

MEMORIAL PARK WASTEWATER TREATMENT FACILITIES IMPROVEMENT PROJECT

Initial Study / Mitigated Negative Declaration

Prepared for
San Mateo County Parks Department and
San Mateo County Department of Public Works

March 2019



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TABLE OF CONTENTS

Memorial Park Wastewater Treatment Facilities Improvement Project Initial Study / Mitigated Negative Declaration

	<u>Page</u>
Section 1, Project Description	1-1
1.1 Introduction	1-1
1.2 Project Background	1-2
1.3 Project Objectives	1-4
1.4 Proposed Project	1-4
1.5 Report Organization	1-27
1.6 Other Approvals	1-28
1.7 References	1-28
Section 2, Environmental Checklist	2-1
Environmental Factors Potentially Affected	2-2
Evaluation of Environmental Impacts	2-3
2.1 Aesthetics	2-5
2.2 Agricultural and Forest Resources	2-13
2.3 Air Quality	2-16
2.4 Biological Resources	2-23
2.5 Cultural Resources	2-45
2.6 Geology and Soils	2-50
2.7 Climate Change	2-56
2.8 Hazards and Hazardous Materials	2-60
2.9 Hydrology and Water Quality	2-67
2.10 Land Use and Planning	2-73
2.11 Mineral Resources	2-75
2.12 Noise	2-76
2.13 Population and Housing	2-80
2.14 Public Services	2-81
2.15 Recreation	2-83
2.16 Transportation/Traffic	2-84
2.17 Utilities and Service Systems	2-92
2.18 Mandatory Findings of Significance	2-96
Section 3, Summary of Mitigation Measures	3-1
Section 4, Report Preparers	4-1
4.1 Lead Agency	4-1
4.2 Consultants	4-1

	<u>Page</u>
Appendices	
A. Project-Related Construction Emissions.....	A-1
B. Special-Status Species Considered.....	B-1

List of Figures

1. Project Location and Facilities	1-3
2. Existing WWTP and Collections System.....	1-6
3. Proposed Project Index Map.....	1-9
3a. Project Components and Work Limits.....	1-10
3b. Project Components and Work Limits.....	1-11
3c. Project Components and Work Limits.....	1-12
3d. Project Components and Work Limits.....	1-13
3e. Project Components and Work Limits.....	1-14
3f. Project Components and Work Limits.....	1-15
4. Phase 1 Project: Site Plan	1-16
5. Phase 2b Collection System Replacement for High and Medium Priority Only	1-21
6a. Photos of Memorial Park.....	2-6
6b. Photos of Memorial Park (cont.).....	2-7
6c. Photos of Memorial Park (cont.).....	2-8

List of Tables

1. Summary of Pipeline Improvements	1-18
2. Summary of Future Manhole Improvements.....	1-20
3. Summary of Construction Assumptions for the Proposed Project.....	1-23
4. Average Daily Construction-related Pollutant Emissions (pounds/day)	2-18
5. Reference Construction Equipment Noise Levels – (50 feet from source).....	2-78
6. Estimated Maximum Daily Vehicle Trips for Project Construction.....	2-85

SECTION 1

Project Description

1.1 Introduction

The San Mateo County Parks Department and the Department of Public Works (hereafter referred to generally as the County) propose to implement the Memorial Park Wastewater Treatment Facilities Improvement Project within unincorporated San Mateo County, California. The proposed project includes improvements to the existing wastewater treatment system (treatment system), including replacement of the existing wastewater treatment plant (WWTP), repairs and replacement of pipes and manholes, and other necessary upgrades to the treatment system. Activities are proposed to occur primarily within the limits of Memorial Park, which is near the community of Loma Mar, in unincorporated San Mateo County, California.

This document is an Initial Study/Mitigated Negative Declaration (IS/MND) that analyzes the potential environmental impacts of project implementation, including those resulting from construction and operation of the proposed treatment system improvements. This IS/MND has been prepared in compliance with Public Resources Code Section 21000 et seq., California Environmental Quality Act (CEQA) of 1970 (as amended), and Title 14, Chapter 3 of the California Administrative Code.

In accordance with the CEQA Guidelines, California Code of Regulations Title 14, Chapter 3, Section 15070, a Mitigated Negative Declaration shall be prepared if the following criteria are met:

- There is no substantial evidence that the project may have a significant effect; or
- Where there may be a potentially significant effect, revisions to the project would avoid or mitigate the effects to a point where clearly no significant effects would occur.

In accordance with Section 15073 of the CEQA Guidelines, this document is being circulated to local, state and federal agencies and to interested organizations and individuals who may wish to review and comment on the report. The Draft IS/MND is available on the following County websites: <https://parks.smcgov.org/memorial-WWTP-replacement> and <https://publicworks.smcgov.org/memorial-park-wwtp>.

Copies are also available to review at the following locations:

Memorial Park Visitor Center, 9500 Pescadero Creek Road, Loma Mar

San Mateo County Planning Department, 455 County Center, 2nd Floor, Redwood City

Woodside Library, 3140 Woodside Road, Woodside

Portola Valley Library, 765 Portola Road, Portola Valley

Public Comment Period. Comments on the adequacy of the Draft IS/MND will be accepted during the 30-day review period from March 12, 2019 to April 11, 2019. Any comments should be submitted in writing to County staff by 5:00 p.m. on April 11, 2019 using the mail or email addresses below:

Mailing Address

Gilles Tourel,
Principal Civil Engineer
County of San Mateo, Department of Public Works
555 County Center, 5th Floor,
Redwood City, CA 94063-1665

Email Address

Gilles Tourel (DPW_Memorialparkproject@smcgov.org)

1.2 Project Background

1.2.1 Introduction

Memorial Park is a 673-acre park in San Mateo County, located at 9500 Pescadero Creek Road, Loma Mar, California. The park has a year-round campground with 158 family camp sites organized into camp areas (e.g., Sequoia Flat Campground), day use areas, a visitor center, a camp store, and two youth camps (Homestead Youth Camp and Redwood Flat Youth Camp). Park activities include camping, hiking, picnicking, campfire programs, and other outdoor activities among the coastal redwood forest. The park does not allow horses, dogs, bicycles, off-road vehicles, fishing, or hunting.

Figure 1 shows a map of the park location.

The campground's wastewater treatment and waste collection system includes a WWTP serving the eastern side of the park, a septic system serving the Homestead Youth Camp and ranger residence on the western side of the park, 9,650 feet of gravity sewer pipes and 56 manholes. The majority of the sewers are asbestos cement pipe, but also include vitrified clay pipe,¹ plastic pipe and some cast iron pipe. These structures were built around 1966 (HydroScience, 2017b). Low or inadequate slopes (i.e., too shallow) are prevalent in the collection system. Sufficient slope is required to reach a flow velocity of 2 feet per second (fps) in order to achieve sufficient scouring of settled solids in the pipes and preventing potential backwatering, or obstructed flow.

¹ Blend of clay and shale that has been subjected to high temperature.



SOURCE: San Mateo County; ESA, 2017

Memorial Park Wastewater Treatment Facilities Improvement Project

Figure 1
Project Location and Facilities

The WWTP is near the end of its design life expectancy, meaning that maintenance is frequently required to replace and repair broken or worn-out parts, and the system does not provide a consistent level of service. Due to age and high maintenance requirements, the County has determined the WWTP requires replacement. The County considered replacing the WWTP in its current footprint however, the site of the existing WWTP is less than 50 feet from Pescadero Creek and the San Francisco Regional Water Quality Control Board (RWQCB) requires any new WWTP be constructed farther than 50 feet from the nearest creek to avoid potential creek water quality impacts. Therefore, a new location has been identified in an existing overflow parking lot approximately 150 feet southeast from its existing location.

1.3 Project Objectives

The main objectives of the project are to: (1) replace the existing WWTP with a modern, reliable system that reduces operations and maintenance (O&M) burden on park staff; and (2) map, evaluate, and repair the collection system to improve system performance and reduce O&M burden. The County seeks to achieve these objectives in a manner that minimizes noise, odors, water quality, and visual impacts of plant construction and operation.

1.4 Proposed Project

1.4.1 Project Location

The project is proposed for Memorial Park, in southern San Mateo County. Memorial Park is located approximately 6.25 miles east of the Pacific Ocean and approximately 16.5 miles southwest of the San Francisco Bay. The nearest community is Loma Mar, just beyond the park's western boundary. The park is generally bounded by Wurr Road to the south and east, and private property to the north and west. Memorial Park is bisected by Pescadero Creek Road, which runs from La Honda west to State Route 1 near the Pescadero Marsh Natural Preserve. As its name suggests, the road generally follows the alignment of Pescadero Creek, which drains to the Pacific Ocean. The project is located in a canyon cut by the west-flowing Pescadero Creek. The northern portion of the park includes steep, forested hills and canyons, and is where the hiking and recreation trails are primarily located. In contrast, the southern portion of the park is flatter, and includes the developed areas and Pescadero Creek. The developed portion of the park can be generally divided into the larger, eastern recreation area which features the primary park entrance and visitor center, the Sequoia Flat campground, and other campgrounds and picnic areas; and the western recreation area which features the Homestead Flat Youth Camp, ranger residence, and maintenance yard. Most of the project is proposed for sites within the developed campground areas of the park, specifically, south of Pescadero Creek Road and north of Wurr Road. Figure 1 includes a map showing the park in the context of southern San Mateo County. Adjacent properties include county-owned land, private single-family homes, and timberland preserve.

The San Mateo County zoning in most of the park is classified as RM (Resource Management). Adjacent to the park is land that is classified R-1 (One-Family Residential District) and TPZ (Timberland Preserve Zone) (County of San Mateo, 2017a). The County's Land Use Map shows the park as designated Rural and Public Recreation (San Mateo County, 2017b). Adjacent lands are designated for low density residential, open space, timber production, and private recreation uses.

1.4.2 Existing Facilities

The park's existing treatment system comprises three main components: 1) the WWTP facility, 2) the collection system, and 3) the disposal system (HydroScience, 2017a, 2017b). The western portion of the park is served by a septic system, while the eastern developed area is served by the WWTP. The existing WWTP is located approximately 30 feet south of Pescadero Creek and about 90 feet northwest of the Sequoia Flat Campground. The existing collection system consists of 9,650 feet of gravity sewer pipe and 56 manholes throughout the park's campground and developed areas. The sewer pipelines associated with the septic system portion of the WWTP include pipelines that are north of Pescadero Creek Road. The disposal system consists of sprayfields and an unlined storage basin. The existing treatment system is shown in **Figure 2**.

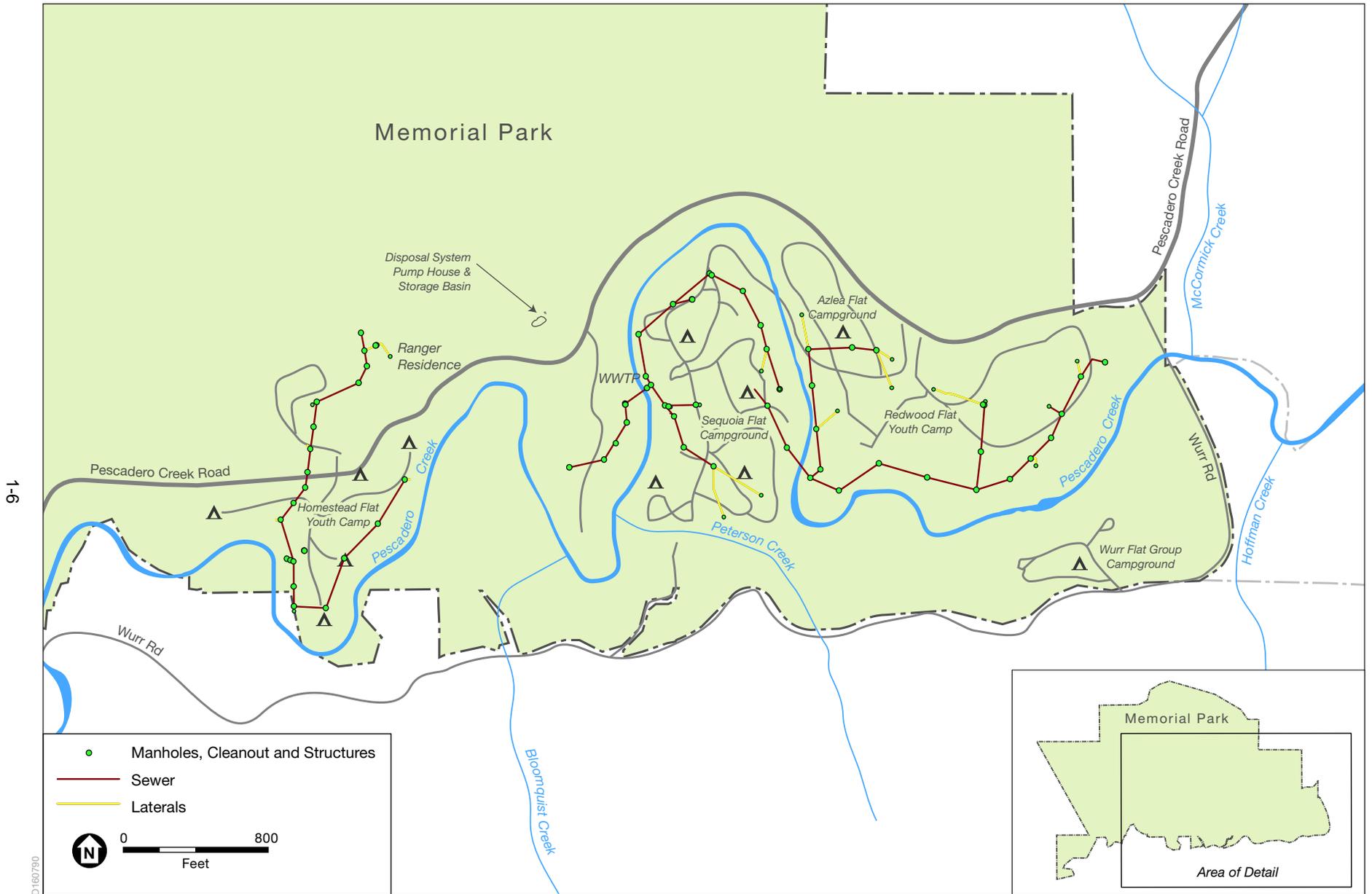
WWTP and Lift Station

The existing WWTP is an extended aeration system with a treatment capacity of 30,000 gallons per day (gpd). The plant has four concrete tanks: two larger tanks approximately 16,500 gallons each, one 4,200-gallon tank for clarification, and one 5,200-gallon tank for sludge storage. Under current operation, one of the larger two tanks serves as an equalization basin and receives influent flow for treatment. Wastewater is pumped from the equalization tank into the other large tank, which is used as an aeration basin. Effluent from the aeration tank flows into the clarifier tank. Treated effluent is dosed with sodium hypochlorite for disinfection and pumped via lift station (i.e., effluent moved from a lower to higher elevation) to spray fields. While the effluent is disposed primarily through sprayfield irrigation, the park also has an unlined retention basin to handle higher flows. The sludge holding tank receives waste activated sludge (WAS) from the treatment process. Sludge is periodically removed from this tank for disposal by a septic hauler.

Collection System

Pipelines

The majority of the existing conveyance system consists of asbestos cement pipe, but also includes some cast iron and either polyvinyl chloride (PVC) or polyethylene plastic pipe. Pipe diameters range from 4 to 8 inches, with the majority being 6 inches. There are currently two separate collection systems, as shown on Figure 2; one collects sewage from the eastern campgrounds and the visitor center and flows to the WWTP in the Sequoia Flat Campground and the other collects sewage from the Homestead Youth Camp, ranger residence, and corporation yard and flows to a septic tank. As described



SOURCE: HydroScience; San Mateo County; ESA, 2017

Memorial Park Wastewater Treatment Facilities Improvement Project

Figure 2
Existing WWTP and Collections System

above, low or inadequate slopes are prevalent in both collection systems, which can reduce the flow from reaching the minimum velocity required to scour settled solids. The settling of solids can lead to reduced pipe capacity and result in backwatering.

The collection system includes two crossings of Pescadero Creek; both crossings consist of PVC pipes attached to wooden suspension bridge structures. Both crossings have been documented as appearing to have sags and/or inadequate slope, which reduce the velocity of flow (HydroScience, 2017b).

Manholes

The collection system at Memorial Park contains 56 manholes: 38 are in the collection system flowing to the WWTP and 18 are part of the septic tank collection system servicing Homestead Flat and the corporation yard. The majority of the manholes have non-reinforced concrete walls; however, some are made of brick. Two manholes have wooden lids and no concrete frames. All other manholes have cast iron rims and lids. Some manholes outside of roadways and paths have rims above ground elevation or have been modified with risers to reduce the potential for inflow. Prioritizing manhole replacement, repair or rehabilitation for this project due to their existing conditions was evaluated, as discussed in Section 1.4.3 (HydroScience, 2017b).

Disposal System

The existing main effluent disposal system at Memorial Park consists of sprayfields located in the hilly portion of the park, north of Pescadero Creek Road, and the associated pumps and generators. The system also includes an above-ground unlined emergency storage basin, which is rarely used but allows for percolation into the ground. Effluent from the WWTP flows to a lift station, is disinfected with sodium hypochlorite, and is then pumped into a storage tank adjacent to the storage basin. From the tank, the effluent is primarily pumped to the sprayfield or discharged directly into the storage basin when there are higher flows. Sludge from this tank is periodically removed for disposal by a septic hauler. The disposal system including effluent pumps, effluent pump station pipe and effluent pipeline are all new or recently replaced in the past few years. and generally in good condition.

1.4.3 Proposed Improvements

Overview

Due to the age of the treatment system components, increasing maintenance and related costs, and water quality concerns due to the proximity of the WWTP to the creek, the County proposes the Memorial Park Wastewater Treatment Facilities Improvement Project. The project would be implemented in phases. Phase 1 would replace the existing WWTP facility and septic system with a new WWTP in an unpaved area that is presently used as an overflow parking lot, approximately 150 feet southeast from the existing WWTP site and approximately 175 feet from the creek. The existing WWTP

would be repurposed as a lift station. A new unpaved, aggregate base overflow parking lot would be constructed approximately 150 feet south of the existing overflow parking lot. Phase 1 would also include the collection system repairs and replacements in the Azalea Flat Campground.

Phase 2 would include collection system repairs and replacements to: fix structural defects; lessen infiltration and inflow; and provide a design flow of 2 fps, the flow needed to scour settled solids in the pipe and prevent potential backwatering caused by reduced pipe capacity (HydroScience, 2017b). This document analyzes two options for the collection system repair and replacements. Phase 2a improvements would repair or replace up to 25 identified pipe sections and up to 44 manholes throughout the system. This option is analyzed at a project-level assessment of effects.

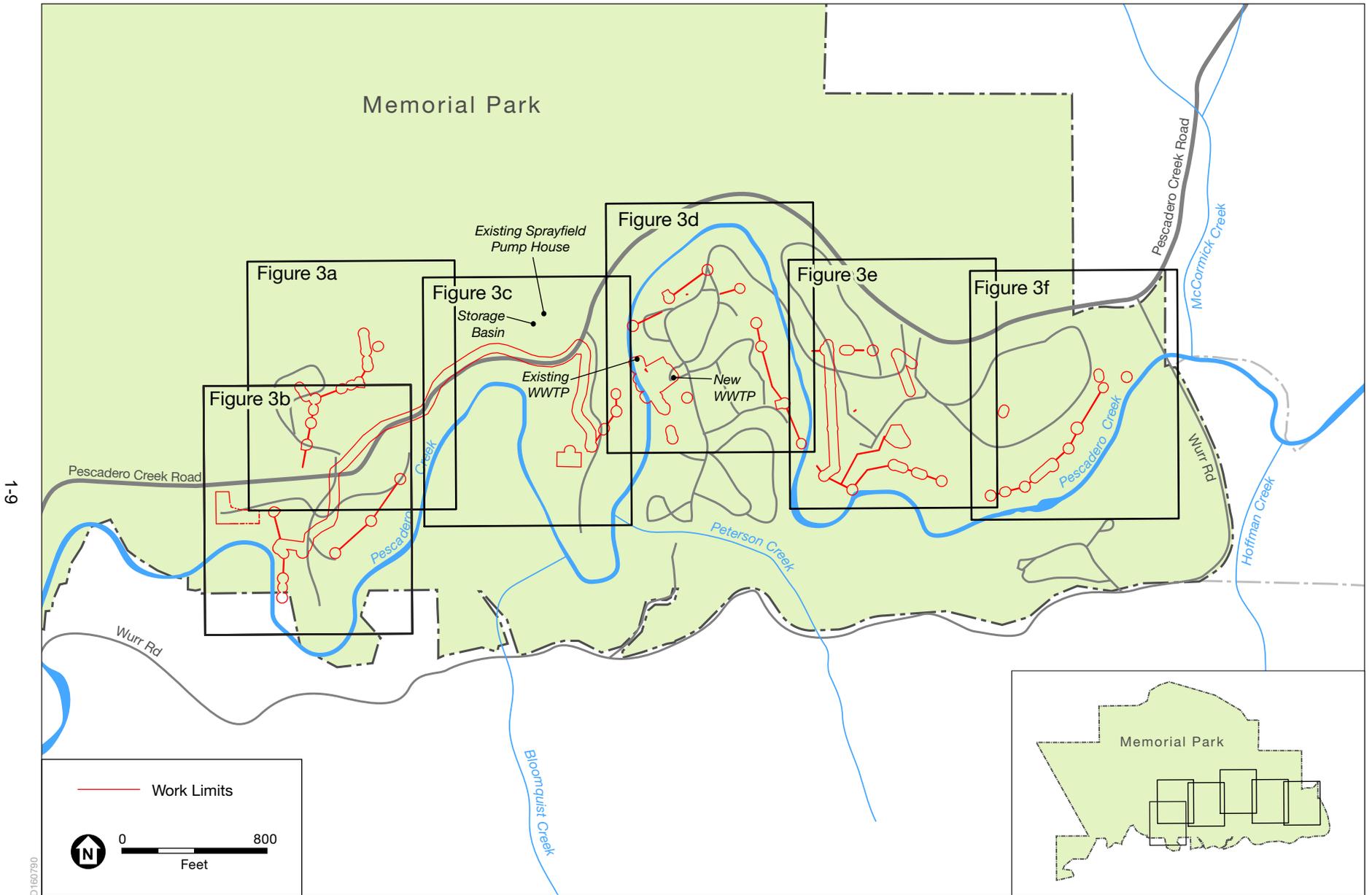
For the Phase 2b option, the County would replace the 18 pipe sections and 37 manholes identified as 'high' and 'medium' priority in the HydroScience Technical Memorandum TM No. 3 – Collection System Condition Assessment and Recommendations (2017b). This project is not funded, and its design has not progressed beyond a preliminary conceptual stage. For these reasons, the Phase 2b project is evaluated at a programmatic, or conceptual level of detail. Accordingly, in the event the County decides to proceed with the Phase 2b project, additional CEQA review could be required if the more advanced designs indicate the project would result in new or substantially different impacts than described in the IS/MND.

