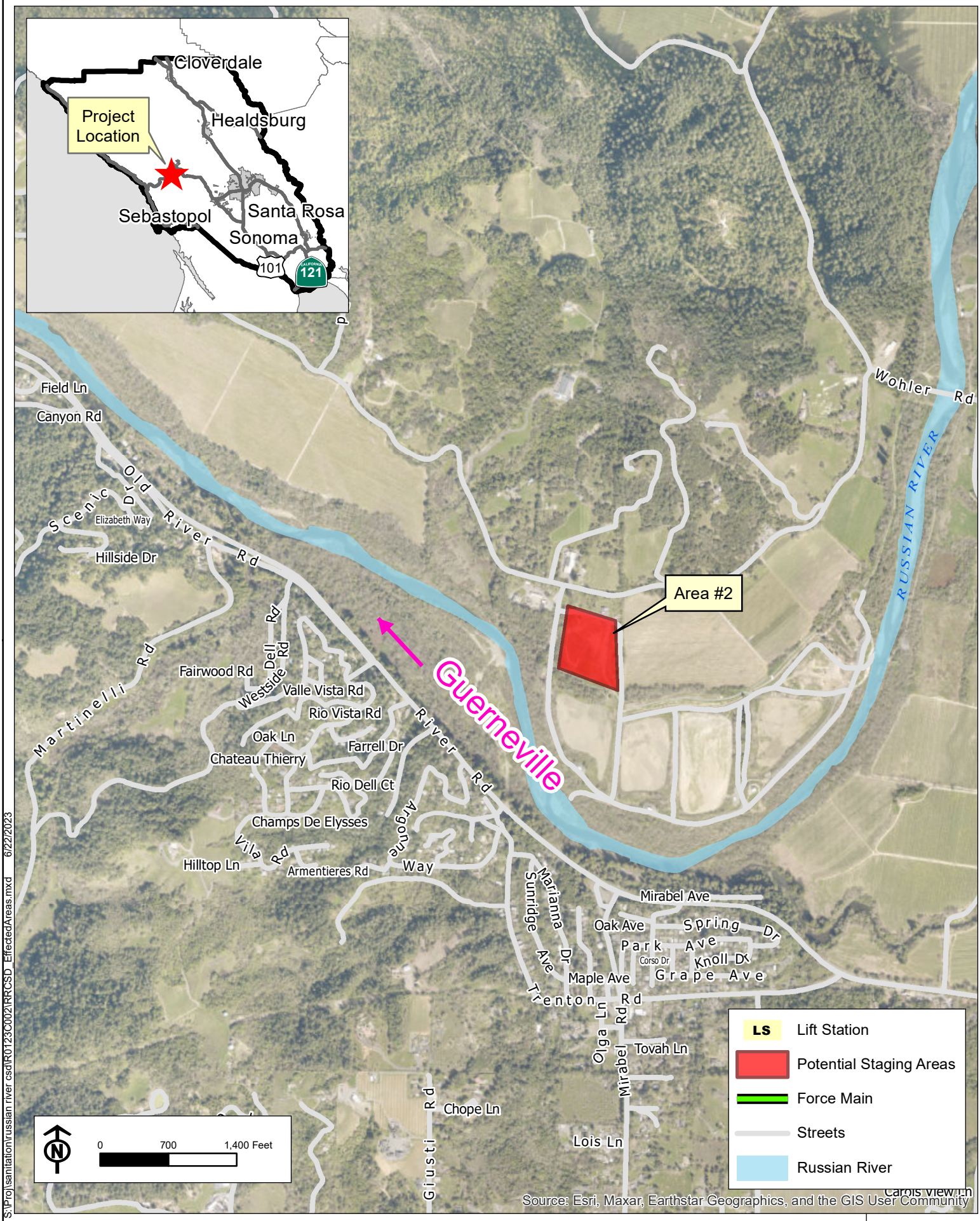
Watson Road and Laughlin Road Lift Station Project Areas

Figure 5



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Staging Area at Sonoma Water Facilities

Figure 6

The Proposed Project is needed to replace existing aging infrastructure, including addressing internal corrosion within the force main network. Naturally occurring sulfur-reducing bacteria in wastewater creates a corrosive hydrogen sulfide gas (H_2S), which can attack concrete and metal materials. It is likely that H_2S corrosion is responsible for damage that has occurred within the system at locations where gaps of air are present within pipelines. Any new pipe materials to be installed for the Proposed Project would be composed of corrosion-resistant materials to reduce the risk of damage due to H_2S. Both structural damage and corrosion could lead to force main leaks or breaks that can harm the environment and lead to costly fines and emergency repairs.

The Proposed Project would also address the liquefaction susceptibility of the subsurface force main facilities. As mentioned previously, a majority of the Proposed Project area is located within “High” to “Very High” zones of liquefaction potential as defined in the LHMP. Addressing these concerns would reduce the risk of structural damage to the District’s force mains during seismic events. Replacements to the existing infrastructure would be made with materials that are intended for seismic resilience.

Additionally, the District is proposing to make improvements to the headworks at the WWTP and the lift stations within the service area in conjunction with the improvements to the associated force mains. A recently compiled condition assessment prepared for the District analyzed the headworks and lift stations using a condition-based and time-based remaining useful life scoring system of 1 to 5 with 5 representing the least remaining useful life and worst condition. Out of 283 total items assessed at the lift stations, over 200 were scored between 3 and 5, indicating that a majority of the District’s electrical and mechanical lift station components would need replacing or rehabilitation in the near future (West Yost 2023).

2.4 Project Description

The Proposed Project would include repairing and replacing existing components of the headworks at the WWTP as well as repairing and replacing existing components at the 11 lift stations, and replacing or rehabilitating sections of three existing force mains.

Project activities associated with repairing the lift stations includes but is not limited to replacing existing lift station platforms, replacing electrical and mechanical pumping components, installing new flow meter vaults, and minor regrading to accommodate new infrastructure. Repairs and replacement associated with the lift stations would result in approximately 4,500 square feet of ground disturbance, including digging pits up to 8 feet deep to install the new flow meter vaults, and would occur mostly within existing lift station footprints and fenced areas.

Part of the improvements intended for the headworks and lift station facilities entails decommissioning the two medium-voltage electrical transmission lines that the District maintains. One line originates at the WWTP and provides primary power to the Vacation Beach Lift Station. The other line originates at the Main Lift Station and provides primary power to the Guerneville, Guernewood Park, and Beanwood lift stations. As discussed in the Project Engineering Report (West Yost 2023), these transmission lines are difficult to maintain and pose a critical safety risk for construction activities that occur within the right-of-way where the lines

are located. Accordingly, the District would decommission the medium-voltage transmission lines and install new dedicated Pacific Gas & Electric (PG&E) electrical utility services at the Guerneville, Guernewood Park, and Beanwood lift stations. The Vacation Beach lift station would receive new low voltage electrical service from the WWTP.

The project would also repair and replace approximately 10,500 linear feet of existing force main pipe on the Beanwood, Rio Nido, and Main force main alignments, including approximately 8,100 linear feet through traditional trenching methods. Trenching methods would include digging a trench approximately three (3) to five (5) feet wide and approximately six (6) to ten (10) feet deep.

In general, repair and replacement of the project facilities would occur in the following sequence: site clearing (vegetation or hardscape removal); excavation for pipeline, conduit, and utility vault installation; microtunneling for pipeline installation; installation of new project components; installation of concrete pads for lift station platforms and control panels; trench and microtunnel shaft backfilling; minor grading; and surface restoration. During project construction stormwater, groundwater, and spoil management would occur. These project activities are described further in the following sub-sections.

Headworks Facilities

The headworks facility at the WWTP consists of a primary bar screen, two mechanical spiral intake screens, each rated for 5.5-million gallons per day (mgd) capacity, a concrete Parshall flume for measuring flow rate, and a grit chamber equipped with two submersible 7.5-horsepower (HP) grit handling pumps located in a basement pumping room. Based on record drawing information, the piping system for the grit pumping station consists of approximately 220 linear feet of 4-inch diameter pipe that discharges into the grit classifier on the second floor of the mechanical building, where the grit is dewatered and separated. The grit classifier is difficult for the District to maintain and operate since it is relatively far away from the headworks where the grit pumps are located.

The following is a list of the proposed repair and replacement activities associated with improving the function of the headworks facilities:

- Repair of concrete cracks and corrosion in various areas, including within the flume channel and areas with visible water leakage and/or moisture infiltration.
- Recoat the internal concrete within the headworks structure.
- Decommission the step-down transformer and electrical connection that supplies power to the Vacation Beach Lift Station.
- Replace the two grit pumps (with different models to better fit the design operating point) and appurtences such as motor starters.
- Replace exposed grit pump discharge piping and valves inside the pump room and grit chamber.
- Replace exhaust fan and building door in grit pump room.
- Replace various corroded metalwork such as conduit supports, conduits, small-diameter piping.

- Replace the three grit-chamber-aeration blowers and the existing grit classifier, which are located in the maintenance building.
- The new grit classifier will be a 480VAC, 3-phase unit with a motor less than 7.5 HP, and would be located outside near the headworks structure. The existing grit piping coming out of the grit chamber will need to be redirected to the new classifier location; the portion of the existing piping within the maintenance building will be removed and a portion of the buried piping will be properly abandoned in place. The new piping alignment will be considered in the selection of the new grit pumps stated above.
- Replace two existing screens with multi-rake screens and install a conveyor on the influent screen system so that debris for both screens may be collected in the same bin.
- Install a baffle wall system inside the grit chamber with an air-blast and grit fluidization assembly to improve grit removal.

Construction Activities and Equipment for Headworks Facilities

Construction activities associated with repairing the headworks includes, but is not limited to rerouting pipes and conduits to accommodate the reconfiguration of the grit classifier, multi-rake screens installation and influent meter vault. Repairs and replacements to the headworks facilities would result in approximately 1,000 square feet of ground disturbance, including digging one (1) pit up to 8 feet deep to install a new utility vault and constructing a 16 foot by 20 foot concrete pad for electrical control panels and other instrumentation. Construction and ground disturbance would occur within existing facilities that consist of paved and previously developed areas.

Construction would require the use of an excavator, front loader and dump truck to facilitate the excavation of new valve vaults, re-rerouting of conduit and pipes, and construction of the concrete pad. Construction would also include the use of concrete saws, jack hammers and other pneumatic tools. A water truck would be employed for dust control. Pumps, generators, hoses, and temporary water tanks would be utilized as needed for flow bypass during construction activities. Finally, a paving machine and roller compactor would be utilized to restore paved surface conditions.

Maintenance and Operations of the Headworks

Maintenance and operation of the headworks would be consistent and similar to existing maintenance and operational activities, however it is anticipated that maintenance activities would occur less frequently with the replacement of deteriorating facility components with new components and improved functionality.

Lift Station Facilities

A majority of the work associated with the District lift station facilities relate to, but are not limited to, the site electrical and mechanical pumping equipment. At two of the lift stations (Main and Rio Nido), the electrical control centers are housed in a building, while the remainder of the lift stations have the electrical facilities located outdoors. The collection system area, including that surrounding the lift stations, have historically been inundated with floodwaters during high water events. The outdoor electrical and motor control centers have been elevated on metal platforms in recent years to avoid the risk of being damaged by water during such flood events. As part of

this project, some of the platforms will be elevated further to raise them above the 500 year flood elevation as defined by Federal Emergency Management Agency (FEMA). The repairs and replacements identified for the lift stations would facilitate maintaining flow capacity, providing dedicated primary electrical utility service for each lift station facility, providing backup power, and equalizing flow being pumped to the WWTP through addition of variable frequency drives (VFDs).

The following sections describe the proposed improvements at the lift stations.

All Lift Stations

- Replace pumps with different models to better fit the design operating point.
- Provide VFDs to improve the flow equalization.
- Replace all exposed piping inside the wet well and valve vault.
- Provide new springs and miscellaneous hardware for the wet well and valve vault hatches.
- Demolish the existing electrical and motor controls. Remote terminal units (RTU) will be reused or new one provided by District based upon condition of existing.
- Provide new motor control panel.
- Install new flowmeter.
- Install new emergency site lighting.

The following sections describe the additional proposed improvements at each lift station.

Rio Nido Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Remove and replace the building ceiling.
- Restore pavement.
- Construct new chain link access gate.

Beanwood Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves, check valves, and combination air valves.
- Restore pavement.
- Provide new PG&E primary utility service.
- Provide new meter/main breaker and new automatic transfer switch (ATS).
- Provide new generator and electrical pad/platform and permanent standby generator.
- Install new local pump and instrumentation box.
- Install weather overhang above outdoor electrical panels.
- Install sump pump in the valve vault.

Main Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves, check valves, and combination air valves.
- Construct low-flow wet well including two (2) pumps, isolation valves, check valves, and access hatches.

- Demolish existing wet well top concrete slab and access hatches. Reconstruct a new reinforced concrete top with three new replacement access hatches.
- Construct junction boxes to route influent to wet well.
- Replace odor control equipment.
- Remove and replace the building ceiling.
- Construct new chain link access gate.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Replace generator and related electrical equipment.

Drake Estate Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves and check valves.
- Construct new chain link access gate.
- Install weather overhang above outdoor electrical panels.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Provide new generator and electrical platform and permanent standby generator.

Drake Road Lift Station

- Replace all isolation valves and check valves.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Install weather overhang above outdoor electrical panels.
- Install sump pump in the valve vault.
- Provide new generator and electrical platform and permanent standby generator.

Watson Road Lift Station

- Replace all isolation valves and check valves.
- Repair corrosion on electrical platform.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Install weather overhang above outdoor electrical panels.
- Install sump pump in the valve vault.
- Provide new generator and electrical platform.

Laughlin Road Lift Station

- Replace all isolation valves and check valves.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Install weather overhang above outdoor electrical panels.
- Provide new generator and electrical platform and permanent standby generator.

Guerneville Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves and check valves.
- Provide new PG&E primary utility service.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Provide new generator and electrical platform and permanent standby generator.

Guernewood Park Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves and check valves.
- Provide new PG&E primary utility service.
- Regrade the site.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Install weather overhang above outdoor electrical panels.
- Provide new generator and electrical platform and permanent standby generator.

Center Way Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves and check valves.
- Regrade the site.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Install weather overhang above outdoor electrical panels.
- Provide new generator and electrical platform and permanent standby generator.

Vacation Beach Lift Station

- Replace pump discharge elbows, guide rails and brackets.
- Replace all isolation valves and check valves.
- Regrade the site.
- Construct new chain link access gate.
- Install new local pump and instrumentation box.
- Provide new meter/main breaker and new ATS.
- Provide new ultrasonic level element and float switches.

Construction Activities and Equipment for Lift Station Facilities

Construction activities associated with repairing the lift stations include, but is not limited to, replacing internal pumps, valves, and piping within the existing wet wells. Repairs and replacements to the lift station facilities would also result in ground disturbance to re-route piping and conduit, install new utility vaults, and install new concrete pads and new elevated platforms that would support electrical control panels, standby generators, and other instrumentation. Ground disturbing activities would occur within existing facility footprints that consist of paved and previously developed areas.

Construction would require the use of an excavator, front loader and dump truck to facilitate the excavation of new valve vaults, re-rerouting of conduit and pipes, and construction of concrete pads. Construction would also include the use of concrete saws, jack hammers and other pneumatic tools. A water truck would be employed for dust control. Pumps, generators, hoses/pipes, and temporary water tanks would be utilized as needed for flow bypass during construction activities. Finally, a paving machine and roller compactor would be utilized to restore paved surface conditions.

Maintenance and Operations of the Lift Stations

Maintenance and operation of the lift stations would be consistent and similar to existing maintenance and operational activities, however it is anticipated that corrective maintenance activities would occur less frequently with the replacement of deteriorating facility components with new components and improved functionality.

Force Main Facilities

Rio Nido Force Main

The Rio Nido Force Main is an 8-inch diameter ductile iron force main with mechanical joints beginning at the Rio Nido Lift Station and running south approximately 890 feet along River Road where it discharges into an existing sanitary sewer manhole. This manhole also collects gravity sewer flows from two houses. After exiting the Rio Nido Lift Station, the alignment is located entirely within the paved southbound lane on River Road.

The Rio Nido Force Main is mostly located in an area identified in the District's LHMP as having "Very Low" liquefaction susceptibility. However, near the start of the alignment, just downstream of the Rio Nido Lift Station, the force main transitions into an area identified as having "High" liquefaction potential.

Because of the different liquefaction susceptibility zones that exist along the Rio Nido Force Main, rehabilitation of the alignment is broken up into two segments. The design intent of Segment 1 is to include the portion of the existing force main that is within the "High" liquefaction zone beginning from the lift station and running south, approximately 200 feet. Segment 2 includes the remainder of existing force main, approximately 690 feet, which continues south where it discharges into an existing sanitary sewer manhole. Figure 7 shows a portion of Segment 2 along the viaduct.

Construction Activities and Equipment for Rio Nido Force Main Facilities

Removal and replacement of Segment 1 would utilize open cut construction that involves saw-cutting of pavement (where applicable), then trenching to expose the pipe, followed by the removal of the existing pipe and installation of the new pipe in the same trench. The new pipe would have a similar depth and grade to the existing pipe. Once installed, the trench would then be backfilled with material that would be compacted followed by appropriate surface restoration methods. Open-cut construction also helps the contractor to avoid existing utilities due to the contractor's ability to visually see obstructions within the trench and possibly make slight adjustments to existing utilities and/or to the force main alignment during installation, thereby avoiding damage to those utilities. Figure 8 provides an example of open-cut construction.

Figure 7. Looking south along River Road on a portion of Segment 2 of the existing Rio Nido Force Main alignment.

Figure 8. Example of open-cut construction for a 20-inch diameter force main within a paved road.

Segment 2 would include Cured-in-place pipe (CIPP) lining the remaining 690 feet of the Rio Nido Force Main. CIPP liner is a resin- impregnated tube that forms a tight fit bond with the interior of the existing pipe. CIPP is inserted into the existing pipe either through a manhole or an access pit. Following insertion, the liner is cured with the total curing phase expected to take one to five hours dependent on the design parameters, curing method, and surrounding environment.

To bypass the section of pipe under construction, it would be necessary to lay temporary pipe placed parallel to the existing alignment in areas protected from traffic. For the portions that involve crossing driveways and roadways, a pipe would be temporarily installed below grade in a shallow trench covered by trench plates or used in combination with crossover ramps.

Construction would require the use of an excavator, front loader and dump trucks to facilitate the removal and replacement of the force main pipe. Construction would also include the use of concrete saws, jack hammers and other pneumatic tools. A water truck would be employed for dust control. Pumps, generators, hoses/pipes, and temporary water tanks would be utilized as needed for flow bypass during construction activities. Finally, a paving machine and roller compactor would be utilized to restore paved surface conditions.

Beanwood Force Main

The Beanwood Force Main is comprised of approximately 1,350 feet of 8-inch diameter welded steel force main beginning at the Beanwood Lift Station and extending northeast towards Drake Road then turning northwest towards the Guerneville Bridge (only used for pedestrian use). The force main daylights on the southeast side of the bridge, whereupon it is suspended under the bridge and crosses the Russian River, and then reenters the ground where it discharges at a manhole on the northwest side of the river just northeast of the pedestrian bridge approach.

The Beanwood Force Main alignment is divided into two segments. Segment 1 includes the portion of the existing force main from the lift station to the southeast end of the pedestrian bridge. Segment 2 includes the suspended portion of existing force main that crosses the Russian River from the southeast end to the northwest side of the river, including the relatively short portion of buried pipeline that discharges into the gravity system.

Construction Activities and Equipment for Beanwood Force Main Facilities

Segment 1 would include the use of open-cut construction for an alternate alignment of the Beanwood Force Main. The force main would run off-pavement until it enters the south end of Drake Road, crossing through a parking lot and running parallel to the west side of Highway 116 along a pedestrian path through Guerneville River Park where it would connect to the start of the Segment 2 alignment. The existing alignment of Segment 1 of the force main would remain in service throughout the open-cut alternative alignment construction and would not require any means of bypassing other than potentially a temporary shut down for connection at the Beanwood lift station. Once the new alignment is in service, the old force main would be abandoned in place and filled with controlled low strength material (CLSM) or flanged at the ends.

Segment 2 would include removing and replacing the existing 8-inch diameter force main that is suspended on the bridge with new 8-inch diameter pipe. Additional and/or replacement of pipe supports and brackets would be included. Figure 9 shows the existing force main hanging underneath the Guerneville Bridge. Removal and replacement of the force main on the Guerneville Bridge would require the temporary installation of scaffolding underneath the bridge during construction activities. Figure 10 provides an example of temporary scaffolding hanging underneath a bridge.

To bypass the section of pipe under construction, it would be necessary to lay temporary pipe placed parallel to the existing alignment in areas protected from traffic, including foot and bicycle traffic on the Guerneville Bridge. For the portions that involve crossing driveways and roadways, a pipe would be temporarily installed below grade in a shallow trench covered by trench plates or used in combination with crossover ramps.

Construction would require the use of an excavator, front loader and dump trucks to facilitate the removal and replacement of the force main pipe. A boom truck would be used to remove and replace the pipe on the Guerneville Bridge. Figure 11 provides an example of a boom truck on a bridge. Construction would also include the use of concrete saws, jack hammers and other pneumatic tools. A water truck would be employed for dust control. Pumps, generators, hoses/pipes, and temporary water tanks would be utilized as needed for flow bypass during construction activities. Finally, a paving machine and roller compactor would be utilized to restore paved surface conditions.

Main Force Main

The Main Force Main consists of a 16-inch diameter steel pipe conveying wastewater from Guernewood Park area to the WWTP. The force main begins at the south end of the Main Lift Station, where it proceeds below grade along Riverside Drive before turning southwest on CA State Highway 116. Approximately halfway between Riverside Drive and Summer Bridge/Vacation Beach Road, the force main is suspended from a viaduct along Highway 116. The force main then continues south on Highway 116, turns east onto Summer Bridge/Vacation Beach Road, crosses beneath the Russian River and heads north into Vacation Beach, where additional wastewater is pumped into the force main from the Vacation Beach Lift Station. The force main then continues east toward the WWTP where it runs within the roadway, then an easement, and finally discharges into the WWTP headworks.

The start of the existing alignment at Main Lift Station is identified in the LHMP as an area of “High” liquefaction susceptibility, and soon after turning onto the highway, susceptibility categorization changes to “Very Low”. In the vicinity of the viaduct, the force main again enters an area the LHMP identifies as having “Very High” susceptibility to liquefaction and remains so all the way to the WWTP.

The Main Force Main is subdivided into seven segments due to the complexity of the alignment and the different construction methods applicable for each segment. The following subsections describe the construction methods for rehabilitation/ replacement of each of these segments.

Figure 9. Looking northwest under the Guerneville Bridge at the existing Beanwood Force Main hanging on the underside.

Figure 10. Example of temporary scaffolding hanging underneath a bridge.

Figure 11. Example of boom truck on a bridge.

Segment 5 is split into two parts (west and east sides of the river) with Segment 6 located underneath the Russian River between these parts. Downstream of the portion of Segment 5 on the east side of the river and upstream of Segment 7, the force main had undergone emergency repair of approximately 900 feet of pipe in 2022, from the park at Vacation Beach Lift Station, east through Orchard Avenue, and extending into the existing District easement east of Orchard Avenue.

Construction Activities and Equipment for Main Force Main Facilities

Segment 1 represents the portion of Main Force Main in Guernewood Park within Riverside Drive (shown in Figure 12) to the intersection of Highway 116. Removal and replacement of Segment 1 would utilize open cut construction that involves saw-cutting of pavement (where applicable), then trenching to expose the pipe, followed by the removal of the existing pipe and installation of the new pipe in the same trench. The new pipe would have a similar depth and grade to the existing pipe. Once installed, the trench would then be backfilled with material that would be compacted followed by appropriate surface restoration methods.

The existing force main would be taken offline, removed from the existing trench, and replaced with a pipe of superior material. Because the force main would need to be offline during the entire construction process, flow bypass measures would need to be in operation for the same duration of construction. To bypass the section of pipe under construction, it would be necessary to lay temporary pipe placed parallel to the existing alignment in areas protected from traffic. For the portions that involve crossing driveways and roadways, a pipe would be temporarily installed below grade in a shallow trench covered by trench plates or used in combination with crossover ramps.

Figure 12. Segment 1 of Main Force Main alignment facing northwest towards Highway 116 on Riverside Drive.

Segment 2 of the Main Force Main begins at the intersection of Riverside Drive and Highway 116. The existing force main at this location lies within the west side of the highway and flows south for approximately 1,440 feet, where it bends 90 degrees toward the east side of the highway and connects to Segment 3. Figure 13 shows a portion of Segment 2 along Highway 116.

Removal and replacement of Segment 2 would utilize open cut construction that involves saw-cutting of pavement (where applicable), then trenching to expose the pipe, followed by the removal of the existing pipe and installation of the new pipe in the same trench. The new pipe would have a similar depth and grade to the existing pipe. Once installed, the trench would then be backfilled with material that gets compacted followed by appropriate surface restoration methods.

Because the force main would need to be offline during the entire construction process, flow bypass measures would need to be in operation for the same duration of construction. To bypass the section of pipe under construction, it would be necessary to lay temporary pipe placed parallel to the existing alignment in areas protected from traffic. For the portions that involve crossing driveways and roadways, a pipe would be temporarily installed below grade in a shallow trench covered by trench plates or used in combination with crossover ramps.

Figure 13. Looking southeast along Highway 116 at the location of the Segment 2 of the Main Force Main pipeline alignment.

Segment 3 of the Main Force Main is the location where the pipe is exposed and suspended along the highway viaduct. At this point, both the force main and an 8-inch diameter gravity pipe are exposed, with the gravity pipe aligned approximately one foot above the force main as shown in Figure 14.

The replacement method for Segment 3 would include sliplining the existing pipe. Sliplining involves inserting a new, smaller-diameter liner pipe into an existing pipe and grouting the annular space in-between the two pipes. This method of pipe repair offers a full structural rehabilitation that would function as an entirely new pipe and is useful where open cut construction or repositioning is unavailable. The method of installing a sliplined pipe would require an excavation pit or access manhole where the new liner pipe would either be winched and pulled through the existing force main from the receiving end or pushed into the existing force main from a pneumatic or hydraulically powered pushing machine at the entry pit.

Because the force main would need to be offline during the entire construction process, flow bypass measures would need to be in operation for the same duration of construction. To bypass the section of pipe under construction, it would be necessary to lay temporary pipe placed parallel to the existing alignment in areas protected from traffic. For the portions that involve crossing driveways and roadways, a pipe would be temporarily installed below grade in a shallow trench covered by trench plates or used in combination with crossover ramps.

Figure 14. The existing 16-inch diameter steel Main Force Main and 8-inch diameter gravity sanitary sewer suspended along the Hwy 116 viaduct.

Segment 4 of Main Force Main begins at the point where the pipe reenters the ground downstream of the viaduct. The existing force main continues along the east side of Highway 116 for approximately 1,320 feet, where it bends toward Summer Bridge Road.

Removal and replacement of Segment 4 would utilize open cut construction that involves saw-cutting of pavement (where applicable), then trenching to expose the pipe, followed by the removal of the existing pipe and installation of the new pipe in the same trench. The new pipe would have a similar depth and grade to the existing pipe. Once installed, the trench would then be backfilled with material that would be compacted followed by appropriate surface restoration methods.

Because the force main would need to be offline during the entire construction process, flow bypass measures would need to be in operation for the same duration of construction. To bypass the section of pipe under construction, it would be necessary to lay temporary pipe placed parallel to the existing alignment in areas protected from traffic. For the portions that involve crossing driveways and roadways, a pipe would be temporarily installed below grade in a shallow trench covered by trench plates or used in combination with crossover ramps.

Segment 5 of Main Force Main begins at the intersection of Highway 116 and Summer Bridge Road. The force main continues toward Summer Bridge, a temporary bridge structure that is constructed and deconstructed every year for summer season recreational activity. The force main follows the road towards the Russian River, crosses the river beneath the riverbed within an encasement (see Segment 6 below), and continues up Vacation Beach Road within an easement towards Vacation Beach Lift Station. Segment 5 is located in an area the LHMP identifies as having “Very High” liquefaction susceptibility.

Segment 5 would utilize open cut construction in a parallel alignment to the existing force main that would involve saw-cutting of pavement (where applicable), then trenching, followed by the installation of the new pipe in the trench. The new pipe alignment would have a similar depth and grade to the existing pipe alignment. Once installed, the trench would then be backfilled with material that gets compacted followed by appropriate surface restoration methods. Parallel alignment would be utilized for Segment 5 along Summer Bridge/Vacation Beach Road to allow the District the opportunity to limit bypass pumping and bypass trucking activity from the Main Lift Station to the WWTP. The parallel alignment would be constructed on both the west and east sides of the river to the connection to the emergency repair project located between the park at Vacation Beach Lift Station and the existing District easement east of Orchard Avenue. The old force main would be abandoned in place and filled with CLSM or flanged at the ends.

Segment 6 is located between the two parts of Segment 5 where the existing force main crosses beneath the Russian River within a 20-foot-wide District easement. Nearly 800 feet from the intersection of Highway 116 and Summer Bridge/Vacation Beach Road, the existing force main crosses the river in a concrete encasement at a depth of approximately 17 to 20 feet below the riverbed. The force main stays encased in concrete for approximately 460 linear feet (LF), where it then exits the casing and continues up Summer Crossing/Vacation Beach Road toward the Vacation Beach lift station, as noted in Segment 5.

Segment 6 would include crossing the Russian River with a new pipe at the Summer Bridge/Vacation Beach Road location, which would require trenchless construction to insert a steel casing beneath the riverbed. Microtunneling would be utilized for trenchless construction and would require entry and exit shafts excavated at a slightly greater depth to the recommended pipe crossing depth on each side of the river for the new pipe to be installed beneath the riverbed. The new pipe would be placed at a depth of approximately 30 feet to 45 feet below the riverbed to limit liquefaction concerns. Microtunneling would include the installation of a casing pipe beneath the riverbed, approximately 200 feet in length and with an approximate diameter of 60 inches to accommodate cobbles that are expected to be up to 12 inches in diameter. The new pipe would then be placed within this larger casing pipe and connected to Segment 5 on either side of the river. The old force main would be abandoned in place and filled with CLSM or flanged at the ends.

Segment 7 of the Main Force Main begins approximately 500 feet east of the dead end at Orchard Avenue in Vacation Beach and extends for the remainder of the distance to the WWTP. Open-cut construction via a parallel alignment for Segment 7 would occur within an existing 20-foot-wide District easement. Parallel alignment would be utilized for Segment 7 to allow the District the opportunity to limit bypass pumping and bypass trucking activity from the Main Lift Station to the WWTP. Parallel alignment for Segment 7 would be installed north of the existing force main to align with the emergency repair project that was installed north of the old alignment and would run adjacent to the existing pipe until connecting to the headworks inlet at the WWTP. The old force main would be abandoned in place and filled with CLSM or flanged at the ends.

Construction of the Main Force Main would require the use of an excavator, bore/drill rig, front loader and dump trucks to facilitate the removal and replacement of the force main pipe. Land clearing and grubbing along Segment 7 would require the use of chainsaws, weed whackers, and chippers. Construction would also include the use of concrete saws, jack hammers and other pneumatic tools. A water truck would be employed for dust control. Pumps, generators, hoses/pipes, and temporary water tanks would be utilized as needed for flow bypass during construction activities. Finally, a paving machine and roller compactor would be utilized to restore paved surface conditions.

Maintenance and Operations of the Rio Nido, Beanwood, and Main Force Mains

Maintenance and operation of the Rio Nido, Beanwood, and Main Force Mains would be consistent and similar to existing maintenance and operational activities, however it is anticipated that maintenance activities would occur less frequently with the replacement of deteriorating facility components with new components and improved functionality.

Construction Staging and Stockpiling Activities

Equipment and materials would be staged and stockpiled at up to nine staging areas, including three paved areas. Staging and stockpiling would utilize approximately 137,000 square feet of unpaved area and 41,000 square feet of paved area (Figures 2 through 6).

The total project footprint would be approximately 380,000 square feet (8.7 acres), including all paved and unpaved trenching, regrading, and staging areas. Trenching, regrading, and soil stockpiling would require the use of backhoes, excavators, and various hand tools.

Duration of Construction

Construction of the Proposed Project may be conducted at multiple locations concurrently. The headworks and lift station sites would require approximately one to five months for construction at each location. The Rio Nido and Beanwood Force Mains would require approximately one to two months for construction at each location. The Main Force Main would require approximately 12 months for construction. Construction activities would take place Monday to Friday between 7:00 a.m. and 7:00 p.m. If necessary, construction may occur on some Saturdays between 8:00 a.m. and 6:00 p.m. to finish the Proposed Project in a timely manner. Some working days and times may have exceptions (as approved by Sonoma Water) as required for encroachment permits, safety considerations or certain construction procedures that cannot be interrupted. With exceptions, advance notification of surrounding residents will occur. Operational activities, including the use of generators, for bypass pumping at the lift stations and dewatering at Segment 6 of the Main Force Main would occur overnight for limited periods during construction.

2.5 Project Alternatives

Project alternatives included the No Project alternative whereby no repairs would be made to District infrastructure (West Yost 2023). This alternative would render the District vulnerable to failures, breakdowns, and overflows due to failing infrastructure.

Alternatives identified for lift station and headworks repairs focused on the level of repairs versus outright replacement of infrastructure and alternatives chosen provided the best balance

of addressing all of the objectives of the proposed project while minimizing construction, operation, and maintenance costs as well as potential environmental impacts.

Alternative methodologies of construction were considered for the replacement of the segments of force mains, as were alternative pipeline alignments. River crossing alternatives for Force Mains were selected based on their cost and ease of construction as well as a reduced potential for environmental impacts. Likewise, the use of CIPP lining and slip-lining, in place of open trenching and removal and replacement of the old pipe, would be utilized where areas that have been identified as geologically and seismically feasible in an effort to reduce cost and potential environmental impacts associated with open trench construction.

2.6 Conformance with the General Plan and General Plan Designation

The Proposed Project areas are subject to the land use policies and designations adopted in the Sonoma County General Plan 2020 (Sonoma County 2016a). The Proposed Project areas are located in western Sonoma County in the unincorporated communities of Guerneville and Rio Nido of Sonoma County. According to the Sonoma County General Plan 2020 the proposed project facilities are located in Urban Residential, Rural Residential, Recreation/Visitor-Serving Commercial, and Public/Quasi-Public land use designations, with lands located along Segment 7 of the Main Force Main designated as Agriculture and Residential, and lands adjacent to the Watson Road and Laughlin Road lift stations listed as Land Intensive Agriculture (Sonoma County 2016a).

The farmland areas adjacent to the Watson Road and Laughlin Road lift stations are currently being used for vineyards, while land along Segment 7 of the Main Force Main is a mixture of ruderal and cultivated rural residential properties, including an apple orchard. The Proposed Project sites (including staging areas) are not designated as forest land or timberland.

The Proposed Project would rehabilitate existing sanitation district infrastructure and would not limit or restrict any existing activities that occur in the Proposed Project area.

2.7 Other Public Agencies Whose Approval Is Required

The following are public entities and agencies that may require review of the project or that may have jurisdiction over the Proposed Project area:

- United States Army Corps of Engineers (USACE)
- United States Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- California Department of Fish and Wildlife (CDFW)
- Northern Sonoma County Air Pollution Control District (NSCAPCD)
- State Historic Preservation Office (SHPO)
- California State Lands Commission (SLC)
- North Coast Regional Water Quality Control Board (NCRWQCB)
- State Water Resources Control Board, State Revolving Fund (SRF)
- California Department of Transportation (Caltrans)

- Sonoma County Permit and Resources Management Department (Permit Sonoma)
- County of Sonoma Public Infrastructure (Sonoma Public Infrastructure)

3.0 Environmental Checklist

The Proposed Project's environmental impacts were assessed based on the environmental checklist provided in Appendix G to the CEQA Guidelines. The checklist provides a summary of potential impacts that may result from implementation of the Proposed Project. In addition, each section below includes a discussion of the rationale used to determine the significance level of the Project's environmental impact for each checklist question. A list of environmental factors and summary of findings are below. The findings of each environmental analysis are included in Sections 3.1 through 3.21.

With regard to the checklist, a "No Impact" response indicates that the analysis concludes that the Proposed Project would not have the impact described. A "Less-than-Significant Impact" response indicates that the Proposed Project would not cause a substantial adverse change to the environment and mitigation is not required. A "Less than Significant with Mitigation Incorporated" response indicates that the Proposed Project may cause a substantial adverse change to the environment, but that mitigation measure(s) have been identified that would reduce the impact to a less-than-significant level. A "Potentially Significant Impact" response indicates that the Proposed Project may cause a substantial adverse change to the environment and that the impact cannot be reduced to a less-than-significant level by incorporating mitigation measures. An environmental impact report must be prepared.

Each response is discussed at a level of detail commensurate with the potential for adverse environmental effect. Each question was answered by evaluating the Proposed Project as proposed, that is, without considering the effect of any added mitigation measures. The Initial Study includes a discussion of the potential impacts and identifies mitigation measures to substantially reduce those impacts to a level of insignificance where feasible. All references and sources used in the Initial Study are listed in the Reference section of the document.

Environmental Checklist and Summary of Potential Impacts

Environmental Factor	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Aesthetics	☐	☐	☒	☐
Agriculture and Forestry Resources	☐	☐	☐	☒
Air Quality	☐	☐	☒	☐
Biological Resources	☐	☒	☐	☐
Cultural Resources	☐	☒	☐	☐
Energy	☐	☐	☒	☐
Geology and Soils	☐	☒	☐	☐
Greenhouse Gas Emissions	☐	☐	☒	☐
Hazards and Hazardous Materials	☐	☒	☐	☐
Hydrology and Water Quality	☐	☒	☐	☐
Land Use and Planning	☐	☐	☐	☒
Mineral Resources	☐	☐	☐	☒
Noise	☐	☒	☐	☐
Population and Housing	☐	☐	☐	☒
Public Services	☐	☐	☐	☒
Recreation	☐	☐	☒	☐
Transportation	☐	☒	☐	☐
Tribal Cultural Resources	☐	☒	☐	☐
Utilities and Service Systems	☐	☐	☒	☐
Wildfire	☐	☒	☐	☐
Mandatory Findings of Significance	☐	☒	☐	☐

3.1 Aesthetics

Except as provided in Public Resources Code section 21099, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Aesthetics Setting

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, visual or aesthetic impacts may occur. This analysis of potential visual effects is based on review of a variety of data, including project maps and drawings, visual survey of the Proposed Project area, aerial and ground level photographs of the Proposed Project area, and planning documents including the Sonoma County 2020 General Plan (Sonoma County 2016b) and Sonoma County Permit and Resources Management Department (Permit Sonoma) visual assessment guidelines (Sonoma County 2019a). The study area for aesthetic resources encompasses the landscapes directly affected by the Proposed Project and the immediate surrounding areas from which the Proposed Project would be visible. Discussion of potential impacts are presented and discussed at the conclusion.

The Open Space and Resource Conservation Element of the Sonoma County General Plan 2020 defines scenic resources under three open space categories: community separators,

scenic landscape units, and scenic highway corridors (Sonoma County 2016b). Community separators are areas that are separate and identifiable cities/communities intermixed with large areas of open space that lead to the avoidance of corridor-style urbanization. Scenic landscape units are areas that are open, provide important visual relief from urban densities, and have little capacity to absorb very much development without significant visual impact. Scenic corridors are rural roads from which the community, as well as tourists, can view the variety and beauty of the many landscapes of Sonoma County including: orchards, forest covered hills, rolling dairy lands, and scenic valleys planted with vineyards.

The Proposed Project area is not within any of the eight areas identified by the Sonoma County General Plan as a community separator. River Road, Highway 116, and Armstrong Wood Road in the Proposed Project area are identified as Scenic Corridors in the Sonoma County General Plan 2020. Additionally, open land adjacent to and within the Proposed Project areas are identified as Scenic Landscape Units in the Sonoma County General Plan 2020.

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program (Streets and Highways Code, section 260 et. seq.) to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. A highway may be designated scenic depending upon the amount of the natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. Caltrans has identified Highway 116 as a State Scenic Highway (Caltrans 2023).

The County of Sonoma has developed Visual Assessment Guidelines to assess the impacts of individual projects (Sonoma County 2019a). These guidelines provide for rating site sensitivity and the visual dominance of the project site, and then using a combination of these ratings to assess the potential for significant impacts.

Under this methodology, the site sensitivity of the Proposed Project areas would be considered "moderate" to "high", as portions of the site are located along scenic corridors and within and adjacent to scenic landscape units. While the majority of lift station sites are not located on scenic corridors or scenic landscape units and site sensitivity would be considered moderate, the proposed repair and replacement of lift stations and force mains on River Road and Highway 116 would be located on land designated as scenic corridors and site sensitivity would be considered high. Additionally, Segment 7 of the Main Force Main would be located on open land identified as a scenic landscape unit and Segment 2 of the Beanwood Force Main would be located underneath the Guerneville Bridge, a Registered Historic property, and would also be considered high.

The proposed repair and replacement of existing lift station facilities would not significantly alter the visual appearance of the existing facilities, with most of the repairs and replacement to be conducted below ground, and the visual dominance would be considered "subordinate". Additionally, the repair and replacement of existing force main pipelines would either be located below ground or underneath the Guerneville Bridge deck, would generally not be visible from public view, and would be considered "inevident" with respect to visual dominance. Proposed

repairs and replacement at the headworks would not be visible from public view and would also be considered “inevident” with respect to visual dominance.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Aesthetic Resources if it would:

a. Have a substantial adverse effect on a scenic vista? *Less than Significant*

River Road, Highway 116, and Armstrong Woods Road are identified as Scenic Corridors in the Sonoma County General Plan 2020. In addition, Caltrans has identified Highway 116 in Guerneville as a State Scenic Highway. Open land adjacent to and within the Proposed Project areas are identified as Scenic Landscape Units in the Sonoma County General Plan 2020. The Guerneville Bridge is listed on the National Register of Historical Places however, the listing of the bridge in 1989 included a description of the existing Beanwood Force Main being located underneath the bridge deck, in the same location that the replacement pipe would be located (Origer 2023a). It was determined in a subsequent review produced by Origer (2023b) that the replacement of the existing sewer force main underneath the bridge with a new force main of similar material in the same alignment would not have an adverse effect on the historic integrity of the Guerneville Bridge.

Construction would involve the repair and replacement of existing public sanitation facilities and would not have a substantial adverse effect on a scenic vista. There may be a short-term aesthetic impact associated with construction activities at the existing facilities. Construction activities would require the use of heavy equipment and temporary storage of materials at the site. During construction, equipment, excavated areas, stockpiled soils and other materials within the project areas may be considered an aesthetic impact by some people. However, any visual impacts would be temporary during the construction phase. Proposed Project components associated with the repair and replacement of the force mains that would be located below ground would not be visible to the public, and the replacement of the existing Beanwood Force Main underneath the Guerneville Bridge would be considered “inevident” under the Visual Assessment Guidelines. Repairs to the existing lift stations and headworks would occur within the existing footprint of developed portions of the facilities and would not significantly change the visual character of those facilities. As such, there would be a less than significant impact because the Proposed Project would not interrupt or block scenic vistas, nor would it significantly alter the existing view and character of the Proposed Project areas, including the bridge.

Maintenance and operation of the Proposed Project would be consistent and similar to existing maintenance and operational activities, however it is anticipated that maintenance activities would occur less frequently with the replacement of deteriorating facility components with new components and improved functionality. As such, maintenance and operation of the Proposed Project would not result in a substantial adverse impact to a scenic vista and there would be no impact.

Finally, by comparing the site sensitivity ratings with visual dominance ratings from the PRMD Visual Assessment Guidelines, it was determined that the Proposed Project would have a less than significant impact. No mitigation is required.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? *Less than Significant*

Although there are several District facilities located on a scenic corridor and State Scenic Highway, including the Beanwood, Guerneville, and Main lift stations and portions of the Rio Nido, Beanwood, and Main force mains to be repaired and replaced, no mature scenic trees would be removed and there are no rock outcroppings or historic buildings of visual significance on the sites. As described above in Section 3.1 a), one segment of the Beanwood Force Main is currently located on the Guerneville Bridge, which is listed on the National Register of Historic places, however the repairs to that segment of force main would include removing the existing force main pipe and replacing it with a new pipe in the same location underneath the bridge, and would not significantly alter the character or historic integrity of the historic status of the bridge.

Maintenance and operation of the Proposed Project would be consistent and similar to existing maintenance and operational activities, however it is anticipated that maintenance activities would occur less frequently with the replacement of deteriorating facility components with new components and improved functionality.

Therefore construction, maintenance, and operation of the Proposed Project would not substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway and the impact would be less than significant. No mitigation is required. Please refer to Section 3.1 a) for additional information.

c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? *Less than Significant*

The Proposed Project areas include both non-urbanized and urbanized areas. As described in Section 3.11, “Land Use”, the Proposed Project facilities are located in Urban Residential, Rural Residential, Recreation/Visitor-Serving Commercial, and Public/Quasi-Public land use designations, with lands located along Segment 7 of the Main Force Main designated as Agriculture and Residential, and lands adjacent to the Watson Road and Laughlin Road lift stations listed as Land Intensive Agriculture.

The Proposed Project would not result in any significant degradation of the existing visual character or quality of the project areas located in both non-urbanized and urbanized areas. The repair and replacement of the existing sanitation facilities would include minor modifications that would mainly occur on previously developed lands that consist of paved areas, hardscape, and ruderal vegetation and would not significantly alter the visual character of the existing facilities.

Additionally, all of the force main repairs and replacement, with the exception of the Beanwood Force Main segment on the Guerneville Bridge, would be located below ground and out of public view.

The presence of vehicles and equipment during construction would be more frequent than currently occurs for typical operations and maintenance activities and would result in short-term impacts to the existing visual character and quality of the sites. During construction activities, excavated areas, stockpiled soils, and other materials within the construction easement and staging areas would contribute negative aesthetic elements in the visual landscape. However, construction activity would be temporary and the presence of vehicles and equipment following the completion of construction would return to levels similar to those that occur during existing operations and maintenance activities. As noted in the Project Description, project implementation would include surface restoration, including repaving of roadways and hydroseeding areas necessary outside of the roadways.

Maintenance and operation of the Proposed Project would be consistent and similar to existing maintenance and operational activities, however it is anticipated that maintenance activities would occur less frequently with the replacement of deteriorating facility components with new components and improved functionality.

As such, potential effects would be temporary, would not significantly impact the long-term visual character of the area, and would not conflict with applicable zoning and other regulations governing scenic quality. Therefore, the impacts from the Proposed Project to the visual character or quality of the project area would be less than significant. No mitigation is required.

d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area? *Less than Significant*

Construction activities would generally be restricted to the hours between 7:00 am and 7:00 pm, Monday through Friday, and lighting of the construction area is not anticipated. If necessary, construction may occur on some Saturdays between 8:00 a.m. and 6:00 p.m. to finish the Proposed Project in a timely manner. Some working days and times may have exceptions (as approved by Sonoma Water) as required for encroachment permits, safety considerations or certain construction procedures that cannot be interrupted. With exceptions, advance notification of surrounding residents will occur. Lighting associated with non-routine construction periods would be temporary and directed downward and away from nearby residences and other sensitive resources. Operational activities, including the use of generators, for bypass pumping and dewatering at Segment 6 of the Main Force Main would occur overnight for limited periods during construction, but are not anticipated to require lighting.

Maintenance and operation of the Proposed Project would not require new security lighting, and permanent infrastructure installed would generally consist of non-reflective material that would not produce glare which could adversely affect daytime or nighttime views in the area.

The Proposed Project would include new emergency lighting at the lift stations, which would be programmed to temporarily turn on during power outages and would remain on for a minimum

of 90 minutes using a battery backup. Emergency lighting would allow for work crews to safely access or exit an area (i.e. platform or staircase) in the event of a power outage. Emergency lighting would also be programmed to turn off when power is restored (e.g. a generator is activated, or utility power is returned). Emergency lighting would be temporary during power outage conditions and directed downward and away from nearby residences and other sensitive resources.

As such, the effects of light or glare associated with the construction, maintenance, and operation of the Proposed Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the areas and the impact would be less than significant. No mitigation is required.

3.2 Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) 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?	☐	☐	☐	☒

Agriculture and Forestry Resources Setting

The analysis of potential agricultural resource and forestry impacts is based on review of the following resources: Sonoma County Important Farmland 2018 Map produced by the California Department of Conservation's Farmland Mapping and Monitoring Program (CDOC 2018); the Williamson Act 2019 Calendar Year Map (Sonoma County 2019b), and the Sonoma County 2020 General Plan Land Use Element and Land Use Map – Russian River Area (Sonoma County 2016a).

The majority of the Proposed Project sites are not located in a designated prime farmland, unique farmland, or farmland of statewide importance (Farmland) area, but in areas considered

Urban and Built- Up Land or Other Land including low density rural development (CDOC 2018). The Proposed Project area is not designated as forest land or timberland.

Land adjacent to the existing Watson Road and Laughlin Road lift stations in Armstrong Valley is listed as Prime Farmland and are currently being used for vineyards, however no Proposed Project activities would occur in those areas.

Land located along the eastern half of Segment 7 of the Main Force Main is considered Farmland of Local Importance and currently supports a mixture of ruderal and cultivated rural residential properties, including an apple orchard. The Proposed Project replacement of the Main Force Main would be installed within the District's existing rights-of-way for the Main Force Main. The land within these rights-of-way currently exclude permanent buildings or structures such as barns or grape processing facilities. Existing agricultural activities within these rights-of-way are generally limited to movement of vehicles, equipment, and goods as well as grazing and other similar activities.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Agricultural and Forestry Resources if it would:

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? *No Impact*

While construction of Segment 7 of the Main Force Main would occur in land designated as Farmland of Local Importance (CDOC 2018), the District has a rights-of-way easement through this land for the existing force main and would install the new force main parallel to the existing alignment and within the existing easement. The Proposed Project construction activities and staging would require additional temporary construction easements to accommodate construction equipment and vehicles, which would temporarily widen the existing 20 foot wide rights-of-way easement to a width of 50 feet during construction activities. Following construction, Segment 7 would be below ground and not interfere with the current allowable uses of the land and would not result in conversion of land to non-agricultural uses.

Furthermore, the Proposed Project includes site restoration activities for unpaved areas such as restoring disturbed areas to their pre-construction conditions, replacing any removed topsoil, re-establishing preconstruction contours and drainage patterns, and revegetating the disturbed areas with grasses to minimize erosion. The District's existing rights-of-way allow for the operation and maintenance of the Proposed Project and would not alter existing agricultural operations and would not convert Farmland to non-agricultural uses. Therefore, designated Farmlands would not be permanently affected by the Proposed Project and no impact would occur.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? *No Impact*

The Proposed Project is not located on Williamson Act contract land (Sonoma County 2019b). Parcels located along Segment 7 of the Main Force Main are designated as Agriculture and Residential (Sonoma County 2016a). The Proposed Project's construction activities may temporarily affect some agricultural uses along Segment 7 of the Main Force Main. However, as described in Section 3.2 a) above, the majority of potential disruptions to agricultural uses within these construction areas would be temporary, would occur within an existing force main rights-of-way easement, and would not be permanently affected by the Proposed Project. The District's existing rights-of-way allow for the continued maintenance and operation of the Proposed Project, which would be consistent and similar to current maintenance and operational activities. As a result, the Proposed Project would not result in any changes in land use that would 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))? *No Impact*

The Proposed Project area (including staging areas) is not designated as forest land or timberland. Therefore, the construction, maintenance, and operation of the Proposed Project would not conflict with existing zoning, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production. Additionally, no timber harvest activities are occurring or expected to occur within the project areas. Therefore, the Proposed Project would have no impact.

d. Result in the loss of forest land or conversion of forest land to non-forest use? *No Impact*

Please refer to Section 3.2 c) above. The Proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. As a result, no impact would occur.

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? *No Impact*

Please refer to Section 3.2 a) above. The construction, maintenance, and operation of the Proposed Project would not result in a change in the existing environment that could result in a conversion of Farmland to non-agricultural use. The Proposed Project would be located adjacent to farmland areas but not within forestland areas. Furthermore, the Proposed Project would not contribute to growth inducing or cumulative impacts to the loss of farmland. Operation of the proposed project would require similar maintenance activities to those currently being performed. As a result, no impact would occur.

3.3 Air Quality

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

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

Air Quality Setting

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects air quality.

Air Basin

The proposed project is located within the boundaries of the North Coast Air Basin (NCAB). The NCAB includes the counties of Del Norte, Trinity, Humboldt, Mendocino, and the northern region of Sonoma County (NCUAQMD 2023). Three air districts are included in the NCAB: North Coast Unified Air Quality Management District, Mendocino County Air Quality Management District, and the Northern Sonoma County Air Pollution Control District (NSCAPCD). The NSCAPCD has jurisdiction over the northern and coastal regions of Sonoma County, including the cities and communities of Healdsburg, Cloverdale, and Guerneville (NSCAPCD 2022). The NSCAPCD is the regulatory agency responsible for assuring that National and California Ambient Air Quality Standards (NAAQS and CAAQS) are attained and maintained in the northern Sonoma County region of the North Coast Air Basin.

Types of Pollutants

Criteria Air Pollutants

The United States Environmental Protection Agency (EPA) is responsible for implementing programs established under the federal Clean Air Act (CAA). As required by CAA, the EPA has identified criteria pollutants that are a threat to public health and welfare and has set "primary" and "secondary" maximum ambient thresholds to meet specific public health and welfare criteria. Criteria air pollutants include ozone (O3), particulate matter (PM_{10}, $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. The California Air Resources Board (CARB) and the EPA focus on these criteria pollutants as indicators of ambient air quality. Criteria air pollutants are described in more detail below.

Ozone

Ozone (O_3) is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone, also called smog, is not emitted directly into the environment, but it is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_x), including nitrogen dioxide (NO_2). ROG and NO_x are known as precursor compounds for ozone. The main sources of NO_x and ROG, also referred to as ozone precursors, are combustion processes such as motor vehicle engines. Other sources include evaporation of solvents, paints, and fuels, and biogenic sources. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Particulate Matter

Particulate matter (PM_{10} and $PM_{2.5}$) refers to a wide range of solid or liquid particles in the atmosphere that come from a variety of stationary, mobile, and natural sources. Power production, cement manufacturing, combustion, fireplaces, diesel trucks, and forest fires are all sources of particulate emissions. Particulate matter includes dust, smoke, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. A subgroup of PM_{10} with an aerodynamic diameter of 2.5 micrometers or less is referred to as $PM_{2.5}$. Some particulate matter, such as pollen, occurs naturally.

Carbon Monoxide

Carbon monoxide (CO) is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with

hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Oxides of Nitrogen

Nitrogen oxides produce O_3 during photochemical reactions in the atmosphere. Nitric oxide (NO) and nitrogen oxide (NO_2) are the primary compounds produced. Nitrogen oxides (NOX) can produce a brown haze that is visible in the atmosphere. These compounds can increase the risk of acute and chronic respiratory disease.

Sulfur Dioxide

Sulfur dioxide (SO_2) is produced through combustion of sulfur or sulfur-containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (PM_{10} and $PM_{2.5}$) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead

Lead is a metal found both naturally in the environment and in manufactured products. Mobile and industrial sources have historically been the major sources of lead emissions but mobile source emissions have been greatly reduced as a result of the phase-out of leaded gasoline. The phase-out of leaded gasoline has resulted in decreasing levels of atmospheric lead. Currently, metal processing is the primary source of lead emissions but recycling facilities are another source. Lead exposure affects the nervous system, kidney function, immune system, reproductive and developmental systems as well as the cardio vascular system.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes nearly 200 compounds, including Diesel Particulate Matter (DPM) emissions from diesel-fueled engines.

Sensitive Receptors

For the purposes of air quality and public health and safety, sensitive receptors are generally defined as land uses with population concentrations that would be particularly susceptible to disturbance from dust and air pollutant concentrations, or other disruptions associated with construction activities of the Proposed Project as well as maintenance and operations activities. Sensitive receptor land uses generally include schools, day care centers, libraries, hospitals, residential care centers, parks, and churches. Some sensitive receptors are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general

public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. Residences located adjacent to the Proposed Project area and recreational users of the Russian River and surrounding areas adjacent to the Proposed Project area would be considered sensitive receptors.

Existing Air Quality

California's ambient air monitoring network includes over 250 sites where air pollution levels are monitored (CARB 2023). There are generally more monitoring sites in areas with reduced air quality and greater population. Ambient concentration data are collected for a wide variety of pollutants, including Ozone, Particulate Matter, and several toxic compounds. Each monitoring site, however, only monitors for pollutants that are elevated in that area. The NSCAPCD currently operates a network of monitoring stations that monitor ambient concentrations of PM_{10} and include locations in Guerneville, Healdsburg, and Cloverdale (NSCAPCD 2022). The NCAB within the jurisdiction of the NCSAPCD is considered to be in attainment or unclassified for all CAAQS and NAAQS standards.

Air District Rules, Regulations, and CEQA Guidelines

Specific rules and regulations adopted by the NSCAPCD limit the emissions that can be generated by various stationary sources and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six criteria air pollutants, but also TAC emission sources, which are subject to these rules are regulated through air districts' permitting processes and standards of operation. Through this permitting process, stationary source emissions are monitored and this information is used in developing air quality plans. The Proposed Project would not introduce any new stationary emission sources, and would not be subject to the NSCAPCD rules and regulations for stationary sources.

With respect to construction, operation, and maintenance activities associated with the Proposed Project, applicable NSCAPCD regulations relate to portable equipment (e.g., gasoline- or diesel-powered engines used for power generation, pumps, compressors, and cranes), architectural coatings, and paving materials. Equipment used during construction activities may be subject to the requirements of NSCAPCD Regulation 1, Chapter 2 (Permits) with respect to portable equipment unless exemptions apply.

The Bay Area Air Quality Management District (BAAQMD) is responsible for regulating stationary sources of air pollution in the nine counties that surround the San Francisco Bay. In 2022, the BAAQMD adopted *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (BAAQMD 2023). The NSCAPCD, wherein the Proposed Project is located, does not currently have CEQA guidelines or significance thresholds for air pollutant emissions. However, this project's estimated pollutant emissions are compared to the significance thresholds established by the BAAQMD, which are based on substantial evidence.

The Sonoma County General Plan's Open Space & Resource Conservation Element includes an Air Resources section with a goal to preserve and maintain good air quality and provide for an air quality standard that will protect human health and preclude crop, plant, and property damage in accordance with the requirements of the Federal and State Clean Air Acts (Sonoma County 2016b). Specific objectives related to this goal include minimize air pollution and greenhouse gas emissions, and encourage reduced motor vehicle use as a means of reducing resultant air pollution.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Air Quality if it would:

a. Conflict with or obstruct implementation of the applicable air quality plan? *No Impact*

The Proposed Project site is under the jurisdiction of the NSCAPCD. The Proposed Project would not conflict with or impair implementation of applicable air quality plans established by the NSCAPCD or local general plans. The main purpose of an air quality plan is to bring an area into compliance with the requirements of federal and State air quality standards. Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The NSCAPCD is in attainment for all criteria pollutants and does not have an adopted air quality plan. Therefore, the Proposed Project would not conflict or obstruct an applicable plan and would have no impact.

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment under an applicable federal or state ambient air quality standard? *No Impact*

The proposed project site is under the jurisdiction of the NSCAPCD. The NSCAPCD is in attainment for all criteria pollutants and does not have an adopted air quality plan. Therefore, the proposed project would not conflict or obstruct an applicable plan and would have no impact.

c. Expose sensitive receptors to substantial pollutant concentrations? *Less than Significant*

Sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. Construction activities would occur in and around the unincorporated areas of Rio Nido, Guerneville, Guernewood Park, and Vacation Beach.

Construction of the Proposed Project would result in the emission of criteria pollutants from equipment exhaust, construction-related vehicular activity, and construction worker automobile trips. Project-related construction emissions would be temporary and vary on a daily basis depending on the level of activity, the specific activities taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance occurring at the time. The Proposed Project would not include the siting of new

sensitive receptors or the siting of new sources of air pollution near existing and future sensitive receptors.

Construction activities such as grading may generate wind-blown dust that could contribute to particulate matter (PM)/fugitive dust. A project that implements all of the BAAQMD's basic Best Management Practices (BMPs) for construction-related fugitive dust emissions recommended by BAAQMD in its 2022 CEQA Air Quality Guidelines (BAAQMD 2023) will not have a significant fugitive dust impact. Sonoma Water incorporates the basic and enhanced construction-related BMPs for construction-related fugitive dust emissions into its standard construction contract specifications (Appendix B) These BMPs protect air quality by avoiding or further minimizing potential adverse impacts to air quality thresholds during construction and maintenance activities.

Construction-related activities could result in the generation of TACs, specifically DPM, from off-road equipment exhaust emissions. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically operated within an influential distance of sensitive receptors. Furthermore, construction-related impacts would be greatest adjacent to the construction site and the impacts would decrease rapidly with distance.

As indicated above, the NSCAPCD's jurisdictional area within the North Coast Air Basin is in attainment or unclassified for all criteria pollutants and the NSCAPCD does not currently have significance thresholds for criteria air pollutants. However, to conduct a quantitative analysis, this project's estimated construction emissions are compared to the significance thresholds established by the BAAQMD. The Proposed Project emissions were estimated based on the project-specific construction schedule, labor, and equipment projections and assumed no mitigation measures. The project-specific data was populated into the California Air Pollution Control Officers Association (CAPCOA) California Emissions Estimator Model (CalEEMod version 2022.1) that quantifies ozone precursors, criteria pollutants, and greenhouse gas emissions from the construction and operation of new land use development and linear projects in California (CAPCOA 2022). The CalEEMod inputs, assumptions, and outputs are presented in Appendix C.

Table 1 below shows a summary of the unmitigated construction emissions as estimated using CalEEMod, and provides daily emissions of criteria air pollutants, as averaged over the entire duration of construction, compared to the BAAQMD significance thresholds. As shown in Table 1, the Proposed Project unmitigated construction emissions for all evaluated pollutants would be well below the BAAQMD significance thresholds, which would ensure that temporary construction-related emissions of criteria air pollutants would not be considered cumulatively considerable. Thus, the Proposed Project would have a less-than-significant impact.

Table 1. Unmitigated average daily emissions (pounds per day) associated with construction of the Proposed Project compared to the BAAQMD thresholds for construction related activities.

Criteria Air Pollutants[1]	ROG	NO_X	Exhaust PM_{10}[2]	Exhaust $PM_{2.5}$[2]
Average daily construction emissions	0.53	4.24	0.56	0.24
BAAQMD construction threshold[3]	54	54	82	54
Over threshold?	No	No	No	No

[1] ROG: Reactive Organic Gases; NO_X: Oxides of Nitrogen; PM: Particulate Matter.

[2] BAAQMD's proposed construction-related significance thresholds for PM10 and PM2.5 apply to exhaust emissions only and not to fugitive dust.

[3] Source: BAAQMD's *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans*, April 20, 2022.

Operation of the Proposed Project would not result in additional emissions over the current (baseline) conditions. Maintenance activities for the Proposed Project would likely remain consistent with existing ongoing maintenance activities of the existing District's pipeline network, lift stations, and WWTP. Maintenance activities could include occasional repair or replacement of components installed as part of the Proposed Project. However, because the projected life of components installed is anticipated to be 30 or more years, emissions resulting from maintenance activities during this time period are likely to be minor in comparison to construction activities. In addition, the proposed project would not generate new operational-related or maintenance-related worker trips and would minimize construction-related vehicle use by positioning staging areas and the temporary stockpile areas relatively close to the project's construction site.

Therefore, there would be no net change in long-term conditions as a result of the Proposed Project compared to the baseline conditions. There would be no long-term air quality impacts associated with operational or maintenance activities. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations and would result in a less than significant impact and no mitigation is required.

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

The Proposed Project construction activities would not result in the generation of permanent or long-term objectionable odors. Odors associated with the intermittent operation of gasoline and diesel powered equipment might be detected by nearby sensitive receptors, but these odors are unlikely to be strong and would be of short duration and also would not affect a substantial number of people. Soil or sediment excavated may contain organic material that is decaying that may create an objectionable odor. The intensity of the odor perceived by a receptor depends on the distance of the receptor from the temporary spoils stockpiling areas and the amount and quality of the exposed soil material. The Proposed Project would not result in the generation of permanent or long-term objectionable odors affecting a substantial number of

people during project maintenance and operation. Therefore, this impact would be less than significant and no mitigation is required.

3.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife 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, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
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?	☐	☐	☐	☒

Biological Resources Setting

Plant Communities and Habitat Types

The Russian River is a southward flowing perennial river that drains 1,485 square miles of Sonoma and Mendocino counties. The Russian River is the second largest river (after the Sacramento River) flowing through the nine county greater San Francisco Bay Area, with a mainstem 115 miles long. Guerneville is situated on the Russian River with the majority of the community being developed on flood terraces above the ordinary high water mark. Flooding of the area occurs when water elevation exceeds 32 feet (NOAA 2023). Habitats in the vicinity include a heterogeneous mix of oak and mixed evergreen forests, woodlands, grasslands, and coastal scrub. Inside the District service area and the largely urbanized footprint of the Proposed Project area mixed evergreen, redwood forest, riverine active channel, patchy grasslands, and urban backyards are the prevalent vegetation and habitat types. Habitat communities present in the project area include residential yards and other developed areas, riparian and mixed conifer forest, the riverine active channel, ruderal grasslands and agricultural fields, seasonal wetlands, and ruderal wooded and herbaceous habitats associated with road shoulders.

Roads and Developed Areas

The vast majority of the Proposed Project construction footprint and staging areas occur along public roads, bridges, and previously developed sites. Developed sites range from compacted bare ground and gravel surfaces to paved and asphalted public roads, access roads, and existing facility footprints. Roadside ditches can form depressions that may support wetland-associated vegetation (as described in the Seasonal Wetlands section below), but are mostly outside of the Proposed Project construction and staging footprints and do not meet criteria to be considered protected wetlands. Common plant species include Bermuda grass (*Cynodon dactylon*), wild radish (*Raphanus sativus*), Italian ryegrass (*Festuca perennis*), mustard (*Hirschfeldia incana*), coyote brush (*Baccharis pilularis*), and other common ruderal species.

Wildlife commonly found in developed rural residential habitats is a mixture of native and introduced species. These species are tolerant of human disturbance and include California towhee (*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), house sparrow (*Passer domesticus*), and various rodents including house mouse (*Mus musculus*). Other species that forage in urban habitats include western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*).

Riparian and Mixed-Conifer Forests

Riparian and mixed-conifer forests occur adjacent to the Proposed Project area along the hillslopes and tributary stream and river margins. Riparian forest consists of water-dependent trees and shrubs growing from the shore to the top of the stream channel bank. Most of the Russian River in the vicinity of the project area has a mature riparian canopy, but a canopy that is partially urbanized by development associated with the community of Guerneville. Riparian forest along the Russian River in the vicinity of the Proposed Project is dominated by mature coast redwood (*Sequoia sempervirens*), California bay (*Umbellularia californica*), Douglas fir

(*Pseudotsuga menziesii*), red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), bigleaf maple (*Acer macrophyllum*), with lesser amounts of Fremont cottonwood (*Populus fremontii*) and various willow species. Red willow (*Salix laevigata*) and Pacific willow (*Salix lucida* ssp. *lasiandra*) occur as part of the midstory and dominate cover closer to the active channel of the Russian River. Native shrubs and herbaceous plants in the understory include dogwood (*Cornus sericea*), poison oak (*Toxicodendron diversilobum*), non-native Himalayan blackberry (*Rubus armeniacus*), periwinkle (*Vinca major*), English ivy (*Hedera helix*), snowberry (*Symphoricarpos albus*), sedges (*Carex* spp.), mugwort (*Artemisia douglasiana*), and California figwort (*Scrophularia californica*).

The Proposed Project sites occur adjacent to the riparian and mixed-conifer forest typically on developed parcels and roadways. Sites support tree and shrub species typical of the adjacent riparian/conifer habitat but since these sites have been previously developed and are periodically cleared for maintenance, habitat at most work locations support disturbed (ruderal) forest and woodland species. Understory vegetation is dominated by non-native invasive species periwinkle, English ivy and Himalayan blackberry, as well as dense stands of native poison oak.

Riparian forest and stream channels in the Russian River watershed provide den/nest habitat, food, and cover and may serve as migration corridors for a variety of wildlife species. Birds represent the most abundant and prominent wildlife. Common birds found in riparian habitat include red-tailed hawk (*Buteo jamaicensis*), acorn woodpecker (*Melanerpes formicivorus*), wrentit (*Chamaea fasciata*), spotted towhee (*Pipilo maculatus*), western scrub jay, song sparrow (*Melospiza melodia*), golden-crowned sparrow (*Zonotrichia atricapilla*), and California quail (*Callipepla californica*). Amphibians and reptiles that may use riparian habitats include California slender salamander (*Batrachoseps attenuatus*), yellow-eyed salamander (*Ensatina eschscholtzii xanthoptica*), western fence lizard (*Sceloporus occidentalis*), northern alligator lizard (*Elgaria coerulea*), and gopher snake (*Pituophis catenifer*).

Riparian forest and instream habitats support a number of mammalian species. The understory and tree cavities provide escape, cover, and den sites. Some common mammals include deer mouse (*Peromyscus maniculatus*), western gray squirrel (*Sciurus griseus*), dusky footed woodrat (*Neotoma fuscipes*), raccoon, and black-tailed deer (*Odocoileus hemionus columbianus*). Larger predatory mammals, such as bobcat (*Lynx rufus*) and gray fox (*Urocyon cinereoargenteus*), may hunt in riparian areas. In addition, several bat species may forage for insects over this habitat and may roost in tree cavities and crevices.

Riverine Active Channel

Riverine active channel habitat occurs along the Russian River and can be defined as the portion of the riparian habitat that is subjected to regular scouring action of high flows, and subject to significant bed load movement in the winter. This area is the location of most of the recreation associated with the swimming, wading or boating in the Russian River. Generally this zone is dominated by the most disturbance-adapted riparian species including red, Pacific, and sandbar willows (*Salix exigua*), Himalayan blackberry, periwinkle, mugwort, and dogwood. This habitat includes sparsely vegetated gravel bars that are often colonized along the edge by

emergent wetland species such as water primrose (*Ludwigia* sp.) and torrent sedge (*Carex nudata*).

The active channel habitat zone provides water, foraging opportunities, and migratory corridors to a wide variety of fish and wildlife. Wildlife uses and typically found species are similar to the riparian mixed conifer forest above. The active channel is the only migratory corridor for listed salmonids and strictly aquatic species. These areas are vegetated by young trees and shrubs that periodically are scoured out by high flows and reestablish lower flow years. Vegetation in this zone is considered as being maintained in a permanent seral (or intermediate ecological successional) stage.

Ruderal Grasslands and Agricultural Fields

The Proposed Project areas that support grassland and agricultural habitats are generally limited to previously cleared forested areas that were established for urban and agricultural uses (homes, businesses, orchards, vineyards, vegetable gardens, landscaping, grazing lands). Grassland habitat at the Proposed Project sites typically consists of maintained and mowed grassy fields on rural residential properties and public park land, and has a high proportion of invasive, ruderal vegetation. Agricultural fields within or adjacent to Proposed Project sites include irrigated and non-irrigated pasture, orchard, and vineyards. The majority of area supporting these habitat types is along Segment 7 of the Main Force Main between the Vacation Beach Lift Station and the WWTP. Vineyards are located adjacent to the Watson Road and Laughlin Road lift stations. These habitat types are dominated by native and non-native annual and perennial grasses and lesser amounts of forbs and other herbaceous species including Italian ryegrass, wild oat (*Avena* sp.), dogtail grass (*Cynosurus echinatus*), Harding grass (*Phalaris aquatica*), wild radish, silvery hairgrass (*Aira caryophyllea*), hairy cat's ear (*Hypochaeris radicata*), Italian thistle (*Carduus pycnocephala*), filaree (*Erodium* spp.), bristly ox-tongue (*Helminthotheca echioides*), Bermuda grass, and field bindweed (*Convolvulus arvensis).* Vineyards consists of cultivated grapes with an understory of the ruderal plants listed above. Agricultural fields typically do not provide suitable habitat for special-status species but can provide some foraging habitat for birds and other wildlife. Depending upon the type of agricultural operation and level of associated vegetation removal, agricultural lands typically do not provide substantial natural habitat for plant and animal species, although grasses and wildlife adapted to human disturbance may occur on agricultural lands during various times of the year.

Ruderal grasslands along Segment 7 support wetland habitat that is described further below. Ruderal grasslands provide cover and foraging habitat for small mammals, reptiles, and avian species, including Botta's pocket gopher (*Thomomys bottae*), common gopher snake, common kingsnake (*Lampropeltis getulus*), and raptors such as red-tailed hawk. This habitat is also important for common ground nesting birds such as western meadowlark (*Sturnella neglecta*) and mourning dove (*Zenaida macroura*). Ruderal grasslands provide open foraging habitat for wildlife species such as white-tailed kite (*Elanus leucurus*) and mule deer that seek cover in adjacent woodland. There are also many birds and mammals that are associated with this habitat, but most are not restricted to grassland and occur in the surrounding habitats. Resident birds include such species as Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes*

bewickii), and California towhee. Reptiles such as western fence lizard, and western rattlesnake (*Crotalus oreganus*) are also typically found in this habitat.