The proposed treatment system improvements are presented and mapped in **Figures 3a-f**. More detailed descriptions of key project elements are presented below.

Phase 1 – WWTP, Lift Station, Force Mains

The existing WWTP would be repurposed as a lift station. Because it is located at the lowest point in the system, raw wastewater from the collection system on the eastern side of the park would continue to flow to the new lift station by gravity. The septic tank serving the western side of the park would be abandoned in place. Rather than flow to the septic system, raw wastewater from the western collection system would be diverted into a new force main and pumped into the eastern collection system, where it would also flow to the new lift station. A new influent force main would be constructed to convey raw wastewater from the lift station to the new WWTP for treatment.

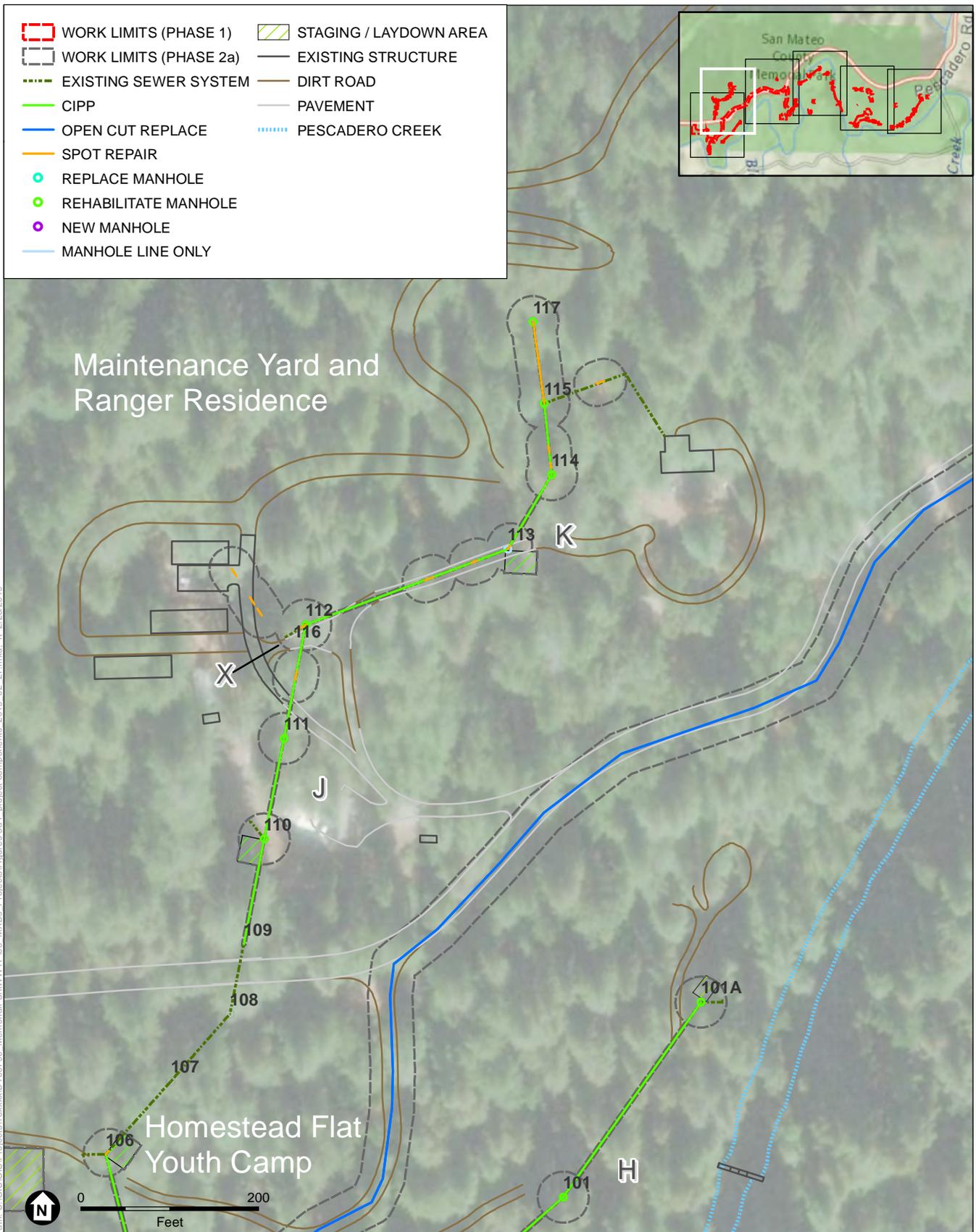
The new WWTP would use a Sequencing Batch Reactor (SBR) system to treat wastewater. The SBR treatment process is based on a fill-and-draw principle: aeration and mixing followed by settling and decanting the treated effluent. The new plant would be required to comply with wastewater treatment standards established by the State Water Resources Control Board and San Francisco Regional Water Quality Control Board's (together "the Boards") 2014 General Permit for Small Systems and meet the General Waste Discharge Requirements (WDR) for small systems. Figure 3d shows the location of the proposed WWTP and **Figure 4** shows a more detailed plan for the proposed WWTP and other Phase 1 project components.



SOURCE: San Mateo County; ESA, 2017

Memorial Park Wastewater Treatment Facilities Improvement Project

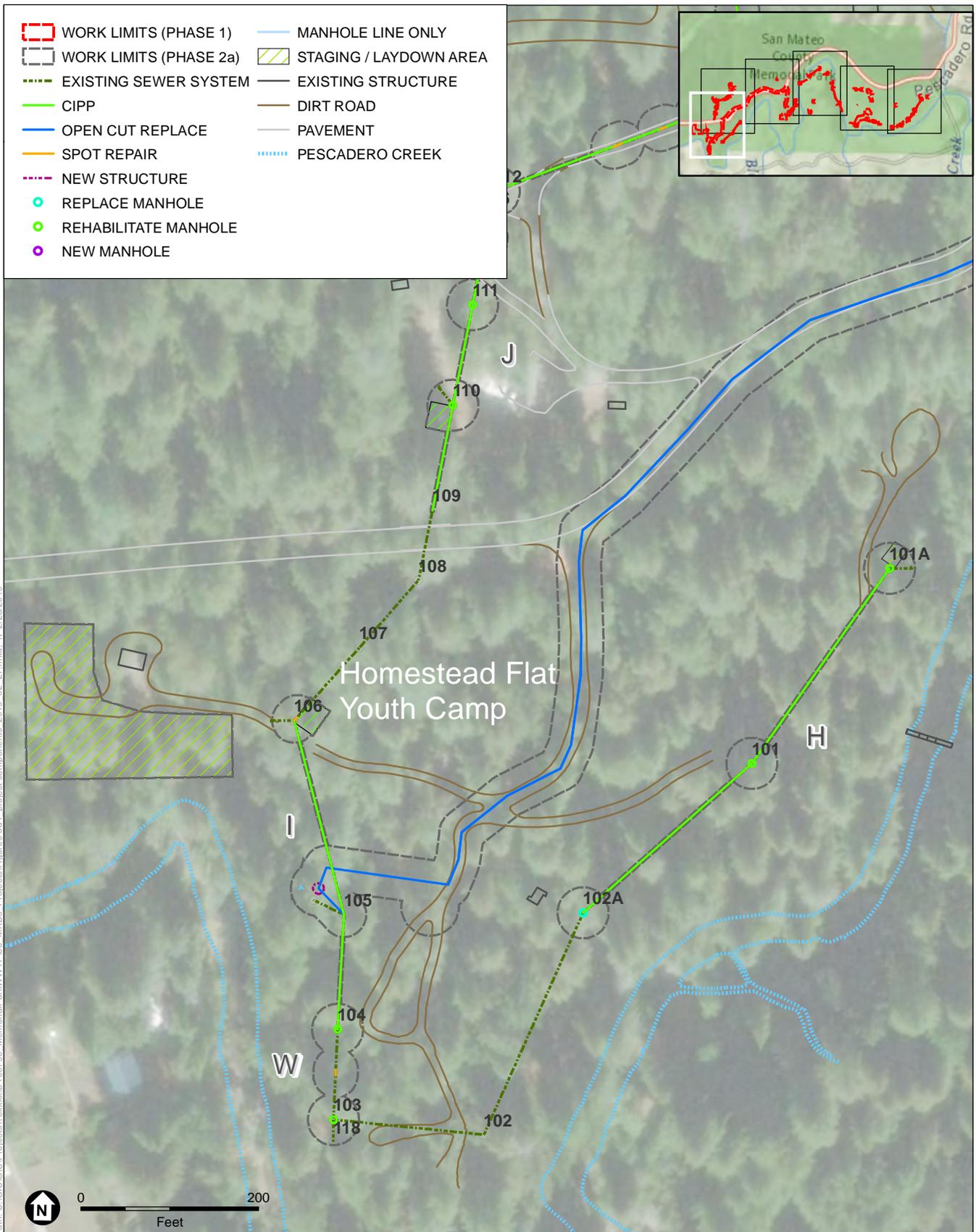
Figure 3
Phase 1 and 2a Project Index Map



SOURCE: HydroScience, 10.20.2017, 12.06.2017; ESA, 12.29.2017

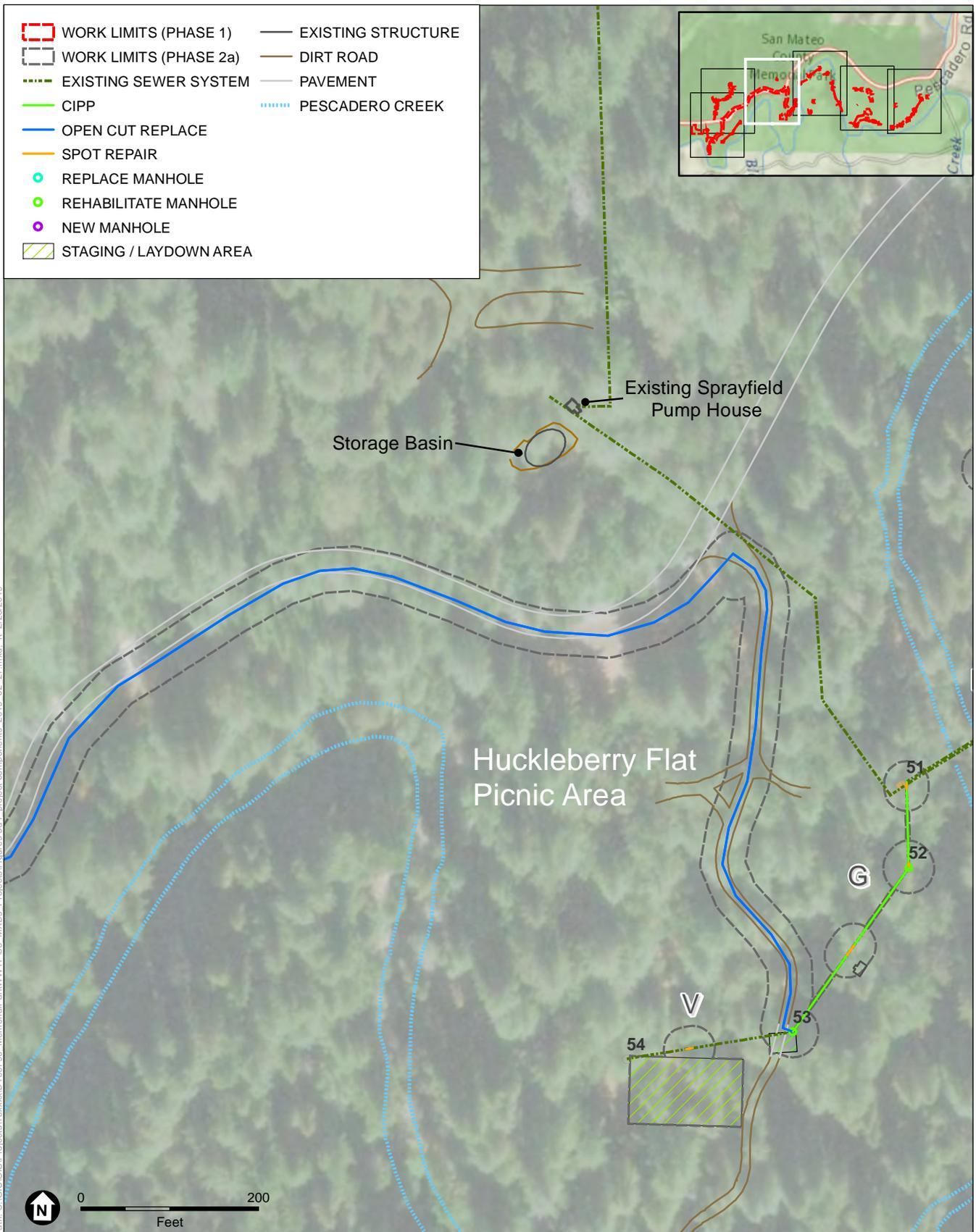
Memorial Park Wastewater Treatment Infrastructure Replacement Project

Figure 3a
Phase 1 and Phase 2a Components and Work Limits



Memorial Park Wastewater Treatment Infrastructure Replacement Project

Figure 3b
Phase 1 and Phase 2a Components and Work Limits



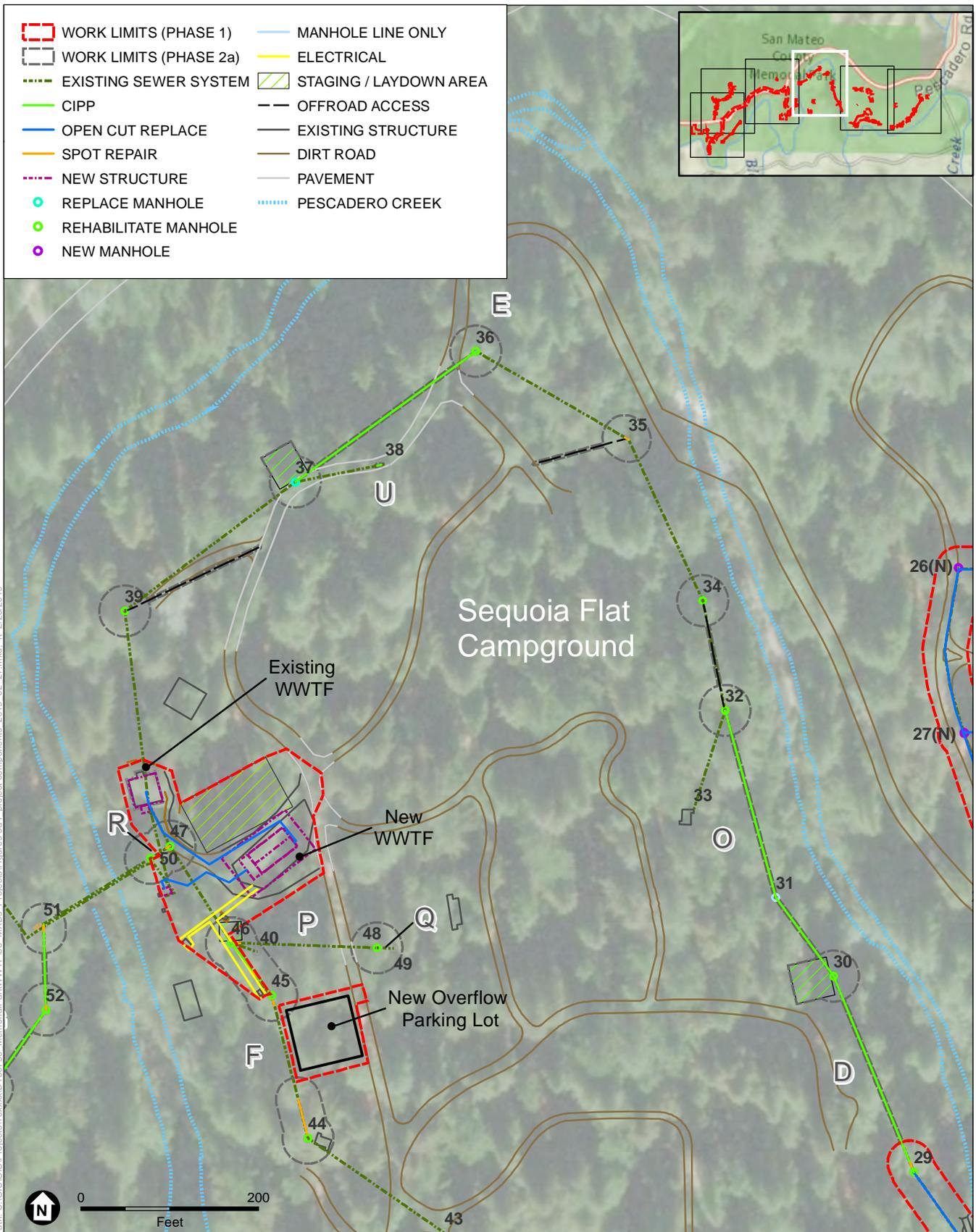
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SOURCE: HydroScience, 10.20.2017, 12.06.2017; ESA, 12.29.2017

Memorial Park Wastewater Treatment Infrastructure Replacement Project

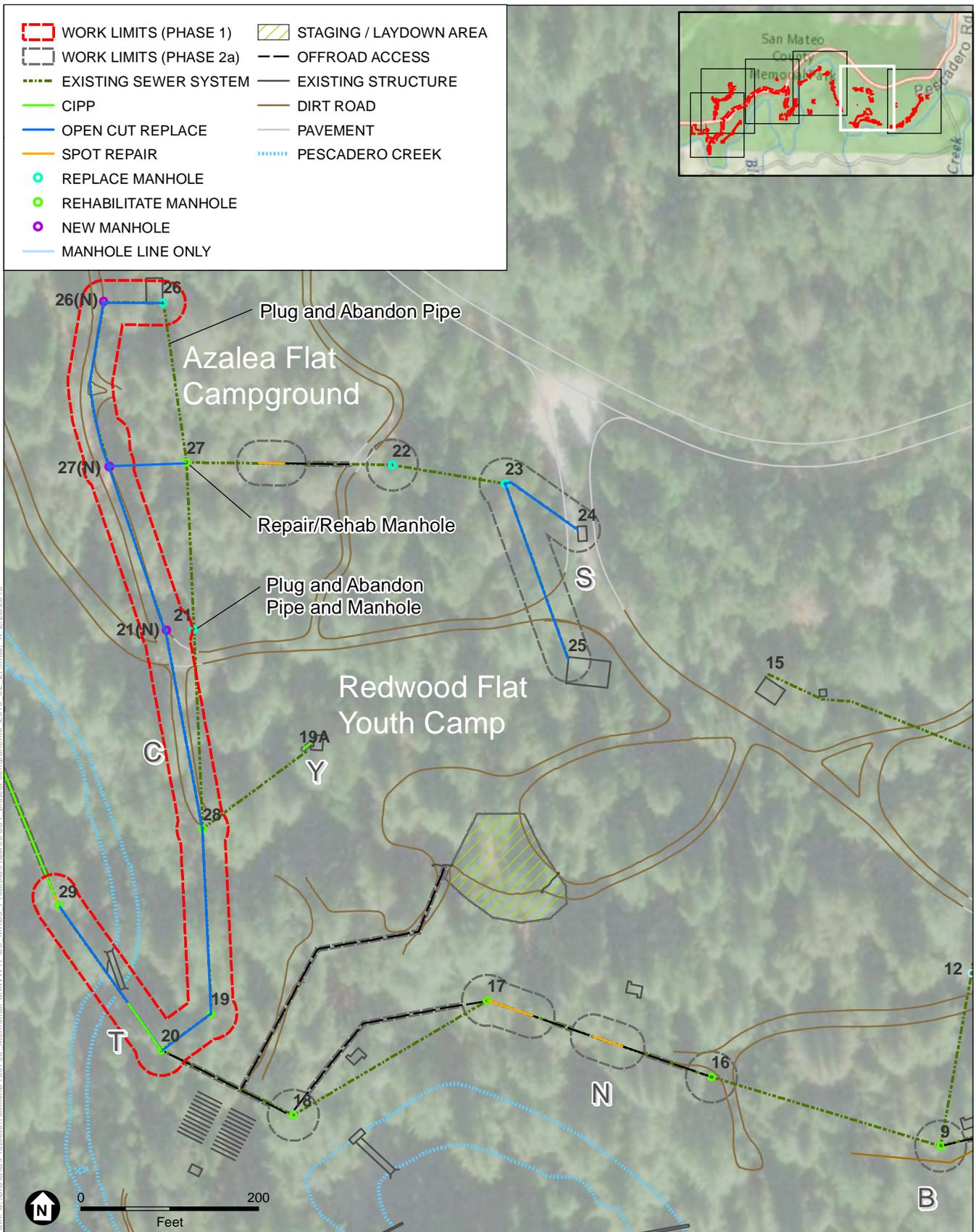
Figure 3c
Phase 1 and Phase 2a Components and Work Limits





Memorial Park Wastewater Treatment Infrastructure Replacement Project

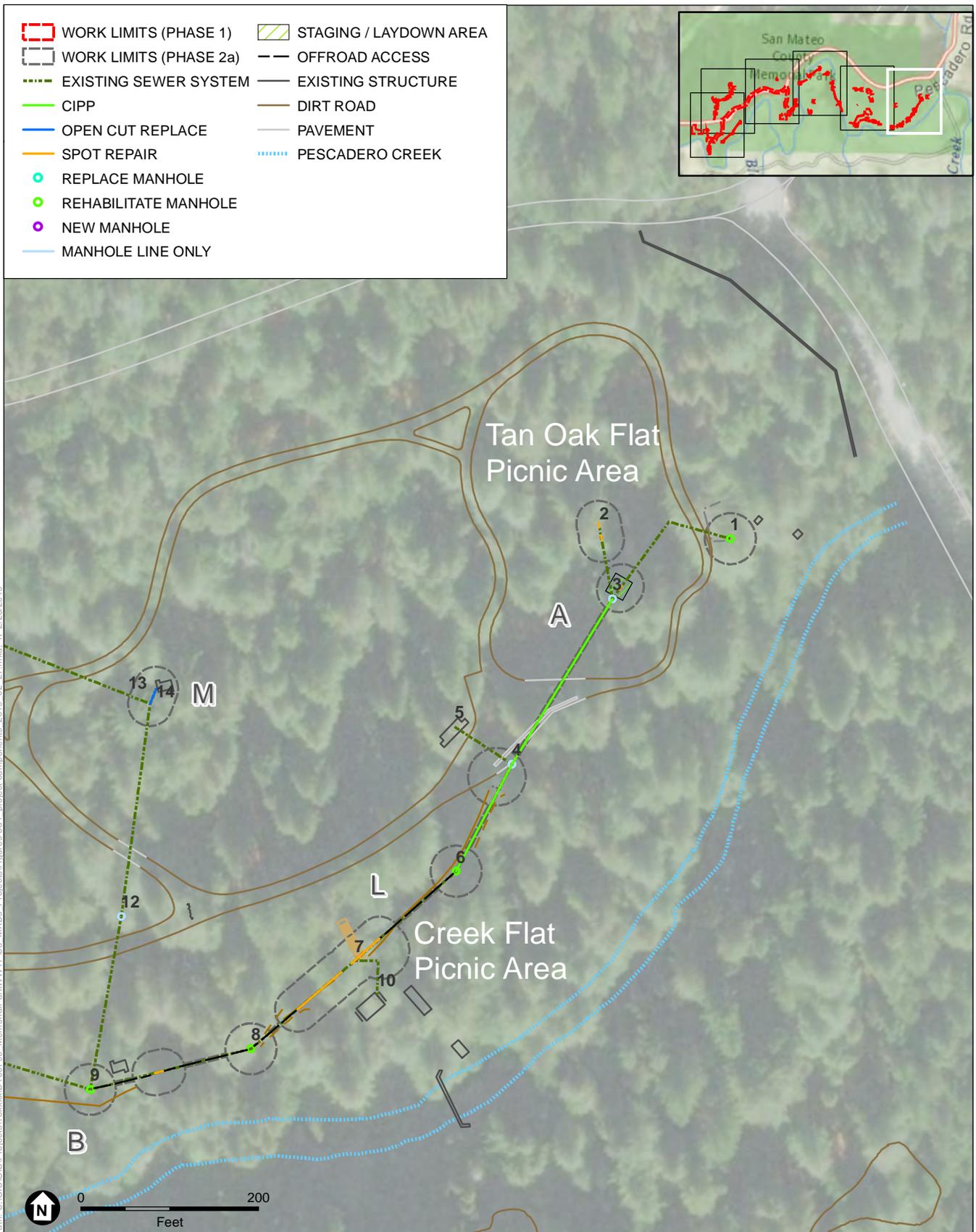
Figure 3d
Phase 1 and Phase 2a Components and Work Limits



SOURCE: HydroScience, 10.20.2017, 12.06.2017; ESA, 12.29.2017

Memorial Park Wastewater Treatment Infrastructure Replacement Project

Figure 3e
Phase 1 and Phase 2a Components and Work Limits

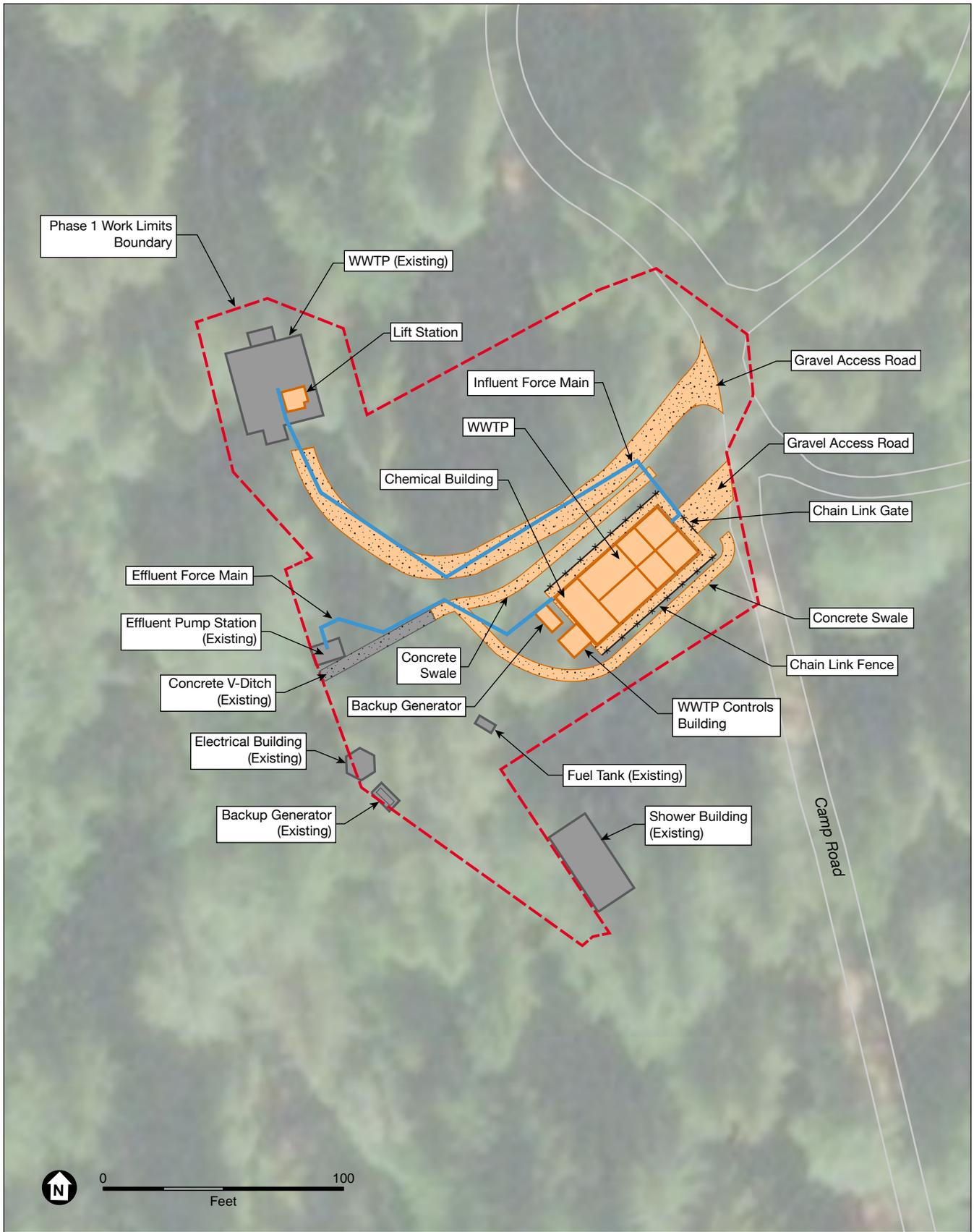


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SOURCE: HydroScience, 10.20.2017, 12.06.2017; ESA, 12.29.2017

Memorial Park Wastewater Treatment Infrastructure Replacement Project

Figure 3f
Phase 1 and Phase 2a Components and Work Limits



SOURCE: HydroScience, 2018; ESA, 2019

Memorial Park Wastewater Treatment Infrastructure Replacement Project

Figure 4
WWTP Replacement Site Plan

The WWTP would comprise a cast-in-place concrete tank, clear well², an electrical and motor control systems building, a chemical storage building, and a backup generator. The concrete tank and clear well footprint would be roughly 62 feet long, 27 feet wide, and 14 feet deep. All but about 1 foot of the tank and well would be buried below ground surface; access risers would extend another 2 feet above the tank. The new WWTP would include submersible effluent pumps and connect to the existing disposal system via new effluent force main.

For safety, security, and to prevent foreign objects from entering the system, the WWTP's concrete tank, clear well, and chemical building would be enclosed by a metal canopy, perimeter fence, and translucent wall paneling. The canopy roof would measure approximately 64 feet long, 35.5 feet wide, and 20.5 feet tall. The fence would be about eight feet tall and include privacy slats. Translucent wall paneling, similar to that used for the existing WWTP canopy roof, would extend an additional 5 feet from near top-of-fence elevation to the base of the canopy roof.

The electrical and motor control systems building would be a concrete masonry unit (CMU) structure with stone-coated metal shingles. The CMU structure would be approximately 10 feet wide, 10 feet long, and 12 feet tall. The backup generator would be mounted onto a concrete slab and housed within a sound enclosure. The generator enclosure would be approximately 6 feet wide, 9 feet long, and 5 feet tall. The CMU structure and backup generator would be located adjacent to and extend beyond the WWTP enclosure described above.

Pursuant to the project's technical specifications, whose implementation would be required as part of the construction contract, the chain link fencing privacy slats, canopy, wall paneling, CMU structure, and generator enclosure would be of an earthen-tone color, comparable to the existing adjacent maintenance and chemical storage buildings at the site (HydroScience, 2018).

As part of Phase 1, the County would install two new force mains. The first would consist of an influent line to convey raw wastewater from the new lift station to the new WWTP. The second would consist of an effluent line to convey treated wastewater from the WWTP to the disposal system's pipeline network. The force mains would be constructed using open-cut trenching methods.

The site of the proposed WWTP, along with the adjacent campground areas to the northeast (proposed as a construction staging area), are subject to periodic surface water ponding during heavy rain storms. To improve site drainage and prevent inundation of the new WWTP, the proposed staging area would be elevated by 12 to 18 inches, using soil excavated from the new WWTP site, and recontoured to direct surface runoff to the west and south, consistent with the prevailing slope and drainage pattern of the surrounding area. In addition, the County would install Portland cement

² The clear well, or effluent lift station, would control the rate of treated water to provide a consistent rate of flow into the disposal system and prevent the need to vary the treatment rate with variations in demand.

concrete ditches around the new WWTP site and regrade the site to capture and route surface runoff flows away from the WWTP. Stormwater would travel down the new concrete ditch into an existing concrete V-ditch, which presently drains this area to Pescadero Creek.

As part of Phase 1, the collection system upgrades needed in the Azalea Flat Campground would also be implemented. These would include the replacement of pipe segments C and T and eight manholes as shown in Figure 3e. The existing pipe segments would be abandoned in place and new pipe segments would be installed using open cut trench method that generally follows an existing road alignment. Eight manholes would be replaced, repaired or rehabilitated.

Phase 2a - Collection System

Summary of Pipe Improvements

Under Phase 2a, the County would repair or replace pipeline segments if they are broken, damaged, or too flat to convey wastewater at the target 2 fps design flow. The work required for the pipeline improvements is described below and summarized in **Table 1**. The locations of the work associated with specific pipe segments is presented in Figures 3a-f, identifiable by their corresponding Segment ID (e.g., Segments A, B, C).

TABLE 1
SUMMARY OF PIPELINE IMPROVEMENTS

Improvement Activity	Segment ID
Spot Repair	A, B, D, F,N, Q, R, U, V, W, X, Y
Cured-in-place Pipe (CIPP)	H, O, P
Spot Repair and CIPP	E, G, I, J, K, L
Open-cut Replace/New Pipe	C*, M, S, T*

* to be completed as part of Phase 1

SOURCE: HydroScience, 2017b. Technical Memorandum No. 3 - Collection System Condition Assessment and Recommendations. Prepared for County of San Mateo, September 16, 2017.

HydroScience identified 25 pipeline segments in the collection system requiring repair or replacement (2017b). The pipeline repairs and replacements would utilize two different methods. The first involves rehabilitating existing pipes with a liner that is installed via manhole and does not require excavation or pipe cutting. Under this approach, the County would utilize a cured-in-place pipe (CIPP) technology. The CIPP method entails a contractor inverting or pulling a flexible, resin-saturated felt tube into the pipe. This tube is cured through either hot water, UV light, or steam, forming a tight-fitting, jointless and corrosion-resistant replacement pipe that does not require any digging. The second method involves open-cut trenching to access pipeline segments for repairs or replacements. Under this approach, a trench is excavated to the depth of or just below the pipeline segment in order to access and repair or replace the existing pipeline. For

open-cut methods, pipe would be of the same material as adjoining pipe, with the exception of asbestos cement pipe which would be replaced with PVC pipe.

In addition to the above-described improvements, and the Phase 1 force mains; under either Phase 2a or 2b, the County would install a third force main. The Phase 2 force main would connect the park's west side wastewater collection system into the park's east side wastewater collection system, allowing for treatment of west side wastewater in the new WWTP and abandonment of the west side septic tank. The force main connecting the two collection systems would be constructed within existing roadways or roadway shoulders, including that of Pescadero Creek Road. As with the Phase 1 force mains, the Phase 2 force main would be constructed using open-cut trenching methods.

Summary of Manhole Improvements

The County would undertake manhole repairs or replacements where the manholes are structurally unstable, allow infiltration/inflow (I/I)³, or require adjustment to match the slope of new pipes. HydroScience (2017b) identified 44 manholes recommended for repair or replacement. The manhole repair and replacements generally fall into three categories, based upon the work to be completed. The first involves lining manholes where I/I is occurring, and does not require excavation or off-hauling debris. The second is rehabilitation for manholes that have I/I issues, but do not have structural or slope concerns. Rehabilitation would involve repairing structural damage to the walls or bench of the manhole. The lining would prevent corrosion and root intrusion. Some manholes are structurally sound, but lining would help to prevent future corrosion and reduce root intrusion into the structure. The third is replacement with a new concrete manhole. Replacement would be required for structural deficiencies. For sewer pipes with little slope, or that require a greater slope than the adjacent manhole can accommodate, replacement would also require a deeper manhole to accommodate the new invert. In areas of the park where rain inflow may be an issue, a riser would be added to raise the rim elevation above grade and prevent inflow into the top of the manhole. The work associated with specific manholes identified for replacement/rehabilitation is summarized in **Table 2**. The locations of the work associated with specific manholes is presented in Figures 3a-f, identifiable by their corresponding manhole ID (e.g., manhole 23, 37, 102A).

³ Inflow/Infiltration (I/I) are terms used to describe the ways that groundwater and stormwater enter into dedicated wastewater or sanitary sewer systems. Inflow refers to stormwater that has direct connection to the wastewater system, and infiltration refers to groundwater that enters the system through cracks and/or leaks in pipes.

TABLE 2
SUMMARY OF FUTURE MANHOLE IMPROVEMENTS

Improvement Activity	Manhole ID
Replace manhole with new concrete manhole	22, 23, 27, 102A
Rehabilitate manhole	9, 12, 16, 17, 18, 32, 34, 36, 39, 45, 46, 50, 103, 112, 114, 115
Line manhole	3, 4, 8, 9, 16, 17, 18, 20, 27, 31, 32, 36, 39, 45, 46, 50, 53, 101, 113, 114, 115
Replace manhole frame and cover	1, 6, 47, 52, 104, 111
Install new riser	8, 27, 30, 44, 48, 101A, 101, 110, 111
Abandon manhole	117

SOURCE: HydroScience, 2017b. Technical Memorandum No. 3 - Collection System Condition Assessment and Recommendations. Prepared for County of San Mateo, September 16, 2017.

Phase 2b - Collection System

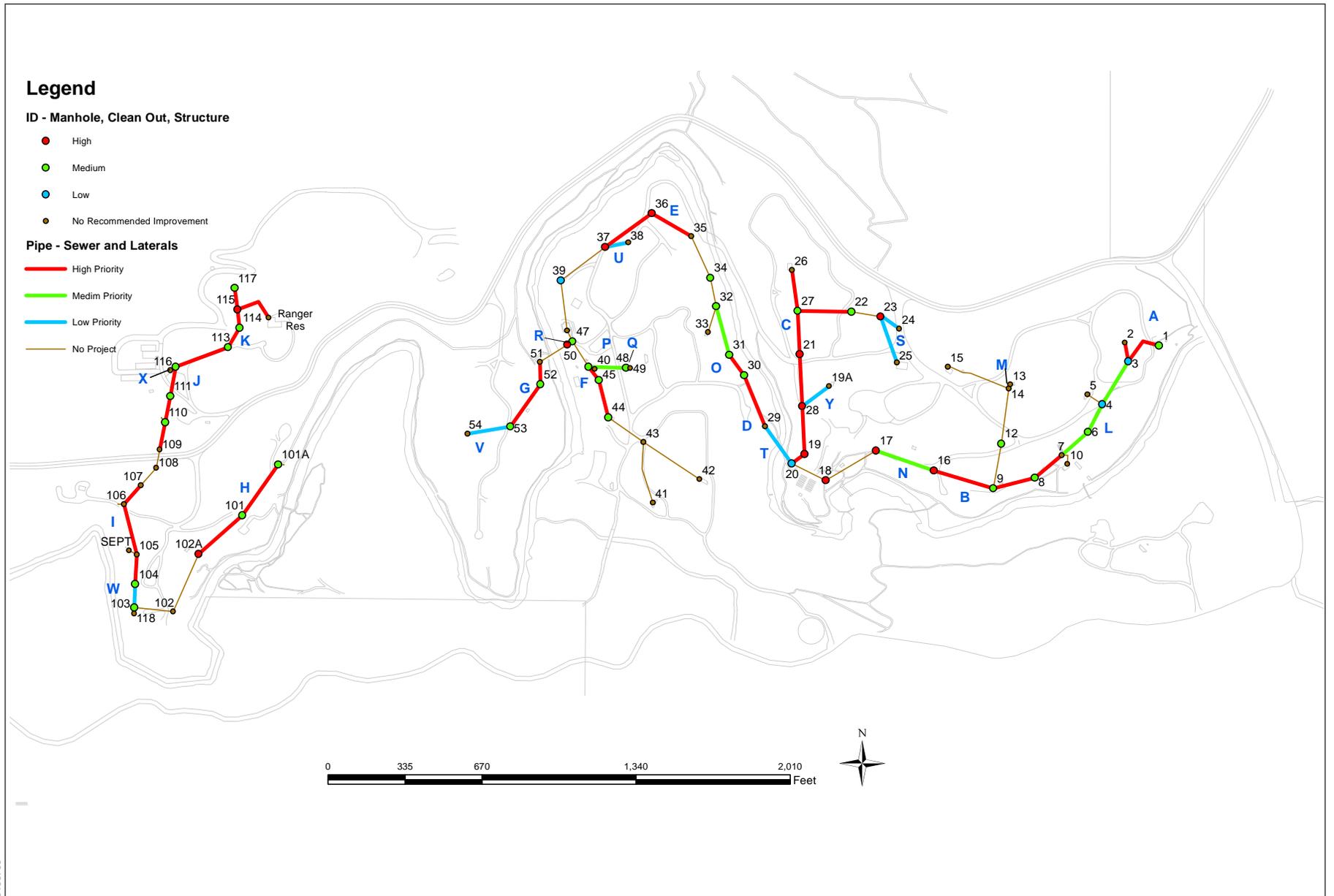
As described above, under the Phase 2b option the County would replace the entire collection system for pipe segments and manholes identified as high and medium priority in the HydroScience Technical Memorandum TM No. 3 – Collection System Condition Assessment and Recommendations (2017) (**Figure 5**). As noted above, this option is in the conceptual stage of development, and based on reasonable assumptions about the overall type of replacements anticipated are described below.

Pipe Replacement Assumptions

Phase 2b would include installation of approximately 4,500 linear feet of new 4- to 8-inch diameter, polyvinyl chloride (PVC) or polyethylene plastic pipe, including that required to replace approximately 3,275 linear feet of existing pipe identified as ‘high priority’ (11 segments A-K) and 1,170 linear feet of existing pipe identified as ‘medium priority’ (7 segments L-R) (HydroScience, 2017b). It is conservatively assumed that all new pipeline would be installed using open cut trenching techniques, similar to that described for the Phase 2a project. The trenches would be 4 to 6 feet in width and up to 16 feet in depth (averaged of 8 feet in depth). Existing pipes would be decommissioned and abandoned in place by filling with concrete. The new pipeline alignments would follow the general alignment of the existing system; where feasible, be located within existing roadways; and, as necessary, include lateral connections back to key facilities along the existing alignment.

Manhole Replacement Assumptions

Under Phase 2b, the County would install approximately 37 new concrete manholes along the new pipeline alignment, including those required to replace the 9 identified as ‘high priority’ and 28 identified as ‘medium priority’ (HydroScience, 2017b). The new manholes would be installed to depths of up to 16 feet, with depth ranges varying based upon those of the corresponding pipeline segments. The existing manholes would be



SOURCE: HydroScience, 2019

Memorial Park Wastewater Treatment Facilities Improvement Project

Figure 5
Phase 2b Collection System Replacement
for High and Medium Priority Only

decommissioned and either removed or backfilled with soil or concrete. Manhole installation would be similar to that described for Phase 2a.

1.4.4 Project Construction

Table 3 summarizes the proposed construction activities, construction footprint, excavation and fill material quantities, and estimated construction vehicle trips required for each major project component. The items shown in Table 3 are conservative estimates of project construction requirements. To the extent practicable, the project would utilize excavated soil on site. However, up to an estimated 1,500 cubic yards of excess soil could require off-site disposal.