Seasonal Wetlands

Seasonal wetlands are sites in which soil remains saturated or inundated for a long enough duration to support wetland vegetation, and often include features such as swales, shallow depressions, and roadside ditches. Seasonal wetlands are typically dry by early to late June in a normal rainfall year. Seasonal wetlands are present in the Proposed Project area in ruderal grassland habitat and arroyo scrub, or associated with ephemeral and developed drainages and ditches in rural residential areas or crossing through previously disturbed riparian habitat. Plant species differ considerably between wetland areas, but, in general, seasonal wetlands are dominated by graminoids including tall fescue (*Festuca arundinacea*), velvetgrass (*Holcus lanatus*), Italian ryegrass (*Festuca perennis*), creeping wild rye (*Elymus triticoides*), mannagrass (*Glyercia occidentalis*), sedges (*Carex* spp.) and rushes (*Juncus* spp.) interspersed with annual forbs such as prickly buttercup (*Ranunculus muricatus*), dock (*Rumex* spp.), common horsetail (*Equisetum arvense*), and pennyroyal (*Mentha pulegium*). Ponded areas even if only wet seasonally can provide an important source of water for wildlife in the area.

Most Proposed Project areas do not support seasonal wetlands with two exceptions. One is a small portion of the Beanwood Force Main located between the Beanwood Lift Station and Drake Road (Figure 3), that serves as a neighborhood storm drainage to nearby Pocket Canyon Creek, as well as a backwater area for Pocket Canyon Creek during high flow events. Another is along Segment 7 of the Main Force Main that traverses through ruderal woodland, agricultural fields, and grassland habitat located between Orchard Avenue in Vacation Beach and the WWTP at the east end of Neeley Road (Figure 2) The Main Force Main alignment would be constructed parallel to the existing alignment that runs parallel and to the south of Lark Drive and Neeley Road. The proposed alignment traverses across various swales and intersecting uplands along a flood terrace above the ordinary high water mark that is activated in extremely high flow and flooding events. This area also receives significant runoff and seepage from the neighboring hillslope located along the north side of Neeley Road.

Animal species typically found in seasonal and perennial water and wetland habitats include birds, such as great blue heron (*Ardea herodias*), mallard (*Anas platyrhynchos*), marsh wren (*Cistothorus palustris*), and red-winged blackbird, reptiles, such as common garter snake (*Thamnophis sirtalis*), and amphibians, such as California newt (*Taricha torosa*), Pacific treefrog (*Pseudacris regilla*), and western toad (*Anaxyrus boreas*).

Special-status Plants, Fish and Wildlife

Special-status species are plants and animals that are protected or identified by the federal and state Endangered Species Acts, California Fish and Game Code, other resource agency lists, and California Native Plant Society (CNPS). A review of special-status species that may occur in the Proposed Project area was conducted (Appendix D). A list of federally endangered and threatened species that may occur in the Proposed Project area was obtained from the U.S. Fish and Wildlife Service (USFWS). The California Natural Diversity Database (CNDDB) and CNPS databases were also queried. Information on each species' included habitat

requirements, Critical Habitat (if designated), and the likelihood of occurring in the Proposed Project area.

In evaluating the potential occurrence of special-status plant and animal species in the Proposed Project area, relevant literature, knowledge of regional biota, and observations made during the field investigations were applied as analysis criteria. The potential for individuals of special-status species or their habitats to occur in the Proposed Project area was evaluated according to the following criteria: None (No Potential to Occur), Unlikely, Moderate, and High.

Sonoma County General Plan and Ordinance 6089

Ordinance 6089 of the Sonoma County zoning code (RC Riparian Corridor Combining Zone) protects riparian corridors along designated streams and functions to implement the provisions of the Sonoma County General Plan Open Space and Resource Conservation and Water Resources Elements. Development setbacks of 50-200 feet are designated along most creeks and rivers outside of city boundaries. Prohibited activities within setbacks include grading, vegetation removal, agricultural cultivation, structures, roads, utility lines, and parking lots. Prohibited Uses and Exceptions are described in Section 26-65-030 of the ordinance. Items A (2) and (3) in Section 26-65-030 indicate that an exception to prohibitions may be approved with a zoning permit if under item A (2) the use involves the minor expansion of an existing legally established structure in conformance with Article 94 where it is demonstrated that the expansion will be accomplished with minimum vegetation removal and protection of riparian functions, and under item A (3), the use only involves the maintenance and restoration or reconstruction of a legally established structure or use in conformance with Article 94. The Proposed Project, to rehabilitate the existing sanitation collection system and reduce earthquake hazard would comply with all zoning codes protecting riparian and stream corridors.

The Sonoma County General Plan 2020 (Sonoma County 2016b) requires the protection of several natural communities. Relevant goals and objectives include:

<u>Sonoma County General Plan 2020</u>

- Objective OSRC-7.1: Identify and protect native vegetation and wildlife, particularly occurrences of special-status species, wetlands, sensitive natural communities, woodlands, and areas of essential habitat connectivity.
- GOAL OSRC-8: Protect and enhance Riparian Corridors and functions along streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, flood control, bank stabilization, and other riparian functions and values.

Article 67, Valley Oak Habitat Combining District, of the Sonoma County zoning code protects and enhances valley oaks and valley oak woodlands. This ordinance requires mitigation for the removal of large, 60-inch diameter, valley oak trees.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Biological Resources if it would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *Less than Significant with Mitigation*

A total of 107 special-status species may occur in the vicinity of the Proposed Project consisting of 71 plants (Appendix D, Table D-1) and 36 fish and wildlife species (Appendix D, Table D-2). There are 101 special-status species (69 plants and 32 animals) that are unlikely or have no potential to occur because their required habitat is not present in the project area, there are no recent occurrences in the vicinity, or Proposed Project activities or suitable habitat would be completely avoided (e.g. staying out of the wetted portion of the Russian River). Examples include the green turtle, a marine species, and several plant species that are endemic to dry serpentine environments. There are two plant and three animal species that have a moderate potential to occur within the Proposed Project area, including Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), bristly sedge (*Carex comosa*), California giant salamander (*Decamptodon ensatus*), hoary bat (*Lasiurus cinereus*), and western red bat (*Lasurius frantzii*). A single species, the northwestern pond turtle (*Emys marmorata*) has a high potential to occur within the Proposed Project area. Three salmonid species, coho salmon (*Oncorhynchus kisutch*, Central California Coast Evolutionarily Significant Unit (ESU)), Chinook salmon (*Oncorhynchus tshawytscha*, California Coastal ESU), and steelhead (*Oncorhynchus mykiss*, Central California Coast Distinct Population Segment) potentially occur within the Russian River in the project area. These species are further discussed below. Northern spotted owl (*Strix occidentalis* ssp. *caurina*) is unlikely to occur within the Proposed Project area, but is included in the discussion below.

Sonoma alopecurus and bristly sedge are special-status plant specieis with the potential to occur in the project area (Appendix D, Table D-1). Sonoma alopecurus is a wetland plant listed as endangered under the federal Endangered Species Act with a historical occurrence from 1987 at the junction of Hwy 116 and Mays Canyon Road (CNDDB 2023), approximately 1,250 feet from the Beanwood Lift Station. Seasonal wetlands within the project area provide some suitable habitat for this species, but human-caused disturbance (e.g. mowing), limited numbers from the historical occurrence, and negative results from focused surveys conducted in 2023 on April 24, April 27, and May 18, reduce the likelihood of the species being present and impacted due to project activities. Bristly sedge is a CNPS List 2B.1 species found in seasonal wetlands in coastal prairie, lake margins, and foothill grasslands. There is a historical occurrence from 1896 within the vicinity of the project area with uncertain location information (CNDDB 2023). Suitable habitat that supports other sedge (*Carex* spp.) species is found within season wetlands in the project area, but the species was not detected during appropriately-timed wetland assessments and the above mentioned focused surveys. Due to the uncertainty in mapping and

span of time since last detection for the historical occurrences and the absence of these plants during focused surveys, the Proposed Project would have a less than significant impact on Sonoma alopecurus and bristly sedge and no mitigation is needed.

There are three animal California Department of Fish and Wildlife-listed Species of Special Concern that have a moderate potential to occur within the project area (Appendix D, Table D-2). The California giant salamander inhabits damp coniferous forests nears streams and usually breed in perennial freshwater streams with rocky substrate, but tend to be found in areas with a moderate gradient. Marginal stream habitat and suitable riparian forests occur within and adjacent to the project area, and there are several historical occurrences in the vicinity (CNDDB 2023). There is potential to encounter individual California giant salmanders in upland areas adjacent to the Russian River and in riparian habitat with ruderal understory along Segment 7 of the Main Force Main between Vacation Beach and the WWTP. Directly harming an individual would be a significant adverse impact. Implementation of Mitigation Measure BIO-1 (Special-Status Aquatic Species Relocation Out of Construction Areas) would reduce this impact to less than significant.

The hoary bat inhabits mature deciduous and coniferous trees near clearings, and are somewhat tolerant to human activity as they have been documented in urban areas. Suitable habitat is present for this species within and adjacent to the project area, and an historical occurrence from 1913 is documented in the Guernewood area (CNDDB 2023). Western red bats inhabit trees and forage in a variety of open habitats, with a preference for sites in proximity to riparian areas. Suitable habitat for this species occurs within and adjacent to the project area, and an historical occurrence from 2003 is documented approximately four miles east of the project area (CNDDB 2023). Construction noise may result in disturbance of roosting hoary or western red bats if they occupy suitable habitat in the construction area. Some clearing of riparian habitat with ruderal understory and canopy will be needed along Segment 7 of the Main Force Main between Vacation Beach and the WWTP to provide for trenching and installation of the new pipe between these locations. Potential hoary bat and western red bat habitat loss could occur if mature box elder occurring in riparian habitat with ruderal understory and canopy will need to be limbed or removed along Segment 7 of the Main Force Main between Vacation Beach and the WWTP, which would be a significant adverse impact if these species are occupying the trees. Implementation of Mitigation Measures BIO-2a (Avoid Direct Mortality of Bats Roosting in Trees) and BIO-2b (Replace Special-Status Bat Roost Sites) would reduce this impact to less than significant.

A single reptile species, the northwestern pond turtle, has a high potential to occur within the project area. They are known to inhabit aquatic environments throughout Sonoma County, including the Russian River. The species may utilize areas within the project area at the Beanwood Force Main crossing and Segments 5 and 6 of the Main Force Main crossing at Vacation Beach for basking habitat. Proposed Project activities would remain out of the wetted portion of the river and would not disturb potential basking habitats; therefore, the impact to northwestern pond turtle would be less than significant. There is low potential to encounter individual northwestern pond turtle in upland areas adjacent to the Russian River and in riparian habitat with ruderal understory along Segment 7 of the Main Force Main between Vacation

Beach and the WWTP. Directly harming an individual would be a significant adverse impact. Implementation of Mitigation Measure BIO-1 (Special-Status Aquatic Species Relocation out of Construction Areas) would reduce this impact to less than significant. The plan called for by Mitigation Measure BIO-1 will meet well understood standards, but will be refined when the project schedule and design are finalized.

Proposed Project activities associated with Segment 6 of the Main Force Main at Summer Bridge/Vacation Beach Road occur within Designated Critical Habitat (DCH) for coho salmon (listed as endangered under the federal and California Endangered Species acts), chinook salmon (listed as endangered under the federal Endangered Species Act), and steelhead (listed as threatened under the federal Endangered Species Act). The section of the Russian River within the Proposed Project area is located within an area identified as Essential Fish Habitat (EHH) for chinook and coho salmon managed with fishery management plans under the Magnuson-Stevens Fishery Conservation and Management Act. All three of these species utilize this section of the Russian River for adult migration to their spawning grounds and out migration for juveniles and smolts. Coho salmon peak spawning occurs in December and January with adult migration tapering off by the end of February. Coho salmon begin to smoltify and migrate downstream to the ocean in March and April. Chinook salmon adult migration usually enter the river from August to January, with peak migration and spawning occurring in November and December. They move quickly to their spawning areas upstream of Healdsburg on the mainstem Russian River and in Dry Creek. Peak emigration for Chinook salmon smolts occurs from mid-April to mid-May. Steelhead adult migration peaks from December through April; smolt emigration peaks from February through May, peaking in mid-May (NMFS 2008). Water temperatures during the summer and fall months in this section of the Russian River regularly exceed 21 degrees Celsius (69.8 degrees Fahrenheit; U.S. Geological Survey gage at Hacienda Station Number 11467000) and do not support rearing habitat for listed salmonids. This section of the Russian River does not support spawning or rearing habitat for these listed salmonids. Construction activities at Segment 6 would occur during the summer dry season between June 15 and October 15 and are not anticipated to result in impacts to these salmonid species. While the individuals of the species would not be present within construction areas as construction activities will remain out of the wetted portion of the Russian River, some activities (e.g. grading and excavation) would result in temporary disturbance to dry portions of the salmonid DCH and EFH. Excavation of the microtunnel at Segment 6 of the Main Force Main will occur on exposed gravel bars below top of bank but outside the wetted channel during the summer dry season from June 15 to October 15. Microtunneling activities would require grading and excavation of 12,000 square feet (0.28 acres) of gravel bar on the west side of the Russian River and 8,000 square feet (0.18 acres) of gravel bar on the east side of the Russian River for entry and exit shafts needed for the microtunneling operation. Upon completion of the microtunneling activities, the excavations would be backfilled with engineered fill and ground surfaces restored with native materials. In addition, construction activities at Segment 6 would not include the use of impact pile driving equipment (use of impact pile driving equipment is prohibited per Mitigation Measure NOI-2 and only vibratory pile driving equipment may be used, therefore, no potential impacts to individual salmonids are anticipated from the project vibratory pile driving activities if they should occur in the project area during construction activities.

Vibratory pile driving is considered to be a mitigation approach for reducing effects to fish from impact pile driving and is not assessed for potential injury to fish (Caltrans 2015a). Restoration of the Proposed Project areas to preconstruction conditions, and incorporation of Mitigation Measures GEO-1 (Minimize Erosion, Sedimentation, and Discharge to Surface or Groundwater), HAZ-1 (Spill Prevention and Response), and NOI-2 (Implement Vibration-Reducing Measures), discussed in the Sections 3.7 (Geology and Soils), 3.9 (Hazards and Hazardous Materials), and 3.13 (Noise), respectively, would reduce any temporary impacts to salmonids and salmonid DCH and EFH to less than significant with mitigation.

Northern spotted owl inhabits old growth forests or mixed stands of old growth and mature trees for nesting, foraging, and roosting. Optimal habitat includes high, multistory canopy dominated by big trees, many with cavities and broken tops, woody debris and open space for foraging under the canopy. The species is unlikely to occur within the Proposed Project area or immediately adjacent areas due to the lack of suitable habitat. As described in the Biological Resources setting above, the vast majority of the Proposed Project construction footprint and staging areas occur along public roads, bridges, and previously developed sites. Developed sites range from compacted bare ground and gravel surfaces to paved and asphalted public roads, access roads, and existing facility footprints. The Proposed Project sites occur adjacent to the riparian and mixed-conifer forest typically on developed parcels and roadways. Sites support tree and shrub species typical of the adjacent riparian/conifer habitat but since these sites have been previously developed and are periodically cleared for maintenance, habitat at most work locations support disturbed (ruderal) forest and woodland species. Portions of the Proposed Project area includes riverine active channel habitat along the Russian River that is dominated by the most disturbance-adapted riparian species including red, Pacific, and sandbar willows, Himalayan blackberry, periwinkle, mugwort, and dogwood. Ruderal grasslands and agricultural fields also occur within the Proposed Project area. These habitats are low quality habitat for northern spotted owl nesting, foraging and roosting and this species is unlikely to occur within the Proposed Project area. Construction activities at Segment 6 would not include the use of impact pile driving equipment (use of impact pile driving equipment is prohibited per Mitigation Measure NOI-2) and only vibratory pile driving equipment may be used, therefore, potential for noise and vibration disturbance would be minimized if individuals occur within the Proposed Project area during construction activities. The Proposed Project's temporary construction activities, including disturbance due to noise and vibration, are unlikely to adversely impact individuals and habitat for northern spotted owl. However, implementation of Mitigation Measures BIO-3 (Worker Environmental Awareness Training), BIO-4 (Nesting Bird Protection Measures), and NOI-2 (Implement Vibration-Reducing Measures) would further minimize potential for impacts to northern spotted owl if individuals occur within the Proposed Project area during construction activities.

The Proposed Project's temporary construction activities have the potential to adversely impact individuals and riparian habitat utilized by California giant salamander, hoary bat, and western red bat. Implementation of Mitigation Measures BIO-1 (Special-status Aquatic Species Relocation Out of Construction Areas), Mitigation Measure BIO-2a (Avoid Direct Mortality of Bats Roosting in Trees), BIO-2b (Replace Special-Status Bat Roost Sites), and Mitigation

Measure BIO-3 (Worker Environmental Awareness Training) would reduce the temporary impacts to less than significant with mitigation.

Mitigation Measure BIO-1: Special-Status Aquatic Species Relocation Out of Construction Areas

Sonoma Water shall prepare and follow the requirements of a Special-Status Species Relocation Plan prior to relocating aquatic species out of construction areas, including staging areas. The relocation plan shall avoid adverse impacts to the species and include the following:

1. Construction activities shall remain out of the wetted portion of the Russian River and areas with standing water in seasonal wetlands. Project activities (including staging and construction) would be timed to minimize the potential for ponded water in seasonal wetlands.
2. Within one week before initiation of construction activities at the project area, surveys shall be conducted for the presence of aquatic species in adjacent terrestrial habitats.
3. Amphibian and reptile species found in terrestrial habitat within the construction area shall be relocated to suitable habitat outside the construction area.
4. The Special-Status Species Relocation Plan shall be presented for approval to the California Department of Fish and Wildlife.
5. The Special-Status Species Relocation Plan at a minimum shall include the following:
    a. qualifications of individuals conducting relocation activities, including documented experience with successful relocations for the relevant species and all required authorizations, a qualified biologist (including those specializing in botany, wildlife, and fisheries) is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of two years conducting surveys for each species that may be present within the Proposed Project site;
    b. life stages of the species that would be relocated, and life stages at which relocation may not be feasible, for example, for eggs and associated avoidance measures;
    c. survey methods for identifying special-status species in the project area;
    d. capture and relocation methods including following the Restraint and Handling of Live Amphibians Standard Operation Procedures, prepared by United States Geological Survey, dated February 16, 2001;
    e. identification and description of the relocation area;
    f. description of potential impacts from the proposed capture methods, and methods for minimizing such impacts;
    g. monitoring of relocated animals; and

h. method for ensuring relocated animals do not return to the Project area.

i. Prior to capturing amphibian and reptile species, the most appropriate release location(s) will be identified and used. The following criteria will be considered when selecting release site(s):
   i. proximity to the work area;
   ii. similar conditions as capture location;
   iii. ample habitat availability prior to release of captured aquatic species; and
   iv. low likelihood of animals reentering work site.

Mitigation Measure BIO-2a: Avoid Direct Mortality of Bats Roosting in Trees

Sonoma Water's project contract specifications shall require that:

1. Not more than six months prior to onset of work activities, a qualified bat biologist shall survey the project construction sites, including staging areas, to identify suitable roost sites. If evidence is observed, or if potential roost sites are present in areas where evidence of bat use might not be detectable (such as a tree cavity), an evening survey and/or nocturnal acoustic survey shall be used to determine if the bat colony is active and to identify the specific location of the bat colony. A qualified bat biologist is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of one year of bat field survey experience, with additional comprehensive acoustic analysis training including attendance at least one acoustic analysis workshop if nocturnal acoustic surveys are to be conducted.
2. Unless a focused survey conducted by a qualified bat biologist determines that no bats are present in trees to be removed, removal of trees that may serve as potential roost sites shall occur between March 1 and April 15 or between August 1 and October 15,. A two stage removal process over two consecutive days shall be implemented for trees that may support colonial roosts (i.e., trees with cavities, crevices, or exfoliating bark) unless a focused survey conducted by a qualified bat biologist determines that no bats are present in trees to be removed. The two-stage tree removal process shall be as follows:

   Step 1: Small branches and limbs containing no cavity, crevice, or exfoliating bark shall be removed with chainsaws under field supervision by a qualified bat biologist.

   Step 2: The remainder of the tree shall be removed within the following 48 hours. The disturbance caused by chainsaw noise and vibration, coupled with the physical alteration, would cause colonial bat species to abandon the roost tree after nightly emergence for foraging. Removing the tree the next day would prevent habitation and re-occupation of the altered tree.

Mitigation Measure BIO-2b: Replace Special-Status Bat Roost Sites

If bat roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities may not commence until roost sites have been replaced. To replace tree roosts, elevated bat houses shall be installed outside of, but near, the construction area. Placement and height will be determined by a qualified bat biologist in consultation with the California Department of Fish and Wildlife. A qualified bat biologist is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of one year of bat field survey experience.

Mitigation Measure BIO-3: Worker Environmental Awareness Training

Sonoma Water shall require contractors, through project contract specifications, to participate in the following:

1. Prior to beginning construction activities, all personnel involved in the activities shall participate in an educational training session conducted by a qualified biologist. A qualified biologist (including those specializing in botany, wildlife, and fisheries) is an individual who shall have a minimum of five years of academic training and professional experience in biological sciences and related resource management activities with a minimum of two years conducting surveys for each species that may be present within the Proposed Project site. Sonoma Water may also utilize appropriately experienced and/or trained environmental staff. Resumes will be submitted to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and/or National Marine Fisheries Service as appropriate, for approval prior to commencement of biological surveys. This training will include instruction on how to identify bird nests, recognize special status species and sensitive habitats, and the appropriate protocol if any special species or nests are found during project implementation.
2. Personnel who miss the first training session must participate in a make-up session before conducting construction activities.

Breeding birds and raptors, and their nest and eggs are protected under sections 3503 and 3503.5 of California Department of Fish and Game Code. Additionally, section 3513 of the Code, as well as the Federal Migratory Bird Treaty Act (16 USC, section 703), prohibit the "killing, possession, or trading of migratory birds." Lastly, section 3800 of the Fish and Game Code prohibits the take of non-game birds, defined as birds occurring naturally in California that are neither game birds nor fully protected species. Disturbance of breeding birds and raptors would be a potentially significant impact.

The Proposed Project includes potential nesting habitat for numerous common bird species. No permanent impacts to birds foraging or migration habitat would occur from the Proposed Project. However, construction activities could result in potentially significant temporary impact to nesting birds because they would include clearing vegetation at project sites where birds could nest. Construction and maintenance activities would also generate short-term noise that

could impact nesting behavior in adjacent areas. Disturbance to nesting birds would be avoided by conducting construction and maintenance outside of the nesting season or minimized by conducting pre-construction nesting surveys as described in Mitigation Measure BIO-4 (Nesting Bird Protection Measures). If active nests are found, a buffer would be established around the nest and maintained until the young have fledged or work postponed until a nest is no longer active. Mitigation Measure BIO-3 (Worker Environmental Awareness Training) would further minimize potential impacts to nesting birds. Implementation of Mitigation Measures BIO-3 and BIO-4 would reduce the impact to nesting birds to less than significant.

Mitigation Measure BIO-4: Nesting Bird Protection Measures

1. If construction or maintenance activities must be scheduled during the nesting season (February 15 through August 15 for most birds), a qualified biologist, familiar with the species and habitats in the area, shall conduct pre-construction surveys for raptors within suitable habitat within 500 feet of construction and maintenance activities and passerine nesting birds within 50 feet of construction, including staging, and maintenance activities. The surveys shall be conducted no more than one week before initiation of construction or maintenance activities. If no active nests are detected during surveys, activities may proceed. Vegetation removal activities will be conducted under the guidance of a qualified biologist or designated trained monitor. A qualified biologist (including those specializing in botany, wildlife, and fisheries) is determined by a combination of academic training and professional experience in biological sciences and related resource management activities. Sonoma Water may also utilize appropriately experienced and/or trained environmental staff. Resumes will be submitted to California Department of Fish and Wildlife (CDFW) and/or U.S. Fish and Wildlife Service, as appropriate, for approval prior to commencement of biological surveys.
2. If active nests are identified in the project area, non-disturbance buffers shall be established at a distance of 500 feet for raptors and 50 feet for all other bird species. Buffer distance may be adjusted with CDFW approval. If active nests are found within 500 feet of a work area, a qualified biologist shall be on site as necessary to monitor the nests for signs of nest disturbance. If it is determined that construction or maintenance activity is resulting in nest disturbance, work shall cease immediately and CDFW shall be contacted. Buffers will remain in place until a qualified biologist determines that the young have successfully fledged, or nests have been otherwise abandoned.

Overall, the mitigation measures incorporated into the Proposed Project would avoid and minimize potential impacts to fish and wildlife special-status species and their habitats, including BIO-1 (Special-Status Aquatic Species Relocation Out of Construction Areas), BIO-2a (Avoid Direct Mortality of Bats Roosting in Trees), BIO-2b (Replace Special-Status Bat Roost Sites), BIO-3 (Worker Environmental Awareness Training), BIO-4 (Nesting Bird Protection Measures), GEO-1 (Minimize Erosion, Sedimentation, and Discharge to Surface or Groundwater), HAZ-1 (Spill Prevention and Response) and NOI-2 (Implement Vibration-Reducing Measures).

Therefore, the Proposed Project would have a less than significant adverse effect on sensitive species and their habitats with mitigation incorporated.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *Less than Significant with Mitigation*

The Proposed Project will be implemented adjacent and under existing riparian habitat associated with the Russian River. Riparian areas in the project area include other sensitive natural communities including wetlands and redwood forest. Riparian habitat and redwood forest are sensitive natural communities identified by CDFW. Alterations to riparian habitat is specifically regulated by CDFW through Streambed Alteration Agreements (SAA) issued under section 1602 of the Fish and Game Code. The Proposed Project will require a SAA from CDFW for Proposed Project activities that occur within the bed and banks of waterways, which will define terms and conditions for project construction activities specifically.

Construction on Segment 1 of the Beanwood Force Main near the Beanwood Lift Station and Segment 7 of the Main Force Main includes trenching through grassland, wetland, and riparian habitats. Construction activities would occur within riparian areas along the Russian River in the vicinity of the Beanwood Force Main crossing and Segment 6 of the Main Force Main near Vacation Beach. Generally, all habitat and soils disturbed by the Proposed Project will be restored to original grade and actively restored to pre-project conditions. Trees, shrubs, grasses and herbs removed during trenching will be re-planted onsite at a minimum of 1.5:1 ratio.

On-site mitigation will be designed to address impacts to the proposed work areas. Habitat affected during construction activities would be restored in the same location where the disturbance has occurred. This potential impact to riparian areas would be reduced to less-than-significant with incorporation of Mitigation Measure BIO-5 (Revegetation After Soil Disturbance) described below. Restoration of the Proposed Project areas to preconstruction conditions, and incorporation of Mitigation Measure BIO-5, Mitigation Measures GEO-1 (Minimize Erosion, Sedimentation, and Discharge to Surface or Groundwater) and HAZ-1 (Spill Prevention and Response), discussed in the Sections 3.7 (Geology and Soils) and 3.9 (Hazards and Hazardous Materials), respectively, would reduce any temporary impacts to less than significant with mitigation.

Mitigation Measure BIO-5: Revegetation After Soil Disturbance

1. Sites where construction, including staging areas, or maintenance activities result in exposed soil will be stabilized to prevent erosion and revegetated with native vegetation as soon as feasible after activities are complete.
2. Revegetation will occur at a ratio of at least 1.5: 1 to account for initial mortality of plantings.
3. If soil moisture is deficient, new vegetation will be supplied with supplemental water until vegetation is firmly established.

4. To the extent practical, native grass and herb seed will be used when seeding a project site.
5. Erosion control fabric, hydromulch, or other mechanism will be applied as appropriate to provide protection to plantings and seeds to hold them in place, and help retain moisture.
6. Revegetation shall be regularly monitored for survival for five years or until minimum survival/cover is achieved. If invasive species colonize the area, action shall be taken to control their spread; options include hand and mechanical removal and replanting with native species.

Ordinance 6089 of the Sonoma County zoning code protects riparian corridors and functions along designated streams. Development setbacks of 50-200 feet are designated along most creeks and rivers outside of city boundaries. Prohibited activities within setbacks include grading, vegetation removal, agricultural cultivation, structures, roads, utility lines, and parking lots. Prohibited Uses and Exceptions are described in Section 26-65-030 of the ordinance. Items A (2) and (3) in Section 26-65-030 indicate that an exception to prohibitions may be approved with a zoning permit if under item A (2) the use involves the minor expansion of an existing legally established structure in conformance with Article 94 where it is demonstrated that the expansion will be accomplished with minimum vegetation removal and protection of riparian functions, and under item A (3), the use only involves the maintenance and restoration or reconstruction of a legally established structure or use in conformance with Article 94. The Proposed Project, to rehabilitate the existing sanitation collection system and reduce earthquake hazard would comply with all zoning codes protecting riparian and stream corridors.

The Sonoma County General Plan 2020 (Sonoma County 2016b) requires the protection of several natural communities. Relevant goals and objectives include Objective OSRC-7.1 and Goal OSRC-8.

The Proposed Project would be consistent with Objective OSRC-7.1 and Goal OSRC-8 of the Sonoma County General Plan because the project would restore any sites impacted by ground disturbing activities to preconstruction condition, and would be revegetated. Implementation of Mitigation Measures BIO-1 (Special-Status Aquatic Species Relocation Out of Construction Areas), BIO-2a (Avoid Direct Mortality of Bats Roosting in Trees), BIO-2b (Replace Special-Status Bat Roost Sites), BIO-3 (Worker Environmental Awareness Training), and BIO-4 (Nesting Bird Protection Measures), BIO-5 (Revegetation After Soil Disturbance), BIO-6 (Avoid, Minimize, or Compensate for Impacts to Jurisdictional Wetlands and Other Protected Waters), GEO-1 (Minimize Erosion, Sedimentation, and Discharge to Surface or Groundwater), and HAZ-1 (Spill Prevention and Response) would reduce temporary impacts to a less than significant level.

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

There are state and federally protected wetlands and other protected water features in the Proposed Project area. A preliminary wetland evaluation estimated that there are approximately 1.71 acres of wetlands and 4.08 acres of “Waters of the US” under the jurisdiction of section 404 of the Clean Water Act (CWA), and approximately 7.65 acres of “Waters of the State” under the jurisdiction of section 401 of CWA and under section 1602 of the California Fish and Game Code in the study area. However, the Proposed Project would only temporarily impact a small portion of these jurisdictional wetlands and “Waters”. Impact to wetlands include clearing of vegetation and use of construction equipment within a temporary construction easement (TCE), as well as trenching for installation of Segment 7 of the Main Force Main and Segment 1 of the Beanwood Force Main. Construction activities within the TCE would temporarily impact approximately 1.13 acres of wetland. Trenching within wetlands would result in temporary impacts to approximately 0.13 acres along 1,142 linear feet.

Impacts to jurisdictional waters include grading, staging and use of construction equipment, and trenchless construction (microtunneling) for installation of Segment 6 of the Main Force Main. Project activities would result in total temporary impacts to approximately 0.46 acre to waters, including 0.28 acre for staging (0.14 acre on each side of river) primarily in disturbed areas associated with the Vacation Beach and Summer Bridge Roads, crossing, and parking lots. Microtunneling excavation would impact a total of 0.09 acre (0.045 acre on each side of river), and grading on the southwest side of the river to stage microtunneling equipment would impact approximately 0.09 acre.

Construction activities resulting in the introduction of fill or other disturbance to jurisdictional wetlands and other protected waters may require a permit from the US Army Corps of Engineers (USACE) pursuant to section 404 of the CWA, and a Water Quality Certification from North Coast Regional Water Quality Control Board (NCRWQCB) pursuant to section 401 of the CWA. The NCRWQCB may require Waste Discharge Requirements for impacts to non-federal wetlands. Both the Federal Government and the State are legally required to apply a “no net loss” policy in issuing these permits. CDFW has jurisdiction over streams and may require a SAA under section 1602 of the California Fish and Game Code.

Implementation of Mitigation Measure BIO-6 (Avoid, Minimize, or Compensate for Impacts to Jurisdictional Wetlands and Other Protected Waters) would reduce impacts to wetlands and waters from construction activities to a less than significant level.

Mitigation Measure BIO-6: Avoid, Minimize, or Compensate for Impacts to Jurisdictional Wetlands and Other Protected Waters

The District shall apply for permits from the appropriate regulatory agencies and comply with permit terms, including the requirements below unless otherwise directed by the permitting agencies:

1. Delineate all jurisdictional wetlands and other protected waters in the Proposed Project area according to United States Army Corps of Engineers (USACE) protocol and a protocol acceptable to the North Coast Regional Water Quality Control Board (NCRWQCB).

2. Where soil removal is necessary in a wetland or drainage, the top 12 inches of soil will be stockpiled to maintain an onsite seed source. After excavation is complete, the stockpiled material will be returned and recontoured to the original topography. Supplemental native wetland seed mix will be applied, as needed.
3. To account for temporal and permanent disturbance to wetland function, wetland habitat enhancement will be conducted on- or off-site. Enhancement will include one or more of the following: increasing native plant species abundance within the area impacted, managing invasive plants, installing native and wetland herbaceous vegetation on- or offsite, and/or acquiring credit from an approved wetland mitigation bank. The appropriate mitigation ratio will be established by the USACE, NCRWQCB, and California Department of Fish and Wildlife, but shall be no less than 1:1. The enhancement effort shall require implementation of a five-year monitoring program with applicable performance standards negotiated with the resource agencies, which will include criteria such as establishing 80 percent survival rate of restoration plantings, increase in vegetative cover by native plant species, and a self-sustaining habitat condition.

The construction contractor may identify additional potential staging areas. If the contractor requests to use an additional potential staging area, impacts to jurisdictional wetlands and other protected waters must be avoided. Implementation of Mitigation Measure BIO-7 (Avoid Impacts to Jurisdictional Wetlands and Other Protected Waters in Additional Potential Staging Areas) would reduce impacts to wetlands and waters from use of additional staging areas for construction activities to a less than significant level.

Mitigation Measure BIO-7: Avoid Impacts to Jurisdictional Wetlands and Other Protected Waters in Additional Potential Staging Areas

Sonoma Water shall require contractors, through project contract specifications, to:

1. Delineate all jurisdictional wetlands and other protected waters in the Proposed Project area according to United States Army Corps of Engineers (USACE) protocol and protocol acceptable to the North Coast Regional Water Quality Control Board.
2. Contractor shall submit a wetland assessment memorandum prepared by a qualified biologist to Sonoma Water that documents the assessment within 5 business days of completion of assessment. The memo shall include:
   a. date and time of assessment;
   b. summary of methods used for making jurisdictional determinations to identify hydrophytic vegetation, hydric soils, and wetland hydrology (jurisdictional features);
   c. results of assessment;
   d. map identification of jurisdictional features found;
   e. and measures proposed to avoid impacting the features.
3. If potentially jurisdictional features are found that could be impacted by staging activities, they shall be avoided by implementing applicable best management

practices (e.g. establishing a minimum buffer of 50 feet from feature, placement of exclusion fencing at buffer distance) or new staging area(s) shall be selected.

4. For a biologist to be considered qualified to conduct wetland assessments, the biologist must have the following experience: a bachelor's degree in biological or natural resource sciences or similar related field, three years of field experience with demonstrated experience conducting wetland delineations in California, and 40 hours of basic wetland delineation training in the USACE Jurisdictional Wetland Delineation procedures. Contractor shall submit evidence of these qualifications to Sonoma Water for approval prior to commencement of wetland examinations.

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*

The Proposed Project would not affect portions of the Russian River riparian corridor primarily used for migration and movement by fish and wildlife. Aquatic species migrate up and downstream in the wetted portions of the channel, which will not be affected. However, temporary impacts may occur briefly to wildlife movements during construction and maintenance activities. The project description includes a microtunneling approach to the Main Force Main crossing that will not affect surface waters or fish passage during project implementation. Wildlife use of the riparian corridor along the Russian River would be minimally affected as access to riparian and mixed conifer forest in the project areas would be maintained during construction activities.

The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Retaining the riparian corridor, keeping work out of the wetted portion of the river, and retaining access to adjacent habitats would result in a less than significant impact and no mitigation is required.