The main construction activities would include equipment and materials staging and laydown; site preparation, consisting of existing facilities demolition and removal, excavation, and grading; construction of new treatment and conveyance facilities, pipeline repairs and replacements; as well as landscape improvements, such as fine grading and revegetation. For the collection system phase, the list of equipment and type of construction activity is based on what is needed for the Phase 2a option, which includes repair, rehabilitation and replacement of pipe segments utilizing different construction methods. The Phase 2b option proposes open-cut trench construction only, so only the list of equipment presented in Table 3 specifically for open-cut trench construction would be necessary.

The area of ground disturbance would be approximately 2.4 acres for Phase 1, and 8.6 acres for Phase 2a or 6.6 acres for Phase 2b. Depth of excavation would be expected to range from 3 to 16 feet, with an average depth of 8 feet. Up to 16 truck trips per day would be required for materials deliveries, and off-haul of construction waste and excavated material.

Prior to construction, the work area for the WWTP would be enclosed in approximately 500 linear feet of 6-foot-tall chain-link fencing for security. The fencing would include privacy slats for visual screening. Per the project's technical specifications, which would be required to be implemented as part of the construction contract, the chain-link fencing privacy slats would be of an earthen-tone color, compatible with the existing adjacent maintenance and chemical storage buildings at the site (HydroScience, 2018).

With respect to the pipe segments crossing Pescadero Creek, one would be modified, and the other would continue to be monitored for flow issues. For the pipe segment crossing the creek between Redwood Flat and Sequoia Flat (between manhole 20 and 29), the County would potentially replace the existing pipe and determine if it is feasible to raise the elevation of the pipe support on the upstream end to achieve greater slope on the pipe. For the pipe segment crossing the creek between Huckleberry Flat and Sequoia Flat, the sags were found to be consistent with the shape of the bridge crossing the creek. The County would continue to monitor flows in this segment of pipe and undertake additional flushing, if needed, to clear accumulation of sediments.

**TABLE 3
SUMMARY OF CONSTRUCTION ASSUMPTIONS FOR THE PROPOSED PROJECT**

Project Site/ Component	Construction Tasks	Disturbance Area		Depth of Excavation/ Quantity of Excavation and Fill	Construction Vehicle Trips, Haul/Delivery Truck Trips	Estimated Construction Equipment (Quantity)	Construction Duration
		Temporary Disturbance Area	Permanent Disturbance Area				
WWTP & Lift Station							
WWTP Components <ul style="list-style-type: none"> SBR Clear Well Influent FM Effluent FM Overflow Pipe Concrete Drainage Ditch Access Road (gravel) 	<ul style="list-style-type: none"> Trim/clear vegetation Excavate for new structure Form, place concrete and equipment Backfill and compact Regrade, revegetate, repave, construct drainage feature 	WWTP Components <ul style="list-style-type: none"> 0.57 acre Mobilization / laydown area <ul style="list-style-type: none"> 0.25 acre 	WWTP Components <ul style="list-style-type: none"> 0.04 acre 	New WWTP & Clear well <ul style="list-style-type: none"> Depth: 16 Feet Excavation: 1,633 cubic yards Excess Soil: 851 cubic yards Fill: 782 cubic yards Influent FM <ul style="list-style-type: none"> Depth: 4 Feet Excavation: 47 cubic yards Fill: 33 cubic yards Excess Soil: 13 cubic yards 	<ul style="list-style-type: none"> 6-10 worker vehicles per day 4-8 truck trips per day 	<ul style="list-style-type: none"> Skip Loader (1) Back Hoe/Track Hoe (1) Fork Lifts (1) Scissor Lift (1) Generators (1) Wiring Pulling Machine (1) Dumpers (1) Pumps (2-3) Sweepers/Scrubbers (1) Skid Steer Loader (bobcat) (1) Water Truck (1) 	<ul style="list-style-type: none"> 12 months
Overflow Parking Lot	<ul style="list-style-type: none"> Trim/clear vegetation Grind existing stumps Relocate picnic tables Cover area with aggregate base Add logs along the perimeter to delineate parking 	Parking Lot <ul style="list-style-type: none"> 0.17 acre 	Parking Lot <ul style="list-style-type: none"> 0.10 acre 	Overflow Parking Lot <ul style="list-style-type: none"> Depth: n/a Excavation: n/a Excess Soil: n/a Fill: 30 cubic yards 			
Collection System							
Pipeline Improvement Components	Open-Cut Trench Replacement <ul style="list-style-type: none"> Trim/clear vegetation Excavate trench Remove damaged pipe Install replacement pipe and imported bedding material Backfill and compact trench Regrade/revegetate/repave Spot Repair <ul style="list-style-type: none"> Trim/clear vegetation Excavate trench Remove damaged pipe Install replacement pipe and imported bedding material Backfill and compact trench Regrade/revegetate/repave CIPP Lining <ul style="list-style-type: none"> Clean area around MH entry points Clean pipe sections between MHs Bypass or stop flows during work Apply epoxy resin to liner Install tube liner into host pipe through MH with steam or water pressure Cure time Detail ends, restore laterals 	Open-Cut Trench Replacement, FM <ul style="list-style-type: none"> 4.69 acre Spot Repair <ul style="list-style-type: none"> 1.95 acre CIPP Lining <ul style="list-style-type: none"> n/a Mobilization / laydown area <ul style="list-style-type: none"> 0.26 acre 	Open-Cut Trench Replacement <ul style="list-style-type: none"> n/a Spot Repair <ul style="list-style-type: none"> n/a CIPP Lining <ul style="list-style-type: none"> n/a 	Open-Cut Trench Replacement <ul style="list-style-type: none"> Depth: varies from 1ft – 16ft Excavation: 1,091 cubic yards Fill: 706 cubic yards Excess soil: 385 cubic yards Spot Repair <ul style="list-style-type: none"> Depth: varies from 1ft – 16ft Excavation: 377 cubic yards Fill: 271 cubic yards Excess soil: 106 cubic yards CIPP Lining <ul style="list-style-type: none"> Depth: n/a Excavation: n/a Fill: n/a Excess soil: n/a 	<ul style="list-style-type: none"> 6-10 worker vehicles per day 4-8 truck trips per day 	<ul style="list-style-type: none"> Concrete/Industrial Saw (1) Loaders (1) Dumpers (1) Pumps (2) Sweepers/Scrubbers (1) Skid Steer Loader (bobcat) (1) Water Truck (1) Air Compressors (2) Backhoes (1) Pipe cutting and welding equipment (1) Compaction equipment including a Plate Compactor (1) Generators (1) Pavers and rollers (1) Asphalt/Paver Truck 	<ul style="list-style-type: none"> 12 months

**TABLE 3 (CONTINUED)
SUMMARY OF CONSTRUCTION ASSUMPTIONS FOR THE PROPOSED PROJECT**

Project Site/ Component	Construction Tasks	Disturbance Area		Depth of Excavation/ Quantity of Excavation and Fill	Construction Vehicle Trips, Haul/Delivery Truck Trips	Estimated Construction Equipment (Quantity)	Construction Duration
		Temporary Disturbance Area	Permanent Disturbance Area				
Collection System (cont.)							
Manhole Components	<p>Replace Manhole</p> <ul style="list-style-type: none"> Trim/clear vegetation Excavate, remove MH structure Install replacement MH and imported bedding material Backfill and compact MH Regrade/revegetate/repave <p>Rehabilitate Manhole</p> <ul style="list-style-type: none"> Clean MH of all solids, debris, roots Inject crack repairs, brick repairs, general patching <p>Install Manhole Liner</p> <ul style="list-style-type: none"> Clean MH of all solids, debris, roots Install liner 	<p>Replace Manhole</p> <ul style="list-style-type: none"> 0.42 acre <p>Rehabilitate Manhole</p> <ul style="list-style-type: none"> 1.90 acre <p>Install Manhole Liner</p> <ul style="list-style-type: none"> 0.29 acre <p>Mobilization / laydown areas</p> <ul style="list-style-type: none"> 0.98 acre 	<p>Replace Manhole</p> <ul style="list-style-type: none"> n/a <p>Rehabilitate Manhole</p> <ul style="list-style-type: none"> n/a <p>Install Manhole Liner</p> <ul style="list-style-type: none"> n/a 	<p>Replace Manhole</p> <p>Depth: varies 3-16 Feet Excavation: 120 cubic yards</p> <ul style="list-style-type: none"> Excess Soil: 120 cubic yards Fill: 120 cubic yards (CL II) <p>Rehabilitate Manhole / Replace lid frame</p> <ul style="list-style-type: none"> Depth: 2 Feet Excavation: 16 cubic yards Excess Soil: 16 cubic yards Fill: 16 cubic yards (CL II) <p>Install Manhole Liner</p> <ul style="list-style-type: none"> n/a 			

NOTES:
 SBR = Sequencing Batch Reactor
 FM = Force main
 MH = Manhole
 CIPP = Cured-in-place pipe lining
 CCTV = closed-circuit television

Installation of the new force main connecting the west and east collection systems would involve construction within the Pescadero Creek Road right-of-way. Pipeline construction would require closure of an approximately 1,500-foot segment of Pescadero Creek Road's eastbound traffic lane from the entrance of Homestead Flat to Huckleberry Flat Roads during work hours (see *Schedule*, below). As pipeline construction would be expected to proceed at a rate of approximately 100 feet per day, the lane closure would be expected to occur over an approximately 3-week period.

The County would close reservations for selected campsites during construction to facilitate construction access, protect visitor safety, and minimize visitor disturbance. For example, the campsite located adjacent to the existing WWTP, which would be used as a staging area for Phase 1 work, would be closed for approximately 12 months. In addition, Phase 2 collection system improvements would be coordinated with campsite closures such that no work would occur within 50 feet of an occupied campsite. Given the pace of collection system improvements (approximately 100 feet per day), individual campsite closures would generally be less than a week in duration. Relatedly, in order to complete improvements to the pipe spanning Pescadero Creek, between Redwood Flat and Sequoia Flat, the park would close impacted campsites prior to and during construction. Upon completion of construction and pipe testing, all campsites and restrooms would be reopened.

Construction Workforce, Access, and Equipment

Project construction would be expected to require a crew of up to 10 workers per phase for the duration of active construction. Construction workers would access the project area via Pescadero Creek Road, as well as via roads within the park. Construction workers would park in the overflow parking lot and laydown areas, and would walk or be transported from these parking areas to the work sites. The types of equipment that would be required for construction are presented by project component in Table 3. Equipment staging and materials laydown would occur in the existing parking areas, the existing maintenance yard, within the limits of construction sites, and several other locations identified on Figures 3a-f.

Schedule

Project construction is conservatively estimated to occur over a 12-month period for each phase with a potential 6-month overlap of Phase 1 and Phase 2a or 2b. Improvements to the WWTP would begin in 2019, and be completed over an approximately 12-month period. Improvements to the collection system could begin as early as 2019 and would occur over an approximately 12-month period. Construction activities would take place during daytime hours from 7:00 a.m. and 4:00 p.m., Monday through Friday. The park would remain open during the construction period. The series of construction events required for the proposed improvements is presented in Table 3.

1.4.5 Project Operations and Maintenance

In general, the County would operate the wastewater treatment system at all times – 24 hours a day, 365 days per year, except during necessary maintenance or cleaning. The new WWTP would be operated by existing park staff; no additional staff would be brought on to support project operations. Park staff would conduct routine visits to the WWTP, lift station, and sprayfield sites to monitor operations on a weekly basis, conduct general maintenance activities, and service equipment on a quarterly basis. The frequency of mechanical equipment inspection (e.g., pumps, valves, tanks, instrumentation) would be guided by manufacturer specifications (e.g., daily, weekly, monthly), and lubrication would be conducted on a quarterly basis.

The proposed project would improve treatment system reliability and efficiency. However, the project would not result in an expansion of treatment system capacity, such that it would result in expansion of the park or park visitation. The County has no plans or proposals for changing the number of existing campsites.

WWTP and Lift Station

As noted previously, the proposed WWTP would employ a SBR system to treat the wastewater. The proposed SBR system would involve two parallel treatment trains in which wastewater is added to the reactor in batches, treated to remove undesirable components, then discharged to the disposal system. This system has three main steps – a constant level anaerobic selector chamber (which operates much like a primary clarifier, providing for removal of a portion of the suspended solids and organic matter), a surge/anoxic/mix chamber (which treats the wastewater through mixing in bacteria), followed by one or more chambers for additional settling. The average dry weather flow is 30,000 gpd while the peak design flow is 50,000 gpd.

Power would be provided by the existing power supply grid, which comes from an overhead power line with pole mounted transformers. There is currently enough power at the site to supply the new WWTP and lift station. A 600-ampere (amp) main switchboard distributes this power to several facilities. The effluent pump station and existing WWTP are fed from one 200-amp breaker. The existing power supply system also has an automatic transfer switch and a standby generator to supply power in the event of a power outage. This existing circuit is large enough to power the effluent pumps and the new lift station pumps. The power for the new WWTP would require a separate circuit and a new standby generator (similar in size to the existing generator). The new circuit could either come directly from the main switchboard or a sub-breaker.

Treatment chemicals for the WWTP would be stored onsite and delivered to the site periodically. These chemicals would be managed under existing regulatory requirements.

Collection System

During the start-up phase, the pipelines would be pressure tested to check for leaks. Water used for the pressure test would be disposed via the park exiting disposal system. Once operational, the pipelines would continuously convey wastewater flows from the park facilities (including the 18 bathrooms, showers and visitor center) to the treatment plant. General operations and maintenance activities associated with pipelines would include annual inspections of the pipeline segments; cleaning of pipeline segments; inspection of valve vaults for leakage; testing, exercising and servicing of valves; and repairs of minor leaks in buried pipeline joints or segments.

Disposal System

The disposal system would operate similarly to how it currently operates. Effluent from the WWTP would be pumped from the new clear well to an existing storage tank adjacent to the storage basin. This tank would either pump the treated effluent to the sprayfields or to the storage basin during peak usage. The storage basin would only be used during high usage times of the system. Maintenance of the disposal system would be similar to that presently undertaken by park staff, including the inspection of the sprayfield equipment that is done by park staff on a weekly basis.

Parking Areas

With construction of the new WWTP, the existing overflow parking lot would no longer be able to accommodate visitor parking. Rather, the visitor parking that is presently accommodated in the existing overflow lot would be directed to the new overflow lot, approximately 150 feet to the south. With the new overflow lot, there would be no change in parking capacity.

1.5 Report Organization

This report is organized as follows:

Section 1, Project Description, provides an introduction to the project with project background, needs and objectives, and discusses the proposed facilities.

Section 2, Environmental Checklist Form, presents the County's Initial Study Environmental Checklist, and analyzes environmental impacts resulting from the project and describes the mitigation measures that would be incorporated into the project to avoid or reduce impacts to less-than-significant levels.

Section 3, Draft Mitigation Monitoring Program, lists the mitigation measures that are recommended in Section 2 and describes required monitoring and reporting actions.

1.6 Other Approvals

A summary of permits and approvals that could be required for project implementation is provided below. Further regulatory approvals could be required in the event that local, county, state, or federal agencies determine that specific construction activities require additional permits or approvals.

1.6.1 Federal

There do not appear to be any federal approvals required for project implementation.

1.6.2 State

- Regional Water Quality Control Board: Issuance of coverage under General Waste Discharge Requirements for Discharges to Land by Small Domestic Systems, Water Quality Order 2014-013-DWQ.
- Regional Water Quality Control Board: Issuance of coverage under the National Pollution Discharge Elimination System, Construction General Permit for stormwater discharges associated with construction activities that disturb more than one acre of land. (Order No. R3-2017-0042, NPDES No. CAG993001).

1.6.3 Local

- County of San Mateo Board of Supervisors: adoption of the IS/MND and mitigation monitoring and reporting plan.
- County of San Mateo Building and Planning Department Tree Removal Permit.

1.7 References

County of San Mateo, 2017a. *Open San Mateo County Maps*. Retrieved November 15, 2017. <https://data.smcgov.org/Government/San-Mateo-County-Maps-and-Apps-portal/3bkn-yaia>.

County of San Mateo, 2017b. *San Mateo County Zoning*. Retrieved November 14, 2017. http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/smc_zoning.pdf.

HydroScience, 2017a. *Technical Memorandum No. 2 – New WWTP Alternatives*. Prepared for County of San Mateo, August 2017.

HydroScience, 2017b. *Technical Memorandum No. 3 - Collection System Condition Assessment and Recommendations*. Prepared for County of San Mateo, September 16, 2017.

HydroScience, 2018. *Technical Specifications, Memorial Park WWTP, 90% Design*. March 2018.

SECTION 2

Environmental Checklist

1. **Project Title:**

Memorial Park Wastewater Treatment Facilities Improvement Project

2. **Lead Agency Name and Address:**

County of San Mateo Department of Public Works
555 County Center, 5th Floor
Redwood City, CA 94063-1665

3. **Contact Person and Phone Number:**

Mr. Gilles Tourel
Principal Engineer
Phone: (650) 363-4100
Email: DPW_Memorialparkproject@smcgov.org

4. **Project Location:**

The project is proposed primarily within Memorial Park in southern San Mateo County. Memorial Park is located approximately 6.25 miles east of the Pacific Ocean and approximately 16.5 miles southwest of the San Francisco Bay. The nearest community is Loma Mar, just outside the park's western boundary. The park is bisected by Pescadero Creek Road, and generally bounded by Wurr Road to the south and east and private property to the north and west.

5. **Assessor's Parcel No.:**

082080160, 084080030, 084070120

6. **Project Sponsor's Name and Address:**

County of San Mateo Department of Public Works

555 County Center, 5th Floor

Redwood City, CA 94063-1665

7. **General Plan Designation:**

The County's Land Use Map shows the park as designated Rural and Public Recreation.

8. **Zoning:**

The park's zoning is classified as Resource Management and Timberland Preserve.

9. Description of the Project:

The proposed project includes improvements to the existing wastewater treatment system, including replacement of the existing wastewater treatment plant, repairs and replacement of pipes and manholes, and other necessary upgrades to the treatment system. See Section 1, Project Description, for more details.

10. Surrounding Land Uses and Setting:

Adjacent lands are designated for low density residential, open space, timber production, and private recreation uses.

11. Other Public Agencies Whose Approval is Required:

Regional Water Quality Control Board: coverage under the National Pollution Discharge Elimination System, Construction General Permit for stormwater discharges associated with construction activities that disturb more than one acre of land; Issuance of coverage under General Waste Discharge Requirements for Discharges to Land by Small Domestic Systems, Water Quality Order 2014-013-DWQ; County of San Mateo Building and Planning Department: Tree Removal Permit.

Environmental Factors Potentially Affected

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

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

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less Than Significant with Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in 5. below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “Less Than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources. A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

Introduction to Initial Study

The County proposes the Memorial Park Wastewater Treatment Facilities Improvement Project. Phase 1 would replace the existing WWTP facility and septic system with a new WWTP that is presently used as an overflow parking lot. The existing WWTP would be repurposed as a lift station. A new overflow parking lot would be constructed. Phase 2 would include collection system repairs and replacements. This document analyzes two options for the collection system repair and replacements. Phase 2a improvements would repair or replace up to 25 identified pipe sections and up to 44 manholes throughout the system. This option is analyzed at a project-level assessment of effects. Phase 2b would replace the 18 pipe sections and 37 manholes identified as 'high' and 'medium' priority in the HydroScience Technical Memorandum TM No. 3 – Collection System Condition Assessment and Recommendations (2017b).

Because design details for Phase 2b are uncertain at this time, it is analyzed at a program-level assessment of effects based on reasonable assumptions about the overall type and level of activities envisioned to occur under this option. Mitigation measures that are required for Phase 2a are also applicable to Phase 2b. In the impact analysis section of this document unless specified otherwise impact conclusions for the "project" would apply to Phase 1, Phase 2a and Phase 2b. Where impacts are potentially different between Phase 2a and 2b, this will be specified.

2.1 AESTHETICS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Have a significant adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads?			X	
<p>Discussion: The discussion below applies to criteria a, b, and c. The study area for the aesthetic resources impact analysis includes the site of the existing WWTP; the site of the proposed WWTP and adjacent staging and laydown area; the sites of collection system improvements; and public areas along Pescadero Creek Road and within Memorial Park from which proposed project activities would be visible.</p> <p>The project site is partially within a County Scenic Corridor that extends along and adjacent to Pescadero Creek Road (San Mateo County, 1986). Pursuant to Section 6325.1 of the County Zoning Regulations, public views within and from County Scenic Corridors shall be protected and enhanced, and development shall not be allowed to significantly obscure, detract from, or negatively affect the quality of these views (San Mateo County, 2018). The site is not within view of any designated state scenic highways (Caltrans, 2019). Photographs depicting representative views of park vegetation, campsites, structures, and the existing parking area where the new WWTP would be constructed and replacement parking area would be located are presented in Figures 6a through 6c. As the photographs indicate, the project site is generally characterized by mature redwood forest with a dense canopy and somewhat open understory. The forest floor within the study area is moderately disturbed and generally devoid of low-lying vegetation, likely due to extensive camping and visitor traffic throughout. The study area remains mostly undeveloped; however, two restrooms and several existing wastewater treatment system structures exist near the proposed WWTP site.</p> <p>As Figures 6a through 6c indicate, existing structures in the vicinity of the proposed WWTP site are generally inconspicuous, largely due to their relatively small height and mass relative to the surrounding forest; their wood, stone, and otherwise earthen-toned finishes; and screening by intervening vegetation and topography. For example, while the canopy roof of the existing WWTP rises to a height of approximately 20 feet above ground surface, the facility is located on a bench that has been cut approximately 15 feet into the slope between the campground and Pescadero Creek. As shown in Figure 6a, Photo 2, an approximately 6-foot-tall wooden fence has been constructed at the top of the cut slope surrounding the WWTP site. Thus, while the nearest campground is about 30 feet to the east, views of the facility from the campground are largely screened because the facility is surrounded by a wooden fence (at campground elevation), and located lower in elevation (downslope).</p> <p>The study area does not offer notable views to and is not the primary focus of any designated scenic vista. Distant views to and within the park are generally obscured by topography and forest vegetation. However, the area's remoteness, prominent trees and gnarled stumps, open understory, and rustic campground architecture; along with Pescadero Creek's densely vegetated riparian corridor, steeply-sloping banks and</p>				



Photo 1 - View Southwest from Pescadero Creek Road



Photo 2 - View North towards Existing WWTP

D:\60790

SOURCE: ESA, 2018

Memorial Park Wastewater Treatment Facilities Improvement Project

Figure 6a
Photos of Memorial Park



Photo 3 - View Southwest Towards Overflow Parking Lot (Proposed New WWTF Site)



Photo 4 - View West towards Pedestrian Bridge

D:\60790

SOURCE: ESA, 2018

Memorial Park Wastewater Treatment Facilities Improvement Project

Figure 6b
Photos of Memorial Park (cont.)



Photo 5 - View South Towards Existing Lift Station



Photo 6 - View North Towards Sequoia Flat Campsite

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SOURCE: ESA, 2018

Memorial Park Wastewater Treatment Facilities Improvement Project

Figure 6c
Photos of Memorial Park (cont.)

broad, cobbly channel, are scenic resources that beneficially contribute to the study area's visual quality. These are defining features of the study area's visual character.

Construction Impacts

Project activities would include equipment and materials staging and laydown; site preparation, consisting of existing facilities renovation, excavation, and grading; construction of new facilities; pipeline repairs and open-cut replacement; as well as landscape improvements, such as fine grading and revegetation. These activities could be visible to motorists traveling along Pescadero Creek Road and park visitors, but would not be visible from residential areas or water bodies. The project would not involve substantial modifications of topography or ground surface relief features, or development on a ridgeline.

Due to intervening vegetation and topography, most construction activities would not be visible to motorists. However, during pipeline installation, motorists would encounter construction equipment, materials, exposed earth and workers along an approximately 1,500-foot segment of Pescadero Creek Road. These activities would not have a substantial adverse effect on motorists' views of scenic landscape features; views of the work are would be fleeting and indirect, as motorists would be in motion and focused on the road ahead. Moreover, the work areas and construction materials would be subordinate in scale and extent to the defining characteristic of the scenic landscape – the forest.

During WWTP and collection system improvements, construction activities would be visible to park users. As noted previously, views to and within the park are largely obscured by trees and topography. As a result, views of construction activities would generally be limited to visitors in the immediate vicinity of the work. In addition, because collection system improvements would proceed at a rate of approximately 100 feet per day, impacts on views within a given location would be limited to a few days to a few weeks.

The site of the new overflow parking area is located in a clearing, adjacent to the camp road and one of the Sequoia Flat Campground restrooms, approximately 150 feet south of the existing overflow parking area proposed for WWTP construction. As the proposed replacement parking area is mostly flat and devoid of vegetation, only minimal clearing, grubbing, and earthwork would be required. The site is surrounded by mature vegetation, which would screen views from adjacent campsites. Passersby along camp road would have direct views of the work area. Preparation of the new parking area would occur over a period of approximately 3 to 5 days.

The WWTP construction would occur in a single location for up to 12 months. The site proposed for the new WWTP presently serves as an overflow parking lot, located approximately 35 feet west of the Sequoia Flat Campground access road, 70 feet north of the existing Sequoia Flat Campground shower building, and 70 feet south of the nearest campsite. The nearest campsite would be closed during construction, but the road and shower building would remain open. As noted previously, the work would occur proximate to other existing park developments (e.g., existing WWTP, lift station, generator, restrooms, shower building), in an area that does not offer any scenic vistas. During construction, park visitors traveling along the Sequoia Flat Campground road, or otherwise strolling through the area would encounter the construction site and equipment. As discussed in Section 1.4.4, Project Construction, the WWTP staging and work areas would be enclosed in 6-foot-tall chain link fence with privacy slats. The

privacy slats would be of an earthen-tone color similar to that of existing park structures, and would obscure views of the active work area. While this visual change would be noticeable to park visitors in the area, the aesthetic effect would not be substantial because: the area is presently used as a parking lot; views of the work area would be largely screened by the perimeter fencing, intervening topography and vegetation; it would be limited in duration, as most prospective viewers would be walking or driving along the camp road; it would be subordinate to the surrounding and dominant scenic landscape feature – the forest; and it would be temporary, limited to the construction period.

For the reasons above, project construction would not have a substantial adverse effect on a scenic vista, scenic resources, or the visual character of the park or its surroundings as viewed from existing residential areas, public lands, water bodies, or roads. Therefore, the impact would be less than significant.

Operation Impacts

Upon completion of construction, disturbed areas beyond the project footprint would be returned to their approximate pre-construction condition. Accordingly, the collection system improvements, which would be at or below ground surface, would not impact aesthetic resources.

The new overflow parking area would be visible from the camp road and shower building. The lot would appear similar in size and surface to the existing overflow parking area proposed for WWTP construction. Views of the site from beyond the camp road and shower building would be limited, due to the mature vegetation that bounds the site.

The existing WWTP would be repurposed as a lift station, which would not change the aesthetics of the area. The new WWTP would be built in an open area currently used as an overflow parking lot. Four trees would be removed at the new WWTP site. As the photographs in Figures 6a through 6c demonstrate, the defining characteristic of the Memorial Park scenic landscape, including that surrounding the proposed WWTP site (Figure 6b, Photo 3), is the abundance of trees. As a result, the removal of four trees among the thousands that make up this scenic resource would not substantially change the scenic quality of the park's forested landscape. Moreover, while not required to reduce this impact to a less-than-significant level, in accordance with San Mateo County's Significant Tree Ordinance, the Department of Public Works would obtain a tree permit from the County Building and Planning Department prior to construction. Compliance with the ordinance, which requires tree replacement, would further reduce potential effects on the site's scenic resources.

As described in Section 1.4.3, Proposed Improvements, the new treatment system's above-ground components would primarily consist of the new WWTP and enclosure, along with the electrical control structure and generator enclosure. At 64 feet long, 35.5 feet wide, and 20.5 feet tall, the WWTP enclosure would be the most visually prominent of these developments. As noted for construction, park visitors traveling along the Sequoia Flat Campground road, or otherwise strolling through the area would encounter the new WWTP and appurtenant structures. In addition, upon completion of construction, the County would reopen the nearby campsite to the north. The campsite area is partially screened from the proposed WWTP site by several mature redwood trees and shrubs. However, campsite visitors may have partial views of the facility from the campsite, and would have direct views when traveling to and from the campsite.

The addition of the new WWTP would increase the size and intensity of development in the area. As noted previously, the site is situated among various other developments. For example, as shown in Figure 4, existing structures in the immediate vicinity include: the shower building, the electrical generator, the electrical control building, the effluent building, and the existing WWTP. The proposed WWTP enclosure would appear as the most prominent of these structures. Similar to that of the existing WWTP canopy roof, the WWTP enclosure’s polycarbonate or fiberglass wall paneling would appear different from the stone and wood finishes of most structures in the park. At the same time, the facility would be subordinate to the predominant landscape feature of the area, the redwoods, which rise to heights of well over 50 feet in the immediate area. As also noted in Section 1.4.3, the chain link fencing privacy slats, canopy, wall paneling, CMU structure, and generator enclosure would be of an earthen-tone color, comparable to the existing adjacent wastewater treatment system buildings at the site (HydroScience, 2019). These surface treatments would reduce visual contrast between the proposed facilities and the more natural aesthetic of its surroundings.

The addition of the new WWTP would be noticeable to park visitors in the area. However, the aesthetic effect would not be substantial because of the nature of the change (i.e., from parking lot to structure), the proximity to similar existing structures, the limited exposure of prospective viewers (e.g., partial views from adjacent campsite and passers-by along the camp road), and mass relative to the dominant scenic landscape feature – the forest.

For the reasons above, project operations would not have a substantial adverse effect on a scenic vista, scenic resources, or the visual character of the park or its surroundings as viewed from existing residential areas, public lands, water bodies, or roads. Therefore, the impact would be less than significant.

b. Significantly damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
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Discussion: See 2.1a discussion, above.

c. Significantly degrade the existing visual character or quality of the site and its surroundings, including significant change in topography or ground surface relief features, and/or development on a ridgeline?			X	
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Discussion: See 2.1a discussion, above.

d. Create a new source of significant light or glare that would adversely affect day or nighttime views in the area?			X	
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<p>Discussion: The proposed project would not include nighttime construction, and there would be no lighting required during the construction phase. In addition, the proposed project would not require the installation of nighttime lighting. With the exception of the proposed wall paneling, the proposed building materials would not be reflective. As the final wall paneling product has not been selected, it remains unknown whether its finish would be reflective, such that it would present a new source of glare. The paneling would be vertical, located beneath the redwood forest canopy, and surrounded by mature trees that keep the site shaded or otherwise screened from direct sunlight for most of the day. However unlikely given the density of the forest canopy, any resulting glare would likely be temporary in duration, as the angle of sunlight would be constantly shifting throughout the day. Since views of the site from most park areas beyond the immediate project area are obscured by intervening topography and vegetation, any affected views would be limited to the adjacent campsite and passersby traveling along camp road. For these reasons, the proposed project would have a less-than-significant impact relative to light or glare.</p>					
e.	Be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?			X	
<p>Discussion: See 2.1a discussion, above.</p>					
f.	If within a Design Review District, conflict with applicable General Plan or Zoning Ordinance provisions?				X
<p>Discussion: The proposed project would not involve development of structures within a Design Review District. Therefore, the project would result in no impact relative to conflicts with applicable design review district regulations.</p>					
g.	Visually intrude into an area having natural scenic qualities?			X	
<p>Discussion: See 2.1a discussion, above.</p>					

References

California Department of Transportation (Caltrans), 2019. California Scenic Highway Mapping System, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, website accessed February, 25, 2019.

San Mateo County, 1986. San Mateo County General Plan – Scenic Corridors.

San Mateo County, 2018. San Mateo County Zoning Regulations. January 2018. Available online at: https://planning.smcgov.org/sites/planning.smcgov.org/files/SMC_Zoning_Regulations.pdf. Accessed on July 2, 2018.

<p>2.2 AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a.	For lands outside the Coastal Zone, 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?			X
<p>Discussion: The following discussion is applicable to criteria a, b, and c. The California Department of Conservation’s Important Farmland Maps indicate that the project area is designated as Other Land (CDC, 2016). None of the project area includes land covered by a Williamson Act contract (CDC, 2016). Existing park roads accessed from Pescadero Creek Road would be utilized to access the work sites. The western section of Pescadero Creek Road is above and adjacent to Prime Agricultural Land. The project would not involve conversion of any farmland, or any other type of land conversion, because all work would take place within park boundaries and the existing Pescadero Creek Road right-of-way. For these reasons, the project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, nor would it conflict with existing zoning for agricultural use, existing Open Space Easement, or a Williamson Act contract and there would be no impact.</p>				
b.	Conflict with existing zoning for agricultural use, an existing Open Space Easement, or a Williamson Act contract?			X
<p>Discussion: See 2.2a discussion, above.</p>				

<p>c. 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?</p>				<p>X</p>
<p>Discussion: See 2.2a discussion, above.</p>				
<p>d. For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?</p>				<p>X</p>
<p>Discussion: The project is not within the Coastal Zone; question 2.2d would not apply to the project (California Coastal Commission, 2018).</p>				
<p>e. Result in damage to soil capability or loss of agricultural land?</p>				<p>X</p>
<p>Discussion: San Mateo County maps prime soils throughout the county. There are no prime soils located within the project area (San Mateo County, 2009). Moreover, the project would not occur in a portion of the park that is zoned for agricultural purposes (e.g., timber harvesting). As described for question 2.2a, the project would utilize Pescadero Creek Road and existing park access roads to access the project sites during the construction phase. Upon completion of construction, areas beyond the footprint of the proposed improvements would be restored to their approximate pre-construction condition. The temporary use of the roads would not preclude future use of soils or adjacent agricultural lands, and would not damage the soil capability in the project site. For these reasons and those identified in response to question 2.2a and 2.2c, above, the project would have a no impact related to damage to soil capability or loss of agricultural lands.</p>				
<p>f. 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))? Note to reader: This question seeks to address the economic</p>				<p>X</p>

impact of converting forest land to a non-timber harvesting use.				
<p>Discussion: The project would involve replacement of the existing WWTP. The project would not change the types of land uses at the site or otherwise conflict with the project site's resource management zoning classification. Therefore, the project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned for timberland production and there would be no impact.</p>				

References

- California Department of Conservation (CDC), Division of Land Resource Protection, Farmland Mapping and Monitoring Program. *San Mateo County Important Farmland*. 2016. Available at: http://maps.conservation.ca.gov/dlrp/metadata/importantfarmland/sanmateo_meta.htm. Accessed on May 29, 2018.
- California Department of Fish and Wildlife (CDFW). Forests and Timberlands – Region 3. 2017. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=111191&inline>. Accessed on: May 29, 2018.
- California Coastal Commission, 2018. California Coastal Zone Map. Hosted on the Data Basin by the Conservation Biology Institute. Available at: <https://databasin.org/maps/new#datasets=ece6ae2d026b43959cfa11cceb2c07ac>. Accessed on June 11, 2018.
- San Mateo County, 2009. County of San Mateo Prime Soils Map. Available online at: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/SMC_Prime_Soils.pdf. Accessed on July 24, 2018.

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

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Conflict with or obstruct implementation of the applicable air quality plan?		X		

Discussion: The proposed project site is within the San Francisco Bay Area Air Basin (Bay Area), which is regulated by the Bay Area Air Quality Management District (BAAQMD) and currently designated as a nonattainment area for state and national ozone standards, state particulate matter (PM₁₀ and PM_{2.5}) standards, and the federal PM_{2.5} (24-hour) standard (BAAQMD, 2017a). The most recently adopted air quality plan to address nonattainment issues for the Bay Area is the 2017 Bay Area Clean Air Plan (2017 CAP, BAAQMD 2017b). The 2017 CAP provides a regional strategy to protect public health and protect the climate by continuing progress toward attaining all state and federal air quality standards; eliminating health risk disparities from exposure to air pollution among Bay Area communities; transitioning the region to a post-carbon economy needed to achieve greenhouse gas (GHG) reduction targets for 2030 and 2050; and providing a regional climate protection strategy to achieve those GHG reduction targets. The 2017 CAP includes 85 control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other GHGs that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion (BAAQMD, 2017b).

The BAAQMD Air Quality CEQA Guidelines recommend that a project’s consistency with the current CAP be evaluated using the following three criteria:

- a) The project supports the goals of the Air Quality Plan;
- b) The project includes applicable control measures from the CAP; and
- c) The project does not disrupt or hinder implementation of any control measures from the CAP.

If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then the BAAQMD considers it to be consistent with air quality plans prepared for the Bay Area (BAAQMD, 2017b).

The primary goals of the 2017 CAP are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate. The BAAQMD-recommended guidance for determining if a project supports the goals in the current CAP is to compare project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project would be consistent with the goals of the 2017 CAP. As indicated in the following discussion with regard to air quality impact questions 2.3b and 2.3c, the proposed project would result in a potentially significant impact related to

construction emissions of fugitive dust that could be reduced to a less-than-significant level with implementation of Mitigation Measure AIR-1. With the implementation of Mitigation Measure AIR-1, the proposed project would support the primary goals of the 2017 CAP.

As noted above, the 2017 CAP contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible air quality plan control measures are considered consistent with the CAP. Two of the 2017 CAP stationary source control measures are applicable to operation of water pollution control plants: WR1 (Limit greenhouse gases (GHGs) from POTWs [Publicly-Owned Treatment Works]) and WR2 (Support Water Conservation). Since the proposed project would not increase demand for water treatment or result in a substantial increase in GHG emissions (see Section 2.7, Climate Change), the proposed project would not hinder the implementation of the 2017 CAP measures.

In summary, for the reasons described above, and as demonstrated through the responses to questions 2.3b and 2.3c, the proposed project would be consistent with all three criteria listed above to evaluate consistency with the 2017 CAP and, therefore, would not conflict with or obstruct implementation of the 2017 CAP after mitigation. The impact would be less than significant with mitigation.

b. Violate any air quality standard or contribute significantly to an existing or projected air quality violation?		X		
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Discussion: Construction activities associated with the proposed project would involve use of off-road equipment that would emit exhaust containing ozone precursors (reactive organic gases or ROG, and nitrogen oxides, or NOx), as well as particulate matter (PM₁₀ and PM_{2.5}). On-site and off-site vehicle activity associated with material transport and construction worker commutes would also generate emissions. Emission levels for these activities would vary depending on the number and types of equipment used, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NOx from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during proposed project construction.

Air pollutant emissions of ROG, NO_x, PM₁₀, and PM_{2.5} that would be generated by off-road construction equipment (e.g., excavators, graders, loaders) were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. The project construction is estimated to occur over a 12-month period for each phase with a potential overlap of 6 months. Proposed project construction emissions were modeled under the conservative assumption that construction could occur over an 18-month period although it could be spread out over a longer duration and hence result in lower average daily emissions. This analysis conservatively assumes that construction of Phases 1 and 2a or 2b could both begin in summer 2019, with a separate crew dedicated to each phase, each working for a 12-month period. If Phase 2a or 2b were to start later or occur over a longer period of time, the actual emissions would be less than described herein. Because both Phase 2 options use the open trench method of construction and therefore a similar set of equipment, the difference in impacts between these two options is negligible. The analysis also assumes that each proposed project construction phase would result in 20 one-way worker trips per day

and 16 one-way truck trips per day. Average daily construction emissions were estimated by dividing the total construction emissions by the number of workdays (i.e., 130 working days in 2019 and 260 working days in 2020). All assumptions and calculations used to estimate the proposed project-related construction emissions are provided in Appendix A. Estimated average daily emissions are shown in **Table 4** and are compared to the BAAQMD thresholds.

TABLE 4
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS (POUNDS/DAY)

	ROG	NO _x	Exhaust PM ₁₀ *	Exhaust PM _{2.5} *
Average Daily Emissions	3.3	31.0	1.4	1.3
<i>BAAQMD Construction Threshold</i>	54	54	82	54
Significant Impact?	No	No	No	No

* BAAQMD's construction-related significance thresholds for PM₁₀ and PM_{2.5} apply to exhaust emissions only and not to fugitive dust.

As indicated in Table 4, the average daily construction exhaust emissions would not exceed the BAAQMD's significance thresholds. In addition to exhaust emissions, emissions of fugitive dust would also be generated by construction activities associated with grading and earth disturbance and/or travel on paved and unpaved roads. Such emissions could result in a potential significant impact. With regard to fugitive dust emissions, the BAAQMD Guidelines focus on implementation of recommended dust control measures rather than a quantitative comparison of estimated emissions to a significance threshold. For all projects, the BAAQMD recommends the implementation of its Basic Control Mitigation Measures (BAAQMD, 2017c). The implementation of the BAAQMD's Basic Construction Mitigation Measures, which are listed in **Mitigation Measure AIR-1** would reduce potential impacts associated with fugitive dust emissions to a less-than-significant level.

The above analysis of air quality impacts considers the potential impacts related to emissions of nonattainment pollutants and their precursors. Although ozone, as a secondary pollutant, would not be directly emitted by construction equipment for the proposed project, the ozone precursors ROG and NO_x would be emitted and are therefore, along with particulate matter, the focus of the impact assessment. Given that ozone formation occurs through a complex photo-chemical reaction between NO_x and ROG in the atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for ozone are established as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., NO_x and ROG). It is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of the resulting secondary pollutants, which are ozone and particulate matter in this case. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of atmospheric modeling in use at this time, it is not scientifically defensible to convert specific emissions levels of NO_x or ROG emitted in a particular area to a particular concentration of ozone in that area. Meteorology, the

presence of sunlight, seasonal impacts, and other complex photochemical factors all combine to determine the ultimate concentration and occurrence of ozone.^{4,5}

As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch Case*),^{6,7} the CEQA criteria pollutants significance thresholds from the air districts were set at emission levels tied to the region's attainment status. These emission levels are indexed to stationary pollution sources permitted by the air district to compel the operator to offset their emissions and they are not intended to be correlated to localized human health impacts. Nonetheless, since project construction would be substantially below the numeric indicators for ROG and NO_x emissions, it is extremely unlikely that project construction NO_x emissions could result in an increase in ground-level ozone concentrations in proximity to the construction area and impacts would be less than significant.

Mitigation Measure AIR-1: During construction, the County shall require its contractor(s) to implement all the BAAQMD's Basic Construction Mitigation Measures, listed below:

1. All exposed surfaces (e.g., unpaved parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day when the construction site is active and when no precipitation is evident.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. 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.
5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
6. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked

⁴ SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

⁵ SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

⁶ SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

⁷ SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

by a certified mechanic and determined to be running in proper condition prior to operation.

7. Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

With regard to operational air emissions, the proposed project would result in no new sources of air pollutants. Therefore, there would be no increase in emissions of criteria air pollutants or precursors as a result of the project compared to the baseline conditions. There would be no long-term operational air quality impact.

c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
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Discussion: According to the BAAQMD, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. In addition, according to the BAAQMD *CEQA Air Quality Guidelines*, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD, 2017b). Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in less-than-significant air quality impacts. As discussed in response to question 2.3b, with implementation of **Mitigation Measure AIR-1** the proposed project would result in less-than-significant construction emissions-related impacts, and would not result in long-term adverse air quality impacts.

d. Expose sensitive receptors to significant pollutant concentrations, as defined by the BAAQMD?			X	
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Discussion: The BAAQMD recommends that lead agencies assess the incremental toxic air contaminant (TAC) exposure risk to all sensitive receptors within a 1,000-foot radius of a project's fence line (BAAQMD, 2017b). The nearest sensitive land uses to the proposed project area consist of a single-family residence located approximately 130 feet north of the proposed project work limits shown in Figure 3. The adjacent campsites could also be considered sensitive receptors; however, given that individual campers typically stay for a short duration (at most for a week or two), the exposure

duration would be minimal to such a degree as to dispel concerns with regard to meaningful exposure risk.