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

Ordinance 6089 of the Sonoma County zoning code protects riparian corridors and functions along designated streams. Development setbacks of 50-200 feet are designated along most creeks and rivers outside of city boundaries. Prohibited activities within setbacks include grading, vegetation removal, agricultural cultivation, structures, roads, utility lines, and parking lots. Prohibited Uses and Exceptions are described in Section 26-65-030 of the ordinance. Item 2 and 3 in Section 26-65-030 indicate that an exception to prohibitions may be approved with a zoning permit if 2.) The use involves the minor expansion of an existing legally established structure in conformance with Article 94 where it is demonstrated that the expansion will be accomplished with minimum vegetation removal and protection of riparian functions, and 3.) The use only involves the maintenance and restoration or reconstruction of a legally established

structure or use in conformance with Article 94. The Proposed Project, to rehabilitate the existing sanitation collection system and reduce earthquake hazard would comply with all zoning codes protecting riparian and stream corridors.

Article 67, Valley Oak Habitat Combining District, of the Sonoma County zoning code protects and enhances valley oaks and valley oak woodlands. This ordinance requires mitigation for the removal of large, 60-inch diameter, valley oak trees. However, exceptions include trees “dead or irretrievably damaged or destroyed by causes beyond the property owner’s control, including, without limitation, fire, flood, wind, lightning, or earth movement” (Section 26-67-030, item b). The Proposed Project would not affect any protected oak trees.

The Proposed Project would not remove any trees protected under county ordinance, would maintain the existing riparian corridor, and have no conflict with county policies and ordinances protecting biological resources. Therefore, the impact would be less than significant and no mitigation is required.

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*

There are no Habitat Conservation Plans (HCP) or Natural Community Conservation Plans (NCCP) that include the project area. Therefore, the Proposed Project would not conflict with the provisions of an adopted or approved HCP or NCCP and there would be no impact and no mitigation is required.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Cultural Resource Setting

The cultural resources setting is provided along with relevant regulatory background, summary of surveys conducted, and their applicability to the Proposed Project.

Cultural resources discussed in this section include archaeological resources, which may be historical resources or unique archaeological resources.

Area of Potential Effects

The area of potential effects (APE) is within portions of the Guerneville, Camp Meeker, Cazadero, and Duncans Mills 7.5' United States Geological Survey (USGS) topographic quadrangles within Sections No. 19, 20, 21, 28, 29, 30, 31, and 32, of Township T8N, Range R10W; and Sections No. 5 and 6, of Township T7N, Range R10W. The APE includes nine staging areas in addition to the headworks, lift stations, and force main facilities to be rehabilitated (Figures 2 through 6).

Ethnographic Context

At the time of Euroamerican settlement, people inhabiting this area spoke Southern Pomo, one of seven Pomoan languages belonging to the Hokan language stock. The Southern Pomo's aboriginal territory falls within present-day Sonoma County. To the north, it reaches the divide between Rock Pile Creek and the Gualala River, and to the south it extends to near the town of Cotati. The eastern boundary primarily runs along the western flanks of Sonoma Mountain until it reaches Healdsburg, where it crosses to the west side of the Russian River. Within the larger area that constitutes the Southern Pomo homelands there were bands or tribelets that occupied distinct areas. Primary village sites of the Southern Pomo were occupied continually, while temporary sites were visited to procure resources that were especially abundant or available

only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant (Origer 2023a).

Historic Context

In 1856, the first Euro-American settled in the Guerneville area (Origer 2023a). Gradually others began to arrive, trees were felled, and mills were established. Thomas Heald and George Guerne are credited with establishing a mill at what is now the townsite of Guerneville. The Guerneville Post Office was established in 1870, and a town plat was filed with Sonoma County in 1879 although the town had developed along that grid much earlier. By the time the plat map was filed, there were many settlers in Guerneville, mostly farmers and lumbermen. Guerne and Heald sold lots to new arrivals and lumber for their homes, and Guerneville became the commercial hub of the Russian River region, especially with the arrival of the railroad in the 1870s (Origer 2023a).

In 1876, Peter Donahue's Fulton & Guerneville Railroad commenced operation and a year later was purchased by the San Francisco & North Pacific Railroad Company (Origer 2023a). The 15-mile rail line was a crucial link for the Russian River, bringing goods into the area while enabling a steady and reliable flow of lumber from its many sawmills.

In addition to the many floods that have occurred in Guerneville, there have been several fires that swept through and destroyed most of the early buildings. In 1894, a fire that local historian John Shubert refers to as the "Phoenix" destroyed all but a few of the buildings south of present-day Fourth Street, where most of the early houses were located (Origer 2023a).

After the floods and fires of the 19th century, what remains in Guerneville are homes and businesses constructed from the turn of the 20th century to the present, with a heavy presence of 1920s to 1950s building associated with the Russian River's fluorescence as a resort area.

As lumber production declined, the railroad's chief freight changed from lumber to tourist, and the old logging railroad became the lifeline for the many resorts that opened along its route. Through the efforts of A.W. Foster, chairman and general manager of the San Francisco & North Pacific Railroad Company, entire vacation communities were built in Mirabel Park, Guerneville, Rio Nido, Monte Rio, Summer Home Park, and many of the narrow canyons that project from the river (Origer 2023a). The railroad carried vacationers until the 1930s. Present-day River Road and Highway 116, west of its intersection with River Road, follow the route of the old railroad grade, and automobiles continue to bring tourists to the area. Some of the old resorts are still in operation, but many of the summer homes have become year-round dwellings.

Results of Research and Surveys

Cultural resources studies were conducted by Tom Origer & Associates (Origer) for the Proposed Project area. Studies and archival record searches are compiled and summarized in the Origer report dated March 10, 2023 (Origer 2023a). The studies included archival records searches at the Northwest Information Center (NWIC), Sonoma State University (NWIC File No. 22-0927); examination of the library and files of Origer; review of information from the Native

American Heritage Commission (NAHC) Sacred Lands Files; and field inspection of the Proposed Project area, referred to as the APE in the Origer report.

The studies were conducted to meet the requirements of the State Water Resources Control Board, section 106 of the National Historic Preservation Act, and those of the California Environmental Quality Act.

The results of the Sacred Lands File review stated that there is no information about the presence of Native American cultural resources in the immediate project area.

Archival research found that no cultural resources have been identified within the APE. The only prehistoric archaeological site within a half-mile of the APE is located more than 1,500 feet from Staging Area #2 (Peron 19679). Other resources that have been documented are historic-era features or buildings that would not have the potential to extend into the APE.

There is one historic property within the APE. The Guerneville Bridge is listed on the National Register of Historic Places (Bloomfield 1989). A portion of the Beanwood Force Main is attached to this bridge.

There are no reported ethnographic sites within one mile of any portion of the APE. The field inspection found no archaeological sites within the APE.

Six locations were found to have a high potential for buried resources within the APE. These are: the southern part of the WWTP Headworks, the Guerneville Lift Station, the Main Force Main Segment 7, Staging Area #1, the southern half of Staging Area #2, and Staging Area #9.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Cultural Resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines section 15064.5? *Less than Significant with Mitigation*

The Proposed Project would include site clearing (vegetation or hardscape removal); excavation for pipeline, conduit, and utility vault installation; microtunneling for pipeline installation; installation of new project components; installation of concrete pads for lift station platforms and control panels; trench and microtunnel shaft backfilling; minor grading; and surface restoration.

The Guerneville Bridge is listed on the National Register of Historic Places (Bloomfield 1989), and a portion of the Beanwood Force Main is attached to the underside of this bridge (Origer 2023a). As a result of the findings in Origer 2023a, Tom Origer & Associates conducted an additional analysis (Origer 2023b) of the potential effects to the Guerneville Bridge as a result of the Proposed Project. Under section 106 of the National Historic Preservation Act of 1966 (NHPA), an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of an historic property for the inclusion in the National Register in a manner

that would diminish the seven (if applicable) integrity considerations of that property (36 CFR 800.5(a)(1).

The Proposed Project would replace approximately 650 feet of the existing 8-inch sewer force main with a new 8-inch pipe and possibly new pipe hangers in the same location under the Guerneville Bridge. The replacement of the pipe and hangers would not remove the historic fabric, and in-kind replacement materials would not detract from the bridge's appearance. Applying the criterion set forth in 36 CFR 8005(a)(1) and analysis of the potential for adverse effects to the bridge, A Finding of No Historic Properties Affect were made (Origer 2023b).

No archaeological or cultural resources are known to occur within the Proposed Project area. However, based on the Origer (2023a) report, six site locations have a high potential for buried historical and archaeological resources within the Proposed Project area. While no resources have been recorded at the Proposed Project area, there is the potential to uncover previously unidentified historical or archaeological resources during ground disturbance. The disturbance, or damage of a previously unidentified historical or archaeological resource would be a potentially significant impact. Implementation of Mitigation Measure CUL-1 (Inadvertent Discovery of Historical or Archaeological Resources) would reduce potential impacts to less than significant by ensuring that construction work would halt within 50 feet of an unanticipated find so that a qualified archaeologist and Native American representative could make additional recommendations if required. If the resource is determined to be a significant historical or unique archaeological resource, additional measures would be taken to minimize or avoid significant effects, which may include (but are not limited to): avoidance; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Implementation of Mitigation Measure CUL-1 would further minimize the potential for the Proposed Project to adversely affect historical or archaeological resources by requiring worker awareness training and halting work and implementing data recovery or preservation procedures and reduce the impact to less than significant.

Mitigation Measure CUL-1: Inadvertent Discovery of Historical and Archaeological Resources and Worker Awareness Training

1. The project specifications shall require the contractor to comply with the following requirements regarding the discovery of cultural resources, including Native American cultural resources and items of historical and archaeological interest. The Sonoma Water Construction Inspector and construction personnel will be notified of the possibility of encountering cultural resources during project construction.

    a. Prior to initiation of ground-disturbing activities, Sonoma Water shall arrange for construction personnel to receive training about the kinds of cultural materials that could be present at the project sites and protocols to be followed should any such materials be uncovered during construction. An archaeologist who meets the U.S. Secretary of Interior's professional standards (48 Fed.Req. 44716, 44738-44739 and Appendix A to 36 CFR 61) shall provide appropriate archaeological training, including the purpose of the

training to increase awareness and knowledge of tribal cultural resources and appropriate protocols in the event of an inadvertent discovery. The Tribal Monitor shall provide appropriate tribal cultural resources training as determined by the Tribe. Training may be required during different phases of construction to educate new construction personnel.

2. The project specifications shall provide that if discovery is made of items of historical, archeological, or cultural interest, the contractor will immediately cease all work activities in the area of discovery. Historical, archaeological, and cultural indicators may include, but are not limited to, dwelling sites, locally darkened soils, stone implements or other artifacts, fragments of glass or ceramics, animal bones, and human bones. After cessation of excavation, the contractor will immediately contact Sonoma Water's Construction Inspector. The contractor will not resume work until authorization is received from the Construction Inspector.
    a. In the event an unanticipated discovery of archaeological materials occurs during construction, Sonoma Water shall retain the services of a qualified professional archaeologist who meets the U.S. Secretary of Interior's professional standards (48 Fed.Req. 44716, 44738-44739 and Appendix A to 36 CFR 61) to evaluate the significance of the items prior to resuming any activities that could impact the site.

       In the case of an inadvertent archaeological discovery, if it is determined that the find is potentially eligible for listing in the California Register of Historical Resources and/or National Register of Historic Places, and the site cannot be avoided, additional mitigation measures shall be implemented. Mitigation measures may include (but are not limited to): avoidance; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for historical resources shall be developed in consultation with responsible agencies, and the culturally affiliated Native American tribe. If data recovery excavation is necessary, Sonoma Water shall provide an Archaeological Resource Management and Data Recovery Plan, prepared by a qualified archaeologist, outlining recovery of the resource, analysis, and reporting of the find. The Archaeological Resource Management and Data Recovery Plan shall be approved by Sonoma Water and affected Native American tribe. Implementation of the Archaeological Resource Management and Data Recovery Plan shall be conducted prior to work being resumed.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5? *Less than Significant with Mitigation*

No archaeological sites are known to occur within the Proposed Project area. While no resources have been recorded within the project area, there is potential to uncover previously unidentified archaeological resources during ground disturbance. The disturbance, or damage, of previously unidentified historical or archaeological resources would be a potentially significant

impact. Implementation of Mitigation Measure CUL-1 (described above) would minimize the potential for the project to adversely affect archaeological resources by halting work and implementing data recovery or preservation procedures and reduce the impact to less than significant after mitigation.

c. Disturb any human remains, including those interred outside of formal cemeteries? *Less than Significant with Mitigation*

While there are no known archaeological resources located within the Proposed Project area, the application of the buried sites model indicates a high potential for buried resources at six APE locations including the southern part of the WWTP Headworks, the Guerneville Lift Station, the Main Force Main Segment 7, Staging Area #1, the southern half of Staging Area #2, and Staging Area #9 (Origer 2023a). If previously unknown human remains were inadvertently discovered during ground-disturbing activities, the impact would be significant. Implementation of Mitigation Measure CUL-2 (Inadvertent Discovery of Human Remains) would ensure proper procedures are followed if previously unknown human remains are discovered and the impact would be less than significant after mitigation is incorporated.

Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains

The project specifications shall require the contractor to comply with Public Resources Code 5097.98 and Health and Human Safety Code 7050.5, as they pertain to the discovery of human remains. If human remains are encountered, the contractor shall halt work within 50 feet of the find, and contact Sonoma Water's Construction Inspector and the Sonoma County Coroner in accordance with Public Resources Code section 5097.98 and Health and Safety Code section 7050.5. Work shall cease in the immediate area until the Public Resources Code section 5097.98 process is concluded.

3.6. Energy

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Energy Setting

California Energy Commission

The California Energy Commission (CEC) oversees rules and regulations related to California's energy uses and needs. Rules and regulations have been established for appliance efficiency and building energy efficiency. Additionally, the CEC oversees the Renewables Portfolio Standard (RPS), a program that sets energy procurement requirements for the state's energy providers (CEC 2023).

The District currently relies on electrical power for primary operation of the sanitation facilities, including pumps at the various lift stations that move effluent from the collection system to the treatment facilities. Likewise, the treatment facilities rely on electrical energy to power the equipment needed to treat, store, and dispose the treated effluent. Electricity providers in the Proposed Project area include PG&E and Sonoma Clean Power. In times of power loss, or interruption, the lift stations and treatment facilities can utilize diesel or liquid propane powered generators to continue operating until electrical power is restored through the transmission system.

Pacific Gas & Electricity

PG&E is an American investor-owned utility headquartered in San Francisco, California. PG&E provides natural gas and electricity to much of northern California including electricity to the Proposed Project area (PG&E 2023).

Sonoma Clean Power

In 2011, the Sonoma Water Board of Directors directed Sonoma Water to investigate forming a community power program in response to Sonoma County's desire for lower rates and cleaner power. In 2012, a Joint Powers Authority was approved by the Board, and Sonoma Clean Power (SCP) was launched. Since then, SCP has become the default electricity provider for

Sonoma County residents and businesses providing locally controlled electricity and the option of using environmentally friendly power generated by renewable sources at competitive rates.

Statewide Energy Efficiency Policies

The California Public Utilities Commission adopted California's first Long Term Energy Efficiency Strategic Plan on September 18, 2008, and updated the plan in 2011 to include a lighting chapter (CPUC 2021). The Strategic Plan primarily focuses on reducing energy consumption associated with new residential, commercial, and industrial construction and operation, agricultural operations, the heating ventilation and air conditioning industry, and local governments.

Sonoma Water Energy Policy and "Carbon-free Water" Campaign

The Board of Directors adopted the Sonoma Water's Energy Policy in March 2011, which sets the guidelines for the Sonoma Water's energy-related projects and innovations and lays the groundwork for a comprehensive program of water-use efficiency, system efficiency, and development and purchase of renewable energy sources. Carbon-free water was achieved by Sonoma Water in 2015.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in significant impacts to Energy Resources if it would:

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

The Proposed Project would not result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Furthermore, the Proposed Project would not result in any new or additional permanent uses of energy compared to current energy use within the sanitation district. Additional energy use related to the Proposed Project would be temporary and limited to the construction and installation of the project components. Where feasible, repair and replacement alternatives selected for the Proposed Project were selected in part because they also would provide the benefit of requiring less energy consumption during construction activities than other alternatives considered.

Finally, operations and maintenance of the Proposed Project would be at a similar level as current operations and maintenance activities and would not result in any new or additional permanent sources of energy consumption. In fact, maintenance needs for newly installed facility components are expected to require less maintenance than the current deteriorating and failing infrastructure being replaced. Additionally, the installation of VFD pumps in the lift stations would result in less consumption of energy to pump effluent through the collection system during operation than the current single speed pumps require. Therefore, the construction, operation and maintenance of the Proposed Project would have a less than significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *No Impact*

The Proposed Project would not conflict with or obstruct regional and local plans and policies described above in the Energy setting and there would be no impact. The Proposed Project would support the goals of the strategic plan, with the installation and use of more energy efficient pumps at the repaired lift stations, which would reduce overall energy consumption during operation of the sanitation collection system.

3.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? 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 an 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 direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Geology and Soils Setting

The environment in the Project area consists of mountainous ranges surrounding the Russian River, which flows through the valley below. The regional topography ranges between approximately 30 feet and 1,200 feet above mean sea level, and a majority of the District's infrastructure exists at approximately 40 to 50 feet above mean sea level. Topography at the Proposed Project facilities is relatively flat, with topography in the vicinity varying from rolling to relatively steep slopes. Historically, the Proposed Project area has seen frequent flooding as the Russian River can reach elevations above 40 feet.

Regional Geology

The site is located within the Coast Range Geomorphic Province of Northern California (RRCSD 2018). This province is generally characterized by northwest-trending mountain ranges and intervening valleys, which are a reflection of the dominant northwest structural trend of the bedrock in the region. The basement rock in the northern portion of this province consists of the Great Valley Sequence, a Jurassic (200 to 145 million years old) volcanic ophiolite sequence with associated Jurassic to Cretaceous (200 to 65 million years old) sedimentary rocks and the Franciscan Complex, a subduction complex of diverse groups of igneous, sedimentary and metamorphic rocks of late Jurassic to early Tertiary age (161 to 34 million years old). The Great Valley Sequence was tectonically juxtaposed with the Franciscan Complex most likely during subduction accretion of the Franciscan and these ancient fault boundaries are truncated by a modern right-lateral fault system that includes the San Andreas, Hayward-Rodgers Creek, and Maacama faults. The San Andreas Fault defines the westernmost boundary of the local bedrock and is located approximately 10 miles southwest of the District. In the site vicinity, the Franciscan Complex is overlain by Tertiary age continental and marine sedimentary and volcanic rocks. These Tertiary age rocks are locally overlain by younger Quaternary alluvial, colluvial, and landslide deposits (RRCSD 2018). During the last 25 million years the geologic and geomorphic structures were primarily created and dominated by faulting, which continues to the present day.

Local Geology

The majority of the Proposed Project site and vicinity is underlain by bedrock of the Jurassic-Cretaceous age Franciscan Complex (RRCSD 2018). The northeastern portion and the southernmost end of the geologic system are underlain by Franciscan Coastal Belt sandstone. The southwestern part of the system is shown to be underlain by Franciscan Central Belt

greywacke sandstone and mélange. Mélange typically consists of resistant blocks of variable lithology within a highly sheared argillite or shale matrix. The central, north-central, and location adjacent to the Russian River are underlain by Pleistocene and Holocene alluvium. In addition, landslide deposits have been mapped on many of the slopes in the Proposed Project vicinity. Most of the elevated portions of the system have been designated as having a high susceptibility to landslides (RRCSD 2018).

Seismology

Based on its record of historic earthquakes and its position astride the North American – Pacific plate boundary, the San Francisco Bay region, within which the District is located, is considered to be one of the more seismically active regions of the world (RRCSD 2018). During the historical period (approximately 170 years), faults within the region have produced 14 moderate to large magnitude (M > 6) earthquakes affecting the Bay Area, as well as many significant smaller magnitude (5 < M < 6) earthquakes.

Among the historically active regional faults, those anticipated to have potential significance to the performance of the District wastewater facilities include the: San Andreas Fault; Rodgers Creek - Healdsburg Fault; Maacama Fault; and Hayward Fault.

San Andreas Fault

The San Andreas Fault, which extends over 750 miles from the Gulf of California to Cape Mendocino, is the major fault within the region and has generated four moderate to large earthquakes during the historical period (approximately 170 years): a M 7 event in June 1838, a M 6.3 event in October 1965, the great M 8 earthquake in April 1906, and the recent M 6.9 Loma Prieta earthquake on October 17, 1989 (RRCSD 2018). The Southern Santa Cruz Mountains segment of the San Andreas fault, on which the Loma Prieta earthquake is thought to have occurred, is situated about 62 miles south of the District. The Working Group on California Earthquake Probabilities (Working Group 2003) has estimated that during the 30-year time period between 1990 and 2020, there is a 23 percent probability of a M 7 or larger earthquake occurring on the San Francisco Peninsula segment of the San Andreas fault, which extends northward from the Loma Prieta rupture segment, and a less than 5 percent probability of a M 8 earthquake along the north coast segments of the fault. More recent work (Working Group 2008) by the USGS has confirmed that these probabilities are still considered suitable. The maximum earthquake for the San Andreas Fault is judged to be in the range of M 7.75 to M 8 (moment magnitude); recent work (Niemi and Hall, 1992) indicates that on the average, an event of such magnitude can be expected to occur approximately every 200 to 300 years (RRCSD 2018).

There are no traces of the San Andreas Fault that traverse or bisect any of the District facilities. The north coast segment of the San Andreas fault is located about 10 miles southwest of Guerneville.

Rodgers Creek - Healdsburg Fault

The Rodgers Creek – Healdsburg Fault is a major component of the San Andreas Fault system in the Bay Area and extends from San Pablo Bay in the south to about Santa Rosa in the north.

The fault extends to the Healdsburg fault in the north. It is well-defined locally by numerous sag ponds and linear trends in the topography. The Rodgers Creek – Healdsburg Fault is interrupted in places by landslide topography and may consist of a zone of en echelon faults. The fault runs through the hills immediately west of the City of Sonoma. The fault is considered capable of M 7 events, and if the fault breaks at the same time as the Hayward fault to the south (considered less likely), as high as M 7.2 to M 7.4 earthquake can occur.

There are no traces of the Rodgers Creek - Healdsburg fault that are known to traverse or bisect any of the District facilities. The fault is located east of the District, about 11 miles from the District WWTP. Any earthquake on the Rodgers Creek – Healdsburg Fault with M 6.25 or larger is likely to produce surface rupture in Sonoma County. While it would create surface rupture in Sonoma, surface faulting hazard in the District system is not likely from any earthquake on the Rodgers Creek – Healdsburg Fault.

Maacama Fault

This fault extends from near Laytonville in Mendocino County to near Mark West Creek in Sonoma County. It has been interpreted as a right stepping extension of the Rodgers Creek - Healdsburg Fault. The most recent event is prehistoric and occurred between 1520 AD and 1650 AD.

The southern section of the fault that is closest to the District, is about 33 miles long, and could produce M 7 earthquakes. If the Maacama Fault breaks along both its southern, central and northern segments, magnitude could be M 7.7 (RRCSD 2018).

There are no traces of the Maacama Creek Fault that are known to traverse or bisect any of the District pipelines. The fault is located east of the District, about 15 miles from the District WWTP.

Hayward Fault

The Hayward Fault is situated about 44 miles to the southeast of the District WWTP. The Hayward Fault is a major component of the San Andreas fault system in the Bay Area and extends approximately 71 miles from its intersection with the Calaveras fault southeast of San Jose, northward through and along the East Bay hills, to San Pablo Bay. It has been suggested on the basis of micro-seismicity data that the Hayward Fault may connect with the Rodgers Creek- Healdsburg Fault beneath San Pablo Bay (Ellsworth et al, 1982), although such a connection requires an en echelon jump between the faults (RRCSD 2018). It is commonly postulated that there are two potential rupture segments for the Hayward Fault, a southern segment extending from Warm Springs (Fremont) to the San Leandro-Mills College area (or perhaps as far north as northern Oakland), and a northern segment extending from the this transition point to San Pablo Bay. The southern segment has been the source of a large (M 6.8) earthquake during the historical period (October 1868). The Working Group on California Earthquake Probabilities (Working Group 2008) has estimated that during the 30 year time period from 2006 to 2036, there is a 31 percent probability of a M 6.7 (or larger) earthquake occurring on the Hayward fault. The maximum earthquake for the Hayward Fault is judged to be in the range of M 7 to M 7.25; the average recurrence of such events is estimated to be approximately 150 to 250 years.

Paleontological Resources

Paleontological resources are the fossilized evidence of past life found in the geologic record. For the purpose of this document, paleontological resources refer to fossilized plant and animal remains of prehistoric species.

Paleontological resources are valued for the information they yield about the history of the earth and its past ecological settings. They represent a limited, non-renewable, impact-sensitive scientific and educational resource. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (i.e., rock formations). Paleontological resources, in general, include fossils as well as the collecting localities and the geologic formations that contain those fossils.

Rock formations that are considered of paleontological sensitivity are those rock units that have yielded significant vertebrate or invertebrate fossil remains. This includes, but is not limited to, sedimentary rock units that contain significant paleontological resources anywhere within its geographic extent. The Proposed Project area is primarily underlain by Late Pleistocene-age alluvial deposits. Based on the Society for Vertebrate criteria, Late Pleistocene-age alluvial deposits have the potential to contain significant paleontological resources (Society of Vertebrate Paleontology 2010).

State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (1972) is to prevent the construction of buildings used for human occupancy on the surface trace of active faults in order to reduce hazards associated with surface fault rupture. The Alquist-Priolo Act requires the delineation of fault rupture zones along all active faults in California. Cities and counties must regulate certain development projects within the zones, including withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Bryant W.A. 2007).

California Building Code

The California Building Code (also known as the California Building Standards Code or Title 24, California Code of Regulations) is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards (Bolt c1978-1988). The California Building Code incorporates by reference the Uniform Building Code with necessary California amendments. The Uniform Building Code is a widely-adopted model building code in the United States. About one-third of the text within the California Building Code has been tailored for California earthquake conditions (CCR 2013).

California Public Resources Code Section 5097

Section 5097 of the Public Resources Code (PRC) protects paleontological resources and states that a person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface any vertebrate paleontological site, or any other paleontological feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

The Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) requires state and local governments to develop hazard mitigation plans as a preliminary measure in order to receive federal disaster grant assistance. Prior to 2000, federal disaster funding was primarily appropriated towards disaster relief and recovery programs after an incident. Through the establishment of the DMA, there is now an increased emphasis on proactive planning for disasters before they occur; municipalities are encouraged to put mitigations in place in order to reduce damages due to hazards identified in a Natural Hazard Reliability Assessment and a Hazard Mitigation Plan.

Sonoma County General Plan

The County of Sonoma General Plan 2020 Public Safety Element includes goals, objectives, and policies to reduce the potential damage from geologic hazards. Regarding construction of projects that could pose unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides, and other geologic hazards, the General Plan includes the following policies:

- Policy PS-1b: Continue to use studies of geologic hazards prepared during the development review process.
- Policy PS-1k: Incorporate measures to mitigate identified geologic hazards for all County roads, public facilities, and other County projects to an acceptable level.

RRCSD Local Hazard Mitigation Plan

In 2018, the District LHMP was prepared for the District and approved by the Federal Emergency Management Agency (RRCSD 2018). The LHMP aims to identify hazards to limit damage to infrastructure and facilities that occur as a result of natural disasters. It includes an assessment of the geologic, seismic, flood, fire, and other hazards present within the District's service area. The LHMP contains liquefaction susceptibility maps showing zones in the District service area. The zones are categorized from "Very High" to "Very Low" liquefaction susceptibility. The LHMP recommends installation of seismically resistant pipes in the Very High and High liquefaction zones.

The LHMP also established a program to identify new projects that will mitigate system vulnerabilities to these hazards. The Proposed Project would restore and improve the structural integrity of the District's sanitation system.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Geology and Soils if it would:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i.) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist

for the area or based on other substantial evidence of a known fault? *Less than Significant*

Fault rupture is an existing risk of the environment to the project, the adverse impacts of which the project will help to ameliorate. Due to its tectonic setting, the project area is prone to a high level of seismic activity. The risk of loss, injury, or death involving the rupture of an earthquake fault is greatest in dense population areas. The Proposed Project site is located approximately 10 miles away from the San Andreas Fault Zone, which is the nearest fault considered to be active (RRCSD 2018). An unnamed inactive fault also underlies Forestville and, while closer to the proposed project site than the San Andreas Fault, would not be anticipated to rupture due to its inactive status. While the Proposed Project would reduce the potential for seismic related infrastructure vulnerabilities, the Proposed Project would not include the development of habitable structures and includes seismic design considerations. Therefore, potential impacts related to earthquake fault rupture would be less than significant.

ii.) Strong seismic ground shaking? *Less than Significant*

Seismic activity is an existing risk of the environment to the project, the adverse impacts of which the project will help to ameliorate. Strong seismic ground shaking at the project sites could result from an earthquake along the San Andreas Fault, an Alquist-Priolo Earthquake Fault Zone located approximately 10 miles east of the proposed project site (RRCSD 2018). An inactive, unnamed fault underlies Forestville, and, while closer to the Proposed Project areas than the San Andreas Fault, would not be anticipated to generate strong seismic ground shaking due to its inactive status. The risk of loss, injury, or death involving strong seismic ground shaking is greatest in dense population areas. As stated above, the proposed project does not involve habitable structures that would be subject to major structural damage or could create a public health hazard. During construction activities, trenching would be limited but some trenches in very small sections may reach a depth that could potentially pose a hazard to construction workers during strong seismic ground shaking. Precautionary measures would include adherence to state- and federally-mandated safety standards, including federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1926) and Cal/OSHA regulations (8 CCR Title 8, section 1540, section 5192) that during construction would minimize hazards to construction workers, including those associated with seismic ground shaking. In addition, the Proposed Project design would enhance the ability of the District's facilities to withstand strong seismic ground shaking. Therefore, potential impacts related to strong seismic ground shaking would be less than significant.

iii.) Seismic-related ground failure, including liquefaction? *Less than Significant*

Seismic-related ground failure is an existing risk of the environment to the project, the adverse impacts of which the project will help to ameliorate. The Proposed Project is located within seismic zones that are determined to have very high and high susceptibility to

liquefaction (Sonoma County 2014). The purpose of the Proposed Project is to address seismic-related issues, including liquefaction that would minimize the potential for District's force mains to be affected by liquefaction. The Proposed Project would also address the liquefiable susceptibility of the subsurface force main facilities. As mentioned previously, a majority of the Proposed Project area is within "High" to "Very High" zones of liquefaction potential as defined in the LHMP. Addressing these concerns would minimize the risk of structural damage to the District's force mains during seismic events. Replacements to the existing infrastructure would be made with materials that are intended for seismic resilience. Therefore, the potential impacts related to seismic-related ground failure would be less than significant.

iv.) Landslides? *Less than Significant*

The Proposed Project site locations are located in a region categorized as "very high landslide susceptibility" (Sonoma County 2014). These movements, including lateral spread events, can result in inches to several feet of downslope ground movements. Pipes in these areas will be highly stressed. Unless specifically designed for large lateral movements, most pipelines will break under lateral movements of more than a few inches (RRCSD 2018).

As described above, the Sonoma County General Plan contains objectives and policies to reduce risks of damage or injury by way of construction standards and the use of geological studies and research and implementation of mitigation measures where feasible. The District's Local Hazard Mitigation Plan provides the framework to limit or eliminate damage to infrastructure and facilities that occur as a result of natural disasters. In this capacity, the District's goals are in line with the goals of the community as addressed in the Sonoma County hazard mitigation plan. The Proposed Project is designed to and will improve the District infrastructure resiliency to natural disasters, such as earthquake and landslides, and reduce risks of damage and would not directly or indirectly cause potential substantial adverse effects. Therefore, the potential impacts related to landslides would be less than significant.

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

The Proposed Project's construction activities would include ground disturbing activities, such as site clearing, asphalt removal, grading, and trench construction, which could potentially result in soil erosion during or following the project's construction. However, the proposed project would also include trench backfilling and site restoration activities that would restore disturbed areas to their pre-construction conditions, including replacing topsoil that was removed during excavation activities, re-establishing preconstruction contours and drainage patterns, and installing erosion and sedimentation controls. The Proposed Project would disturb more than one acre and would be required to comply with the State Water Resources Control Board Construction General Permit. The Construction General Permit would require the preparation and implementation of a Stormwater Pollution Prevent Plan (SWPPP) that would include measures designed to prevent erosion and control stormwater runoff. These practices and

procedures would reduce the risk of erosion and sediment transport outside of the Proposed Project area. Mitigation Measure GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater) would further minimize onsite erosion. Implementation of the mitigation measure and SWPPP would reduce this impact to less than significant.

Mitigation Measure GEO-1: Minimize Erosion, Sedimentation, and Discharge to Surface and Groundwater

Sonoma Water will require contractors, through project contract specifications, and maintenance staff to implement the following in accordance with the California Department of Transportation (Caltrans) Best Management Practices (BMP) Manual (Caltrans 2017) if not otherwise included in the project Storm Water Pollution Prevention Plan (SWPPP):

1. Soil disturbance shall be kept to the minimum footprint necessary to complete the project and existing vegetation should be preserved to the extent feasible.
2. Staging will occur on work areas, access roads, surface streets, designated stockpile areas, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all equipment and materials will be contained within the existing service roads, paved roads, or other pre-determined staging and stockpile areas. Stockpiling of materials, including portable equipment, vehicles and supplies (e.g., chemicals), shall be restricted to the designated construction staging areas.
3. All project-related items, including equipment, stockpiled material, temporary erosion control treatments, and trash, will be removed within 72 hours of project completion.
4. As necessary, to prevent sediment-laden water from being released during transport of spoils to onsite disposal locations, truck beds will be lined with an impervious material (e.g., plastic), or the tailgate blocked with wattles, hay bales, or other appropriate filtration material. Trucks may drain excess water by slightly tilting the loads and allowing the water to drain out through the applied filter, only within the active work area where the sediment is being loaded into the trucks.
5. No runoff from the staging areas will be allowed to enter waters of the State, including the creeks or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, hay wattles or bales, silt screens). The discharge of decant water from any onsite temporary sediment stockpile, or storage areas, to waters of the State, including surface waters or surface water drainage courses, outside of the active project site, is prohibited.
6. During the dry season (June 15 to October 15), if stockpiled soils will remain exposed and unworked for more than 7 days then erosion control measures will be utilized. During the wet season (October 16 to June 15), no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control.
7. Work will avoid significant rainfall events. Significant rainfall is defined as 0.1 inch of rain in a 24-hour period. Work will resume when conditions allow and as

specified in the SWPPP and Construction General Permit for the Proposed Project.

8. In anticipation of the first significant rainfall event, exposed soils will be stabilized according to requirements of the SWPPP and Construction General Permit.
9. Following completion of construction or maintenance activities, upland soils should be seeded and stabilized using erosion control fabric, straw, and/or hydroseeding using California certified weed free native seeds appropriate for the site.
10. Erosion control fabrics shall consist of natural fibers that will biodegrade over time. No plastic or other non-porous material will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff.
11. Erosion control measures shall be installed according to manufacturer's specifications.
12. Appropriate measures include, but are not limited to, the following (measures utilized would be implemented in accordance with the Caltrans BMP Manual (Caltrans 2017):
    a. Silt fences
    b. Straw bale barriers
    c. Brush or rock filters
    d. Storm drain inlet protection
    e. Sediment traps
    f. Sediment basins
    g. Erosion control blankets and mats
    h. Straw wattles
    i. Soil stabilization (i.e., tackified straw with native seed, jute or geotextile blankets, broadcast and hydroseeding, etc.)
13. All temporary construction-related erosion control methods (e.g., silt fences) shall be removed at the completion of construction, or as directed by a qualified erosion control specialist.

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 an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? *Less than Significant*

The majority of the District system is located within young (Holocene) alluvial deposits that have been categorized as having a high liquefaction potential. A few localized segments within the collection system also cross into areas considered to have very high liquefaction susceptibility. It should also be noted that the majority of the WWTP is underlain by young alluvium that is considered to have very high liquefaction susceptibility (RRCSD 2018).

The potential for liquefaction was discussed in Section 3.6 a), above. The Proposed Project's activities will improve the District infrastructure resiliency to natural disasters such as earthquake and landslides and reduce risks of damage and would not directly or indirectly

cause instability of other potential substantial adverse effects. Therefore, the potential impacts related to landslide, lateral spreading, subsidence, liquefaction, or collapse would be less than significant.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? *Less than Significant*

Most District facilities are on soils that range from thin layers of firm soil to medium deep layers of relatively softer soils (RRCSD 2023). Much of the project area soils are considered to contain less than 50% clay with mostly low shrink-swell (expansive) potential (NRCS 1972). As stated in response to questions 3.6 a) and 3.6 c) above, the Proposed Project would not involve habitable structures that would be subject to major structural damage or could create a public health hazard. The Proposed Project would not create significant risks to life or property, and would ameliorate existing risks. This impact would be less than significant.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? *No Impact*

The Proposed Project is a wastewater infrastructure improvement project that would repair and replace existing facilities and significantly enhance and improve the reliability and resiliency of the wastewater system. The Proposed Project does not involve septic tanks or alternative waste water disposal systems. As such, the Proposed Project would have no impact.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? *No Impact*

Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material. Fossils are the remains or traces of prehistoric animals and plants. Fossils are important scientific and educational resources because of their use in (1) documenting the presence and evolutionary history of particular groups of now-extinct organisms; (2) reconstructing the environments in which these organisms lived; and (3) determining the relative ages of the strata in which they occur, as well as the relative ages of the geologic events that resulted in the deposition of the sediments that formed these strata and in their subsequent deformation.

As with archaeological remains, paleontological resources may be buried with no surface manifestation. However, the Proposed Project’s ground disturbing activities would include digging trenches approximately three (3) to five (5) feet wide and approximately six (6) to ten (10) feet deep. Therefore, the sedimentary rock layer would be avoided. Construction and maintenance of the Proposed Project would not directly or indirectly impact unique paleontological or geologic resources and there would be no impact.

3.8 Greenhouse Gas Emissions

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

Greenhouse Gas Emissions Setting

The greenhouse gas emissions setting is provided along with relevant regulatory background and guidelines, and their applicability to the Proposed Project.

Certain gases in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. This is sometimes referred to as the "greenhouse effect" and the gases that cause it are called "greenhouse gases" (GHG). Primary GHGs include carbon dioxide, methane, nitrous oxide and fluorinated gases. Each of these gases have long atmospheric lifetimes, ranging from a few years to several thousand years, and persist in the atmosphere long enough to become well mixed and dispersed around the globe. GHG emissions from anywhere in the world can cause global effects.

It is widely accepted by the scientific community that increasing GHG emissions from human-made sources are contributing to an increased greenhouse gas effect and global climate change, which may result in sea level rise and increases in the frequency and intensity of extreme weather and weather-related events such as drought, wildfires and flooding.

Carbon dioxide (CO_2) is the reference gas for climate change because it is the predominant GHG emitted. In emissions inventories, GHG emissions are typically reported as metric tons (MT) of CO_2 equivalents (CO_2e).

Regulatory Setting

The California Global Warming Act of 2006, or Assembly Bill 32, directs responsibility for monitoring and reducing GHG emissions to the CARB. The act required CARB to design and implement feasible and cost-effective emissions limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020. The state achieved this goal by 2016. Senate Bill 32 set a new GHG reduction target and requires CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

The NSCAPCD, in which the Proposed Project is located, does not currently have significance thresholds for GHG emissions. However, this project's estimated GHG emissions are compared to significance thresholds established by the BAAQMD that are supported by substantial evidence, as described below.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Greenhouse Gas Emissions if it would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less than Significant*

The Proposed Project would generate GHG emissions during construction from the use of construction equipment, truck trips associated with hauling of construction materials and spoils, and vehicle trips associated with commute of construction workers. Project-related construction emissions would be temporary and vary from day to day depending on equipment use.

In 2017, the BAAQMD adopted operational GHG significance thresholds of 1,100 MT CO_2e per year for non-stationary source projects and 10,000 MT CO_2e per year for stationary source projects[3]. These thresholds were derived based on the Assembly Bill 32 GHG reduction target for 2020 (BAAQMD 2017). In 2022, BAAQMD adopted *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (BAAQMD 2023). The BAAQMD's 2022 threshold supersede their 2017 thresholds. The 2022 thresholds apply to land use projects and include qualitative criteria to demonstrate that a project has incorporated design elements that would ensure it would contribute its "fair share" of what is needed to achieve the State's long term GHG reduction goals. The BAAQMD has not developed a quantitative threshold of significance for construction-related GHG emissions (BAAQMD 2023).

Sonoma Water proposes an interim quantitative threshold of 660 MT CO_2e per year as a reference for project-related GHG analyses. This threshold is based on BAAQMD's former operational GHG threshold of 1,100 MT CO_2e per year, which was derived from a gap filling analysis of the measures necessary to meet the Assembly Bill 32 2020 target, and adjusted 40% lower to meet the 2030 targets established by Senate Bill 32.

Construction GHG emissions from the Proposed Project have been estimated based on the project-specific construction schedule, labor, and equipment projections. The project-specific data was populated into the California Air Pollution Control Officers Association (CAPCOA) California Emissions Estimator Model (CalEEMod version 2022.1) that quantifies ozone precursors, criteria pollutants, and GHG emissions from the construction and operation of new land use development and linear projects in California (CAPCOA 2022)[4]. The CalEEMod inputs, assumptions, and outputs are presented in Appendix C. Total construction GHG emissions from the Proposed Project are estimated to be approximately 475 MT CO_2e.

[3] BAAQMD. (May 2017). CEQA Air Quality Guidelines.
[4] California Air Pollution Control Officers Association. (2022). CalEEMod.

Amortized over the 30-year lifetime of the electrical and mechanical components of the Proposed Project, construction GHG emissions would be approximately 15.8 MT CO_2e per year. The proposed project's GHG emissions during construction would be well below the 660 MT CO_2e per year threshold considered for this analysis. Therefore, impacts during construction would be less than significant and no mitigation would be required.

Once construction is complete, operation and maintenance of the Proposed Project would be similar to existing conditions. No change or additional operations or maintenance activities are anticipated. As a result, the Proposed Project would not generate any additional GHG emissions during operations and maintenance. There would be no impact to GHG emissions during operations and maintenance activities. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and the impact would be less than significant.

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

Existing plans and policies aimed at reducing GHG emissions apply to a variety of sources such as residential, transportation, agriculture, water, waste management and industry. There are no adopted GHG-related plans, policies, or regulations that are directly applicable to the Proposed Project, which is an infrastructure rehabilitation project and would not result in land use changes, population growth or new development of any kind. As described in section 3.8.a) above, project construction would not exceed the reference GHG emission threshold and project operations and maintenance activities would not generate additional GHG emissions over existing conditions. Therefore, the Proposed Project would not conflict with any applicable plan, policy or regulation to reduce GHG emissions and there would be no impact.

3.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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 or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Hazards and Hazardous Materials Setting

A database search of the United States Environmental Protection Agency (USEPA) National Priorities List (NPL) and Superfund Alternative Approach Sites database and the USEPA Advanced Search for National Priorities List and Non-NPL Sites database revealed no Superfund sites within the Proposed Project areas (USEPA 2022). A database search of the GeoTracker (State Water Resources Control Board) site revealed two permitted underground storage tanks that were also former Leaking Underground Storage Tank (LUST) clean-up sites within the Proposed Project area (SWRCB 2023). The underground storage tanks are located at the District Main Lift Station and District Wastewater Treatment Facility and are used to store diesel fuel for back-up generators. The underground storage tank leak at the Main Lift Station was repaired in 1987 and contaminated soil was excavated and removed from the site. The underground storage tank leak at the Wastewater Treatment Facility was repaired in 1995 and contaminated soil was excavated and removed from the site. Both clean-up sites are identified in GeoTracker as closed cases where clean-up activities have been completed and the potential for encountering contaminated soils no longer exists.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Hazards and Hazardous Materials if it would:

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 Proposed Project would require the temporary transport of construction equipment and construction materials, and routine transport of vehicles that use hazardous materials (e.g. motor oil, fuels). Construction of the Proposed Project would also require the use of certain hazardous materials such as fuels and oils when operating construction equipment and would also rely on the use of welding materials, concrete, and asphalt. Sonoma Water staff and contractors would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, including California Occupational Safety and Health Administration (Cal/OSHA) and California Department of Toxic Substances Control (DTSC) requirements and manufacturer's instructions, during project construction and maintenance activities. All hazardous materials would be disposed of at a properly licensed disposal facility. The Proposed Project would be required to implement and comply with existing hazardous material regulations; therefore the routine transport, use, and disposal of hazardous materials would be unlikely to result in a significant hazard to the public or the environment. Therefore, this impact would be less than significant.

The District's wastewater is not considered hazardous waste according to the California Department of Toxic Substances Control and as codified in the California Code of Regulations (Title 22, Division 4.5, Chapter 11 Identification and Listing of Hazardous Waste). There would be no operational transport, use, or disposal of hazardous materials. Therefore, operation of the Proposed Project would not create a significant hazard to the public or 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? *Less than Significant with Mitigation*

There are no reported or anticipated sources of hazardous material contamination within Proposed Project sites. The Proposed Project would involve the temporary, routine transport and handling of small quantities of hazardous substances such as diesel fuels, lubricants, and solvents for equipment during construction and periodic maintenance activities. Construction, operation, and maintenance of the Proposed Project would require the use of vehicles and equipment that may have a slight potential for accidentally spilling oil or fuel.

Sonoma Water staff and contractors would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, including California Occupational Safety and Health Administration (Cal/OSHA) and California Department of Toxic Substances Control (DTSC) requirements and manufacturer's instructions, during project construction and maintenance activities. Disposal of all hazardous materials would be in compliance with all current hazardous waste disposal laws. The Proposed Project would be required to implement and comply with existing hazardous material regulations; therefore, the project would be unlikely to result in a significant hazard to the public or the environment. If these fuels and lubricants were released into the water or ground during application or equipment refueling or maintenance, contamination and harm to the environment could result in 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. Implementation of Mitigation Measures GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater) and HAZ-1 (Spill Prevention and Response) would further minimize the potential effects of an unforeseeable release of hazardous materials. The potential impact would be reduced to less than significant with mitigation incorporated.

Mitigation Measure HAZ-1: Spill Prevention and Response

Sonoma Water shall require contractors, through project specifications, to prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall comply with the California Department of Transportation (Caltrans) Storm Water Pollution Prevention Plan and Water Pollution Control Program Preparation Manual and the Caltrans Construction Site Best Management Practices Manual. Sonoma Water will require contractors, through project contract specifications, and maintenance staff to follow the SWPPP during all project activities as well as implement the following measures:

1. All field personnel shall be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills.
2. Equipment and materials for cleanup of spills will be available on site, and spills and leaks will be cleaned up immediately and disposed of in accordance with local, state, and federal regulations.
3. Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). Spill clean-up materials

will be stockpiled where they are readily accessible. All field personnel shall be advised of these locations and trained in their appropriate use.

4. During construction and maintenance activities, Sonoma Water staff and contractor(s) will routinely inspect the work site to verify that items 1-4 above are properly implemented and maintained.
5. Absorbent materials will be used on small spills located on impervious surface rather than hosing down the spill; wash waters shall not discharge to the storm drainage system or surface waters. For small spills on pervious surfaces such as soils, wet materials will be excavated and properly disposed rather than burying it. The absorbent materials will be collected and disposed of properly and promptly.
6. Vehicle and equipment maintenance activities will be conducted off-site or in a designated, protected area away from waterways equipped with secondary containment and designed to avoid a direct connection to underlying soil, surface water, or the storm drainage system. For stationary equipment that must be fueled on-site, secondary containment, such as a drain pan or drop cloth, shall be provided in such a manner to prevent accidental spill of fuels to underlying soil, surface water, or the storm drainage system.
7. All vehicles and equipment will be kept clean. Excessive build-up of oil or grease will be avoided. Incoming vehicles and equipment will be checked for leaking oil and fluids (including delivery trucks, and employee and subcontractor vehicles). Leaking vehicles or equipment will not be allowed onsite.

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 with Mitigation*

While the Proposed Project locations are not located within one quarter mile of an existing or proposed school, the transportation routes to the Laughlin Road and Watson Road lift stations are located within one-quarter mile of Guerneville School. As discussed above, the Proposed Project would involve the temporary, routine transport and handling of small quantities of hazardous substances such as diesel fuels, lubricants, and solvents for equipment during construction and periodic maintenance activities. These materials would be used in accordance with local, state, and federal regulations. The potential impact to local schools would be reduced to less than significant with implementation of Mitigation Measure HAZ-1 (Spill Prevention and Response) described above.

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*

As mentioned in the setting above, the Proposed Project would be located on two former hazardous materials sites that are included on a list of hazardous materials sites pursuant to California Government Code 65962.5, also known as the Cortese List. A database search of the GeoTracker (State Water Resources Control Board) site revealed two permitted underground

storage tanks that were former LUST clean-up sites within the Proposed Project areas (SWRCB 2023). The underground storage tanks are located at the District Main Lift Station and the District Wastewater Treatment Facility and are used to store diesel fuel for back-up generators. The underground storage tank leak at the Main Lift Station was repaired in 1987 and contaminated soil was excavated and removed from the site. The underground storage tank leak at the Wastewater Treatment Facility was repaired in 1995 and contaminated soil was excavated and removed from the site. Both clean-up sites are identified in GeoTracker as closed cases where clean-up activities have been completed and the potential for encountering contaminated soils no longer exists. Ground-disturbing activities during construction and maintenance of the Proposed Project, including modifications at the District Main Lift Station and Treatment Facility, would not come into contact with or otherwise affect hazardous material sites. As such, the Proposed Project would not be located on a site that would create a significant hazard to the public or environment and there would be no impact.

e. For a project located within an airport land use plan area 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 or excessive noise for people residing or working in the project area? *No Impact*

The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport. The Proposed Project's permanent features would be primarily below the ground surface, underneath a bridge, or less than one-story in height and would not pose a safety hazard to airport use. The Proposed Project would have no impact on people residing or working in the project area with respect to airport compatibility.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? *Less than Significant with Mitigation*

Construction of the Proposed Project would be conducted at multiple locations concurrently. The headworks and lift station sites would require approximately one to five months for construction at each location. The Rio Nido and Beanwood Force Mains would require approximately one to two months for construction at each location. The Main Force Main would require approximately 12 months for construction. Construction activities would take place Monday to Friday between 7:00 a.m. and 7:00 p.m. If necessary, construction may occur on some Saturdays between 8:00 a.m. and 6:00 p.m. to finish the Proposed Project in a timely manner. Some working days and times may have exceptions (as approved by Sonoma Water) as required for encroachment permits, safety considerations or certain construction procedures that cannot be interrupted. With exceptions, advance notification of surrounding residents will occur. Operational activities during construction, including the use of generators, for bypass pumping and dewatering would occur overnight for limited periods at each location during construction.

Maintenance activities associated with the Proposed Project would be minimal, including regular maintenance, vegetation management activities, and periodic inspections. Operational activities

associated with the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

As described in Section 3.17 (Transportation), one lane closures would occur during construction activities, and detours may occur, but no full road closures are anticipated. Per Mitigation Measure TRA-1, traffic control measures would be implemented in order to reduce potential impacts (see Section 3.17 Transportation). Construction activities would continue to allow the movement of emergency vehicles and the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Proposed Project would have a less-than-significant impact with implementation of mitigation on emergency response or evacuations during construction and maintenance.

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

Wildland fires are an existing risk of the environment to the general area. The Proposed Project area is ranked as a High Fire Hazard Severity Zone in the State Responsibility Area (SRA) (CAL FIRE 2023). Proposed Project construction, operation, and maintenance activities would not exacerbate this risk, nor involve placement of people or habitable structures that would result in exposure to a significant risk of wildland fires. The Proposed Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires beyond the risks that currently exist in the vicinity of the Proposed Project area. As described in 3.9f above, movement of emergency vehicles would not be impaired. Therefore, this impact would be less than significant, and no mitigation is necessary.

3.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. 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; or	☐	☐	☐	☒
iv. impede or redirect flood flows?	☐	☐	☐	☒
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Hydrology and Water Quality Setting

The hydrology and water quality setting is provided along with relevant regulatory background topics and their applicability to the Proposed Project.

Sonoma County has a Mediterranean climate characterized by warm, dry summers and mild, moist winters. The majority of annual precipitation in this region occurs as rain that falls during the period between November through April. Mean annual precipitation varies but averaged 30.7 inches during the last century. Precipitation patterns in the region are influenced by local topography; correspondingly, mean annual precipitation generally increases with elevation. Stream discharge in the area is determined by precipitation patterns, bringing higher flows during periods of rain, generally in winter, and lower flows during dry conditions, typically during the summer (Santa Rosa Plain Groundwater Sustainability Agency, n.d.).

Surface Water Quality

The mix of urban, rural, agricultural, and undeveloped land uses within the project vicinity contributes to varied pollutant types that currently exist in the Russian River watershed. Runoff from urban areas can entrain pollutants including sediment, oil and grease, heavy metals, pesticides, and debris. Agricultural pollutants can include contaminants from livestock manure and chemical fertilizers. Rural residences can potentially contribute pollutants through faulty sewage disposal systems.

The Regional Water Quality Control Boards in California implement water quality control plans (basin plans), which characterize the region's natural water quality, potential beneficial uses, water quality problems, and defines programs and standards to achieve the water quality objectives. The Proposed Project is within the Russian River Hydrologic Unit and is covered by the NCRWQCB's Water Quality Control Plan for the North Coast Region (NCRWQCB 2018).

Groundwater Resources

The principal water-bearing materials in Sonoma County are the alluvial deposits and sedimentary units of the valleys as well as some of the volcanic rocks. Natural recharge takes place along streams, rivers, and through direct infiltration of precipitation through surficial and permeable portions of the water-bearing materials. Development in these areas can increase surface runoff and reduce groundwater quality and recharge capability.

The Sustainable Groundwater Management Act (SGMA) was enacted in 2014. SGMA requires governments and water agencies in high and medium priority basins to form Groundwater Sustainability Agencies (GSAs) to manage groundwater sustainably and adopt Groundwater Sustainability Plans (GSP). The Proposed Project is located in the Lower Russian River Valley Groundwater Basin within the North Coast hydrologic region (DWR 2023). This basin is designated as a "very low" priority and no GSA has been formed and no GSP developed.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Hydrology and Water Quality if it would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? *Less than Significant with Mitigation*

Water quality and waste discharge are regulated under the federal Clean Water Act and the State Water Resources Control Board and NCRWQCB issue Water Quality Certifications under section 401 of the Act and Waste Discharge Requirements (WDRs) under the Porter-Cologne Act. The Project will be required to comply with all provisions of the issued permits. The Proposed Project would involve ground disturbing construction activities such as trenching, excavation, grading, soil stockpiling, and filling in order to install Proposed Project components. Construction activities would involve dewatering, including during excavation of the microtunnel shafts at the Main Force Main's Segment 6 at the Vacation Beach Summer Crossing and during microtunneling activities. The Proposed Project would avoid or minimize accidental releases of sediment and contaminants from ground disturbance during construction and maintenance activities by isolating the work area and filtering water during dewatering or otherwise disposing of the water in accordance with permit requirements. Staging and stockpiling of materials during construction and maintenance activities within the project area could result in discharges that could potentially result in degradation of surface waters, which would be a potentially significant impact. However, Proposed Project activities are not anticipated to result in impacts to hydrology and water quality, as the project's construction, operation, and maintenance activities would incorporate Mitigation Measures GEO-1 (Minimize Erosion, Sedimentation, and Discharge to Surface and Groundwater) and HAZ-1 (Spill Prevention and Response) which require, for example, Sonoma Water and contractors to follow contract specifications, develop and implement a SWPPP in accordance with the State Water Resources Control Board, and comply with all applicable regulations. Operation of the Proposed Project would not result in discharges that could potentially result in degradation of surface water or groundwater.

Additionally, the Proposed Project would disturb more than one acre and would be required to comply with the State Water Resources Control Board Construction General Permit. Consequently, the Construction General Permit would require the preparation and implementation of a SWPPP that would include measures designed to prevent erosion and control stormwater runoff to minimize the potential for adversely affecting water quality during construction. Implementation of these mitigation measures and adherence to the requirements of any issued water quality certification and/or WDRs, construction general permit, and SWPPP would further reduce the level of impact to surface and groundwater quality to less than significant.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? *No Impact*

The Proposed Project is located in the Lower Russian River Valley Groundwater Basin (DWR 2023). This basin is designated as a "very low" priority and no GSP has been developed. The Proposed Project consists of rehabilitating existing sanitation facilities and would not change the

existing groundwater conditions. As such, the Proposed Project would not impact groundwater supplies or impede management. There would be no impact.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

The Proposed Project would involve the rehabilitation of existing sanitation facilities and would not alter the existing drainage patterns in the Proposed Project area or increase impervious surfaces.

i.) result in substantial erosion or siltation on- or off-site; *Less than Significant*

The Proposed Project's construction activities would include ground disturbing activities that could potentially result in soil erosion during or following the project's construction. However, the Proposed Project would also include trench backfilling and site restoration activities that would restore disturbed areas to their pre-construction conditions, including replacing topsoil that was removed during excavation activities, re-establishing preconstruction contours and drainage patterns, and installing erosion and sedimentation controls. As described in Section 3.7 b) (Geology and Soils), Mitigation Measure GEO-1 (Minimize erosion, sedimentation, and discharge to surface and groundwater) would further minimize onsite erosion. The impact related to alteration of a drainage pattern would be less than significant.

ii.) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; *Less than Significant*

Construction, maintenance, and operation of the Proposed Project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. Following construction, all disturbed areas would be restored to their original contours. The majority of Proposed Project components would be underground and the sites restored to pre-project conditions. Maintenance and operation of the Proposed Project would not change the rate or amount of surface runoff. Therefore, there would be no increase in the rate or amount of surface runoff and associated flooding resulting from construction, maintenance or operation of the Proposed Project and there would be a less than significant impact.

iii.) 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; or - *No Impact*

Construction, operation, and maintenance of the Proposed Project would not substantially alter surface runoff in a manner which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional causes of polluted runoff. Following construction, all disturbed areas would be restored

to their original contours. The majority of Proposed Project components would be buried underground and the sites restored to pre-project conditions. Maintenance and operation of the Proposed Project would not affect stormwater drainage systems or provide substantial additional causes of polluted runoff. Please see Section 3.9 (Hazards and Hazardous Materials) for more on potential for hazardous materials at the Proposed Project sites. Therefore, the Proposed Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and there would be no impact.

iv.) impede or redirect flood flows? *No Impact*

The Proposed Project would involve the rehabilitation of existing sanitation facilities and would not result in new structures or alterations to the landscape that could impede or redirect flood flows. Therefore, there would be no impact.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? *No Impact*

The California Department of Conservation has identified the mainstem Russian River channel as being in a Tsunami Zone within the Proposed Project Area (CDOC 2022). Additionally, some Proposed Project facilities are located within areas mapped by FEMA as Special Flood Hazard Areas, including Regulatory Floodways (FEMA 2008). However, the Proposed Project involves the rehabilitation of existing sanitation facilities that are largely underground and will avoid impacts associated with a tsunami or flood waters. Construction and maintenance activities, including microtunneling, would generally occur during the dry season or, if taking place during the rainy season, would avoid significant rain events as defined in Mitigation Measure GEO-1 (Minimize Erosion, Sedimentation, and Discharge to Surface and Groundwater). Furthermore the project would implement Mitigation Measure HAZ-1 (Spill Prevention and Response) which requires the preparation of a SWPPP, thus avoiding the risk of releasing pollutants due to project site inundation. Because construction and maintenance activities would take place during the dry season or would avoid significant rain events, and includes measures to prevent spills, construction and maintenance of the Proposed Project would not be affected by flood hazards, tsunami, or seiche zones that would risk the release of pollutants, there is no impact.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? *No Impact*

As described in Section 3.10a), the Proposed Project would comply with all provisions of the issued water quality certification and/or WDRs, construction general permit, and associated SWPPP and is not expected to violate any water quality standards. NCRWQCB Basin Plan requirements would be adhered to through the conditions of the water quality certification and construction general permit. There is no GSP for the Proposed Project area. Overall, the Proposed Project would not conflict with or obstruct existing water quality or groundwater management plans. Therefore, there would be no impact.

3.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Land Use and Planning Setting

The Proposed Project sites are located in western Sonoma County in the unincorporated communities of Guerneville, Guernewood Park, Vacation Beach, and Rio Nido of Sonoma County. According to the Sonoma County General Plan 2020 the proposed project facilities are located in Urban Residential, Rural Residential, Recreation/Visitor-Serving Commercial, and Public/Quasi-Public land use designations, with lands located along Segment 7 of the Main Force Main designated as Agriculture and Residential, and lands adjacent to the Watson Road and Laughlin Road lift stations listed as Land Intensive Agriculture (Sonoma County 2016a).

The farmland areas adjacent to the Watson Road and Laughlin Road lift stations are currently being used for vineyards, while land along Segment 7 of the Main Force Main is a mixture of ruderal and cultivated rural residential properties, including an apple orchard. The Proposed Project sites (including staging areas) are not designated as forest land or timberland.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Land Use and Planning if it would:

a. Physically divide an established community? *No Impact*

The Proposed Project involves the repair and replacement of existing sanitation facilities, including the treatment plant headworks, lift stations, and segments of three force mains, which would be compatible with the current use of the Proposed Project areas and would not conflict with existing adjacent land uses. Repairs and replacement of project components would occur in the same locations and alignments as the existing facilities and would not physically divide an established community. Operations and maintenance of the Proposed Project would be consistent with current operations and maintenance activities of the existing facilities to be repaired and replaced. As such, there would be no impacts associated with permanent alteration to established communities and the Proposed Project would not physically divide or otherwise alter an established community.

b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? *No Impact*

Current land uses in the project areas as defined in the Sonoma County General Plan 2020 are Urban Residential, Rural Residential, Recreation/Visitor-Serving Commercial, and Public/Quasi-Public. Construction, operation, and maintenance of the Proposed Project would occur within existing rights-of-way and acquired easements. The Proposed Project would not alter or conflict with any land use designations, plans, or policies or regulation adopted for the purpose of avoiding or mitigating an environment effect (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) and there would be no impact.

3.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Mineral Resources Setting

Though various minerals have been mined in Sonoma County during the past century, mining operations at the current time consist almost exclusively of the extraction and processing of rock, sand and earth products for use in construction and landscaping (Sonoma County 2016b).

The State Geologist classifies or inventories mineral lands throughout the state and has designated certain mineral bearing areas as being of regional significance (PRMD, OSRC 2016). By law, local agencies must adopt mineral management policies that recognize mineral information provided by the State, assist in the management of land use that affect areas of statewide and regional significance, and emphasize the conservation and development of identified mineral deposits. Accordingly, Sonoma County has adopted the Aggregate Resources Management (ARM) Plan to set forth the State mandated mineral management policy for the County (Sonoma County 2010). During the process of adoption of the plan, the County considered the aggregate resource areas classified as MRZ-2 by the State Geologist (Sonoma County 2016b).

Land use policies have been formulated with full recognition and consideration of the classification and designation information transmitted by the State (State Department of Conservation, California Geological Survey Special Report 175 and subsequent amendments) and incorporated by reference herein (Sonoma County 2016b).

The following are relevant Goals, Objectives, and Policies for the protection of mineral resources as identified in the Open Space and Resource Conservation Element of the Sonoma County General Plan 2020 (Sonoma County 2016b).

- GOAL OSRC-13: Provide for production of aggregates to meet local needs and contribute the County's share of demand in the North Bay production-consumption region. Manage aggregate resources to avoid needless resource depletion and ensure that extraction results in the fewest environmental impacts.

- Objective OSRC-13.1: Use the ARM Plan to establish priority areas for aggregate production and to establish detailed policies, procedures, and standards for mineral extraction.

The following policies shall be used to achieve these objectives:

- Policy OSRC-13a: Consider lands designated in the ARM Plan as priority sites for aggregate production and mineral extraction and review requests for additional designations for conformity with the General Plan and the ARM Plan.
- Policy OSRC-13c: Review projects that are on or near sites designated "Mineral Resources" in the ARM Plan for compatibility with future mineral extraction.

The Sonoma County Aggregate Resources Management Plan (Sonoma County 2010) identifies an area upstream of the project site along the Russian River that is suitable for mineral resource extraction activities. The “middle terrace” area along the Russian River extends from approximately river mile 30 near the intersection of Limerick Lane and Highway 101 downstream approximately 6 river miles to Lake Benoist in the Riverfront Regional Park, which is approximately 8,700 feet (1.6 miles) northeast from the proposed project’s temporary staging and stockpiling area at Sonoma Water’s Mirabel facilities on Westside Road (Staging Area #2). The closest proposed repair and replacement construction activity would occur approximately 5.9 miles west of the “middle terrace” at the Rio Nido Lift Station and Rio Nido Force Main. There is no known mineral resource that would be of value regionally or statewide within the project site (Sonoma County 2010).

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Mineral Resources if it would:

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? *No Impact*

No known mineral resources occur in the proposed project areas. All Proposed Project construction, operation, and maintenance activities would be conducted within previously developed and disturbed areas. Repairs and replacement of project components would occur in the same locations and alignments as the existing facilities and would not 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. Consequently, the proposed project would have no impact with respect to mineral resources.

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? *No Impact*

The Proposed Project would not result in the loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. All Proposed Project activities would occur on previously developed lands identified as Urban

Residential, Rural Residential, Recreation/Visitor-Serving Commercial, and Public/Quasi-Public land use designations, with lands located along Segment 7 of the Main Force Main designated as Agriculture and Residential in the Sonoma County General Plan 2020 Sonoma County 2016b). Consequently, the Proposed Project would have no impact with respect to mineral resources.

3.13 Noise

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

Noise Setting

Existing Noise Setting

The primary contributors to the noise environment in the Proposed Project area include vehicle traffic on adjacent roads; airplane over-flights; sounds emanating from residences and businesses; recreation users; and naturally occurring sounds such as wind and wildlife, etc. The Proposed Project is located in multiple land use areas that include residential and business areas that are subject to temporary and periodic increases in traffic-related noise as a result of the movement of vehicles.

The principal noise generator occurring near the Proposed Project sites would be vehicle traffic on major County roads in the area. These roadways include State Route Highway 116 (Highway 116), Rio Nido Road, River Road, Eagle Lane, Guerneville River Park, Riverkeeper Stewardship Park access roads, Guerneville Bridge, Riverside Drive, Summer Bridge Road, Vacation Beach Road, Orchard Avenue, Western Avenue, Drake Road, Watson Road, Laughlin Road, Old Cazadero Road, Center Way, Neeley Road, Beach Ave, and Greentree Way. Highway 116, which is identified as “Noise Impacted Road Segments” in the County’s General Plan 2020 Noise Element (Sonoma County 2012).

The Proposed Project sites are not located near industrial sources, airports, Sonoma-Marin Area Rail Transit (SMART) rail line, or other mapped noise generating sources, such as the

Infineon International Raceway, solid waste landfills and transfer stations, or the geothermal plants.

The nearest sensitive noise receptor to a Proposed Project site is a residence located approximately 25 feet southeast of Segment 1 and 2 of the Rio Nido Force Main along River Road. However, additional residences are located at similar distances, these include Proposed Project sites near Segment 1 and 2 of the Main Force Main and at Vacation Beach lift station, Drake Estates lift station, Drake Road lift station, Rio Nido lift station and Guerneville lift station.

Existing Vibration Environment

The existing vibration environment is dominated by traffic from nearby roadways. Vehicles associated with business, residence, recreation and tourism can generate vibrations that vary depending on vehicle type, weight, and pavement conditions.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Noise Resources if it would:

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance, or applicable standards of other agencies? *Less than Significant with Mitigation*

The Proposed Project would not result in any new permanent sources of noise. Operation of the Proposed Project is excluded from this analysis because it would resemble the existing operation of the District's facilities and would not result in an increase in existing noise levels. Therefore, no operational impact related to existing noise level standards would result.

Consequently, the impact assessment solely addresses the generation of substantial temporary increase in ambient noise levels associated with the use of equipment related to construction and maintenance activities. Ambient noise level standards associated with equipment related to construction and maintenance activities, such as that which would occur under the Proposed Project, are within the jurisdiction of the County of Sonoma. However, the *Sonoma County General Plan 2020 Noise Element* (Sonoma County 2012) does not specifically address intermittent or temporary construction and maintenance noise levels and the County of Sonoma does not have an adopted noise ordinance. The Sonoma County General Plan 2020 Noise Element provides guidance for reviewing new permanent projects and new transportation projects. The Sonoma County General Plan 2020 contains the following policy related to construction equipment and vehicles: Policy NE-1i: County equipment and vehicles shall comply with adopted noise level performance standards consistent with the best available noise reduction technology.

The Sonoma County General Plan Noise Element calls for the preparation of an acoustical analysis or noise analysis (noise analysis) prior to approval of any discretionary project involving a potentially significant new noise source or a noise sensitive land use in a noise impacted area. The *Sonoma County Guidelines for the Preparation of Noise Analysis* (Sonoma County Noise

Analysis Guidelines) (Sonoma County 2019c) serve as a tool to implement the General Plan Noise Element policies by providing the following: 1) criteria to determine when a noise analysis is required; 2) minimum qualifications for persons preparing a noise analysis; and 3) substantive requirements for a noise analysis, including format content, standards, and thresholds of significance. The Proposed Project is not a land use development project and would not introduce a new noise source; therefore, a noise analysis is not required for the Proposed Project per the Sonoma County Noise Analysis Guidelines. The Sonoma County Noise Analysis Guidelines identify that temporary construction noise generally needs to be evaluated at a qualitative level, given its temporary and short-term nature, and establishes a qualitative threshold for construction activities that occur in the early morning or evening hours (during the hours 10 p.m. to 7 a.m.) may be considered significant and require a quantitative analysis (Sonoma County 2019c).

Traffic noise dominates the existing noise environment at the Proposed Project area. For reference, heavy traffic at a distance of 300 feet has a noise level of 60 A-weighted decibel (dBA) and a quiet urban area during the daytime of 50 dBA (Caltrans 2015). Noise generated at and near the construction areas would occur with varying intensities and durations during the various phases of construction. Noise would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. The equipment operates in alternating cycles of full power and low power, thus, producing noise levels less than the maximum level. The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period. Table 2 depicts typical noise levels generated from various types of construction equipment that may be used during Proposed Project construction at a reference distance of 50 feet.

Based on the noise levels depicted in Table 2, individual construction equipment can be expected to generate intermittent maximum instantaneous noise levels ranging from approximately 55 to 90 dBA L_{max} at a distance of 50 feet from the source during the construction period. For reference, riding on a lawn tractor presents an average noise exposure of 86 to 96 dBA, depending on the model (Mahoney et al. 2017).

The equipment that would produce the loudest noise during project construction (Segment 6 of the Main Force Main microtunneling activities) would be a vibratory pile driver (95 dBA at 50 feet) that would potentially be used for the installation of the microtunneling shafts; however, this equipment would be used briefly for up to five days at each shaft. The nearest sensitive noise receptors are residences located approximately 110 feet southwest of the project site located west of the Russian River, south of Summer Bridge Road. Impact pile driving equipment would not be utilized for construction activities.

Another piece of equipment that would produce loud noise during project construction (open trench activities) would be the concrete saw (90 dBA at 50 feet); however, this equipment would be used intermittently. The nearest sensitive noise receptors are residences approximately 25 feet away from Segment 1 and 2 of the Rio Nido Force Main along River Road and Rio Nido Road, Segment 1 and 2 of the Main Force Main, and the Vacation Beach lift station, Drake Estates lift station, Drake Road lift station, Rio Nido lift station and Guerneville lift station.

Table 2. Reference Construction Equipment Noise Levels (50 feet from source).

Type of Equipment*	Lmax[1], dBA[2]
Auger drill rig	85
Backhoe	80
Boring power unit	80
Chain saw	85
Compactor (ground)	82
Concrete mixer	85
Concrete truck	82
Concrete saw	90
Crane	85
Drill rig truck	84
Dump truck	84
Excavator	85
Generator (25 kilovolt-amperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Jack hammer	88
Loader	85
Paver	89
Pickup truck	55
Pile driver/hammer (vibratory)	95
Pneumatic tools	85
Pumps	78
Roller	74
Pickup truck	55
Scraper	85
Vacuum excavator (Vac-truck)	85
Welder/Torch	73

[1] The instantaneous maximum noise level measured during the measurement period of interest.

[2] A-weighted decibels (dBA) units, which are an expression of the relative loudness of sounds in air as perceived by the human ear

*Equipment use would be intermittent and vary from day to day throughout the given use period.

SOURCES: (Federal Highway Administration 2006a) and (Federal Highway Administration 2006b)

Construction is anticipated to be short-term. Open trench construction would occur linearly at a rate of 40 to 200 feet per day. At this linear rate of construction, sensitive receptors adjacent to open trench construction areas are anticipated to be exposed to temporary construction noise lasting several days. Microtunneling construction (installation of shafts are anticipated to occur over 60 days and boring of microtunneling over 20 days) would take approximately 12 weeks; and lift station construction activities are anticipated to be short-term, taking approximately two to four weeks to complete at each location. The locations of project components are shown in Figures 1 through 6.