Construction of the proposed project would result in short-term diesel exhaust emissions (DPM), which are TACs, from on-site heavy-duty equipment. Proposed project construction would generate DPM emissions from the use of off-road diesel equipment required for construction activities. Exposure of sensitive receptors—such as nearby residences—is the primary factor used to determine health risk. Exposure is a function of the concentration of a substance or substances in the environment and the extent of exposure of that person to the substance. A longer exposure period would result in a higher exposure level. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time.

The dose to which receptors are exposed is the primary factor affecting health risk from exposure to TACs. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments should be based on 9, 30, and/or 70-year exposure periods to determine the health risk to sensitive receptors from cancer or chronic non-cancer health effects of TAC emissions (such as DPM) (OEHHA, 2015). However, OEHHA also states that such health risk assessments should be limited to the duration of the emission-producing activities associated with the project, unless the activities occur for less than six months (OEHHA, 2015). Construction of the proposed project would occur over a 12-month period for each phase within an area of 9.4 acres. WWTP improvements would occur over a period of 12 months and be approximately 1,100 feet from the nearest sensitive receptor. Pipeline and manhole improvements would occur at various locations throughout the park, progressing at a rate of roughly 100 feet per day. While some pipeline segments proposed for improvement are located within 1,000 feet of the nearest sensitive receptor, given the estimated pace of construction, work on a given pipeline segment would not occur for more than two months within 1,000 feet from any one sensitive receptor.

Operation of the proposed project would not result in any sources of TAC emissions. As a result, the TAC exposure impact on sensitive receptors would be less than significant.

e. Create objectionable odors affecting a significant number of people?			X	
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Discussion: The BAAQMD has identified typical sources of odor in the BAAQMD 2017 CEQA Air Quality Guidelines, a few examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations (BAAQMD, 2017c).

During construction, diesel powered equipment may create localized odors. These odors would be temporary and given the distance between construction areas and nearby residences or other long-term sensitive uses (130 feet or more) would be unlikely to be noticeable for extended periods of time outside of the proposed project boundaries. Nearby park users and residents may experience an occasional whiff of diesel exhaust during construction. However, because the sources of exhaust would be few in number, not concentrated in any one location for long periods of time, and would not affect substantial numbers of people, impacts associated with objectionable

<p>odors affecting substantial numbers of people during proposed project construction would be less than significant.</p> <p>According to the BAAQMD CEQA Air Quality Guidelines, sensitive land uses within 2-miles of a WWTP could be exposed to objectionable odors (BAAQMD, 2017c). There are sensitive land uses within 2-miles of the WWTP, which consist of single-family residences. These single-family residences are located within the odor screening distance established by the BAAQMD for WWTPs and could already be exposed to objectionable odors from the existing facility. The main odor sources at a WWTP identified by the BAAQMD are the headworks area where the wastewater enters the facility and large solids and grit are removed, the primary clarifiers where suspended solids are removed, denitrification that would occur at the secondary clarifiers, and the aeration basins when poor mixing characteristics lead to inadequate dissolved oxygen levels (BAAQMD, 2017c). Since the project involves replacement of an existing, and aging, WWTP, the proposed improvements would not result in additional new odor sources identified by the BAAQMD and may result in reduced odors with more up to date technology. Therefore, odor impacts associated with proposed improvements at the WWTP would be less than significant.</p>				
<p>f. Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?</p>			<p>X</p>	
<p>Discussion: As discussed in response to question 2.3b, above, the proposed project would not exceed the BAAQMD thresholds and would not result in long-term adverse air quality impacts. Also, as discussed for questions 2.3d and 2.3e, above, the proposed project would not expose sensitive receptors to substantial pollutant concentrations or objectionable odors that would affect significant numbers of people. Thus, the project would not generate pollutants that will violate existing standards of air quality on-site or in the surrounding area. This impact is considered less than significant.</p>				

References

BAAQMD, 2017a. Air Quality Standards and Attainment Status, available at <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>, last updated January 1, 2017.

BAAQMD, 2017b. Spare the Air: Cool the Climate – Final 2017 Clean Air Plan, adopted April 19.

BAAQMD, 2017c. Bay Area Air Quality Management District (BAAQMD), California Environmental Quality Act – Air Quality Guidelines, May 2017.

Office of Environmental Health Hazard assessment (OEHHA), 2015. Air Toxics Hotspot Program, Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments, February 2015.

2.4 BIOLOGICAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Have a significant adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
<p>A botanical and wildlife reconnaissance survey of the project site was conducted by an ESA biologist on October 26, 2017 to identify sensitive or regulated biological resources of the project site and surrounding vicinity, including special-status species⁸ and their habitats; riparian habitats or other sensitive natural communities⁹; jurisdictional wetlands and waters; wildlife corridors and nursery sites; and heritage and landmark trees (ESA, 2017). The site visit and additional database research and analysis covered all parts of the project area including where Phase 2a and Phase 2b would be implemented. The findings of the site visit are discussed below as appropriate, in addition to information on natural communities, plant and animal species, and sensitive biological resources obtained from the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB; CDFW, 2018a), the California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2018), the U.S. Fish and Wildlife Service (USFWS; USFWS, 2018), standard biological literature, birding community observations (eBird, 2018), and communication with County Parks natural resources staff (H. Ormshaw, personal communication, November 2018). A detailed biological resources assessment technical report was also prepared for the project (ESA, 2017).</p>				

⁸ Special-status species are plants and animals listed or proposed for listing as threatened or endangered under the Federal or California Endangered Species Act (FESA or CESA), in the Federal Register; species formerly designated by the USFWS as species of concern or species designated by the CDFW as species of special concern; species designated as "fully protected" by the state; raptors (birds of prey), which are specifically protected by California Fish and Game Code Section 3503.5, thus prohibiting the take, possession, or killing of raptors and owls, their nests, and their eggs; plants listed as rare or endangered under the California Native Plant Protection Act; species that meet the definitions of rare and endangered under CEQA; and plants considered by the CNPS to be "rare, threatened or endangered in California" under the California Rare Plant Ranking system (CRPR) which include Rank 1A, 1B, 2A, and 2B as well as Rank 3 and 4 plant species.

⁹ The CDFW's Natural Heritage Division identifies special-status natural communities, which are those that are naturally rare and those whose extent has been greatly diminished through changes in land use. The CNDDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species: Information is maintained on each site for the natural community's location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of all special-status natural communities, CEQA requires consideration of the potential impacts of a project on biological resources of statewide or regional significance.

This analysis considers such biological resources within a larger project study area, defined as the project work limits within the park and surrounding habitat in the neighboring vicinity that may support sensitive or regulated biological resources.

Discussion: The proposed project could have a significant adverse effect on special-status species. The following evaluation of the project's potential impacts on biological resources considers vegetation communities observed on or adjacent to the project site relative to general habitat requirements of special-status plants and animals that are known to reside in the project vicinity or that have the potential to seasonally or periodically occur in the project study area.

Two communities were characterized within the project site during the reconnaissance survey which include upland redwood forest and developed areas of the park. The redwood forest community defines the overall character of the study area and comprises most of the natural habitat within the park. Redwood forest within the study area is dominated by a relatively dense overstory composed of coast redwood (*Sequoia sempervirens*) with other secondary species such as Douglas fir (*Pseudotsuga menziesii* var. *menziesii*), coast live oak (*Quercus agrifolia*), tanoak (*Notholithocarpus densiflorus*), madrone (*Arbutus menziesii*), and interior live oak (*Quercus wislizeni*). Riparian trees, such as big leaf maple (*Acer macrophyllum*), California bay (*Umbellularia californica*), and California buckeye (*Aesculus californica*) are concentrated along the Pescadero Creek corridor. Much of the natural redwood understory consists of sparsely vegetated redwood duff. The duff layer is compacted and unvegetated within much of the study area, including on earthen hiking trails, unpaved roads and parking areas, and at campsites.

The developed community type generally consists of park areas that have been paved or on which buildings or other facilities have been constructed. Within the project study area, pavement is limited to park access roads, the main entrance parking lot, and building foundations. Park facilities are integrated into the redwood forest community; thus, associated plant and animal species already described are expected to occur along the fringes of developed areas.

The study area also includes Pescadero Creek, a perennial stream which flows east to west through Memorial Park from its headwaters near Castle Rock State Park at State Route 9 to the Pacific Ocean. Soil substrate in the creek corridor consists of cobble of varying sizes with gravel and sand. The riparian canopy is a narrow band of big leaf maple, California bay, and California buckeye trees with a sparse shrub, vine, and fern understory contiguous with the redwood forest community of the project study area.

Lists of special-status plant and animal species that have the potential to occur within the study area were compiled based on observation of existing conditions and suitable habitat during the reconnaissance survey with data contained in the CNDDDB (CDFW, 2018a) and the CNPS Inventory of Rare and Endangered Plants (CNPS, 2018) for the La Honda, Mindego Hill, Pigeon Point, San Gregorio, Half Moon Bay, Palo Alto, Woodside, Franklin Point, and Big Basin U.S. Geological Survey 7.5 minute topographical quadrangles, in addition to those included on the official USFWS list of federal endangered and threatened species that occur in the proposed project area (USFWS, 2018). **Table B-1, Special-Status Species, in Appendix B**, presents the special-status plant and animal species, their status, their habitat requirements, and period of identification or plant blooming periods, and considers the potential for each species to occur within the project study area.

Special-Status Plants

The project could have a significant impact either directly or indirectly through direct loss or habitat modifications, on special-status plants if they occur on the project site. The following special-status plants were determined to have at least a moderate potential to occur within the park or surrounding vicinity: Santa Cruz cypress (*Hesperocyparis abramsiana* var. *abramsiana*; CRPR 1B.2), minute pocket moss (*Fisidens pauperculus*; CRPR 1B.2), Dudley's lousewort (*Pedicularis dudleyi*; CRPR 1B.2), and white-flowered rein orchid (*Piperia candida*; CRPR 1B.2). Each of these species are documented in the project vicinity.

The project site contains one Santa Cruz cypress, located near the park entrance, and suitable redwood forest habitat that may support minute pocket moss, Dudley's lousewort, and white-flowered rein orchid. Surveys have not been performed to establish the presence or absence of these species on the project site. While the Santa Cruz cypress tree can be flagged for avoidance and protected during project construction, other rare plants have not been identified within the park. As suitable habitat for each of these species is present within the project site, they could be present in vegetated areas to be disturbed under the project. If minute pocket moss, Dudley's lousewort, or white-flowered rein orchid are present within the project site, project implementation could have an adverse effect on these special-status species during construction, primarily through direct effects such as vegetation removal, ground disturbance in support of excavation and open-cut trenching for pipeline installation or replacement, or trampling.

A majority of the project components are proposed for developed areas of the park where vegetation is managed to facilitate staff access and visitor use. Such components include the existing WWTP site, proposed WWTP site, replacement overflow parking lot, staging and laydown areas, and most of the existing and proposed new collection system pipelines. Broad application of the cured-in-place pipe lining (CIPP) construction method for pipeline rehabilitation requires no or minimal ground disturbance, as this method generally involves accessing the subject pipeline segment through an existing manhole and rehabilitating the pipe from within. Such installation methods would avoid most habitat for rare plants. While most of the new or existing pipelines requiring the open-cut trench construction (for both Phase 2a and Phase 2b options) are located in existing paved or earthen roadways and trails; some segments, as well as some pipe segments identified for spot repairs, would require excavation within undisturbed, vegetated areas that could support rare plants. Based on observations of the project footprint during the October 26, 2017 reconnaissance survey, the following pipeline repair or replacement projects (hereafter referred to as pipeline projects) may require vegetation removal: the new force main project proposed between Homestead Flat Youth Camp and Huckleberry Flat Picnic Area (i.e., between manholes 105 and 53); and projects C, F, G, K, and S (see Table 1 and Figures 3a through 3f). Therefore, project construction could have a significant impact on special-status plant species.

Implementation of **Mitigation Measure BIO-1a** would reduce potential impacts on special-status plants to a less-than-significant level by requiring focused botanical surveys of the project study area prior to construction to identify rare plant(s) for avoidance or relocation should populations occur where vegetation removal is necessary to achieve the project objective.

Mitigation Measure BIO-1a: A qualified botanist with a minimum of four years of academic training and professional experience in botanical sciences and a minimum of two years of experience conducting rare plant surveys shall conduct appropriately timed surveys for special-status plant species with a moderate or high potential to occur in the study area (i.e., Santa Cruz cypress, minute pocket moss, Dudley's lousewort, and white-flowered rein orchid) in all suitable habitat that would be potentially disturbed by the project (i.e., where vegetation removal [including downed logs] may occur). Surveys shall be conducted following the most recent CDFW protocol (CDFW, 2018b). If no special-status plants are found during focused surveys, the botanist shall document the survey findings in a report to CDFW, and no further mitigation will be required.

If special-status plants are found during focused surveys, the following measures shall be implemented:

1. Information regarding the special-status plant populations shall be reported to the CNDDDB, mapped, and documented in a technical memorandum provided to the County.
2. If any population can be avoided during project implementation, it shall be clearly marked in the field by a qualified botanist and avoided during construction activities. Before vegetation removal, ground clearing or ground disturbance, all on site construction personnel shall be instructed as to the species' presence and the importance of avoiding impacts to this species and its habitat through the Worker Environmental Awareness Program training (see Measure BIO-1b).
3. If special-status plant populations cannot be avoided, the County shall coordinate with CDFW on relocation of special-status plants. To the extent feasible, special-status plants that would be impacted by the project shall be relocated within local suitable habitat. This can be done either through salvage and transplanting or by collection and propagation of seeds or other vegetative material. Any plant relocation would be done under the supervision of a qualified botanist or restoration ecologist.

Special-Status Animals

The proposed project could have a significant impact either directly or indirectly through direct loss or habitat modifications on special-status animals that are known to occur or have a moderate or high potential to occur in the project site or larger study area. The redwood forest vegetation community, old growth redwood forest stands, and the Pescadero Creek corridor within the project site contain suitable habitat that may support special-status animals, including central California coast steelhead DPS¹⁰ (*Oncorhynchus mykiss*; federally listed as threatened), and central California coast Coho salmon ESU¹¹ (*Oncorhynchus kisutch*; federal and State-listed as endangered), California red-legged frog (*Rana draytonii*; federally listed as threatened and California Species of Special Concern [SSC]), foothill yellow-legged frog (*Rana boylei*; State listed threatened in California), Santa Cruz black salamander (*Aneides niger*; California SCC), California giant salamander (*Dicamptodon ensatus*; California

¹⁰ The central California coast steelhead Distinct Population Segment (DPS) are made up of populations downstream of manmade or natural barriers between coastal creeks of Big Sur north to the Oregon border.

¹¹ The central California coast Evolutionarily Significant Unit (ESU) of coho salmon extends from Punta Gorda in southern coastal Humboldt County south to Aptos Creek in Santa Cruz County and is listed as endangered under both FESA and CESA.

SCC), red-bellied newt (*Taricha rivularis*; California SCC), western pond turtle (*Actinemys marmorata*; California SCC), special-status and migratory birds (including marbled murrelet [*Brachyramphus marmoratus*]), and special-status bats.

Project construction activities could have an adverse effect on one or more of these special-status species. The effects could be direct (e.g., harassment or take of an individual) or indirect (e.g., modifying existing habitat, disrupting foraging and nesting efforts, or interfering with movement). Construction activities that could cause direct impacts on special-status animals include vegetation removal, tree trimming or removal, ground disturbance in support of excavation and open-cut trenching for pipeline installation or replacement, modification of existing facilities, construction of new facilities, transportation of materials and equipment along trails to work sites, and staging of materials and equipment at work sites.

Potential direct and indirect effects on these special-status animals would be limited to the duration of project construction, as the post-construction footprint and operation of project-related facilities within the park would not substantially differ from pre-project conditions or result in long-term adverse effects on special-status animals through habitat disturbance.

Implementing **Mitigation Measures BIO-1b and BIO-1c** would substantially reduce the potential for direct and indirect impacts on special-status animals during construction. These measures would help avoid and reduce habitat disturbance where feasible, exclude wildlife from entering project areas during construction, provide for listed or sensitive species surveys prior to construction, protect against nesting bird and roosting bat disturbance through seasonal work limits or buffers around active nests or roosts, and provide for monitoring of construction activities by a qualified biologist. Through implementation of these broad protection measures for sensitive resources within and nearby the project sites, project impacts on special status wildlife habitats would be reduced to less than significant. The following subsections provide more detailed information on potential project impacts to specific special-status animals and their associated habitats and identify mitigation measures to reduce those potential impacts to a less-than-significant level.

Mitigation Measure BIO-1b: A project-specific Worker Environmental Awareness Program (WEAP) training shall be developed and implemented by a qualified biologist for the project and attended by all construction personnel prior to beginning work onsite. The training could consist of a recorded presentation that could be reused for new personnel. The WEAP training shall generally address but not be limited to the following:

1. Applicable State and federal laws, environmental regulations, project permit conditions, and penalties for non-compliance;
2. Special-status animal species with potential to occur at or in the vicinity of the project site, their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve these species as they relate to the project, and the boundaries within which the project construction shall occur, avoidance measures, and a protocol for encountering such species including a communication chain;
3. Pre-construction surveys and biological monitoring requirements associated with each phase of work and at each project site;

4. Known sensitive resource areas in the project vicinity that are to be avoided and/or protected as well as approved project work areas; and
5. Best management practices (BMPs) and their location on the project site for erosion control and/or species exclusion.

Mitigation Measure BIO-1c: The County shall ensure that the following general measures are implemented by the contractor while working in the project site during construction to prevent and minimize impacts on special-status species and sensitive biological resources:

1. Project-related vehicles shall observe a 10 mile-per-hour speed limit on unpaved roads in the project site.
2. No pets shall be allowed in the project site.
3. The contractor shall provide wildlife-proof (closed) garbage containers for the disposal of all food-related trash items. All garbage shall be collected daily from the project sites and placed in a closed container from which garbage shall be removed weekly. Construction personnel shall not feed or otherwise attract wildlife to the project site.
4. As necessary, erosion control measures shall be implemented to prevent any soil or other materials from entering any nearby aquatic habitat. Erosion control measures shall be installed adjacent to aquatic habitat (i.e., at work site boundaries adjacent to Pescadero Creek) when excavation or ground disturbance is necessary to prevent soil from eroding or falling into the area.
5. Sediment control measures shall be furnished, constructed, maintained, and later removed. Plastic monofilament coir rolls or mats (including those labeled as biodegradable, photodegradable, or UV-degradable) shall not be used. Only natural burlap, coir, or jute wrapped fiber rolls and mats shall be used.
6. If vehicle or equipment maintenance is necessary, it shall be performed in designated upland staging areas, and spill kits containing cleanup materials shall be available onsite. Maintenance activity and fueling must occur away at least 100 feet from Pescadero Creek.
7. No staff, equipment, or materials in support of project implementation (e.g., small Bobcat skid steer or motorized wheelbarrow) shall enter or cross creeks while water is flowing (with the exception of the road crossing on Sequoia Flat Road).
8. Project personnel shall be required to report immediately any harm, injury, or mortality of a listed species (federal or State) during construction, including entrapment, to the construction foreman, qualified biologist, or County staff. County staff or their consultant shall provide verbal notification to the USFWS Endangered Species Office in Sacramento, California, and/or to the local CDFW warden or biologist (as applicable) within 1 working day of the incident. County staff shall follow up with written notification to the appropriate agencies within 5 working days of the incident. All special-status species observations shall be recorded on California Natural Diversity Data Base (CNDDB) field sheets and sent to the CDFW by the County staff or their consultant.
9. The spread of invasive non-native plant species and plant pathogens shall be avoided or minimized by implementing the following measures:

- a. Construction equipment shall arrive at the project clean and free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species.
- b. Any imported fill material, soil amendments, gravel, or other materials required for construction and/or restoration activities that will be placed within the upper 12 inches of the ground surface shall be free of vegetation and plant material.
- c. Certified weed-free imported erosion control materials (or rice straw in upland areas) shall be used exclusively, if possible.
- d. To reduce the movement of invasive weeds into uninfested areas, the contractor shall stockpile topsoil removed during excavation (e.g., during excavation for open-cut-trench construction) and shall subsequently reuse the stockpiled soil for re-establishment of disturbed project areas, if possible.

Fish

The project does not include work within Pescadero Creek; therefore, direct effects on central California coast steelhead or central California coast coho salmon are not anticipated. However, indirect effects on special-status fish may result from project ground disturbance and associated uncontrolled sediment runoff, resulting in increased turbidity of the creek and possible gill trauma. Indirect effects of the proposed project on special-status fish related to a change in water quality would be avoided or minimized to a less-than-significant level by implementation of **Mitigation Measure BIO-1c** (described above) and **Mitigation Measure HYD-1**, which calls for preparation and implementation of a project-specific stormwater control plan that includes BMPs to help control runoff, sedimentation, erosion, and contamination from petroleum products.

Amphibians and Reptiles

Suitable aquatic habitat and foraging habitat for California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, western pond turtle, and red-bellied newt occurs within the project site within the Pescadero Creek corridor and adjacent uplands. Additionally, the project study area occurs within designated critical habitat for California red-legged frog.¹² Under the proposed project, no work would occur within aquatic habitat. As noted, proposed construction activities would involve ground disturbance, particularly ground disturbance at the project sites adjacent to the Pescadero Creek corridor (e.g., existing and new WWTP sites, the new force main project between manholes 105 and 53, and pipeline projects I, W, G, R, F, T, and C [between manholes 20 and 19] see Table 1 and Figures 3a through 3f). While temporary and limited in their areal extent, such activities at the identified locations could have a substantial adverse effect on these species directly or through habitat modification.

¹² The USFWS can designate critical habitat for species that have been listed by the federal government as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the FESA as those lands (or waters) within a listed species' current range that contain the physical or biological features that are considered essential to its conservation. The project study area is located within designated critical habitat for California red-legged frog (75 CFR 12816 12959).

Implementing **Mitigation Measures HYD-1, BIO-1b, BIO-1c, and Mitigation Measure BIO-1d** (below) would avoid or minimize potential impacts to or take of special-status and sensitive amphibians and reptiles to a less-than-significant level through a stormwater control plan that includes BMPs to control runoff, erosion, etc., a mandatory training of construction crews to identify sensitive environmental resources in the project vicinity (e.g., special-status wildlife with potential to occur onsite and adjacent sensitive habitat areas and vegetation communities), along with implementation of specific protection and avoidance measures such as erecting exclusionary fencing around work areas, conducting pre-construction surveys and biological monitoring during construction, and requiring additional protection measures during project implementation.

Measure BIO-1d: The following conservation measures shall be implemented to minimize or eliminate potential adverse impacts on California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, western pond turtle, and red-bellied newt during project-related activities:

1. A qualified biologist shall survey the work sites 2 weeks before the onset of construction for California red-legged frog (CRLF), foothill yellow-legged frog (FYLF), Santa Cruz black salamander (SCBS), California giant salamander (CAGS), western pond turtle (WPT), and red-bellied newt (RBN to determine presence (and life stage) of these species within the project sites, particularly those in proximity to Pescadero Creek.

Typical credentials for a qualified biologist include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities, and a minimum of two years of experience conducting surveys for each species that may be present within the project area.

A qualified biologist shall conduct a pre-construction survey of these project work areas for CRLF, FYLF, SCBS, CAGS, WPT, and RBN immediately prior to the start of construction activities. The surveys will consist of walking the project work limits in areas where natural habitat will be disturbed or removed to ascertain presence of these species.

Unless explicitly authorized by the USFWS and CDFW (e.g., through issuance of an Incidental Take Permit (ITP)), neither CRLF nor FYLF shall be relocated if encountered in project areas. Rather they shall be allowed to disperse of their own volition while all work is halted within 50 feet of individuals. If they do not disperse on their own volition, the on-site biologist shall monitor the frog while work continues, as long as the on-site biologist can ensure the safety of the frog. The qualified biologist shall immediately inform the construction manager that work should be halted or modified (in the case of a buffer or non-dispersing individual), if necessary, to avert take of listed species.

USFWS and CDFW approval is not required for the relocation of SCBS, CAGS, WPT, or RBN as these species are not federally- or State-listed threatened or endangered. If adult SCBS, CAGS, WPT, or RBN are found within project sites during surveys, they will be relocated outside of the work area by a qualified biologist. The specific methods for handling amphibians or reptiles and decontamination shall follow USFWS (2005) and USGS (2015) protocols, respectively. These protocols describe field equipment maintenance,

disinfection, and field hygiene procedures designed to minimize potential spread of pathogens when handling amphibians or reptiles.

Should egg masses, metamorphs, or tadpoles of CRLF, FYLF, SCBS, CAGS, WPT, or RBN be identified within the Pescadero Creek corridor adjacent to a work site, a 100-foot no-disturbance buffer shall be established around the location(s) within the creek corridor until juveniles disperse from the breeding sites. The 100-foot no-disturbance buffer around egg masses, metamorphs, or tadpoles would not extend into the upland area if species exclusion fencing is installed at the worksite boundary.

2. Project work areas shall be monitored by a qualified biologist during exclusion fence installation and ground disturbing activities to identify, capture, and relocate non-listed sensitive amphibians (SCBS, CAGS, WPT, or RBN) if found, and halt or observe work in the vicinity of CRLF and FYLF if encountered onsite. The qualified biologist shall have the authority to stop construction activities and develop alternative work practices, in consultation with construction personnel and resource agencies (as appropriate), if construction activities are likely to affect special-status species or other sensitive biological resources.
3. County staff or its contractors shall install temporary exclusion fencing around key project boundaries, including project sites where ground disturbance will occur adjacent to Pescadero Creek, at the existing treatment plant and new plant sites, and around all project staging and laydown areas throughout the Park.
 - Fencing shall be installed immediately prior to the start of construction activities under the supervision of a qualified biologist.
 - The County staff or their contractor shall ensure that the temporary exclusion fencing is continuously maintained until all construction activities are completed.
 - County staff or their consultant shall ensure daily visual inspections of the fence for any amphibians or reptiles that may get stuck by the fence, including weekends. These daily checks shall be conducted by the qualified biologist for the first week of construction. If no species are observed, the qualified biologist may train the contractor to conduct daily inspections and call the qualified biologist if any species are encountered.
 - The fencing shall be of a material that meets CDFW standards for species exclusion, a minimum height of 3 feet above ground surface, with an additional 4 to 6 inches of fence material buried such that species cannot crawl under the fence, and shall include escape funnels to allow species to exit the work areas.
 - The exclusion fence shall not cross Pescadero Creek to allow wildlife movement to continue through the creek corridor when work is not occurring.
4. All excavations of a depth of 8 inches or greater shall be either backfilled at the end of each workday, covered with heavy metal plates, or escape ramps shall be installed at a 3:1 grade to allow wildlife that fall in a means to escape.

5. Vehicles or equipment parked overnight at the project staging areas or creek sites shall be inspected for harboring species each morning by the qualified biologist before vehicles or equipment are moved.

Special-Status and Migratory Birds

Project activities, including vegetation and tree trimming or removal, ground disturbance, modifications to the existing treatment plant, new construction of the replacement plant, pump station, and pipelines, and a general increase in noise and visual disturbance within the park may adversely affect nesting birds within 0.25 mile of the individual project sites during the breeding season (approximately February 1 to September 15). Suitable foraging and/or nesting habitat is present in the project vicinity for special-status birds, including marbled murrelet (federally-threatened and State-endangered), Cooper's hawk and sharp-shinned hawk (*Accipiter cooperii*, *A. striatus*; California "watch list" species), long-eared owl (*Asio otus*; California SCC and USFWS Bird of Conservation Concern [BCC]), and olive-sided flycatcher (*Contopus cooperii*; California SCC and BCC). Other migratory and resident raptor and passerine species forage and/or nest in the mature coast redwood, Douglas fir, big leaf maple, and bay laurel forest and herbaceous understory within and surrounding the project sites.

Memorial Park is considered occupied habitat for the marbled murrelet and critical habitat for this species is designated within old growth redwoods forest of the region, including the study area.¹³ An arborist survey performed in 2018 of trees within 50 meters of the project site identified several trees suitable for marbled murrelet nesting (H. Ormshaw, personal communication, November 2018). Removal of several (approximately four) redwood trees within established use areas (i.e., the Park campground overflow parking lot) is proposed to accommodate project construction; none of which were identified as suitable nest trees for marbled murrelet. Due to the density and extent of redwood forest and old growth redwood forest stands within the project study area and regional vicinity, the removal of these particular redwood trees would not substantially degrade habitat value of the old growth redwood forest for marbled murrelet, as new edge habitat would not be created nor existing habitat fragmented; thus, project impacts on marbled murrelet critical habitat are less-than-significant. Project impacts on the old growth redwood forest sensitive natural community are further discussed in response to question 2.4b, below.

Removal and trimming of trees and other vegetation, along with disturbance to existing structures (e.g., existing WWTP, pipe bridge crossings), could destroy active bird nests or contribute to visual or auditory harassment of marbled murrelet at occupied nest trees. Increased noise and visual disturbance associated with construction could disrupt nesting efforts in the forest habitat surrounding the project construction sites. The loss of an active nest occupied by a special-status bird species as a result of project implementation would be a significant impact. Moreover, disruption of nesting migratory or native birds is not permitted under California Fish and Game Code, as it could constitute unauthorized take.

USFWS has issued guidance on estimating effects of auditory and visual disturbance to marbled murrelet that indicate or would be considered harassment and (USFWS, 2006). The guidance describes harassment-motivated behavior (e.g., adult flushing from a nest during incubation or abandoning feeding attempts) manifesting when a)

¹³ The project study area is located within designated critical habitat for marbled murrelet (81 CFR 51348 51370).

the action-generated sound level substantially exceeds ambient conditions existing prior to the project (i.e., by 20-25 decibel [dB] or more); b) when the total sound level is very high (i.e., exceeds 90 dB); or when visual proximity of human activities occurs to close to an active nest site (i.e., within 40 meters).

Due to the forest density within 50-meters of the project site and typical height of nest branches, it is not anticipated that nesting marbled murrelet would be visually disturbed by project activities to a level qualifying as harassment. Project-induced auditory disturbance during certain construction activities has more potential to result in adverse effects on nesting marbled murrelet should they be present. A conservative estimate of the ambient noise level of the project site is “Low”, between 61-70 dB, commensurate with light vehicular traffic at slow speeds on paved surfaces and non-gas-powered recreational activities associated with small parks, visitor centers, bike paths, and residences (USFWS, 2006). Noise levels during construction are expected to reach up to 90 dB during use of certain equipment (see Section 2.12, Noise and Vibration), which the guidance classifies as “High”, 81-90 dB (USFWS, 2006). An increase of 20 dB above ambient noise conditions during construction could influence behavior of marbled murrelet to a degree considered harassment within 50 meters of the noise generating activity.

Compliance with existing State and federal regulations would prevent impacts on nesting birds. Implementing **Mitigation Measures BIO-1b and BIO-1c** (described above) and **Mitigation Measure BIO-1e** (below) would facilitate compliance with these requirements by limiting certain project activities to periods outside of the bird breeding season, identifying suitable nest trees for marbled murrelet in the project vicinity and protecting these trees, conducting pre-construction bird surveys to identify active nests, establishing no work buffer zones around active nests or nest trees identified on or near the project sites, and through seasonal and time of day restrictions for noise-generating activities to avoid harassment of nesting marbled murrelet. Through adherence to these mitigation measures, the project would have a less-than-significant impact on nesting birds.

Measure BIO-1e: Breeding birds, their nests, and marbled murrelet nest trees shall be protected during construction through the following measures:

1. Tree removal, tree trimming, ground vegetation removal, and building demolition and removal shall occur outside of the bird breeding season (February 1 to September 15), to the extent feasible. If these activities cannot be avoided during bird breeding season, the measures in parts 5 and 6, below, shall apply.
2. Trees identified for removal under the project shall first be assessed for suitability as marbled murrelet nest trees by a qualified wildlife biologist.

Typical credentials for a qualified biologist include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities, and a minimum of two years of experience conducting surveys for each species that may be present within the project area.

Those trees determined to have suitable elements for nesting marbled murrelet will be retained under the project, if feasible. If suitable nest trees cannot be retained in order to achieve project objectives, County staff shall coordinate

with USFWS and CDFW regarding removal of a potential marbled murrelet nest tree from occupied and designated critical habitat.

3. If known suitable nest trees for marbled murrelet occur within 50-meters of trees to be removed or trimmed or buildings to be demolished under the project, these activities shall not occur during the marbled murrelet breeding season (April 1 to September 15).
4. Project activities which produce noise levels between 70 dB and 90 dB shall be restricted to between two-hours after sunrise and two-hours before sunset during the marbled murrelet breeding season (April 1 to September 15). Project activities which produce noise levels of 91 dB or greater shall be prohibited during marbled murrelet breeding season.
5. If tree removal, tree trimming, ground vegetation removal, and building demolition and removal during bird breeding season (February 1 to September 15) cannot be fully avoided, a qualified wildlife biologist shall conduct pre-construction nesting surveys within 7 days prior to the start of such activities or after any construction breaks of 14 days or more.

Surveys shall be performed for the individual project sites, vehicle and equipment staging areas, and suitable habitat within 250-feet in order to locate any active passerine (perching bird) nests and within 500-feet of these individual sites to locate any active raptor (birds of prey) nest sites.

County staff shall additionally coordinate with CDFW and USFWS offices to identify any recent or historic marbled murrelet nest sites within 0.5-mile of the project sites. Focused marbled murrelet surveys shall be performed if warranted based on agency communications.

6. If active nests or nest trees presumed to be occupied are located during the pre-construction nesting bird surveys or identified prior to or during project construction, the wildlife biologist shall evaluate if the schedule of construction activities could affect the active nests and the following measures shall be implemented based on their determination:
 - a. If construction is not likely to affect the active nest, construction may proceed without restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the surrounding construction activity to confirm there is no adverse effect. Spot-check monitoring frequency would be determined on a nest-by-nest basis considering the particular construction activity, duration, proximity to the nest, and physical barriers which may screen activity from the nest. The qualified biologist may revise his/her determination at any time during the nesting season in coordination with the County staff.
 - b. If it is determined that construction may affect the active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s) and all project work would halt within the buffer until a qualified biologist determines the nest is no longer in use. Typically, these buffer distances are 250 feet for passerines and 500 feet for raptors; however, the buffers may be adjusted if an obstruction, such as a building, is within line-of-sight between the nest and construction. Buffer distances for nesting marbled murrelet shall initially be 0.25 mile from the project area.

For special-status bird species (i.e., fully protected, endangered, threatened, species of special concern), a County representative, supported by the wildlife biologist, shall coordinate with CDFW (and USFWS for FESA-protected species nests such as marbled murrelet) regarding modifying nest buffers, prohibiting construction within the buffer, and modifying or restricting construction activities until nesting is complete.

- c. Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests of all other non-listed species protected under the MBTA and California Fish and Game Code shall be done at the discretion of the qualified biologist and in coordination with the County staff.
 - d. Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed and could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged.
7. With the exception of marbled murrelet nest sites, any birds that begin nesting within the project site and survey buffers amid construction activities shall be assumed to be habituated to construction-related or similar noise and disturbance levels and no work exclusion zones shall be established around active nests in these cases; however, should birds nesting nearby begin to show disturbance associated with construction activities, no-disturbance buffers shall be established as determined by the qualified wildlife biologist.

Special-Status and Otherwise Protected Bats

Special-status bats, pallid bat and Townsend's big-eared bat (*Antrozous pallidus*, *Corynorhinus townsendii*; California SSC and Western Bat Working Group [WBWG]¹⁴ high-priority species), have the potential to roost in tree cavities and foliage, existing or underutilized buildings, or other human-made structures within the project study area. Other bats, such as hoary bat (*Lasiurus cinereus*; WBWG medium-priority species) could also roost in similar habitat of the project site. Project activities including tree trimming, tree removal, modification to the existing treatment plant and new construction could result in disturbance to special-status bats roosting within the project sites or nearby. Destruction of an occupied, non-breeding bat roost, resulting in the death of bats; disturbance that causes the loss of a maternity colony of bats (resulting in the death of young); or destruction of hibernacula¹⁵ are prohibited under California Fish and Game Code and would be considered a significant impact. Bat mortality could be the result of direct or indirect project disturbances. Direct disturbance could include tree cutting and building modifications, or roost destruction by any other means. Indirect disturbance to bat species could result in behavioral alterations due to construction-associated noise or vibration, or increased human activity in the area.

Implementing **Mitigation Measures BIO-1b** and **BIO-1c** (described above) and **Mitigation Measure BIO-1f** (below) would reduce potential impacts on special-status bats to a less-than-significant level by increasing worker education regarding the

¹⁴ The Western Bat Working Group is a non-profit organization of agencies, organizations, and individuals which facilitates communication among interested parties to reduce risks of bat species decline or extinction, share bat ecology information and research, and develop a forum for management and conservation strategies in western North America and Canada.

¹⁵ Hibernaculum refers to the active winter quarters of a hibernating animal.

potential presence and sensitivities of these species, requiring pre-construction roost surveys, and implementing avoidance measures if potential roosting habitat or active roosts are identified. Through adherence to these mitigation measures, the project would have a less-than-significant impact on special-status bats.

Mitigation Measure BIO-1f: A qualified biologist who is experienced with bat surveying techniques (including auditory sampling methods), behavior, roosting habitat, and identification of local bat species shall conduct a pre-construction habitat assessment of the project study area to characterize potential bat habitat and identify potentially active roost sites. No further action is required if the pre-construction habitat assessment does not identify bat habitat or signs of potentially active bat roosts within the project study area (e.g., guano, urine staining, dead bats, etc.).

If the surveying biologist identifies potential roosting habitat or potentially active bat roosts within or in the immediate vicinity of project sites, including trees that could be trimmed or removed under the project or buildings that would be disturbed under the project (e.g., existing treatment plant), the following measures shall be implemented:

1. Removal of- or disturbance to trees or structures (e.g., buildings, other man-made structures) identified as potential bat roosting habitat or active roosts shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, to the extent feasible. These dates avoid bat maternity roosting season (approximately April 15 to August 31) and period of winter torpor (approximately October 15 to February 28).
2. If removal of- or disturbance to trees and structures identified as potential bat roosting habitat or active roosts during the periods when bats are active is not feasible, a qualified biologist will conduct pre-construction surveys within 14 days prior to disturbance to further evaluate bat activity within the potential habitat or roost site.
 - a. If active bat roosts are not identified in potential habitat during pre-construction surveys, no further action is required prior to removal of- or disturbance to trees and structures within the pre-construction survey area.
 - b. If active bat roosts or evidence of roosting is identified during pre-construction surveys, the qualified biologist shall determine, if possible, the type of roost and species.
 - i. If special-status bat species or maternity or hibernation roosts are detected during these surveys, appropriate species- and roost-specific avoidance and protection measures shall be developed by the qualified biologist. County staff or their consultant may choose to coordinate with CDFW depending on what species has been found roosting within the project study area. Such measures may include postponing the removal of or disturbance to structures or trees, or establishing exclusionary work buffers while the roost is active. A minimum 100-foot no disturbance buffer shall be established around special-status species, maternity, or hibernation roosts until the qualified biologist determines they are no longer active. The size of the no-disturbance buffer may be adjusted by the qualified biologist, in coordination with CDFW,

depending on the species present, roost type, existing screening around the roost site (such as dense vegetation or a building), as well as the type of construction activity that would occur around the roost site, and if construction would not alter the behavior of the adult or young in a way that would cause injury or death to those individuals.

Under no circumstances shall active maternity roosts be disturbed until the roost disbands at the completion of the maternity roosting season or otherwise becomes inactive, as determined by the qualified biologist.

- ii. If a common species, non-maternity or hibernation roost (e.g., bachelor daytime roost) is identified, disturbance to- or removal of trees or structures may occur under the supervision of a qualified biologist as described under 3).
3. The qualified biologist shall be present during tree and structure disturbance or removal if active non-maternity or hibernation bat roosts or potential roosting habitat are present. Trees and structures with active non-maternity or hibernation roosts of common species or potential habitat shall be disturbed or removed only under clear weather conditions when precipitation is not forecast for three days and when nighttime temperatures are at least 50°F, and when wind speeds are less than 15 mph.
 - a. Trimming or removal of trees with active (non-maternity or hibernation) or potentially active roost sites of common bat species shall follow a two-step removal process:
 - i. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using hand tools (e.g., chainsaws).
 - ii. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using hand tools or other equipment (e.g. excavator or backhoe).
 - iii. All felled trees shall remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats to escape, or be inspected once felled by the qualified biologist to ensure no bats remain within the tree and/or branches.
 - b. Disturbance to- or removal of structures containing or suspected to contain active (non-maternity or hibernation) or potentially active common bat roosts shall be done in the evening and after bats have emerged from the roost to forage. Structures shall be partially dismantled to significantly change the roost conditions, causing bats to abandon and not return to the roost. Removal will be completed the subsequent day.
4. Bat roosts that begin during construction are presumed to be unaffected as long as a similar type of construction activity continues, and no buffer would be necessary. Direct impacts on bat roosts or take of individual bats will be avoided.

<p>b. Have a significant adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</p>			X	
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Discussion: Riparian habitat occurs within the Pescadero Creek corridor of the project study area and old growth redwood forest occurs within the study area. These sensitive natural communities have potential to be adversely affected by the project during construction.

Riparian Habitat

The project includes multiple work sites within or adjacent to the Pescadero Creek riparian corridor (i.e., the existing WWTP site and pipeline and manhole rehabilitation sites at Redwood Flat Youth Campground, Huckleberry Flat Picnic Area, Sequoia Flat Campground, and Creek Flat Picnic Area). Pescadero Creek within the project study area does not support traditional riparian corridor vegetation, such as dense, willow thickets that distinctly contrast with surrounding upland communities. The tree canopy at each site along the Pescadero Creek channel is dense and contiguous with the surrounding upland areas, but with species composition more dominated by big leaf maple, California bay, and California buckeye, rather than coast redwood. Ground vegetation is relatively sparse and limited to annual herbs and perennial fern species growing on the creek banks, with a few additional shrubs. Bank definition varies throughout the project study area with some locations defined by a steep drop-off to the creek channel below (e.g., near pipeline project O and project D [between manholes 34 and 29]) and others with a much more gradual bank slope (e.g., at the existing treatment plant site and near the southern portion of pipeline project C, near manhole 20). (See Figures 3a through 3f for pipeline locations.)

The proposed project would not require extensive trimming or removal of trees or vegetation within the Pescadero Creek riparian corridor to accommodate project objectives. While minor tree trimming or removal of some trees within the riparian corridor may occur (e.g., four coast redwood trees at the new treatment plant site), it is unlikely to result in a substantial adverse effect on riparian habitat (e.g., extensive and permeant loss of riparian vegetation which reduces habitat value for associated wildlife). The impact of the proposed project on riparian habitat would be less than significant with no mitigation required.

Old Growth Redwood Forest

As discussed above, the project site is located within old growth redwood forest. The project includes removal of approximately four coast redwood trees around the new treatment plant site (the existing overflow parking lot), and additional tree trimming and/or removal of coast redwood trees may be necessary at other locations in the project study area to accommodate construction of the new pump station and force main at Homestead Flat Youth Camp, and pipeline replacement using open-cut trench construction where rehabilitation through the CIPP method is infeasible.