Proposed Project construction and maintenance activities could cause a temporary increase in noise to the project vicinity. However, the Proposed Project would restrict construction and maintenance activities to hours between 7:00 a.m. and 7:00 p.m. Monday through Friday. If necessary, construction may occur on some Saturdays between 8:00 a.m. and 6:00 p.m. to finish the Proposed Project in a timely manner. No construction or maintenance activities would be scheduled on Sundays or on holidays. Some working days and times may have exceptions (as approved by the District) as required for encroachment permits, safety considerations or certain construction procedures that cannot be interrupted. With exceptions, advance notification of surrounding residents will occur. Noise generated by equipment during construction and maintenance would not result in a significant impact. To further minimize potential for noise generated impacts to sensitive receptors, Mitigation Measure NOI-1 (Avoid and Minimized Ambient Noise during Construction and Maintenance Activities) would be implemented.

To keep the sewer system in operation during construction activities the use of generators would be required for limited periods of time for bypass pumping at each lift station during overnight hours. Dewatering of the microtunnel shafts at Segment 6 of the Main Force Main location during construction may also require the temporary use of generators for pumping overnight. Implementation of Mitigation Measure NOI-1 (Avoid and Minimize Ambient Noise during Construction and Maintenance Activities) includes the use of temporary noise damper barriers/enclosures/ structures to be installed around bypass pumping and dewatering equipment to minimize noise. With implementation of Mitigation Measure NOI-1, the temporary use of generators for bypass pumping and dewatering would be less than significant.

Operation of the Proposed Project would resemble the existing operation of District’s facilities and would not result in an increase in existing noise levels. There would be no permanent increase in ambient noise levels as a result of implementation of the Proposed Project. Implementation of Mitigation Measure NOI-1 (Avoid and Minimize Ambient Noise during Construction and Maintenance Activities) would restrict noise producing construction activities and heavy equipment to daytime hours on Monday through Saturday. In summary, the Proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance, or applicable standards of other agencies. Therefore, there would be a less-than significant impact with mitigation incorporated.

Mitigation Measure NOI-1: Avoid and Minimize Ambient Noise during Construction and Maintenance Activities

Sonoma Water will require contractors, through project contract specifications, and maintenance staff to implement in the following:

1. Work will be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday. No construction shall be permitted on Sunday or on holidays.
2. Power equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) will be equipped with manufacturer's sound-control devices, or alternate sound control that is no less effective than those provided as original equipment. Equipment will be operated and maintained to meet applicable standards for construction noise generation. No equipment will be operated with an unmuffled exhaust.
3. Construction equipment noise shall be minimized where feasible during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by potentially shrouding or shielding impact tools. No equipment will be operated with an unmuffled exhaust.
4. When feasible site construction staging areas as far as practical from nearby sensitive receptors.
5. All construction machinery and equipment would be inspected daily to see if there are any problems that may contribute to increased noise levels and unsafe practices.
6. Temporary noise damper barriers/enclosures/structures (e.g. plywood with sound absorbing materials, sound blankets, sandbags or other materials) shall be installed around bypass pumping and dewatering equipment to minimize noise and ensure that noise levels do not exceed 90dBA at a distance of 50 feet. A Sonoma Water construction inspector and/or contractor shall conduct management control of sound source by implementing noise level monitoring for bypass pumping and dewatering equipment within 50 feet of sensitive receptor locations.
7. Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as feasible from nearby sensitive receptors.
8. Residences and other sensitive receptors within 200 feet of construction and staging areas shall be notified on the construction schedule in writing, at least two weeks prior to the commencement of construction activities. This notice shall indicate the allowable hours of construction activities as specified by the applicable local jurisdiction. The construction contractor shall designate a noise/vibration disturbance coordinator who would be responsible for responding to complaints regarding construction noise or vibration. The coordinator shall determine the cause of the complaint and ensure that reasonable measures are implemented to correct the problem. A contact number for the noise/vibration disturbance coordinator shall be conspicuously placed on the project

identification sign(s) and included in the construction schedule notification sent to nearby residences and sensitive receptors.

b. Generation of excessive groundborne vibration or groundborne noise levels? *Less than Significant with Mitigation*

Construction equipment can generate perceptible groundborne vibration and groundborne noise, which varies depending on the vehicle type, weight, and soil/pavement conditions. Construction of the Proposed Project would include the use of equipment that generates groundborne vibration. The nearest sensitive receptors (residences) are located approximately 110 feet from the vibratory pile driving activity on the west side of the river and approximately 180 feet from the vibratory pile driving activity on the east side of the river at Segment 6 of the Main Force Main (microtunneling activities), and approximately 25 feet for the vibratory roller activity within the Proposed Project area. People residing in this area could potentially be exposed to temporary groundborne vibration or groundborne noise levels during project construction. Continuous vibrations with a peak particle velocity of approximately 0.1 inch/second begin to cause annoyance (Caltrans 2015b). Impact pile driving equipment would not be utilized for construction activities.

Groundborne vibration typically attenuates (diminishes) over short distances. Table 3 lists the reference peak particle velocity (PPV; a measurement of vibration) for typical construction equipment at a distance of approximately 25 feet and the attenuated PPV at approximately 110 feet (the distance from the project to the nearest receptor). The reference vibration source levels listed in Table 3 are based on information provided by the Federal Transit Administration (FTA 2018).

Table 3. Vibration Source Levels for Construction Equipment at 25 feet and Attenuated at 110 feet (Proposed Project Distance to Nearest Sensitive Noise Receptor).

Equipment	Reference PPV at 25 Feet (inch/second)*	Attenuated PPV at 110 feet (inch/second)**
Pile driver (vibratory), upper range	0.734	0.080
Pile driver (vibratory), typical	0.17	0.018
Vibratory roller	0.21	0.023
Large bulldozer	0.089	0.010
Caisson drilling	0.089	0.010
Loaded trucks	0.076	0.008
Jackhammer	0.035	0.004

*PPV = peak particle velocity (a measurement of vibration).

**Attenuated PPV = PPVref x $(25/D)^{1.5}$ where attenuated PPV = peak particle velocity of the equipment adjusted for distance (inch/second), PPVref = the source reference vibration level at 25 ft (inch/second) and D = distance from the equipment to the receptor (feet).

The vibratory roller would produce the greatest groundborne vibration levels during construction of the Proposed Project. The vibration levels generated by the vibratory rollers at the nearest sensitive receptor (approximately 25 feet away) to the project would be a PPV of 0.21 inch/second. At the distance from the project construction area to the nearest sensitive receptor,

and with the anticipated construction equipment, the PPV would be more than the vibration threshold of potential annoyance of 0.1 inch/second. Therefore, construction and maintenance-activities could generate excessive groundborne vibration or groundborne noise levels potentially affecting sensitive receptors. To reduce potential generation of excessive groundborne vibration or groundborne noise levels impacts from construction and maintenance activities, the Proposed Project would implement Mitigation Measure NOI-2 (Implement Vibration-Reducing Measures). The vibration reducing measure would ensure proper tuning of vibratory equipment, employ the use of vibration damping devices, and not overlap the use of the greatest vibratory construction equipment (e.g., vibratory roller and vibratory pile driver). In addition, the Proposed Project would restrict construction and maintenance activities to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction or maintenance activities would be scheduled on Sundays or on holidays. Implementation of Mitigation Measure NOI-2 (Implement Vibration-Reducing Measures) during construction and maintenance activities would further minimize the impact. Therefore, the impact would be less than significant with mitigation.

Mitigation Measure NOI-2 Implement Vibration-Reducing Measures

Sonoma Water shall require contractors, through project contract specifications, and maintenance staff to implement the following practices during construction activities to minimize vibration-related impacts on local sensitive receptors:

1. Prohibit use of impact pile driving equipment.
2. Ensure proper tuning of vibratory equipment.
3. Use vibration damping devices.
4. Limit use of vibratory equipment to daytime hours (7:00 a.m. to 7:00 p.m.) on weekdays (Monday to Friday) and (8:00 a.m. to 6:00 p.m.) on Saturdays.
5. Limit use of vibratory equipment to work that cannot be accomplished without such equipment; and
6. Do not overlap the use of the greatest vibratory construction equipment (e.g., vibratory roller and vibratory pile driver).
7. Residences and other sensitive receptors within 200 feet of vibratory pile driving construction activities shall be notified on the construction schedule in writing, at least two weeks prior to the commencement of construction activities. This notice shall indicate the allowable hours of construction activities as specified by the applicable local jurisdiction. The construction contractor shall designate a noise/vibration disturbance coordinator who would be responsible for responding to complaints regarding construction noise or vibration. The coordinator shall determine the cause of the complaint and ensure that reasonable measures are implemented to correct the problem. A contact number for the noise/vibration disturbance coordinator shall be conspicuously placed on the project identification sign(s) and included in the construction schedule notification sent to nearby residences and sensitive receptors.

Operation and maintenance of the Proposed Project would resemble the existing operations and maintenance activities within the project area and would not result in generation of groundborne vibration or groundborne noise levels and would not result in an impact.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? *No Impact*

The Proposed Project does not involve the development of new noise sensitive land uses, and thus, implementation of the Proposed Project would not expose people to excessive aircraft noise. In addition, the Proposed Project is not located within the vicinity of a private airstrip or within an airport land use plan. The Proposed Project is within ten miles of a public airport, but would not expose people residing or working in the project area to excessive noise levels. Therefore, there would be no impact.

3.14 Population and Housing

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

Population and Housing Setting

The community of Guerneville is included within an aggregated population designation known as a Census Designated Place (CDP). According to the Association of Bay Area Governments (ABAG) Bay Area Census, the Guerneville CDP had an estimated population of approximately 4,500 in 2010 (ABAG 2010).

The District began operation in 1983 and serves an area of approximately 2,700 acres that includes the unincorporated areas of Rio Nido, Guerneville, Guernewood Park, and Vacation Beach (SW 2023). The District provides service to approximately 3,200 equivalent single-family dwelling units (SW 2023).

Discussion of Potential Impacts

a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? *No Impact*

The Proposed Project does not involve construction of new homes or businesses in the area, new road extensions, or other new or expanded infrastructure into undeveloped areas. The Proposed Project involves repair and replacement of existing sanitation facilities, including the treatment plant headworks, lift stations, and segments of three force mains and would not directly or indirectly induce substantial population growth. The Proposed Project would not increase wastewater treatment capacities above existing conditions. For these reasons, the project would not induce population growth and no impact would occur.

b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? *No Impact*

The Proposed Project would involve the repair and replacement of existing sanitation facilities and would not result in the displacement of any existing housing or people, necessitating the construction of replacement housing elsewhere. Therefore, there would be no impact.

3.15 Public Services

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

Public Services Setting

The Russian River Fire Protection District (RRFPD), now part of the Sonoma County Fire District (SCFD), covers approximately 20 square miles and serves the populations of Guerneville, Rio Nido, Oddfellows Park, Vacation Beach, Guernewood Park and the Armstrong Valley. The RRFPD is a "combination" fire department comprised of 12 Career Firefighters supplemented by volunteers and interns who provide emergency response to fires, medical emergencies, hazardous materials releases, man-made and natural disasters as well as non-emergency response to a wide variety of public requests for assistance (RRFPD 2023). The RRFPD also staffs an Advanced Life Support Transport Ambulance. The Advanced Life Support Ambulance also serves the neighboring areas of Forestville, Monte Rio, Cazadero, Duncan's Mills and Jenner. The RRFPD operates out of one fire station located at 14100 Armstrong Woods Road in Guerneville, which is centrally located within the Proposed Project area. In July 2020, the RRFPD joined the SCFD and now operates within the SCFD as Station Number 9 (SCFD 2023).

Police services within the District and Proposed Project area are provided by the Sonoma County Sheriff's Office. The Sheriff's Office operates the Guerneville Substation located at the corner of First and Church streets in Guerneville, which is centrally located within the Proposed Project area (SCSO 2020).

The District and Proposed Project area are located within the jurisdiction of the Guerneville Elementary School District, which operates the Guerneville Primary School and Guerneville Elementary School, both of which are located at 14630 Armstrong Woods Road in Guerneville (Guerneville School District 2023).

Other public facilities within the Proposed Project area include the Sonoma County Library system. There are approximately 14 branches within the library system. The Sonoma County Library serves Sonoma County communities and their surrounding areas, as well as the predominantly rural area of west Sonoma County (Sonoma County Library 2023). The Guerneville Regional Library located at 14107 Armstrong Woods Road in Guerneville is approximately 0.20 miles from the Beanwood Force Main.

For discussion regarding nearby recreational facilities and parks, refer to Section 3.16 (Recreation), below.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Public Services if it would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: i.) Fire Protection; ii.) Police Protection; iii.) Schools; iv.) Parks; v.) Other Public Facilities? *No Impact*

As described in Section 3.14 (Population and Housing), above, the proposed project would not result in direct or indirect population growth that requires additional or altered public facilities to maintain service ratios or performance objectives due to such demands. Since construction activities would be temporary and involve approximately 15 workers, project construction would not be expected to significantly increase the resident population in a manner that could increase the need for additional governmental facilities or affect the ability to maintain acceptable service ratios, response times, or performance objectives.

As described below in Section 3.16 (Recreation), the Proposed Project would include short-term temporary closures and restrictions in use of the access and parking lot of the Guerneville River Park on the west side of Highway 116. This is a construction-related closure, and not a physical change in the environment to maintain acceptable service ratios, response times, or other performance objective for parks. Access to the entrance and parking lot of the Guerneville River Park would remain open on the east side of Highway 116 during construction activities. Construction activities for the Proposed Project would also result in the short-term temporary closure of the Vacation Beach Playground and seasonally available Summer Dam parking area. However, as described in Section 3.16 (Recreation), other facilities including public beach access and playgrounds in the surrounding community would be available for use within the

Proposed Project area. This short-term closure will not involve adverse impacts to the environment.

Furthermore, operations and maintenance of the Proposed Project would be consistent with current operations and maintenance activities of the existing facilities to be repaired and replaced and would not result in substantial increases in necessary public facilities, or the ability to maintain acceptable service ratios, response times, or performance objectives. Therefore, the Proposed Project would not increase demand for fire and police protection, schools, parks, or other public facilities and there would be no impact.

3.16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Would the project 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. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Recreation Setting

Guerneville and the surrounding communities along the Russian River contain many recreational opportunities including swimming, boating, bicycling, hiking, and sightseeing, as well as neighborhood, regional, and state parks.

Riverkeeper Stewardship Park and a publicly maintained parking lot are located adjacent to the east side of the Guerneville Bridge along the north side of the Russian River. The park is located adjacent to the existing and proposed Beanwood Force Main alignment that traverses the river underneath the Guerneville Bridge. The parking lot contains a manhole on the existing Beanwood Force Main that connects to the sanitation collection system on the north side of the river and that the proposed replacement would also connect to.

Johnson's Beach is a privately-owned campground and beach that is located adjacent to the west side of the Guerneville Bridge on the north side of the river. Access to the campground is located on Church Street, approximately 280 feet northwest of the existing and proposed Beanwood Force Main alignment. Access directly to the beach is located on First Street approximately 700 feet west of the existing and proposed Beanwood Force Main alignment. The beach includes a flashboard dam that is installed seasonally by the Russian River Recreation and Parks District to create a swimming and boating area during the summer months (RRRPD 2023).

Guerneville River Park straddles both sides of the Guerneville Bridge on the south side of the river and has two public entrances to the park. One public entrance and parking lot is located along the east side of the northbound lane of Highway 116 as it approaches the Highway 116 Bridge on the south side of the river. The other entrance to Guerneville River Park is on the west side of the Highway 116 Bridge and utilizes Drake Road, which crosses under Highway

116, for parking and access to a walking path and the park. The west side entrance, parking lot, and walking path in the park are located along the proposed Beanwood Force Main Segment 1 alignment.

Guerneville Pee Wee Golf is located at 16155 Drake Road on the opposite side of Highway 116 from the Beanwood Lift Station and proposed Beanwood force main alignment. Amenities include two 18-hole miniature golf courses and arcade games (GPWG 2019).

The Rio Nido Homeowner's Association maintains the Rio Nido Pee Wee Golf, which is located at 14759 Canyon 7 Road in Rio Nido, approximately 450 feet north of the Rio Nido Lift Station and Force Main (RHNOA 2023). The Homeowner's association also maintains a playground and picnic grounds at the same location.

Armstrong Redwoods State Natural Reserve is located at the north end of Armstrong Woods Road, approximately 1.1 miles north of the closest Proposed Project site at the Watson Road Lift Station.

The Russian River Recreation and Parks District operates five parks in the Proposed Project area including the Bruno Farnocchia Memorial Park, the J.K. Wright Memorial Playground, the Henry N. Pacheco Memorial Playground, the Angelo Boles Memorial Grove, and the Vacation Beach Playground.

The Bruno Farnocchia Memorial Park is a 3.18-acre park located at 14800 Rio Nido Road, approximately 1200 feet (0.22 miles) north of the Rio Nido Lift Station and Force Main. The park includes a playground, horseshoe pits, picnic tables, barbeques, portable restroom, and a tennis court and is also the location of a dog park and community garden (RRRPD 2023).

The J.K. Wright Memorial Playground is a 0.88-acre park located at 16016 Drake Road, approximately 550 feet east of the proposed Beanwood Force Main alignment at the west entrance to Guerneville River Park. The park includes a sandbox, water sluice for children, swings, and several other fun features for kids. Other amenities include two tennis courts, a basketball court, picnic tables, barbecues, portable restroom and a lawn area (RRRPD 2023).

The Henry N. Pacheco Memorial Playground is a 1.2-acre park located at 14100 Old Cazadero Road, which is adjacent to the Guernewood Park Lift Station. The facilities include two tennis/pickle ball courts, a small playground, and a single basketball hoop (RRRPD 2023).

The Angelo Boles Memorial Grove is a 0.18-acre redwood tree grove located between Guernewood Lane and Highway 116, approximately 0.7 miles southwest of the Guerneville Lift Station and 0.25 miles northeast of the Main Lift Station and Force Main. The grove provides picnic opportunities (RRRPD 2023).

The Vacation Beach Playground is a small playground located at 17828 Orchard Avenue just above the Vacation Beach Dam, and is adjacent to the Vacation Beach Lift Station. The Main Force Main traverses through the playground from the river crossing and then turns east down Orchard Road to the WWTP. The playground has picnic tables, barbeques, a grassy area, playground, and basketball court (RRRPD 2023).

The Vacation Beach Dam is a seasonal dam on the Russian River that is adjacent to the playground and includes a limited day use parking lot, portable restroom, and small boat launch on the upstream and downstream sides of the dam that are seasonally available for use between mid-June and September (RRRPD 2023). The Main Force Main crosses underneath the Russian River just downstream of the Vacation Beach Dam and continues through the Vacation Beach Playground to Orchard Road. The dam and parking lot are adjacent to Vacation Beach Summer Crossing Road, which provides a seasonal one-lane bridge for vehicle traffic between Vacation Beach on the east side of the river and Highway 116 on the west, from June through September. Refer to Section 3.17, Transportation, for more information on the seasonal river crossing.

The Northwood Golf Club is located at 19400 Highway 116, approximately 1.1 miles east of the Main Force Main where it turns from Highway 116 to Vacation Beach Summer Crossing Road. The golf club includes a 9-hole golf course, restaurant, and lodging (NGC 2021).

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Recreation if it would:

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? *Less than Significant*

The Proposed Project would not 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. During construction, it is not expected that many recreationists would be displaced from recreational areas in the Proposed Project vicinity and thereby substantially increase the use of other nearby parks or recreational facilities.

Construction of Segment 1 of the Beanwood Force Main would require temporary closure of the west side entrance, parking lot, and walking path in Guerneville River Park during the duration of the short-term construction activities which are expected to last one month. As described above in the setting, the park has another entrance and parking lot located along the east side of the northbound lane of Highway 116 that would remain open and available for use during construction activities.

Construction of the segment of the Main Force Main that crosses under the river at the Vacation Beach Summer Crossing would require the temporary closure of the Summer Dam parking lot during the duration of the short-term construction activities which are expected to last 3 to 4 months, and would be inaccessible to the public for one season. Construction activities at the summer crossing are described in the Project Description and would include microtunneling and open-trench excavation to install the new force main along a parallel alignment to the existing force main. The boat ramps and summer crossing road would continue to be available for use during construction.

The segment of the Main Force Main that runs through the Vacation Beach Playground, would be fenced during the duration of the short-term construction activities, and the playground would be inaccessible to the public for a period of two weeks to a month. Construction activities within the park boundaries are described in the Project Description and would include open-trench excavation and removal and replacement of the existing force main.

In addition to the short-term closure of Vacation Beach Playground during construction activities, it is possible that some recreationists that currently use the recreation areas near Proposed Project construction areas would not want to use these areas during construction activities due to temporary increases in noise and potential reductions in air quality associated with use of construction equipment. Other recreationists may avoid work areas due to the appearance of construction areas. These potentially displaced recreationists may instead use similar local or regional recreation facilities located in the Proposed Project vicinity resulting in occasional increases in use of other recreation facilities.

The temporary increased use of other local or regional recreation resources that may be attributable to construction of the Proposed Project is not anticipated to result in substantial physical deterioration of recreational resources, or otherwise result in physical degradation of existing recreational resources. Following project construction, recreational surfaces at the Vacation Beach Playground would be restored to their general pre-project conditions. For all of the above reasons, construction activities associated with the Proposed Project would have a less than significant impact relative to a potential increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.

The Proposed Project operation and maintenance would have no impact on recreational resources nor contribute to a potential increase in 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? *No Impact*

The Proposed Project does not propose to construct or expand, nor would it require the construction or expansion of, recreational facilities. The Proposed Project would include the restoration of the Vacation Beach Playground surfaces following construction of the Main Force Main as described in 3.17 a) above. The Proposed Project would not result in a permanent increase in the local population or increased demand for the construction or expansion of recreational facilities due to growth. In addition, operation and maintenance of the Proposed Project would not require the construction or expansion of recreational facilities. Therefore, the Proposed Project would have no impact related to the construction or expansion of recreational facilities.

3.17 Transportation

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

Transportation Setting

The Proposed Project is located within portions of Rio Nido, Guerneville, Guernewood Park, and Vacation Beach in Sonoma County. The area has a relatively extensive road network and many local roads are very narrow and do not meet modern standards. Major traffic arteries are River Road, State Highway 116, Bohemian Highway, and Mirabel Road. All major routes are two lane rural roadways. Intercity transit service connects the river communities with Santa Rosa via Sebastopol (Sonoma County 2016c).

Public Transportation

Two bus routes are within the project area. Route 20: *Russian River Area, Forestville, Sebastopol, Santa Rosa.* The weekday schedule begins at 6:30 am and runs until 9:20 pm. Route 28: *Guerneville, Monte Rio*. The weekday schedule begins at 7:45 am and runs until 5:08 pm. Bus stops are located near the Main Force Main and Main Lift Station, Rio Nido Force Main and Lift Station, Guerneville Force Main and Lift Station.

Bikeways

The project area includes paved and unpaved bike paths (bikeways) that connect and traverse the cities and unincorporated areas of Sonoma County. The County maintains an extensive network of Class I, II, and Class III bikeways that interconnect with individual city bikeways. The General Plan 2020 Open Space Policy OSRC-18c serves to "*Designate the Regional Parks Department as the agency responsible for establishing and maintaining Class I bikeways along public rights-of-way in unincorporated areas, and the Transportation and Public Works Department as the agency responsible for establishing and maintaining Class II and III bikeways along public rights-of-way in unincorporated areas*." (Sonoma County 2016b).

Bikeways defined by the County of Sonoma as follows:

- Class I Bikeway: A bike path for the exclusive use of bicycles. It is separated from the road by a space or a barrier. A bike path may be on part of a road right-of-way or on a separate right-of-way.
- Class II Bikeway: A bike lane on a right-of-way for the primary use of bicycles. Through travel by autos or pedestrians is not allowed, although vehicle parking is permissible.
- Class III Bikeway: A bike route that shares its right-of-way with either moving autos or pedestrians.

Bicycle Boulevards

Streets where conditions are created in order to enhance bicycle safety and optimize travel for bicycles rather than automobiles such as reduced traffic speed and volume; the use of diverters and roundabouts to discourage through and non-local motor vehicle traffic; assigning the right-of-way to the bicycle; traffic controls that help bicycles cross major arterial roads; and signage and street design that encourages use by bicyclists and informs motorists that the roadway is a priority route for bicyclists.

County of Sonoma General Plan 2020

The County of Sonoma General Plan 2020 Circulation and Transit Element includes goals, objectives, and policies that support movement of automobiles and support alternative modes of transportation. Regarding construction of projects that could impact circulation, particularly for bicycles and pedestrians, the General Plan includes the following policy:

- Policy CT-3z: Require road construction projects to minimize their impacts on bicyclists and pedestrians through the proper placement of construction signs and equipment and by providing adequate, safe, well-marked detours. Where it is safe to do so, allow bicyclists and pedestrians to pass through construction areas in order to avoid detours. Where two-way bicycle and pedestrian travel can be safely accommodated in a one-way traffic control zone, adequate signage shall be placed to alert motorists of bicycles and pedestrians in the lane (Sonoma County 2016b).

Sonoma County Transportation Authority Moving Forward 2050

The Sonoma County Transportation Authority's (SCTA) Comprehensive Transportation Plan, called Moving Forward 2050, outlines the following goals:

1. Connected and Reliable
2. Safe and Well-Maintained
3. Community Oriented and Place-Based
4. Zero Emissions

To support these goals, Moving Forward 2050 proposes road and transit projects that would maintain and improve the transportation infrastructure, including enhancing the transit system and non-motorized transportation network (SCTA 2021).

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Transportation if it would:

a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? *Less than Significant with Mitigation*

Operation and maintenance activities of the Proposed Project would not conflict with an applicable plan, ordinance or policy related to the circulation systems in the project area. Operations and maintenance of the Proposed Project would be consistent with current operations and maintenance activities of the existing facilities to be repaired and replaced.

Construction activities would result in short-term and temporary impacts to traffic in the areas immediately adjacent to project sites. Construction would temporarily generate additional vehicle trips associated with the construction workers, construction equipment and material-related deliveries.

The expected increase in traffic would take place between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and on Saturdays from 8 a.m. to 6 p.m., as necessary. The estimated increase in trips along these roads would be approximately 21 round trips per day, based upon an estimated 20 construction workers and 1 potential daily staging area-related trips for the Proposed Project.

Project construction would temporarily increase traffic volumes in the project area. It is anticipated that the proposed project would be constructed in phases. For example, potential traffic impacts associated with the work on the Rio Nido Force Main and Lift Station would be limited to River Road, Highway 116, Rio Nido Road, and Eagle Lane. Beanwood Force Main and Lift Station would be limited to Drake Road and Guerneville Bridge on Highway 116. Main Force Main and Main Lift Station potential traffic impacts would be limited to Riverside Drive, HWY 116, Vacation Summer Bridge, and Orchard Avenue. Lift stations Drake Estates, Drake Road, Watson Road, Laughlin Road, Guerneville, Guernewood Park, Center Way, and Vacation Beach are not located on major traffic arteries and the construction activities would not contribute to significant traffic disruptions.

A portion of River Road is classified as a Class II Bicycle lane beginning at the corner of Westside Road and ending at Armstrong Woods Road. The Sonoma County Transit Authority has proposed Class I, Class II and Class III bicycle lanes for much of the Russian River area along River Road, Hwy 116, Riverside Road, Neeley Road, Moscow Road and Main Street. As described above, Policy CT-3z, requires road construction projects to minimize their impacts on bicyclists and pedestrians through the proper placement of construction signs and equipment and by providing adequate, safe, well-marked detours. Potential temporary impacts would be minimized and reduced to less than significant levels through implementation of Mitigation Measure TRA-1 (Traffic Control Measures) described below. The technical specifications will include requirements for the contractor-prepared temporary traffic control plan, which will include plans for pedestrian and vehicular traffic, meeting ADA, complying with California

Manual on Uniform Traffic Control Devices, and referencing County temporary traffic control requirements.

The Proposed Project construction, operation, and maintenance activities would not conflict with County's policies for existing or proposed bicycle or pedestrian facilities.

The traffic disruptions from construction activities would not significantly affect the speed and reliability of the existing bus service. These impacts will be temporary and of limited duration. Pedestrian access including wheelchair accessible ramps and temporary sidewalks where needed will be maintained during construction.

The project's construction, maintenance, and operation activities would be consistent with the goals and objectives of the Sonoma County General Plans and SCTA Comprehensive Transportation Plan by maintaining the existing roadways in the project area. There are no conflicts with County programs, plans, ordinances or policies regarding transportation. Implementation of Mitigation Measure TRA-1 (Traffic Control Measures) would reduce this impact to less than significant.

Mitigation Measure TRA-1: Traffic Control Measures

Sonoma Water shall require contractors, through project contract specifications, and maintenance staff to implement the following:

1. Construction and maintenance activities shall be staged and conducted in a manner that maintains two-way traffic flow on public roadways in the vicinity of the work site to the maximum extent practicable. If temporary lane closures are necessary, they shall be coordinated with the County of Sonoma at least seven days prior to commencement of closure. Work shall be coordinated so that emergency vehicles and personnel shall be provided immediate access at all times.
2. Traffic control and safety precautions shall conform to the "California Manual on Uniform Traffic Control Devices" (latest edition), and applicable provisions of the County of Sonoma and Caltrans encroachment permits.
3. Traffic control and safety precautions shall provide safe passage for vehicular and pedestrian traffic through the work at all times.
4. Subject to encroachment permit requirements, traffic on two-lane streets may be reduced to one lane provided that restriction of traffic flow, flaggers, cones, signs, and barricades are furnished as required by Sonoma Water. Traffic shall be permitted equal flow time in each direction.
5. At least seven days prior to commencement of work, notify residents along the Proposed Project roadways, in writing, that traffic flows will be subject to detours and/or delays, and that access to individual driveways may be disrupted during working hours. Notice will also be provided in writing to the property owner.

6. At least seven days prior to commencement of work, notifications shall be posted in the Proposed Project area to inform drivers of impending construction work and likely delays and detours.
7. Construction activities may require the temporary, short-term closure of a bus stop. If necessary. a temporary bus stop will be located nearby during the active construction period. Immediately after completion of construction, the stop will be opened to restore access for bus patrons.
8. Access for driveways and private roads shall be maintained. If brief periods of construction would temporarily block access, property occupants would be notified, in writing, at least three days in advance of blocking property occupants' driveways. Notice shall also be provided in writing to the property owner.
9. Adequate off-street parking shall be provided or designated public parking areas will be used for workers' personal vehicles and construction-related vehicles not in use through the construction period.

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

CEQA Guidelines section 15064.3, subdivision (b) describes specific considerations for evaluating a project's transportation impacts, which is measured by "vehicle miles traveled" (VMT) and refers to the amount and distance of automobile travel that is attributable to a project.

The County of Sonoma relies on the California Governor's Office of Planning and Research (OPR) published *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018) (referred to herein as the OPR Technical Advisory), which provides guidelines on the implementation of SB 743 and thresholds of significance. The thresholds of significance are as follows:

"In accordance with OPR's guidelines for CEQA, a project could have significant transportation impact on the environment if it:

a) Conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities;

b) Conflicts with or is inconsistent with CEQA Guidelines section 15064.3(b);

c) Substantially increases hazards due to geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);"

In addition, CEQA Guidelines section 15064.3(b) provides the following criteria for analyzing transportation impacts:

1. Land Use Project. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within ½ mile of either an existing major transit stop or a stop along an existing high-quality transit corridor

should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

2. Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis.

The Proposed Project is not a transportation project as described in CEQA Guidelines section 15064.3(b). The temporary construction traffic will largely involve non-automobile traffic, that is not included in VMT calculations per OPR guidance. The Proposed Project is a capital improvement project and a qualitative analysis is appropriate pursuant to Guidelines section 15064.3(b)(3). Based on the estimates described in response to question 3.16 a), above, the Proposed Project would not result in a substantial increase in traffic during construction activities. Refer to the response to question 3.16 e), below for discussion regarding effects on emergency access. Local residents and business owners could potentially notice an increase in neighborhood traffic during the phased construction. However, this increase would be temporary and short in duration. The Proposed Project's construction and maintenance activities would not generate long-term net increase in VMT. Built components of the Proposed Project would not alter traffic circulation patterns or reduce access to alternative modes of transportation. Vehicle traffic associated with Project-related operation and maintenance activities would be similar to that of existing activities. Further, because newly installed Proposed Project components will require less maintenance than the existing, deteriorating components, maintenance traffic will be reduced. The Proposed Project would not be expected to substantially disrupt automobile traffic, local or regional mass transit, or non-motorized travel and relevant components of the circulation system. The Proposed Project will have a less than significant impact on vehicle miles traveled.

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

The Proposed Project does not include geometric design features or incompatible uses. There would be no increase in hazards generated by the project or any changes to the existing designs or uses of roadways. Therefore, there would be no impact.

d. Result in inadequate emergency access? *Less than Significant with Mitigation*

The Proposed Project does not include any structures that would permanently block or constrain roadways and would not result in inadequate emergency access. As described in Section 3.9 f) (Hazards and Hazardous Materials), construction and maintenance activities may require temporary one-lane road closures, which may cause delays of short duration immediately

adjacent to the project site. Operation and maintenance of the Proposed Project would resemble the existing activities at the project site and would not result in inadequate emergency access. If lane closures or traffic generated by Project construction and maintenance activities were to interfere with emergency access such that response times were extended, a significant impact would result. To further minimize the potential impact, Mitigation Measure TRA-1 would be implemented during construction and maintenance activities to ensure emergency access is maintained. The temporary one-lane road closures adjacent to the project site would not result in inadequate emergency access and the impact would be less than significant with implementation of Mitigation Measure TRA-1.

3.18 Tribal Cultural Resources

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

Tribal Cultural Resources Setting

California Assembly Bill 52 established that a "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (Public Resources Code section 21084.2). Public Resources Code section 21074 defines tribal cultural resources as either of the following:

1) sites, features, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:
   a) included or determined to be eligible for inclusion in the California Register of Historical Resources;
   b) included in a local register of historical resources as defined in subdivision (k) of section 5020.1;
2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of section 5024.1. In applying the criteria set forth in subdivision (c), of section 5024.1 for the purposes of this analysis, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also established a formal consultation process for lead agencies with California tribes regarding tribal cultural resources.

The Southern Pomo's aboriginal territory falls within present-day Sonoma County (Origer 2023a). To the north, it reaches the divide between Rock Pile Creek and the Gualala River, and to the south it extends to near the town of Cotati. The eastern boundary primarily runs along the western flanks of Sonoma Mountain until it reaches Healdsburg, where it crosses to the west side of the Russian River. Within the larger area that constitutes the Southern Pomo homelands there were bands or tribelets that occupied distinct areas. Primary village sites of the Southern Pomo were occupied continually, while temporary sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant (Origer 2023a).

As described in Section 3.5 (Cultural Resources), based on the Origer (2023a) archival research and field investigations of the project area, six locations have a high potential for buried cultural resources within the project area. These are: the southern part of the WWTP Headworks, the Guerneville Lift Station, the Main Force Main Segment 7, Staging Area #1, the southern half of Staging Area #2, and Staging Area #9.

Native American Outreach

Sonoma Water mailed AB 52 notification letters on February 6, 2023, to the tribes listed by the NAHC and tribes that have formally requested notification under AB52. Sonoma Water received a formal request from the Kashia Band of Pomo Indians of the Stewarts Point Rancheria on February 9, 2023, and the Federated Indians of Graton Rancheria on February 22, 2023, for tribal consultation. As of the date of publication of this document, the District is continuing the AB 52 consultation process with the Kashia Band of Pomo Indians of the Stewarts Point Rancheria and Federated Indians of Graton Rancheria.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Tribal Cultural Resources if it:

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? *No Impact*

As described in Section 3.5 (Cultural Resources), there are no known cultural resources that are listed or eligible for listing in the California Register of Historical Resources, or in the local

register of historical resources within the Proposed Project area. Therefore, there would be no impact.

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less than Significant with Mitigation

As described in Section 3.5 (Cultural Resources), the results of the Sacred Lands File (Origer 2023a) review stated that there is no information about the presence of cultural resources in the immediate project area, however six locations (the southern part of the Russian River Treatment Plant Headworks, the Guerneville Lift Station, the Main Force Main Segment 7, Staging Area #1, the southern half of Staging Area #2, and Staging Area #9) have a high potential for buried resources within the project area. Tribal cultural resources are known to occur within the project APE. Therefore, there is potential to uncover previously unidentified tribal cultural resources during ground disturbance. The disturbance or damage of previously unidentified tribal cultural resources could be a potentially significant impact. Mitigation measures for tribal cultural resources must be developed in consultation with the affected California Native American tribe pursuant to Public Resources Code section 21080.3.2, or according to section 21084.3. section 21084.3 identifies sample mitigation measures that may be considered, including avoidance and preservation of tribal cultural resources and treating these resources with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

While consultations with the Tribes are ongoing, Sonoma Water is including a measure to allow for a tribal cultural resource monitor to be present during project ground disturbing activities. Implementation of Mitigation Measure TCR-1 (Tribal Monitor and Archaeologist During Ground-disturbing Activities) and Mitigation Measures CUL-1 and CUL-2 (Section 3.5) would minimize the potential for the project to adversely affect tribal cultural resources by ensuring that a tribal monitor is present during ground disturbing activities, providing worker awareness training, halting work and implementing recovery or preservation procedures. These measures would reduce any impact to a level that is less than significant.

> **Mitigation Measure TCR-1: Tribal Monitor During Ground-disturbing Activities**
>
> Sonoma Water shall enter into a tribal monitoring agreement with willing local culturally-affiliated tribes to monitor ground-disturbing activities in areas identified as high sensitivity for buried resources or areas determined in consultation with the local culturally-affiliated tribe as sensitive for tribal cultural resources.

3.19 Utilities and Service Systems

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

Utilities and Service Systems Setting

Electricity providers in the Proposed Project area include PG&E and Sonoma Clean Power. PG&E is an American investor-owned utility headquartered in San Francisco, California. PG&E provides natural gas and electricity to much of northern California including electricity to the Proposed Project area (PG&E 2023). In 2011, the Sonoma Water Board of Directors directed Sonoma Water to investigate forming a community power program in response to Sonoma County's desire for lower rates and cleaner power. In 2012, a Joint Powers Authority was approved by the Board, and Sonoma Clean Power (SCP) was launched. Since then, SCP has become the default electricity provider for Sonoma County residents and businesses providing

locally controlled electricity and the option of using environmentally friendly power generated by renewable sources at competitive rates.

Water services in the Proposed Project area are provided by Sweetwater Springs Water District (SSWD 2023). Wastewater services in the Proposed Project area are provided by the District. Wastewater collection services include collection, treatment, disposal, and recycled water distribution (SW 2023).

Waste management services in the Proposed Project area within Sonoma County involves a number of public and private partners. Sonoma Public Infrastructure (formerly Sonoma County Department of Transportation and Public Works) owns the Sonoma County Central Landfill located north of Petaluma, which includes recycling services and five refuse transfer stations. Republic Services of Sonoma County, Inc. operates the central landfill disposal site, as well as four of the transfer stations, located in Annapolis, Guerneville, Healdsburg, and Sonoma. The transfer stations serve solid waste, construction and demolition debris, and organics. Materials are consolidated at the transfer stations and loaded into large transfer trailers for shipment offsite to the Central Landfill in Petaluma (Sonoma County 2022). While these entities provide services within the Proposed Project area, the facilities themselves are located outside of the Proposed Project area.

Recology Sonoma Marin Inc. (Recology Sonoma Marin) provides solid waste collection and recycling in the unincorporated areas of Sonoma County within the Proposed Project area. Recology Sonoma Marin collects and transports commercial and solid waste to the Central Landfill (Recology Waste Zero n.d.).

While the agencies and organizations listed above provide services within the Proposed Project area, the facilities themselves are located outside of the Proposed Project area.

Discussion of Potential Impacts

In accordance with CEQA, the Proposed Project could result in potentially significant impacts to Utilities and Service Systems if it would:

a. Require or result in the relocation or construction of new or expanded water, waste water treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? *Less than Significant*

The Proposed Project would involve construction activities relating to the repair and replacement of existing sewer infrastructure (e.g., sewer force mains, lift stations, and headworks). The Proposed Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, natural gas, or telecommunication facilities of which could cause significant environmental effects.

Part of the improvements intended for the headworks and lift station facilities entails decommissioning the two medium-voltage electrical transmission lines that the District maintains. One medium-voltage line originates at the WWTP and provides primary power to the

Vacation Beach Lift Station. The other medium-voltage line originates at the Main Lift Station and provides primary power to Guerneville, and Guernewood Park and Beanwood Lift Stations. As discussed in the Project Engineering Report (West Yost, 2023), these transmission lines are difficult to maintain and pose a critical safety risk for construction activities that occur within the right-of-way where the lines are located. Accordingly, the Proposed Project would decommission the medium-voltage transmission lines and install new dedicated PG&E electrical utility services at the Guerneville, Guernewood Park, and Beanwood lift stations. The Vacation Beach lift station would receive new low voltage electrical service from the WWTP. Installation of new electrical utility services would connect to existing electrical transmission facilities in the Proposed Project area. The construction and relocation of these new electrical utilities would not cause significant environmental effects and the impact would be less than significant and no mitigation is required.

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? *Less than Significant*

The Proposed Project does not involve future development requiring water supply. The Proposed Project may require water for dust control during construction and maintenance activities and possibly irrigation of seeds and young plants associated with revegetation. Dust control and irrigation water uses would be infrequent, short-term, and provided by a water truck that is supplied from a nearby water hydrant or other source. The operation of the Proposed Project would not increase demand for water use as a result of implementation and thus would not require expanded water supplies. This impact would be less than significant and no mitigation is required.

c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? *No Impact*

The construction, maintenance, and operation of the Proposed Project would not generate wastewater and as such would not affect the capacity of the wastewater treatment provider beyond existing demand. The Proposed Project directly addresses the integrity of the existing wastewater pumping, conveyance, and treatment infrastructure. The Proposed Project would not negatively impact the capacity of the collection and treatment system, and no impact would occur.

d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? *Less than Significant*

Construction and maintenance activities related to the Proposed Project would generate minimal solid waste related to excess construction materials and material removed during site clearing and construction, and as such would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the

attainment of solid waste reduction goals. Operation of the Proposed Project would not generate solid waste. This impact is less than significant and no mitigation is required.

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *Less than Significant Impact*

The Proposed Project would not generate operational waste. Construction activities and maintenance activities related to the Proposed Project would generate minimal solid waste related to excess construction materials and material removed during site clearing and construction and would comply with all federal, state, and local regulations related to solid waste.

A majority of the solid waste from construction or maintenance activities would be diverted per California Assembly Bill 939, which requires all cities and counties in California to divert 50 percent of their waste stream away from landfills (CalRecycle 2023).

The disposal of all waste would comply with applicable federal, state, and local management and reduction statues and regulations related to solid waste and this potential impact would be less than significant.

3.20 Wildfire

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

Wildfire Setting

No recent wildfires have occurred within the Proposed Project area, although wildfires have occurred in the vicinity. Recent fires (2017 Nuns, Tubbs and Pocket; 2019 Kincade; and 2020 Walbridge and Glass) (Digital Mapping Solutions 2021) in Sonoma County and throughout the State of California have heightened awareness of the risks that wildfires pose to people and structures in Sonoma County.

State Responsibility Area

The California Department of Forestry and Fire Protection (CAL FIRE) is the primary emergency response agency for fire suppression and prevention within the State Responsibility Areas (SRA), which includes much of rural Sonoma County (CAL FIRE 2018). The Proposed Project is located within CAL FIRE's Sonoma-Lake-Napa Unit, which includes six counties: Sonoma, Lake, Napa, Yolo, Colusa, and Solano counties. Within this Unit, there are five divisions and ten field battalions. Sonoma County comprises the West Division and which contains four battalions and covers nearly 800,000 acres (Sonoma County 2023). Battalion 1410 encompasses much of

central Sonoma County, from Bodega Bay to Mount St. Helena, including the Proposed Project area (CAL FIRE 2022).

CAL FIRE has ranked most of the SRA within Sonoma County as having a wildfire risk of moderate, high, or very high. The Proposed Project area is ranked as a High Fire Hazard Severity Zone in the SRA (CAL FIRE 2023). The Proposed Project area is ranked as having a high wildfire risk (Sonoma County 2021).

Local Responsibility Area

Sonoma County Fire District (SCFD) is the local fire district responsible for fire suppression and prevention within the Proposed Project area. Station No 9 is within the Proposed Project area (SCFD 2023).

Regulatory Background

Strategic Fire Plan for California

The 2018 Strategic Fire Plan for California addresses wildfire risk reduction at the statewide level and emphasizes community involvement, risk assessment, and proactive pre-fire management actions to reduce risk. The plan also describes California's fire risks as worsening due to a growing population in wildland areas, an accumulation of dry vegetation in the landscape due to large scale fire suppression over time, and increasing costs of firefighting services (CAL FIRE 2018).

California Public Resources Code

Section 4427

PRC section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torch, tarpot, or grinding device from which a spark, fire, or flame may originate, when the equipment is located on or near land covered by forest, brush, or grass during any time of the year when burning permits are required. Before such equipment may be used, all flammable material, including snags, must be cleared away from the area around such operation for a distance of 10 feet. A serviceable round-point shovel with an overall length of not less than 46 inches and a backpack pump water-type fire extinguisher, fully equipped and ready for use, must be maintained in the immediate area during the operation. This section does not apply to portable powersaws and other portable tools powered by a gasoline-fueled internal combustion engine.

Section 4431

PRC section 4431 requires users of gasoline-fueled internal combustion–powered equipment operating within 25 feet of flammable material on or near land covered by forest, brush, or grass to have a serviceable round-point shovel with an overall length of not less than 46 inches or one serviceable fire extinguisher at the immediate location of use during periods when burn permits are required.

Section 4442

PRC section 4442 prohibits the use of internal combustion engines running on hydrocarbon fuels on any land covered by forest, brush, or grass unless the engine is equipped with a spark

arrestor and is constructed, equipped, and maintained in good working order when traveling on any such land.

Local Plans, Policies, Regulations, and Ordinances

Sonoma County General Plan

The Public Safety Element of the Sonoma County General Plan 2020 (Sonoma County 2014) identifies the following goal, objective, and policy that are applicable to the proposed project.

- Goal PS-3: Prevent unnecessary exposure of people and property to risks of damage or injury from wildland and structural fires.
    - Objective PS-3.3: Use the Sonoma County Hazard Mitigation Plan to help reduce damages from wildland fire hazards.
        - Policy PS-3f: Encourage strong enforcement of State requirements for fire safety by the California Department of Forestry and Fire Protection.

Sonoma County Community Wildfire Protection Plan

The Healthy Forests Restoration Act of 2003 established the Community Wildfire Protection Plan (CWPP) as a process for enhancing collaboration between stakeholders from federal, state and local agencies and community groups as they search for solutions to Wildland/Urban Interface (WUI) wildfire issues. There are three requirements for a CWPP: it is collaboratively developed with input from agencies and community members; it identifies and prioritizes treatment areas, mitigation strategies and treatments; and it recommends measures to reduce the ignitability of structures (Sonoma County 2023). The Sonoma County CWPP addresses issues such as fire risk and barriers to safe evacuation within the SRA. The Proposed Project area overlaps the SRA.

Sonoma County Fire District Strategic Plan

The Sonoma County Fire District Strategic Plan was prepared in 2020 and is a framework that guides SCFD's policies and operations. The plan will ensure that SCFD continues to provide high quality and reliable service to the communities they serve while at the same time ensuring the effective of resources and funds (SCFD 2021).

Discussion of Potential Impacts

a. Substantially impair an adopted emergency response plan or emergency evacuation plan? *Less than Significant*

Construction, operation, and maintenance of the Proposed Project would not impair an adopted emergency response plan or emergency evacuation plan, such as the California Fire Strategic Plan, Sonoma County CWPP, SCFD Strategic Plan, or the Sonoma County General Plan. Construction-related and certain maintenance-related activities would include movement of equipment and vehicles on project area roadways. The Proposed Project would not result in inadequate emergency access, as described in Sections 3.9 (Hazards and Hazardous Materials), and 3.17 (Transportation). As described in Mitigation Measure TRA-1 (Traffic Control Measures), project specifications will require the contractor to submit and implement a traffic

control plan. Implementation of Mitigation Measure TRA-1 during construction and maintenance activities would ensure emergency access is maintained. Therefore, the Proposed Project would not impede emergency response plans or evacuation plans and this potential impact would be less than significant.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? *Less than Significant with Mitigation*

Wildfire risk is an existing environmental risk that the Proposed Project will not exacerbate. The only project occupants will be Sonoma Water staff and contractors, who will not be at significant risk of exposure from these existing risks. The Proposed Project area includes landscapes within the SRA ranked by CAL FIRE as having a high fire risk. Construction, maintenance, and operation activities would not exacerbate wildfire risk. Conditions at the Proposed Project sites would not exacerbate wildfire risks. Project work crews would only be onsite during temporary construction and maintenance activities. Highway 116 and surface roads within the project area provide emergency access routes for work crew evacuation. The Proposed Project would not result in inadequate emergency access, as described in Sections 3.9 (Hazards and Hazardous Materials), and 3.17 (Transportation). Implementation of Mitigation Measure TRA-1 during construction and maintenance activities would ensure emergency access is maintained. As such, the Proposed Project would minimize the risk of wildfire and minimize the exposure of occupants to wildfire pollutants or uncontrolled wildfires.

Although the risk of wildfire is not elevated in the Proposed Project area, Sonoma Water's project specifications will require that contractors comply with Public Resources Code sections 4427, 4431, and 4442 during construction and maintenance activities to reduce risk of ignition in the Proposed Project areas. Additionally, Sonoma Water's contractor will prepare and implement a Fire Protection Plan during construction activities. With the following mitigation measures, risks will be mitigated to a level that is less than significant.

> **Mitigation Measure WILD-1. Prepare and implement a Fire Protection Plan to minimize potential for wildland fires during construction activities.**
>
> Before construction begins, Sonoma Water and its contractors shall develop a fire protection plan for implementation during construction activities as specified in the project specifications. This plan will require:
>
> 1. Equipment shall include spark arresters;
> 2. Equipment staging areas and worker parking areas are cleared of all extraneous flammable materials;
> 3. Fire extinguishing equipment will be accessible during vegetation management, construction activities, and maintenance activities;
> 4. Crews are informed of Fire Protection Plan and trained to follow method of operation in case of fire;
> 5. Crews will have relevant contact information on hand to identify who to contact in case of emergency;

6. Crews will notify authorities of any fire;
7. Sites will be accessible to emergency vehicles during performance of work;
8. Require that light trucks and cars with factory-installed (type) mufflers be used only on roads where the roadway is cleared of vegetation. These vehicle types shall maintain their factory-installed (type) muffler in good condition.
9. Smoking is prohibited in wildland areas, with smoking limited to paved areas or areas cleared of all vegetation.
10. Require that nylon or other non-metal string be used in string trimmers to reduce risk of sparks.

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

The Proposed Project includes installation of electrical appurtances in order to provide an electrical supply to headworks, lift stations and force main project components' equipment. Project specifications shall continue to require compliance with California Fire Code and all State laws and County of Sonoma ordinances, rules of the State or County of Sonoma Health Departments, rules of the National Board of Fire Underwriters and National Fire Protection Associations, and local power company regulations for mechanical and electrical work. Therefore, this impact would be less than significant.

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? *No Impact*

The Proposed Project does not include any structures on slopes that are vulnerable to post-fire hazards related to landslides or flooding (Digital Mapping Solutions 2021).

However, as discussed in Section 3.7 (Geology and Soils), the Proposed Project site locations are located in a region categorized as "very high landslide susceptibility" (Sonoma County 2014). This is an existing risk that the Proposed Project will not exacerbate. The District's Local Hazard Mitigation Plan provides the framework to limit or eliminate damage to infrastructure and facilities that occur as a result of natural disasters. The Proposed Project is designed to and will improve the District infrastructure resiliency to natural disasters, such as earthquake and landslides, and reduce risks of damage and would not directly or indirectly cause potential substantial adverse effects. The Proposed Project would not expose people or structures to enhanced risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and therefore there is no impact..

3.21 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 substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
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 will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion of Potential Impacts

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

Potentially significant impacts from the Proposed Project were identified for several resources. For more details, please refer to the impact discussions presented in Sections 3.4 (Biological

Resources), 3.5 (Cultural Resources), 3.7 (Geology and Soils), 3.9 (Hazards and Hazardous Materials), 3.10 (Hydrology and Water Quality), 3.13 (Noise), 3.17 (Transportation), 3.18 (Tribal Cultural Resources), and 3.20 (Wildfire). The Proposed Project includes mitigation measures that would minimize these impacts to a less than significant level. The Proposed Project with incorporation of the mitigation measures would not have a significant environmental impact on any of the 20 factors listed on the Environmental Checklist and described in Sections 3.1 to 3.20.

b. Does the project have impacts that are individually limited, but cumulatively considerable? *Less than Significant*

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines section 15355). As defined by the State of California, cumulative impacts reflect "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines section 15355[b]).

The Proposed Project is a rehabilitation project to repair and replace deteriorating sanitation facilities. Repair and replacement of existing sanitation facilities would improve the functionality and reliability of the wastewater treatment system and reduce the potential for spills, leaks, or overflows that could negatively affect the surrounding environment. The Proposed Project would not increase the treatment capacity of the sanitation system that could contribute to growth or development in the area. The project would have less than significant impacts during construction and maintenance, and in the long-term operation of the Proposed Project would have beneficial effects through the reduced potential for spills, leaks, or overflows in the Proposed Project area. Maintenance and operation of the Proposed Project would be similar and consistent with existing maintenance and operation activities and would not result in an increase in pollutant and greenhouse gas emissions above existing conditions. Therefore, the Proposed Project would have a less than significant cumulatively considerable impact on growth and pollutant emissions that could affect air quality.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? *Less than Significant*

The Proposed Project consists of the rehabilitation of existing sanitation facilities. The Project actions would not result in a population increase in the Proposed Project vicinity. There may be temporary construction and maintenance-related impacts to humans associated with air quality, cultural resources, geology and soils, hazards and hazardous materials, noise, transportation, tribal cultural resources, and wildfire that with implementation of mitigation measures would be less than significant. Please refer to the impact discussions in Sections 3.1 through 3.20. Therefore, the Proposed Project would have a less than significant impact on humans.

4.0 Determination

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 will be prepared.

☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the Proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Signature:_____ Date: 6.28.23

Grant Davis - General Manager

5.0 List of Preparers

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Appendix A: Notice of Availability/Notice of Intent to Adopt Initial Study and Mitigated Negative Declaration

Sonoma Water

404 Aviation Boulevard
Santa Rosa, CA 95403
Front Desk: 707-526-5370
www.sonomawater.org

Notice of Availability / Notice of Intent to Adopt Initial Study and Mitigated Negative Declaration for the RUSSIAN RIVER COUNTY SANITATION DISTRICT HEADWORKS, LIFT STATIONS, AND FORCE MAINS PROJECT

Posted: June 30, 2023

Public Review Period: July 1, 2023 to July 31, 2023

The Sonoma County Water Agency (Sonoma Water) is the Lead Agency under the California Environmental Quality Act (CEQA) for the proposed Russian River County Sanitation District Headworks, Lift Stations, and Force Mains Project (Proposed Project). Sonoma Water has prepared an Initial Study and Mitigated Negative Declaration (IS/MND) for the project in accordance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and Sonoma Water's Procedures for Implementation of CEQA. This notice is to announce that the IS/MND is available for review by the public, agencies, and interested parties. Instructions for submitting comments on the document are included in this notice.

Project Location: The Russian River County Sanitation District serves and the Proposed Project is located in the unincorporated areas of Rio Nido, Guerneville, Guernewood Park, and Vacation Beach in west Sonoma County.

Project Description: The Proposed Project would reduce the potential for sanitary sewer overflows and leaking pipes, and reduce the risk of the loss of sanitation service resulting from failures of deteriorating infrastructure due to ground deformation, liquefaction, or lateral ground movement caused by a moderate or severe earthquake. To maintain safe and reliable sanitation service during a seismic event, the Proposed Project would also improve the ability of the Main Force Main to withstand the effects of ground deformation, liquefaction, and lateral spread hazards at the Russian River crossing. The Proposed Project would include repairing and replacing existing components of the headworks at the wastewater treatment plant, as well as repairing and replacing existing components at the 11 lift stations located within the RRCSD. Proposed repairs at the lift stations include replacing existing lift station platforms, installing new flow meter vaults, and regrading.

The Proposed Project would replace the existing force main pipeline on the Beanwood, Rio Nido, and Main force main alignments. The Proposed Project would replace a segment of the Beanwood Force Main that is attached underneath the Guerneville Bridge. The Proposed Project would also replace a segment of the existing Main Force Main that crosses under the Russian River near the Vacation Beach summer crossing. The new Main Force Main pipeline segment would be microtunneled approximately 30 feet to 45 feet below the riverbed to replace the existing pipeline segment. The existing pipeline segment would be disconnected, filled with a low strength concrete mixture, and abandoned in place. Work on the force mains would improve their ability to withstand the effects of ground deformation, liquefaction, and

lateral spread hazards.

Materials: A copy of the IS/MND and supporting materials are available at the Sonoma Water administrative office at 404 Aviation Blvd., Santa Rosa, CA. The IS/MND is available online at: https://www.sonomawater.org/environmental-documents

Public Review: The 31-day public review on the IS/MND runs from July 1, 2023, to July 31, 2023. Please include a name, mailing address, and email address of a contact person for all future correspondence on this subject. Written comments must be submitted no later than 5:00 pm on July 31, 2023. Written comments may be addressed to: Jeff Church, Senior Environmental Specialist, Sonoma Water, 404 Aviation Blvd., Santa Rosa, CA 95403-9019; or emailed to jeff.church@scwa.ca.gov.

ADOPTION OF THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Tentative Adoption Schedule: Following the close of the IS/MND public review period, Sonoma Water's Board of Directors will consider adoption of the IS/MND. The project is scheduled for consideration and adoption by Sonoma Water's Board of Directors at their regularly scheduled meeting beginning at **8:30 am on September 26, 2023.** Comments submitted during the Initial Study review period will be included in our report to the Board of Directors.

Appendix B: Sonoma Water Construction Contract Specifications Incorporation of Bay Area Air Quality Management District's Best Management Practices

Sonoma Water Construction Contract Specifications Incorporation of Bay Area Air Quality Management District's Best Management Practices

Project-Level Air Quality Impacts

On April 20, 2022, the Bay Area Air Quality Management District's (BAAQMD) Board of Directors adopted *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans*. The 2022 California Environmental Quality Act (CEQA) Air Quality Guidelines (BAAQMD, 2023) were developed to assist lead agencies in evaluating air quality and climate impacts from proposed land use projects and plans in the San Francisco Bay Area Air Basin (SFBAAB).

Chapter 5, "Project-level Air Quality Impacts", of the 2022 CEQA Air Quality Guidelines provides guidance on how to conduct an air quality analysis at the project level. Construction-related activities, such as soil disturbance, grading, and material hauling, can result in fugitive dust emissions (e.g., $PM_{2.5}$ and PM_{10}). For a project to have a less-than-significant criteria air pollutant impact related to construction-related fugitive dust emissions, it must implement all Air District's basic best management practices (BMPs) listed in Table 5-2 (BAAQMD, 2023). In addition to the mitigation measures described in Table 5-2, projects are strongly encouraged to implement enhanced best management practices to control fugitive dust emissions. These enhanced measures are especially important when there are schools, residential areas, or other sensitive land uses located near the construction site and are described in Table 5-3 (BAAQMD, 2023).

The objectives of the BAAQMD guidance are met through Sonoma County Water Agency's (Sonoma Water) construction contract specifications, which have similar requirements as the recommended basic and enhanced construction-related fugitive dust emissions BMPs. Tables A-1 and A-2 identify the BAAQMD's basic and enhanced BMPs and the location of their inclusion in Sonoma Water's standard construction contract specifications. Some BMPs in Sonoma Water's standard construction contract specifications are incorporated by reference to the California Department of Transportation's (CalTrans) Construction Site Best Management Practices (BMP) Manual (CalTrans, 2017).

REFERENCES

BAAQMD (Bay Area Air Quality Management District). 2023. 2022 California Environmental Quality Act Air Quality Guidelines. Revised April 20, 2023. Accessed at https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

CalTrans (California Department of Transportation). 2017. Construction Site Best Management Practices (BMP) Manual. CTSW-RT-17-314.18.1. May 2017. Accessed at https://dot.ca.gov/programs/construction/storm-water-and-water-pollution-control/manuals-and-handbooks

Table A-1. Bay Area Air Quality Management District 2022 CEQA Guidelines - Table 5-2 Basic Best Management Practices for Construction-Related Fugitive Dust Emissions (BAAQMD, 2023)

BAAQMD BMP ID	BAAQMD Basic Best Management Practice	Located in Sonoma Water Standard Contract Specifications at
B-1	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 5.
B-2	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.	Spec Date: 11/2022; Specification Section 01 10 00 paragraph 1.11, C.
B-3	All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.	Spec Date: 11/2022; Specification Section 01 10 00 paragraph 1.11, G.
B-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.	Spec Date: 11/2022; Contract limits speeds to 10mph on unpaved areas. Specification Section 01 10 00 paragraph 1.11, H.
B-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.	Spec Date: 11/2022; Specification Section 01 10 00 paragraph 1.11, E.
B-6	All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.	Spec Date: 11/2022; Contract limits work during high winds to a maximum of 15 mph. Specification Section 01 10 00 paragraph 1.11, D.
B-7	All trucks and equipment, including their tires, shall be washed off prior to leaving the site.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 6 for tracking controls, BMP TC-3
B-8	Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 6 for tracking controls, BMP TC-1.

BAAQMD BMP ID	BAAQMD Basic Best Management Practice	Located in Sonoma Water Standard Contract Specifications at
B-9	Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.	Spec Date 11/2022. Signs are specified in Specification Section 01 10 00 paragraph 1.11.

[1] CalTrans (California Department of Transportation). 2017. Construction Site Best Management Practices (BMP) Manual. CTSW-RT-17-314.18.1. May 2017.

Table A-2. Bay Area Air Quality Management District 2022 CEQA Guidelines - Table 5-3 Enhanced Best Management Practices for Construction-Related Fugitive Dust Emissions (BAAQMD, 2023)

BAAQMD BMP ID	BAAQMD Enhanced Best Management Practice	Located in Sonoma Water Standard Contract Specifications at
E-1	Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 3 for Temporary Soil Stabilization; BMP SS-1.
E-2	Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 5 for Wind Erosion Control.
E-3	Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 3 for Temporary Soil Stabilization.
E-4	Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 3 for Temporary Soil Stabilization.
E-5	Minimize the amount of excavated material or waste materials stored at the site.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual Section 3 for Temporary Soil Stabilization; BMP SS-1.
E-6	Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.	Spec Date: 11/2022: By reference to Caltrans Construction Site BMP Manual[1] Section 3 for Temporary Soil Stabilization, BMP SS-1.

[1] CalTrans (California Department of Transportation). 2017. Construction Site Best Management Practices (BMP) Manual. CTSW-RT-17-314.18.1. May 2017.

Appendix C: CalEEMod V1 Russian River County Sanitation District Headworks, Lift Stations, and Force Mains Project Detailed Report

Russian River County Sanitation District Head Works, Lift Stations, and Force Mains Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Russian River County Sanitation District Head Works, Lift Stations, and Force Mains Project
Construction Start Date	2/26/2024
Lead Agency	Sonoma County Water Agency
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	52.0
Location	38.49888902535031, -122.99339417165561
County	Sonoma-North Coast
City	Unincorporated
Air District	Northern Sonoma County APCD
Air Basin	North Coast
TAZ	895
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	2.00	Mile	1.50	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.07	0.91	7.11	11.8	0.02	0.24	0.77	1.01	0.22	0.20	0.41	—	2,510	2,510	0.07	0.21	4.46	2,577
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.07	0.90	7.26	11.4	0.02	0.24	0.77	1.01	0.22	0.20	0.41	—	2,484	2,484	0.07	0.21	0.12	2,547
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	0.53	4.24	5.74	0.01	0.14	0.43	0.56	0.13	0.11	0.24	—	1,405	1,405	0.04	0.10	1.04	1,436
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.10	0.77	1.05	< 0.005	0.03	0.08	0.10	0.02	0.02	0.04	—	233	233	0.01	0.02	0.17	238

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	1.07	0.91	7.11	11.8	0.02	0.24	0.77	1.01	0.22	0.20	0.41	—	2,510	2,510	0.07	0.21	4.46	2,577
2025	1.00	0.85	6.89	8.66	0.02	0.22	0.77	0.99	0.20	0.20	0.40	—	2,479	2,479	0.06	0.21	4.27	2,546
2026	0.34	0.29	1.39	4.99	< 0.005	0.05	0.49	0.53	0.04	0.11	0.16	—	798	798	0.03	0.02	2.07	807
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.07	0.90	7.26	11.4	0.02	0.24	0.77	1.01	0.22	0.20	0.41	—	2,484	2,484	0.07	0.21	0.12	2,547
2025	0.99	0.83	7.03	8.31	0.02	0.22	0.77	0.99	0.20	0.20	0.40	—	2,454	2,454	0.06	0.21	0.11	2,517
2026	0.50	0.42	2.15	4.65	< 0.005	0.08	0.49	0.56	0.07	0.11	0.18	—	773	773	0.04	0.02	0.05	780
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.64	0.53	4.24	5.74	0.01	0.14	0.41	0.56	0.13	0.10	0.24	—	1,405	1,405	0.04	0.10	1.04	1,436
2025	0.53	0.44	3.14	4.44	0.01	0.10	0.43	0.53	0.10	0.11	0.20	—	1,104	1,104	0.03	0.08	0.98	1,128
2026	0.15	0.13	0.65	1.76	< 0.005	0.02	0.18	0.21	0.02	0.04	0.06	—	298	298	0.01	0.01	0.35	301
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.12	0.10	0.77	1.05	< 0.005	0.03	0.08	0.10	0.02	0.02	0.04	—	233	233	0.01	0.02	0.17	238
2025	0.10	0.08	0.57	0.81	< 0.005	0.02	0.08	0.10	0.02	0.02	0.04	—	183	183	0.01	0.01	0.16	187
2026	0.03	0.02	0.12	0.32	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	49.3	49.3	< 0.005	< 0.005	0.06	49.8

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2024) - Unmitigated

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

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

Off-Road Equipment	0.82	0.69	5.99	8.20	0.01	0.23	—	0.23	0.21	—	0.21	—	1,200	1,200	0.05	0.01	—	1,204
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	5.99	8.20	0.01	0.23	—	0.23	0.21	—	0.21	—	1,200	1,200	0.05	0.01	—	1,204
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.02	1.39	< 0.005	0.04	—	0.04	0.04	—	0.04	—	204	204	0.01	< 0.005	—	204
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.19	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.7	33.7	< 0.005	< 0.005	—	33.9
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.21	0.27	3.61	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	520	520	0.02	0.02	2.39	528
Vendor	< 0.005	< 0.005	0.23	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	164	164	< 0.005	0.03	0.30	172
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.21	0.34	3.20	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	493	493	0.03	0.02	0.06	499
Vendor	< 0.005	< 0.005	0.24	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	165	165	< 0.005	0.03	0.01	172
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.05	0.56	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.2	85.2	< 0.005	< 0.005	0.17	86.4
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.9	27.9	< 0.005	< 0.005	0.02	29.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.1	14.1	< 0.005	< 0.005	0.03	14.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.63	4.63	< 0.005	< 0.005	< 0.005	4.85
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.63	5.18	5.09	0.01	0.21	—	0.21	0.20	—	0.20	—	840	840	0.03	0.01	—	843
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.63	5.18	5.09	0.01	0.21	—	0.21	0.20	—	0.20	—	840	840	0.03	0.01	—	843
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.26	2.22	< 0.005	0.09	—	0.09	0.09	—	0.09	—	367	367	0.01	< 0.005	—	368
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	60.7	60.7	< 0.005	< 0.005	—	60.9

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.21	0.27	3.61	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	520	520	0.02	0.02	2.39	528
Vendor	0.01	0.01	0.45	0.06	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	329	329	< 0.005	0.05	0.60	345
Hauling	0.02	0.02	1.21	0.22	0.01	0.02	0.20	0.22	0.02	0.06	0.07	—	821	821	< 0.005	0.13	1.47	861
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.21	0.34	3.20	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	493	493	0.03	0.02	0.06	499
Vendor	0.01	0.01	0.47	0.07	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	329	329	< 0.005	0.05	0.02	344
Hauling	0.02	0.02	1.27	0.23	0.01	0.02	0.20	0.22	0.02	0.06	0.07	—	822	822	< 0.005	0.13	0.04	860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.13	1.44	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	219	219	0.01	0.01	0.45	222
Vendor	< 0.005	< 0.005	0.20	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	144	144	< 0.005	0.02	0.11	150
Hauling	0.01	0.01	0.54	0.10	< 0.005	0.01	0.09	0.09	0.01	0.02	0.03	—	358	358	< 0.005	0.06	0.28	376
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.2	36.2	< 0.005	< 0.005	0.07	36.7
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.02	24.9
Hauling	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	59.4	59.4	< 0.005	0.01	0.05	62.2

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

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.04	5.08	0.01	0.20	—	0.20	0.18	—	0.18	—	840	840	0.03	0.01	—	843
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.04	5.08	0.01	0.20	—	0.20	0.18	—	0.18	—	840	840	0.03	0.01	—	843
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.69	1.70	< 0.005	0.07	—	0.07	0.06	—	0.06	—	281	281	0.01	< 0.005	—	282
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.31	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	46.5	46.5	< 0.005	< 0.005	—	46.7
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.24	3.32	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	510	510	0.02	0.02	2.22	518
Vendor	0.01	0.01	0.43	0.06	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	323	323	< 0.005	0.05	0.59	339
Hauling	0.02	0.02	1.17	0.21	0.01	0.02	0.20	0.22	0.02	0.06	0.07	—	807	807	< 0.005	0.13	1.46	847
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.31	2.96	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	484	484	0.02	0.02	0.06	490
Vendor	0.01	0.01	0.46	0.06	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	323	323	< 0.005	0.05	0.02	339
Hauling	0.02	0.02	1.22	0.21	0.01	0.02	0.20	0.22	0.02	0.06	0.07	—	807	807	< 0.005	0.13	0.04	846
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.09	1.01	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.32	167
Vendor	< 0.005	< 0.005	0.15	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	< 0.005	0.02	0.09	113
Hauling	0.01	0.01	0.40	0.07	< 0.005	0.01	0.07	0.07	0.01	0.02	0.02	—	270	270	< 0.005	0.04	0.21	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.05	27.6
Vendor	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.01	18.8
Hauling	< 0.005	< 0.005	0.07	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.7	44.7	< 0.005	0.01	0.03	46.9

3.7. Linear, Drainage, Utilities, & Sub-Grade (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	1.87	1.29	< 0.005	0.08	—	0.08	0.07	—	0.07	—	245	245	0.01	< 0.005	—	246
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	1.87	1.29	< 0.005	0.08	—	0.08	0.07	—	0.07	—	245	245	0.01	< 0.005	—	246
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.71	0.49	< 0.005	0.03	—	0.03	0.03	—	0.03	—	92.9	92.9	< 0.005	< 0.005	—	93.2
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.09	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	15.4	15.4	< 0.005	< 0.005	—	15.4
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.24	3.32	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	510	510	0.02	0.02	2.22	518
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.31	2.96	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	484	484	0.02	0.02	0.06	490
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.10	1.15	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	187	187	0.01	0.01	0.37	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.21	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.9	30.9	< 0.005	< 0.005	0.06	31.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Linear, Drainage, Utilities, & Sub-Grade (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	1.86	1.29	< 0.005	0.08	—	0.08	0.07	—	0.07	—	245	245	0.01	< 0.005	—	246
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.25	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	32.6	32.6	< 0.005	< 0.005	—	32.7
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.39	5.39	< 0.005	< 0.005	—	5.41

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.29	2.72	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	475	475	0.02	0.02	0.05	480
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.37	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.2	64.2	< 0.005	< 0.005	0.12	65.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.02	10.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Linear, Paving (2026) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.17	1.92	< 0.005	0.05	—	0.05	0.04	—	0.04	—	298	298	0.01	< 0.005	—	299
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.17	1.92	< 0.005	0.05	—	0.05	0.04	—	0.04	—	298	298	0.01	< 0.005	—	299
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.30	0.50	< 0.005	0.01	—	0.01	0.01	—	0.01	—	76.8	76.8	< 0.005	< 0.005	—	77.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	—	12.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.18	0.22	3.07	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	500	500	0.02	0.02	2.07	508
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.29	2.72	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	475	475	0.02	0.02	0.05	480
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.07	0.72	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	124	124	0.01	< 0.005	0.23	126
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.6	20.6	< 0.005	< 0.005	0.04	20.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	2/26/2024	5/22/2024	5.00	62.0	—
Linear, Grading & Excavation	Linear, Grading & Excavation	5/23/2024	6/20/2025	5.00	281	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	6/21/2025	3/9/2026	5.00	187	—
Linear, Paving	Linear, Paving	3/10/2026	7/19/2026	5.00	94.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Grubbing & Land Clearing	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Linear, Grubbing & Land Clearing	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Linear, Grading & Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Linear, Grading & Excavation	Tractors/Loaders/Backh	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Grading & Excavation	Pumps	Diesel	Average	5.00	8.00	11.0	0.74
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	3.00	8.00	11.0	0.74
Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	30.0	23.0	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	2.00	23.0	HHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	0.00	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	0.00	0.00	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	30.0	23.0	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	4.00	23.0	HHDT
Linear, Grading & Excavation	Hauling	16.2	14.0	HHDT
Linear, Grading & Excavation	Onsite truck	0.00	0.00	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	30.0	23.0	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	0.00	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	0.00	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	0.00	0.00	HHDT

Linear, Paving	—	—	—	—
Linear, Paving	Worker	30.0	23.0	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	0.00	HHDT,MHDT
Linear, Paving	Hauling	0.00	0.00	HHDT
Linear, Paving	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	0.00	0.00	1.50	0.00	—
Linear, Grading & Excavation	10,110	12,514	1.50	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	0.00	0.00	1.50	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	1.50	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	10.5	annual days of extreme heat
Extreme Precipitation	24.2	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	18.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	1	1	4
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Exposure Indicators	—
AQ-Ozone	11.6
AQ-PM	2.31
AQ-DPM	1.78
Drinking Water	8.58
Lead Risk Housing	70.2
Pesticides	57.8
Toxic Releases	0.51
Traffic	8.51
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	35.0
Haz Waste Facilities/Generators	3.64
Impaired Water Bodies	58.7
Solid Waste	87.1
Sensitive Population	—
Asthma	68.7
Cardio-vascular	44.2
Low Birth Weights	13.5
Socioeconomic Factor Indicators	—
Education	28.1
Housing	81.0
Linguistic	13.3
Poverty	55.4
Unemployment	18.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	44.70678814
Employed	24.97112794
Median HI	26.78044399
Education	—
Bachelor's or higher	65.32785833
High school enrollment	100
Preschool enrollment	11.35634544
Transportation	—
Auto Access	55.28037983
Active commuting	72.11600154
Social	—
2-parent households	71.41023996
Voting	95.00834082
Neighborhood	—
Alcohol availability	84.11394842
Park access	8.315154626
Retail density	7.878865649
Supermarket access	27.78134223
Tree canopy	99.35839856
Housing	—
Homeownership	41.48594893
Housing habitability	20.5825741
Low-inc homeowner severe housing cost burden	13.22982163
Low-inc renter severe housing cost burden	38.71423072
Uncrowded housing	38.91954318

Health Outcomes	—
Insured adults	71.87219299
Arthritis	0.0
Asthma ER Admissions	49.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.1
Cognitively Disabled	12.5
Physically Disabled	20.3
Heart Attack ER Admissions	88.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	88.1
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	29.7
Elderly	27.8
English Speaking	90.9
Foreign-born	1.9
Outdoor Workers	31.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	96.6
Traffic Density	8.7
Traffic Access	23.0
Other Indices	—
Hardship	52.3
Other Decision Support	—
2016 Voting	89.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Off-Road Equipment	Project specific equipment types
Construction: Trips and VMT	Project specific data

Appendix D: Special-status Species Tables

Table D-1. Potential for Special-Status Plant Species to Occur Within the Russian River County Sanitation District Headworks, Lift Stations, and Force Main Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Agrostis blasdalei Blasdale's bent grass	S2/1B.2	Coastal bluff scrub, Coastal dunes, Coastal Prairie. Elevation range: 0 - 490 feet. Blooms: May - July	**None.** No suitable habitat within or adjacent to Project Area.
Alopecurus aequalis var. *sonomensis* Sonoma alopecurus	FE S1/1B.1	Freshwater marshes, riparian scrub. Elevation range 15 – 1,200 feet. Blooms: May - July	**Moderate.** Marginal habitat within or adjacent to Project Area. Classed as moderate due to close proximity of historical occurrence near Guerneville. Species not observed during site visits.
Amorpha californica var. *napensis* Napa false indigo	S2/1B.2	Canopy openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 165 – 6,560 feet. Blooms: April – July.	**Unlikely.** Some marginal habitat within or adjacent to Project Area. Historical occurrence mapped along Russian River and adjacent areas but likely incorrect mapping. Species not observed during site visits.
Arctostaphylos bakeri ssp. *bakeri* Baker's manzanita	/Rare S1/1B.1	Chaparral, broadleaf upland forest. Strict serpentine endemic, often in talus. Elevation range: 250 – 985 feet. Blooms: February - April.	**None.** No suitable habitat within or adjacent to Project Area.
Arctostaphylos bakeri ssp. *sublaevis* The Cedars manzanita	/Rare S2.1B.2	Chaparral, closed-cone coniferous forest. Strict serpentine endemic. Elevation: 605 – 2,495 feet. Blooms: February – May.	**None.** No suitable habitat within or adjacent to Project Area.
Arctostaphylos hispidula Howell's manzanita	S3/4.2	Chaparral, sandstone serpentinite. Broad serpentine endemic. Elevation: 395 – 4,100 feet. Blooms: March - April.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Arctostaphylos stanfordiana ssp. *decumbens* Rincon ridge manzanita	S1/1B.1	Chaparral, cismontane woodland. Restricted to red rhyolite soils. Elevation range: 240 – 1,220 feet. Blooms: Feb – May.	**None.** No suitable habitat within or adjacent to Project Area.
Asclepias solanoana Serpentine milkweed	S3/4.2	Chaparral, cismontaine woodland, lower montane coniferous forest. Strict serpentine endemic. Elevation range: 755 – 6,105 feet. Blooms: May – August.	**None.** No suitable habitat within or adjacent to Project Area.
Calamagrostis ophitidis Serpentine reed grass	S3/4.3	Chaprallal (N face slope openings), lower montane coniferous forest, meadows and seeps, valley and foothill grassland. Strict serpentine endemic. Elevation 295 – 3,500 feet. Blooms: April – July.	**None.** No suitable habitat within or adjacent to Project Area.
Calochortus raichei The Cedars fairy-lantern	S2/1B.2	Chaparral, closed-cone coniferous forest. Strict serpentine endemic. Elevation: 650 – 1,600 feet. Blooms: May – August.	**None.** No suitable habitat within or adjacent to Project Area.
Calochortus uniflorus Pink star-tulip	S4/4.2	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest. Elevation: 35 – 3,510 feet. Blooms: April - June.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area.
Calystegia collina ssp. *oxyphylla* Mt. Saint Helena morning glory	S3/4.2	Chaparral, lower montane coniferous forest, valley and foothill grassland. Strict serpentine endemic. Elevation: 915 – 3,315 feet. Blooms: April – June.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Calystegia purpurata ssp. *saxicola* Coastal bluff morning glory	S2S3/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, North Coast coniferous forest. Elevation: 0 – 345 feet. Blooms: March - September.	**Unlikely.** No suitable habitat within Project Area. Species has high affinity to coastal habitats. Known occurrences greater than two miles from Project Area.
Campanula californica Swamp harebell	S3/1B.2	Bogs, fens, closed-cone coniferous forests, coastal prairie, meadows and seeps, freshwater marshes and swamps. Elevation: 0 – 1,300 feet. Blooms: June – October.	**Unlikely.** Marginal habitat within or adjacent to Project area. Nearest occurrence greater than two miles. **NOTE:** CNPS list includes *Eastwoodiella californica* which is an inactive name for this species.
Carex comosa Bristly sedge	S2/2B.1	Wetlands, coastal prairie, lake margins, and foothill grassland. Elevation range: 0 – 2,050 feet. Blooms: May - September	**Moderate.** Suitable habitat present within Project Areas. Known historical occurrence within one mile of Project Area.
Castilleja ambigua var. *ambigua* Johnny-nip	S3S4/4.2	Coastal scrub, coastal prairie, wetlands, valley and foothill grassland, vernal pool margins. Elevation: 0 – 1,425 feet. Blooms: March - August.	**None.** No suitable habitat within or adjacent to Project Area.
Ceanothus confusus Rincon Ridge ceanothus	S1/1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland; known from volcanic and serpentine substrate; typically on dry shrubby slopes. Elevation range: 245 – 3,495 feet. Blooms: February – June.	**None.** No suitable habitat within or adjacent to Project Area.
Ceanothus foliosus var. *vineatus* Vine Hill ceanothus	S1/1B.1	Chaparral. Sandy, acidic substrate. Elevation range: 145 – 995 feet. Blooms: March – May.	**None.** No suitable habitat within or adjacent to Project Area. Species not observed within Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Ceanothus gloriosus var. *exaltatus* Glory brush	S4/4.3	Chaparral. Sandy or rocky substrate. Elevation range: 100 – 2,000 feet. Blooms: March – August.	**None.** No suitable habitat within or adjacent to Project Area. Species not observed within Project Area.
Ceanothus purpureus Olly-leaved ceanothus	S2/1B.2	Chaparral. Volcanic slopes. Elevation range: 390 – 2,080 feet. Blooms: February – June.	**None.** No suitable habitat within or adjacent to Project Area. Species not observed within Project Area.
Chlorogalum pomeridianum var. *minus* Dwarf soaproot	S3/1B.2	Chaparral, valley and foothill grassland. Strict serpentine endemic. Elevation range: 1,000 – 3,280 feet. Blooms: May – August.	**None.** No suitable habitat within or adjacent to Project Area.
Collomia diversifolia Serpentine collomia	S4/4.3	Chaparral, cismontane woodland. Strict serpentine endemic. Elevation range: 655 – 1,970 feet. Blooms: May – June.	**None.** No suitable habitat within or adjacent to Project Area.
Cordylanthus tenuis ssp. *brunneus* Serpentine bird's beak	S3/4.3	Chaparral, cismontane woodland, closed-cone coniferous forest. Broad serpentine endemic. Elevation range: 1,000 – 3,000. Blooms: July – August.	**None.** No suitable habitat within or adjacent to Project Area.
Cordylanthus tenuis ssp. *capillaris* Pennell's bird's-beak	FE/Rare S1/1B.2	Open or disturbed areas in closed-cone coniferous forest, chaparral. Strict serpentine endemic. Elevation range: 145 – 995 feet. Blooms: June – September.	**None.** No suitable habitat within or adjacent to Project Area.
Cypripedium californicum California lady's slipper	S4/4.2	Bogs and fens, lower montane coniferous forest. Usually serpentine soils, streambanks. Elevation range: 100 – 9,000 feet. Blooms: April – September.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Cypripedium montanum Mountain lady's slipper	S4/4.2	Broadleaf upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest. Elevation: 605 – 7,300 feet. Blooms: March – August.	**None.** No suitable habitat within or adjacent to Project Area.
Delphinium bakeri Baker's larkspur	FE/SE S1/1B.1	Mesic, grassy areas in broadleaf upland forest, coastal scrub, valley and foothill grassland. NW facing slopes underlain by decomposed shale. Elevation range: 260 – 995 feet. Blooms: March – May.	**Unlikely**. Marginal habitat present within and adjacent to Project Areas. Limited distribution and nearest occurrence > two miles and last observed in 1946. Species not observed within Project Area during appropriately-timed focused survey.
Delphinium luteum Golden larkspur	FE/Rare S1/1B.1	Chaparral, coastal prairie, scrub. N facing rocky slopes. Elevation: 0 – 325 feet. Blooms: March – May.	**None.** No suitable habitat within or adjacent to Project Area.
Elymus californicus California bottle-brush grass	S4/4.3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland. Elevation range: 50 -1,540 feet. Blooms: May – November.	**Unlikely.** Marginal habitat within or adjacent to Project area. Nearest occurrence greater than two miles.
Erigeron biolettii Streamside daisy	S3/3	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest. Mesic, rocky areas. Elevation range: 100 – 3,610 feet. Blooms: June – October.	**Unlikely.** Project Areas lacking suitable microhabitat (mesic rocky areas). Occurrences within area along Russian River but last observed in early 1900s.
Erigeron greenei Greene's narrow-leaved daisy	S3/1B.2	Chaparral. Serpentine and volcanic substrate. Broad serpentine endemic. Elevation range: 260 -3,295 feet. Blooms: May – September.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Erigeron serpentinus Serpentine daisy	S2/1B.3	Chaparral, serpentine shrubland. Strict serpentine endemic. Elevation: 195 – 2,180 feet. Blooms: May – August.	**None.** No suitable habitat within or adjacent to Project Area.
Eriogonum cedrorum The Cedars buckwheat	S1/1B.3	Closed-cone coniferous forest. Strict serpentine endemic. Elevation range: 1,200 – 1,805 feet. Blooms: June – September.	**None.** No suitable habitat within or adjacent to Project Area.
Eriogonum ternatum Ternate buckwheat	S4/4.3	Lower montane coniferous forest. Strict serpentine endemic. Elevation range: 1000 – 7300 feet. Blooms: June – August.	**None.** No suitable habitat within or adjacent to Project Area.
Erysimum concinnum Headland wallflower	S2/1B.2	Northern coastal bluff scrub, coastal dunes, coastal prairie. Elevation range: 0 – 600 feet. Blooms: February – July.	**None.** No suitable habitat within or adjacent to Project Area.
Erysimum franciscanum Franciscan wallflower	S3/4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland. Often in granitic or serpentine soils. Elevation range: 0 – 1,800 feet. Blooms: March – June.	**None.** No suitable habitat within or adjacent to Project Area.
Erythranthe nudata Bare monkeyflower	S4/4.3	Chaparral, cismontane woodland. Seeps, strict serpentine endemic. Elevation range: 655 - 2,300 feet. Blooms: May – June.	**None.** No suitable habitat within or adjacent to Project Area.
Fissidens pauperculus Minute pocket moss	S2, 1B.2	North Coast coniferous forest. Damp coastal soil. Elevation range: 35 – 3,360 feet.	**Unlikely.** Minimal habitat within or adjacent to Project Area. Species not observed during focused surveys. Nearest occurrence greater than two miles and last observed in 1951.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Fritillaria liliacea Fragrant fritillary	S2/1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine. Elevation range: 10 – 1,345 feet. Blooms: February – April.	**None.** No suitable habitat within or adjacent to Project Area. Project Areas primarily composed of sandy soil and gravels. Species not observed within Project Area during appropriately-timed focused survey.
Gilia capitata ssp. c*hamissonis* Blue coast gilia	S2/1B.1	Coastal dunes, coastal scrub. Elevation range: 5 – 655 feet. Blooms: April – July.	**None.** No suitable habitat within or adjacent to Project Area.
Gilia capitata ssp. p*acifica* Pacific gilia	S2/1B.2	Chaparral openings, coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevation range: 15 – 5,465 feet. Blooms: April – August.	**None.** No suitable habitat within or adjacent to Project Area.
Gilia capitata ssp. *tomentosa* Woolly-headed gilia	S1/1B.1	Rocky areas within coastal bluff scrub. Valley and foothill grassland. Serpentine outcrops. Elevation range: 35 – 700 feet. Blooms: May – July.	**None.** No suitable habitat within or adjacent to Project Area.
Hemizonia congesta ssp. congesta Congested hayfield tarweed	S2/1B.2	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1,840 feet. Blooms: April – November.	**Unlikely.** Marginal habitat within or adjacent to Project area. Nearest occurrence greater than two miles.
Hesperevax sparsiflora var. *brevifolia* Hort-leaved evax	S3.1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation range: 0 – 705 feet. Blooms: March – June.	**None.** No suitable habitat within or adjacent to Project Area.
Horkelia tenuiloba Thin-lobed horkelia	S2/1B.2	Broadleaf upland forest, coastal scrub, valley and foothill grassland, chaparral; in mesic openings, on sandy substrate. Elevation range: 165 – 1,640 feet. Blooms: May – July.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence approx. 1.5 miles from Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Hosackia gracilis Harlequin lotus	S3/4.2	Broadleaf upland forest, cismontane woodland, North Coast and closed-cone coniferous forest, Coastal scrub and prairie, Meadows and seeps. Usually in wetlands. Elevation range; 0 – 2,295 feet. Blooms: March – July.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area. Species not observed within Project Area during appropriately-timed focused survey.
Iris longipetala Coast iris	S3/4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation range: 0 – 1,970 feet. Blooms: April – August.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area.
Kopsiopsis hookeri Small groundcone	S1S2/2B.3	Redwood forest, open woodland, mixed-conifer forest. Parasitic generally on *Gaultheria shallon*, occasionally *Arbutus menziesii* or *Arctostaphylos uva-ursi*. Elevation: 295 – 2,900 feet. Blooms: April – August.	**None.** No suitable habitat within or adjacent to Project Area. Known associates (see habitat requirements) not present.
Lasthenia californica spp. *macrantha* Perennial goldfields	S2/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation range: 15 – 1,705 feet. Blooms: January – November.	**None.** No suitable habitat within or adjacent to Project Area.
Leptosiphon aureus Bristly leptosiphon	S4/4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation range: 180 – 4,920 feet. Blooms: April – July.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area.
Leptosiphon jepsonii Jepson's leptosiphon	S2/1B.2	Chaparral, cismontane woodland; on open to partially shaded grassy slopes on volcanic or the periphery of serpentine substrate. Elevation range: 330 – 1,640 feet. Blooms: March – May.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Lessingia arachnoidea Crystal Springs lessingia	S2/1B.2	Cismontane woodland, coastal scrub, grassland. Often roadsides, grassy slopes. Strict serpentine endemic. Elevation range: 195 - 655 feet. Blooms: July – October.	**None.** No suitable habitat within or adjacent to Project Area.
Lessingia hololeuca Woolly-headed lessingia	S2S3/3	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Clays soils, strong serpentine affinity. Elevation range: 50 – 1,000 feet. Blooms: June – October.	**None.** No suitable habitat within or adjacent to Project Area.
Limnanthes vinculans Sebastopol meadowfoam	FE/SE S1/1B.1	Vernal pools, swales, wet meadows in valley and foothill grassland, valley oak woodland. Poorly drained soils of clay and sandy loam. Elevation range: 35 - 950 feet. Blooms: April – May.	**None.** No suitable habitat within or adjacent to Project Area.
Lupinus tidestromii Tidestrom's lupine	FE/SE S1/1B.1	Coastal dunes. Elevation range: 0 – 330 feet. Blooms: April – June.	**None.** No suitable habitat within or adjacent to Project Area.
Monardella viridis Green monardella	S3/4.3	Broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 330 – 3,315 feet. Blooms: June – September.	**None.** No suitable habitat within or adjacent to Project Area.
Piperia candida White-flowered rain orchid	S3/1B.2	North coast and lower montane coniferous forest, broadleaf upland forest. Forest duff, mossy banks, rock outcrops, muskeg. Sometimes on serpentine soil. Elevation: 95 – 4,260 feet. Blooms: May – September.	**Unlikely.** Marginal habitat lacking microhabitat within or adjacent to Project Area. Nearest known occurrence greater than two miles from Project Area.
Piperia leptopetala Narrow-petaled rein orchid	S4/4.3	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. Elevation range: 1,245 – 7,300 feet.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Pleuropogon hooverianus North Coast semaphore grass	ST S2/1B.1	Broadleaf upland forest, meadows and seeps, North Coast coniferous forests. Mesic sites, sometimes freshwater marshes. Elevation range: 30 – 2,180 feet. Blooms: May – July.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area.
Ranunculus lobbii Lobb's aquatic buttercup	S3/4.2	Freshwater wetlands. Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools.	**None.** No suitable habitat within or adjacent to Project Area.
Sidalcea calycosa ssp. r*hizomata* Point Reyes checkerbloom	S2/1B.2	Freshwater marshes near coast. Elevation range: 10 – 245 feet. Blooms: April – September.	**None.** No suitable habitat within or adjacent to Project Area.
Sidalcea malviflora ssp. *purpurea* Purple-stemmed checkerbloom	S1/1B.2	Coastal prairie, broadleaf upland forest. Elevation range: 50 – 280 feet. Blooms: May – June.	**None.** No suitable habitat within or adjacent to Project Area.
Streptanthus barbiger Bearded jewelflower	S3/4.2	Chaparral. Strict serpentine endemic. Elevation range: 490 – 3,510. Blooms: May – July.	**None.** No suitable habitat within or adjacent to Project Area.
Streptanthus glandulosus ssp. *hoffmanii* Hoffman's bristly jewelflower	S2/1B.3	Chaparral, cismontane woodland, valley and foothill grassland. Moist, steep rocky embankments. Often on serpentine soil. Elevation range: 390 – 1,454 feet. Blooms: March – July.	**None.** No suitable habitat within or adjacent to Project Area.
Streptanthus morrisonii ssp. *hirtiflorus* Dorr's cabin jewelflower	S2/1B.2	Chaparral, closed cone coniferous forest. Strict serpentine endemic. Elevation range: 605 – 2,690 feet. Blooms: June.	**None.** No suitable habitat within or adjacent to Project Area.

Species	Status* Federal/State CA Rank/CNPS	Habitat Requirements	Potential to Occur in the Project Area
Streptanthus morrisonii ssp. *morrisonii* Morrison's jewelflower	S1/1B.2	Chaparral, talus. Strict serpentine endemic. Elevation range: 395 – 1,920 feet. Blooms: May – September.	**None.** No suitable habitat within or adjacent to Project Area.
Trifolium amoenum Two-fork clover	FE S1/1B.1	Open sites and swales in coastal bluff scrub, valley and foothill grassland. Often in wetlands Sometimes on serpentine soils. Elevation range: 15 – 1,360 feet. Blooms: April – June.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area.
Trifolium buckwestiorum Santa Cruz clover	S2/1B.1	Broadleaf upland forest, cismontane woodland, coastal prairie. Moist grasslands. Elevation range: 115 – 2,000 feet. Blooms: April – October.	**Unlikely.** Some habitat elements present but in degraded condition. Nearest known occurrence greater than two miles from Project Area.
Trifolium hydrophilum Saline clover	S2/1B.2	Mesic, alkaline sites in marshes, swamps, valley and foothill grassland, vernal pools. Elevation range: 0 – 895 feet. Blooms: April – June.	**None.** No suitable habitat within or adjacent to Project Area.
Usnea longissima Methuselah's beard lichen	S4/4.2	Broadleaf upland forest, North Coast coniferous forest. On tree branches, usually old growth. Elevation range: 165 – 4,790 feet.	**Unlikely.** Marginal habitat within or adjacent to Project Area. Lacking old growth forest/trees. Species not observed during surveys.
Viburnum ellipticum Oval-leaved viburnum	S3/2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation range: 900 – 4,600 feet. Blooms: May – June.	**None.** No suitable habitat within or adjacent to Project Area.

* **Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
SE	State Endangered
ST	State Threatened
SR	State Rare
SX	Presumed extirpated in California. Not located despite exhaustive searches. Low likelihood species will be rediscovered.
SH	Possibly extirpated in California. All sites are historical, element has not been seen for 20 years. Habitat still exists.
S1	Critically imperiled. Extreme rarity or steep declines in populations.

S2	Imperiled. Rarity due to restricted range, few populations, steep declines, or other factors.
S3	Vulnerable. Vulnerable due to restricted range, few populations, steep declines, or other factors.
Rank 1A	California Native Plant Society (CNPS) Rank 1A: Plants presumed extinct in California
Rank 1B	CNPS Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CNPS Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CNPS Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 0.1	Threat rank modifier for CNPS Ranks representing seriously threatened in California
Rank 0.	Threat rank modifier for CNPS Ranks representing moderately threatened in California
Rank 0.3	Threat rank modifier for CNPS Ranks representing low threat in California

Potential to Occur:
None. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
Moderate. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
High. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

SOURCES: The California Department of Fish and Wildlife Natural Diversity Database (California Department of Fish and Wildlife, 2020), U.S. Fish and Wildlife Service Species Lists (United States Fish and Wildlife Service, 2019), California Native Plant Society Electronic Inventory (California Native Plant Society, 2019) for the Camp Meeker, Cotati, Healdsburg, Santa Rosa, Sebastopol, and Two Rock USGS 7.5' Quadrangles.

Table D-2. Potential for Special-Status Wildlife Species to Occur Within the Russian River County Sanitation District Headworks, Lift Stations, and Force Main Project Area.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Invertebrates			
Bombus caliginosus Obscure bumble bee	S1S2	Coastal areas from Santa Barbara County California, north to Washington State.	**Unlikely.** Minimal suitable nesting, foraging, and overwintering habitat within or adjacent to Project Area. No recent observations of species in area.
Bombus occidentalis ssp. *occidentalis* Western bumble bee	CSE S1	Meadows and grasslands with abundant floral resources. Historically known throughout mountains and north coast of California, now largely confined to high elevation sites and a few occurrences on northern California coast.	**Unlikely.** Minimal suitable nesting, foraging, and overwintering habitat within or adjacent to Project Area. No recent observations of species in area, thought to now be restricted to higher elevation sites.
Danaus plexippus Monarch butterfly	FC	Habitat is a complex issue for this species. In general, breeding areas are virtually all patches of milkweed in North America and some other regions. The critical conservation feature for North American populations is the overwintering habitats, which are certain high altitude Mexican conifer forests or coastal California conifer or Eucalyptus groves as identified in literature. It appears virtually all North American monarchs overwinter in one of these two areas.	**Unlikely.** Extremely marginal in most of the Project Area. No observed breeding habitat (due to absence of milkweeds) and no occurrences within the vicinity Project Area.
Dubiraphia giulianii Giuliani's dubiraphian riffle beetle	S1S3	Occurs among vegetation and rocks in slow parts of rivers. Might also occur in creeks as several relatives do. Submerged vegetation in streams with moderate to strong flowing current.	**Unlikely.** Suitable habitat adjacent to Project Area near the Russian River and tributaries. Single occurrence from 1948 on Russian River upstream from Project Area.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Gonidea angulata Western ridged mussel	S1S2	Western ridged mussels inhabit the bottom of cold creeks, rivers, and lakes from low to mid-elevations with substrates that vary from gravel to firm mud, and include at least some sand, silt or clay. It is generally associated with constant flow, shallow water (less than 10 feet in depth), and well-oxygenated substrates. This species is often present in seasonally turbid streams, but it is absent from continuously turbid water (such as glacial meltwater streams).	**Unlikely**. Suitable habitat within or adjacent to Project Area, however Project activities would not be within the wetted portion of the channel. Known occurrences in the vicinity of Project Area.
Speyeria zerene ssp. *myrtleae* Myrtle's silverspot butterfly	FE S1	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County.	**None.** The Project Area is outside the species' range.
Syncaris pacifica California freshwater shrimp	FE/SE S2	Endemic to Marin, Napa, & Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy.	**None.** Species is known to occur in close proximity to the Project Area, but the mainstem Russian River and ephemeral drainages within or adjacent to Project Area does not provide suitable habitat.
Fish			
Eucyclogobius newberryi Tidewater goby	FE/SE	Brackish water habitats along the Calif coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water & high oxygen levels.	**None.** The Project Area lacks suitable habitat.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Hesperoleucus parvipinnis Gualala roach	S3/SSC	Fresh water, Medium river, creek, low gradient, moderate gradient, pools. Gualala River and tributaries: a cool, forested coastal stream. Found only in the Gualala River.	**None.** The Project Area is outside the species' range.
Hysterocarpus traskii ssp. *pomo* Russian River tule perch	S4/SSC	Low elevation streams of the Russian River system. Clear flowing water with abundant cover and deep pool habitat.	**None**. Suitable habitat within or adjacent to Project Area, however Project activities would not be within the wetted portion of the channel.
Oncorhynchus kisutch Coho salmon, Central California Coast ESU	FE/SE S2	Requires beds of loose, silt -free, coarse gravel for spawning. Also cover, cool water, and sufficient dissolved oxygen.	**None**. Suitable habitat within or adjacent to Project Area, however Project activities would not be within the wetted portion of the channel. Species known to occur in Russian River, and area is designated Critical Habitat for this species.
Oncorhynchus tshawytscha California Coastal Chinook Salmon	FT	Adults migrate upstream in fall. Spawns in cold, clear, freshwater rivers and large creeks with gravel substrate. Juveniles (smolts) migrate downstream in spring and summer to the ocean.	**None**. Suitable habitat within or adjacent to Project Area, however Project activities would not be within the wetted portion of the channel. Species known to occur in Russian River, and area is designated Critical Habitat for this species.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Oncorhynchus mykiss ssp. *irideus* Steelhead, Central California Coast	FT S3	Found in aquatic habitat in cool waters with sufficient oxygen.	**None**. Suitable habitat within or adjacent to Project Area, however Project activities would not be within the wetted portion of the channel. Species known to occur in Russian River, and area is designated Critical Habitat for this species.
Spirinchus thaleichthys Longfin smelt	ST S1	Habitat includes a wide range of temperature and salinity conditions in coastal waters near shore, bays, estuaries, and rivers, some populations are landlocked in lakes.	**None.** The Project Area is outside the species' range.
Amphibians			
Dicamptodon ensatus California giant salamander	S2S3/SSC	Adults prefer damp coniferous forests near streams. Adults breed in perennial mountainous streams with rocky substrate. Larvae are aquatic for one or more years. Occasionally occurs in lakes and ponds, but usually at higher elevations.	**Moderate.** Some marginally suitable habitat within Project Area, and nearby occurrences on tributaries to mainstem Russian River in the vicinity.
Rana boylii Foothill yellow-legged frog	S4/SSC	Moderate to high gradient streams with gravel to cobble substrate. Breeds in areas with slower moving water. Tadpoles use rocky shallow creek margins for cover and grazing.	**Unlikely**. Suitable habitat is present but occurrences largely restricted to tributaries of Russian River and not within or immediately adjacent to Project Area.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Rana draytonii California red-legged frog	S2S3/SSC	Creeks, ponds, and marshes with permanent or temporary water bordered by emergent or riparian vegetation. Requires 4-6 months of permanent water for larval development.	**Unlikely.** The Project Area lacks suitable breeding. Non-breeding habitat is present, but there are no records of the species within or adjacent to Project Areas.
Taricha rivularis Red-bellied newt	S2/SSC	Streams and mesic upland habitats primarily within redwood forest, but also mixed-conifer, valley-foothill woodland, montane hardwood and hardwood-conifer habitats. Requires rapid streams with rocky substrate for breeding and egg laying.	**None**. No suitable habitat within or adjacent to Project Areas - requires higher gradient streams in proximity to redwood forest. No known occurrences within vicinity of Project Areas.
Reptiles			
Chelonia mydas Green sea turtle	FT/ST	Green turtles are generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting.	**None**. No suitable habitat within Project Areas.
Emys marmorata Western pond turtle	S3/SSC	Streams, ponds, and lakes with basking habitat features such as logs, rocks, sandy beaches in open sun.	**Moderate**. Suitable habitat within and adjacent to Project Areas. Known to inhabit the Russian River and aquatic environments throughout Sonoma County.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Birds			
Ardea herodias Great blue heron	*S4/--*	Freshwater and brackish marshes, along lakes, rivers, bays, lagoons, ocean beaches, mangroves, fields, and meadows. Nests commonly high in trees in swamps and forested areas, less commonly in bushes, or on ground, rock ledges, and coastal cliffs. Often nests with other herons.	**Unlikely.** Marginally suitable habitat within and adjacent to Project Areas. Species unlikely to be present during proposed Project activities.
Cerorhinca monocerata Rhinoceros auklet	S3/WL	Nests in burrow mainly on grassy or shrubby sea-facing slope or level area near edge of island; small numbers of nests on cliffs or steep slopes, also recorded nesting in caves in Oregon and California.	**None**. No suitable habitat within Project Areas.
Charadrius nivosus Western snowy plover	ST S3	The Pacific coast population breeds primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitats include bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars.	**None.** No suitable habitat within Project Areas.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT/SE S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	**Unlikely.** Suitable habitat present but no known occurrences within or adjacent to Project Areas.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Elanus leucurus White-tailed kite	S3S4/FP	Forages in grasslands, open woodlands, agricultural fields, and marshes. Nests in trees with dense foliage.	**Unlikely.** Marginal nesting habitat present within Project Area.
Fratercula cirrhata Tufted puffin	S1S2/SSC	Nonbreeding primarily pelagic. Can be found well out to sea all year. Immatures more likely than adults to winter in bays. Nests on offshore islands or along the coast. Nests on slopes in ground burrows, sometimes under boulders and piles of rocks, occasionally under dense vegetation.	**None**. No suitable habitat within project areas.
Pandion haliaetus Osprey	S4/WL	Occurs in ponderosa pine and mixed conifer habitats along sea coasts, lakes, and rivers. Foraging (fishing) areas require large snags and open trees near large, clear, open water.	**Unlikely.** Nests along Russian River. No known nests currently within Project Area but could be found in adjacent areas. Could utilize adjacent habitat in Russian River for hunting.
Riparia riparia Bank swallow	ST S2	Habitat includes open and partly open situations, frequently near flowing water. Nests are in steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, or along the coast, or in gravel pits, road embankments, etc.	**Unlikely.** Suitable habitat present within and adjacent to Project Area. No known recent occurrences within the vicinity.
Strix occidentalis ssp*. caurina* Northern spotted owl	FT/ST S2S3/SSC BCC	Old growth forests or mixed stands of old growth and mature trees. High, multistory canopy dominated by big trees, many trees' w/cavities or broken tops, woody debris, and space under canopy.	**Unlikely.** Marginal habitat within and adjacent to Project Area. No known recent occurrences within the vicinity.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Mammals			
Antrozous pallidus Pallid bat	S3/SSC	A wide variety of habitats is occupied, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The species is most common in open, dry habitats with rocky areas for roosting.	**Unlikely.** Marginal suitable habitat found within and adjacent to project areas. Species more common in dry rocky environments. No known recent occurrences.
Arborimus pomo Sonoma tree vole	S3/SSC	Old growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats along the coast from Sonoma County north to the Oregon border. Restricted to the fog belt. Eats almost exclusively Douglas fir needles.	**Unlikely.** Marginal habitat found within and adjacent to project areas.
Corynorhinus townsendii Townsend's big-eared bat	S2/SSC	Occurs throughout most of California in mesic sites. Roosts in the caves, mines, tunnels, buildings, etc. Extremely sensitive to human disturbance	**None.** No suitable habitat within project area and human activities preclude presence. Five records from Guerneville, Healdsburg, and Hopland from 1946 to 1987. Human activities preclude presence.
Erethizon dorsatum North American porcupine	S3	North American porcupines are native to the coniferous and mixed-forest habitats of Canada, the northeastern and western regions of the United States and northern Mexico. Besides forests, porcupines can also be found in grasslands, desert shrub communities and even tundra.	**Unlikely.** Suitable habitat found within and adjacent to project areas, although human activities preclude presence.

Species	Status* Federal/State CA Rank/Other (BCC)	Habitat Requirements	Potential to Occur in the Project Area
Lasiurus cinereus Hoary bat	S4	Spend their summers in the foliage of mature deciduous and coniferous trees, typically near the edge of a clearing. They have also been found to utilize trees found in heavy forested areas, open wooded glades, and shaded trees along urban streets in cities and parks.	**Moderate.** Suitable habitat found within and adjacent to project areas. Known occurrence within the vicinity.
Lasiurus frantzii Western red bat	S3/SSC	Occurs throughout most of central and southern California, except alpine and desert regions, and coastal California from SF bay region to south. Roosts in trees and forages in a variety of open habitats. Preference for sites in proximity to riparian areas. Usually solitary but sometimes nurse in colonies. Young nursing period generally May – August. Young typically capable of flight at 3 - 6 weeks.	**Moderate.** Suitable habitat with and adjacent to Project Area. Occurrence from west of Forestville area observed in 2003.
Taxidea taxus American badger	S3/SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Somewhat tolerant of human activity.	**Unlikely.** Minimal habitat found within and adjacent to Project Area. Closest occurrences are within the Santa Rosa Plain and Sonoma coast areas. Evidence of badger presence is easily identified.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FD	Federal Delisted
SE	State Endangered
ST	State Threatened
CSE	Candidate State Endangered
CST	Candidate State Threatened
FP	California Department of Fish and Wildlife (CDFW) Fully Protected in California
SSC	CDFW Species of Special Concern
WL	CDFW Watch List

BCC	United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern
S1	Critically imperiled. Extreme rarity or steep declines in populations.
S2	Imperiled. Rarity due to restricted range, few populations, steep declines, or other factors.
S3	Vulnerable. Vulnerable due to restricted range, few populations, steep declines, or other factors.
S4	Uncommon but not rare in California; some cause for long-term concern due to declines or other factors.

Potential to Occur:
None. Habitat on and adjacent to the site is clearly unsuitable for the species requirements.
Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
Moderate. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
High. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

SOURCES: The California Department of Fish And Wildlife Natural Diversity Database (California Department of Fish and Wildlife, 2020), and U.S. Fish and Wildlife Service Species Lists (United Stated Department of Fish and Wildlife, 2019) for Camp Meeker, Cotati, Guerneville, Healdsburg, Santa Rosa, Sebastopol, and Two Rock USGS 7.5' Quadrangles.