<p>Due to the density and extent of redwood forest and old growth redwood forest stands within the project study area and regional vicinity, the removal of several redwood trees to accommodate project construction would not result in a substantial change in habitat value of the old growth redwood forest. The impact of the proposed project on old growth redwood forest would be less than significant with no mitigation required.</p>				
<p>c. Have a significant adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p>			<p>X</p>	
<p>Discussion: Pescadero Creek is a potentially jurisdictional water of the U.S.¹⁶ and water of the State.¹⁷ The regulations and policies of various federal agencies (e.g., U.S. Army Corps of Engineers [USACE], U.S. Environmental Protection Agency [EPA], and USFWS) mandate that the filling of wetlands (and waters) be avoided unless it can be demonstrated that there is no practicable alternative to filling. The USACE has primary federal responsibility for administering regulations that concern waters and wetlands in the project study area under statutory authority of the Rivers and Harbors Act (RHAA; Sections 9 and 10¹⁸) and the Clean Water Act (CWA; Section 404¹⁹). The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) (together “Boards”) are the principal state agencies with primary responsibility for the coordination and control of water quality. The Boards are granted authority under the Porter-Cologne Water Quality Control Act to implement and enforce the water quality laws, regulations, policies, and plans to protect the groundwater and surface waters of the State.</p> <p>Collectively, the regulatory scheme established to protect waters of the U.S. and State requires that fill of wetlands and waters be avoided or minimized to the maximum extent practicable (e.g., design the project elements to be placed above areas defined as waters of the U.S./waters of the State) while still accomplishing the project’s purpose.</p>				

¹⁶ The federal government defines and regulates other waters, including wetlands, in Section 404 of the Clean Water Act (CWA). Other waters of the U.S. include unvegetated waters of streams, lakes, and ponds that are connected to Traditional Navigable Waters (TNW).

¹⁷ As defined in the Porter-Cologne Water Quality Control Act, “waters of the state” is defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.”

¹⁸ Pursuant to Section 10 of the Rivers and Harbors Appropriation Act of 1899 (RHAA; 33 USC 403), the USACE regulates the construction of structures in, over, or under, excavation of material from, or deposition of material into “navigable waters.” In nontidal waters the limit of navigable water is the ordinary high water mark (OHWM). Larger streams, rivers, lakes, bays, and oceans are examples of navigable waters regulated under Section 10. The RHAA prohibits the unauthorized obstruction or alteration of any navigable water (33 USC Section 403).

¹⁹ Section 404 of the federal CWA (33 USC 1251-1376) prohibits the discharge of dredged or fill material, or placement of structures into waters of the U.S., including wetlands, without a permit from the USACE. The CWA prohibits the discharge of any pollutant without a permit. Implicit in the CWA definition of “pollutant” is the inclusion of dredged or fill material regulated by Section 404 (33 USC 1362). The discharge of dredged or fill material typically means adding into waters of the U.S. materials such as concrete, dirt, rock, pilings, or side cast material that are for the purpose of replacing an aquatic area with dry land or raising the elevation of an aquatic area.

While several project components would occur at work sites in proximity to waters subject to State and federal regulation, the proposed project does not include construction of new facilities or other work activities within the Pescadero Creek channel. Although a formal delineation of potentially jurisdictional waters of the U.S. and State has not been conducted in support of the proposed project, a review of the project plans and reconnaissance survey has confirmed the proposed project would not involve fill of waters of the U.S. No actions are proposed below top of bank; therefore, the project also would not impact waters of the State.

The proposed project may include manipulation to the elevation of an existing pipeline over the Pescadero Creek channel between manhole 29 and 20. Under Section 10 of the RHAA, the USACE regulates construction of structures in, over, or under navigable waters, defined as those “subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 CFR Section 3294); Pescadero Creek, including the project reach, does not meet the definition of a navigable water and therefore, is not subject to RHAA Section 10. The project impact on waters of the U.S. would be less than significant with no mitigation required.

<p>d. Interfere significantly with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?</p>		<p>X</p>		
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Discussion: The Pescadero Creek corridor facilitates wildlife movement through the project study area for special-status fish, amphibians, and reptiles, and more common wildlife, such as California newt, raccoon and opossum. Special-status, migratory, and resident birds and special-status and common bats are also likely to use the Pescadero Creek corridor to move through the park. Several project sites are located adjacent to the Pescadero Creek corridor and construction at these sites has potential to affect wildlife movement to and along Pescadero Creek.

Project work is restricted to the upland banks and would avoid direct impacts to or obstruction of wildlife movement within Pescadero Creek aquatic habitat. As discussed for question 2.4a, under *Special-Status Animals and Amphibians and Reptiles*, exclusion fencing installed around these upland work sites adjacent to Pescadero Creek would minimize risk of disruption to wildlife movement to or along the creek corridor from construction activities occurring on the adjacent banks as work areas would be isolated from animals (**Mitigation Measure BIO-1c** and **Mitigation Measure BIO-1d**). Such exclusion fencing would be temporary during construction, installed upland of the creek bed and banks, and not cross or otherwise restrict fish or wildlife movement within Pescadero Creek. Once constructed, the project would not present any substantial new barriers to movement to or along the riparian corridor when compared with existing conditions. Accordingly, the project would not substantially interfere with wildlife movement during or following construction. The impact would be less-than-significant with mitigation.

<p>e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?</p>		<p>X</p>		
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Discussion: San Mateo County Ordinance Code Section 11000 (Regulations for the Preservation, Protection, Removal and Trimming of Heritage Trees on Public and Private Property) and Section 12000 (The Significant Tree Ordinance of San Mateo County) regulates the trimming and removal of heritage trees and significant trees on both public and private property. Heritage trees are defined as any individual or grove of trees designated as such by the County Board of Supervisors and all Santa Cruz cypress and Oregon white oak trees. The Significant Tree Ordinance exempts tree cutting on properties in a designated Resource Management District, such as Memorial Park, except within 100 feet of a state or county scenic road, such as Pescadero Creek Road. The ordinance directs that, for non-exempt tree cutting within the Resource Management District, the County’s district zoning regulations shall apply. Per the Resource Management District regulations, removal of living trees with trunk circumference greater than 55 inches (17.5 inches in diameter) measured 4-1/2 feet above the average surface of the ground [DBH] is prohibited, except as may be required for development permitted under the regulations (section 6324.2(j)). Recreation and recreation-related facilities are identified as allowable uses within the Resource Management District (section 6315(p, q)). Section 6324(i) provides that, for permitted uses, “Wherever possible, vegetation removed during construction shall be replaced.” No replacement ratio is specified.

The project includes removal of approximately four coast redwood trees around the new WWTP site, which is more than 100 feet from Pescadero Creek Road. In addition, tree trimming, work within tree driplines, and/or removal of coast redwood trees at other locations in the project study area may be necessary to accommodate construction of the new pump station and force main at Homestead Flat Youth Camp, and pipeline replacement using open-cut trench construction where rehabilitation through the CIPP method is infeasible. Memorial Park and the project study area contains high quality, mature redwood forest and some trees may qualify for protection under the County heritage or significant tree ordinance. Work within tree driplines including excavation and open-cut trench construction under the project would likely be necessary and could compromise the survival of the tree. If this were to occur, the impact with respect to compliance with local policies and ordinances regarding tree preservation, could be significant.

Project compliance with the County tree protection ordinances for significant and heritage trees would avoid conflict with this local policy. Implementation of the **Mitigation Measure BIO-2** (below) would ensure compliance with the San Mateo County Tree Ordinances for Heritage and Significant Trees and minimize potential impacts to heritage or significant trees within the project sites to a less-than-significant level. This measure calls for a pre-construction tree survey of the project study area to identify heritage and/or significant trees; tree protection measures during construction; avoiding tree trimming or removal of heritage or significant trees if feasible; and

planting replacement trees at a 1:1 ratio (replacement: removed) for trees measuring 17.5 inches DBH or greater within the project study area following project construction.

Mitigation Measure BIO-2: The County or its contractor shall implement the following measures to avoid or minimize impacts to protected trees:

1. The County or its contractor shall contract a certified arborist to perform a tree survey of the project sites to determine presence of significant trees within 100 feet of Pescadero Creek Road and heritage trees anywhere within the project site which could be adversely affected by project implementation prior to initiation of construction activities, and identify trees to be removed or trimmed under the project at each such project site.
2. Should heritage trees be identified within the project sites or significant trees be present at project sites within 100 feet of Pescadero Creek Road, a certified arborist shall determine appropriate protective measures to be implemented during construction and which may include but is not limited to the following:
 - a. A certified arborist shall accurately locate root protection zones and identify other specific measures that would limit potential indirect impacts on trees that may be encroached upon (e.g., fencing around 1.5 times the canopy area) consistent with the County's tree protection measures. Tree protection measures shall be maintained throughout the duration of the project.
 - b. Construction drawings shall depict areas to be avoided such as tree trunks and root protection zones.
 - c. If any large roots or large masses of roots need to be cut, the roots shall be inspected by a certified arborist or forester prior to cutting. Any root cutting shall be undertaken by an arborist or forester and documented. Roots to be cut shall be severed cleanly with a saw or topers.
 - d. If pruning is necessary (proceed to 3), pruning should be done by an arborist or forester to clean and raise canopy per International Society of Arboriculture pruning standards.
3. If trimming or removal of heritage trees within the project sites or significant trees within 100 feet of Pescadero Creek Road cannot be avoided, the County or its contractor shall complete the permit application process and obtain a permit from the County to trim or remove trees. The permit application process requires an Existing Tree Plan be prepared and an Arborists Report that assesses tree health and provides tree protection measures which may be incorporated into a Tree Protection Plan for trees that could be indirectly affected by work in their immediate vicinity. Any heritage tree removed under the project would also be replaced according to step 4, below, unless otherwise specified in the County permit.
4. If trimming or removal of significant trees cannot be avoided, qualifying trees identified for removal measuring 17.5 inches DBH or greater shall be replaced at a 1:1 ratio (replacement trees to removed trees) with the species removed (if native) or other native species (if non-native) within the immediate vicinity of the removal site of at least a 5-gallon stock. Replacement trees shall be

monitored at least once a year for at least five years or longer, concurrent with restored areas of riparian habitat or wetlands.				
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or State habitat conservation plan?			X
Discussion: The proposed project is not located within or subject to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans; therefore, no conflict with such a plan would occur and there would be no impact.				
g.	Be located inside or within 200 feet of a marine or wildlife reserve?			X
Discussion: The proposed project is not located inside or within 200 feet of a marine or wildlife reserve; therefore, the project would have no impact to a marine or wildlife reserve.				
h.	Result in loss of oak woodlands or other non-timber woodlands?		X	
<p>Discussion: The project study area is characterized by the upland redwood forest vegetation community and includes old growth redwood forest. Individual coast live oak, tanoak and interior live oak occur among the coast redwood trees in the study area but would not be considered oak woodlands. The park and surrounding area was historically harvested for timber in the late 1800s and early 1900s. These activities ceased within the park when the County acquired the land in 1924; therefore, the upland redwood forest and old growth redwood forest vegetation communities of the park would be considered non-timber woodlands. Some land surrounding the park remains designated for timber production.</p> <p>As discussed above in response to question 2.4e, the project would remove approximately four coast redwood trees to accommodate construction of the new treatment plant. Additional trees may be trimmed, removed, or have roots damaged during construction associated with repair or replacement of the distribution system throughout the park. The dispersed loss of individual trees within a woodland community would not substantially alter the community from the park's existing conditions, thus the project impact to non-timber woodlands would be less than significant.</p> <p>As removal of individual redwood trees within 100 feet of Pescadero Creek Road could result in conflicts with the San Mateo County Tree Ordinances for Heritage and Significant Trees, described above under question 2.4e, Mitigation Measure BIO-2 would require replacement of qualifying trees removed under the project at a 1:1 ratio (replacement trees: removed trees). While not required to reduce the potential impact to non-timber woodlands, the application of this mitigation measure identified above would have incidental impact reduction by planting replacement trees within the study</p>				

area following construction and would further ensure that the project impact on non-timber woodlands of the park would be less than significant.

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2.5 CULTURAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Cause a significant adverse change in the significance of a historical resource as defined in Section 15064.5?				X
<p>Discussion: A significant impact would occur if the project could cause a substantial adverse change to a historical resource, herein referring to historic-period architectural resources or the built environment, including buildings, structures, and objects. A substantial adverse change includes the physical demolition, destruction, relocation, or alteration of the resource.</p> <p>ESA staff conducted a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University on October 3, 2017 (File No. 17-1064). The review included the project area and a 0.5-mile radius. Previous surveys, studies, and site records were accessed. Records were also reviewed in the Historic Property Data File that contains information on sites of recognized historical significance including those evaluated for listing in the National Register of Historic Places, the California Register of Historical Resources (California Register), the California Inventory of Historical Resources, California Historical Landmarks, and California Points of Historical Interest. NWIC records and the Historic Property Data File indicate that no built environment historic-period resources have been previously recorded in the records search radius.</p> <p>ESA staff also conducted a review of online maps and aerial photography, reviewed literature in ESA's Northern California cultural resources library; held discussions with park rangers, and conducted a site visit of the project area on October 22, 2017.</p> <p>As a result of the background research and field survey, one cultural resource, the existing WWTP within Memorial Park, was identified in the project area.</p> <p>San Mateo County established Memorial Park in 1924, in memory of the local veterans of World War I. During the Great Depression, the park was established as a WPA project camp by President Roosevelt, and many of the buildings, stone and concrete work, roadways, sewer lines, and picnic sites were built by WPA crews (Svanevik and Burgett, 2001). This includes the natural stone hut converted for use as the electrical control building for the Homestead System, and the original sewer system that consisted of large septic tanks, drain fields, and sludge drying beds. The WWTP has undergone regular maintenance, improvement, and upgrades since its original construction, including replacement of original pipes, pumps, and electrical components, as well as building repair such as roof replacement.</p> <p>ESA recommends that the Memorial Park WWTP as not eligible for listing as an individual historical resource, as defined by CEQA; it does not appear to meet the criteria for listing in the California Register (ESA, 2018). The resource consists of multiple buildings and components, constructed predominantly in the early 1960s, and includes dispersed ancillary buildings and structures serving the Park. While the park was established in 1926, and underwent development as a WPA camp in the late 1930s, the WWTP significantly post-dates both these events. The park is associated</p>				

with post-World War II population growth and the expanded need for public recreation and related services; however, the resource does not uniquely represent any significant regional development or trends. Mere association with these trends does not rise to the level of significance, and archival research failed to indicate any additional significant associations. Additionally, review of County Parks Department records as well as discussions with park staff failed to identify any significant persons associated with the resource. Therefore, the WWTP does not appear eligible under Criterion 1 (significant events) or 2 (significant persons).

As an industrial vernacular style utility facility, typical for its age and location, the WWTP does not appear to significantly embody the characteristics of a distinctive type, period, or method of construction, or represent the work of a master architect or builder (Criterion 3). The WWTP reflects typical post-World War II vernacular industrial design, with minimal architecturally distinct elements. Rather, the WWTP and ancillary buildings were designed to be minimally intrusive into the natural landscape, as well as to be easy to maintain and operate. Finally, the WWTP does not appear to have the potential to yield information important to an understanding of the history of the local area, the state, or the nation (Criterion 4).

The WWTP retains its integrity of location and setting, and overall design, materials, workmanship, and feeling. The maintenance and improvements conducted on the buildings since their original construction has not significantly impacted the integrity of the facility.

While the WWTP overall retains its physical integrity, it does not meet the requirements of any criteria for listing in the California Register. For these reasons, the WWTP does not appear to be eligible for the California Register and would not be considered a historical resource for the purposes of CEQA. As the project would not affect any significant historic-period buildings or structures, the project would have no impact on historical resources and no mitigation is required.

b. Cause a significant adverse change in the significance of an archaeological pursuant to Section 15064.5?		X		
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Discussion: A significant impact would occur if the project could cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Results of the NWIC records search on October 3, 2017 (File No. 17-1064) identified four previously recorded cultural resources within 0.5 mile of the project area, none of which are in the project area. One of these resources, P-41-002221, was recorded approximately 140 feet southeast of the project area and is an architectural resource consisting of an historic-era dam and swimming pool. The three other resources consist of: P-41-000227, Native American archaeological site consisting of petroglyphs located approximately 0.3 mile east of the project area; P-41-000455, Native American archaeological site consisting of flaked-stone lithics, fire-affected rock, possible groundstone, and possible housepits, located 0.3 mile southeast of the project area; and P-41-002190, historic-era architectural resource consisting of a cabin located approximately 2,000 feet northeast of the project area. Additionally, the NWIC has record of 16 previous cultural resources studies that have been conducted

within 0.5 mile of the project area. Two of these studies included small portions of the project area.

None of the ethnographic literature reviewed for this study described or depicted any ethnographic place names in or in close proximity to the project area. Kroeber (1925 [1976]: Fig 42) depicts the closest place name as *Kino-te*, approximately 15 miles northeast of the project area, in the vicinity of Redwood City.

On October 22, 2017, an ESA archaeologist conducted an archaeological pedestrian survey of the project area. Intensive pedestrian survey methods were used, consisting of walking parallel transects spaced at no more than 10 meters apart and inspecting the surface for cultural material or evidence thereof. No archaeological resources were identified in the project area during the pedestrian survey.

The study concludes that no known archaeological resources are present in the project area and does not anticipate that the project would impact archaeological resources (ESA, 2018).

Although no archaeological resources were identified during the study, no subsurface investigations were conducted and there remains the potential that archaeological resources could be encountered during project-related ground-disturbing activities. If any such resources were encountered and found to qualify as an historical resource or unique archaeological resource for CEQA purposes, project-related impacts to the resources could be significant. Implementation of **Mitigation Measure CUL-1** would reduce the potential for such impacts to a less-than-significant level by requiring work to halt in the event of an unanticipated discovery of an archaeological resource, and providing for appropriate documentation and treatment, as warranted.

Mitigation Measure CUL-1: If prehistoric or historic-era archaeological resources are encountered, all construction activities within 100 feet of the find shall halt and the San Mateo County Parks Department shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. An archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for Archeology (qualified archaeologist) shall inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with Public Resources Code (PRC) § 21083.2 and CEQA Guidelines § 15126.4, with a preference for preservation in place.

Consistent with CEQA Guidelines § 15126.4(b)(3), preservation in place may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan in consultation with the County Parks Department. Treatment of unique archaeological resources shall follow the applicable requirements of PRC § 21083.2. Treatment for most resources would consist of (but would not be not limited to) sample excavation,

artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.

c. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074?		X		
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Discussion: A significant impact would occur if the project could cause a substantial adverse change to a tribal cultural resource through physical demolition, destruction, relocation, or alteration of the resource.

The County contacted the NAHC to request a list of potentially interested tribes. On July 27, 2017, the County received the Tribal Consultation List from the NAHC. The County then contacted the listed tribal representatives, asking whether they would like to be notified pursuant to AB 52 of future projects that could affect tribal lands. The County has received no response.

Results of the NWIC records search on October 3, 2017 (File No. 17-1064) identified four previously recorded cultural resources within 0.5 mile of the project area, none of which are in the project area. Two of the resources include P-41-000227, a Native American archaeological site consisting of petroglyphs located approximately 0.3 mile east of the project area and P-41-000455, a Native American archaeological site consisting of flaked-stone lithics, fire-affected rock, possible groundstone, and possible housepits, located 0.3 mile southeast of the project area.

None of the ethnographic literature reviewed for this study described or depicted any ethnographic place names in or in close proximity to the project area. Kroeber (1925 [1976]: Fig 42) depicts the closest place name as *Kino-te*, approximately 15 miles northeast of the project area, in the vicinity of Redwood City.

On October 4, 2017, ESA contacted the NAHC by email with attachment to request a records search of their Sacred Lands File (SLF). ESA received a response from the NAHC on October 11, 2017 stating that the SLF has no record of any resources in the project area.

On October 22, 2017, an ESA archaeologist conducted an archaeological pedestrian survey of the project area. No tribal cultural resources were identified in the project area during the pedestrian survey.

The study concludes that no known tribal cultural resources are present in the project area and does not anticipate that the project would impact tribal cultural resources (ESA, 2018).

Although no tribal resources were identified during the study, no subsurface investigations were conducted and there remains the potential that tribal resources could be encountered during project-related ground-disturbing activities. If any such resources were encountered and found to qualify as an historical resource or unique archaeological resource for CEQA purposes, project-related impacts to the resources could be significant. Implementation of **Mitigation Measure CUL-1** would reduce the

potential for such impacts to a less-than-significant level by requiring work to halt in the event of an unanticipated discovery of an archaeological resource, and providing for appropriate documentation and treatment, as warranted.				
d. Disturb any human remains, including those interred outside of formal cemeteries?		X		
<p>Discussion: A significant impact would occur if the project would disturb any human remains, including those interred outside of formal cemeteries. There is no indication that the project area has been used for burial purposes in the recent or distant past. While it is unlikely that human remains would be encountered in the project area, damage to human remains, if encountered, would be a potentially significant impact. Implementation of Mitigation Measure CUL-2 would reduce this potential impact to a less-than- significant level by ensuring that if human remains are encountered and they are determined to be Native American in origin, the Native American Heritage Commission would be contacted and the remains would be treated appropriately.</p> <p>Mitigation Measure CUL-2: In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall cease until the San Mateo County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission (NAHC) will be contacted within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American (PRC § 5097.98), who in turn would make recommendations to the County Parks Department for the appropriate means of treating the human remains and any associated funerary objects [CEQA Guidelines § 15064.5(d)].</p>				

References

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- Svanevik, Michael, and Shirley Burgett, *San Mateo County Parks: A Remarkable Story of Extraordinary Places and the People Who Built Them*, San Mateo County Parks and Recreation Foundation, Menlo Park, CA, 2001.

2.6 GEOLOGY AND SOILS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in:				
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 significant evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42 and the County Geotechnical Hazards Synthesis Map.			X	
<p>Discussion: The greater San Francisco Bay Area is located in an area of high seismic activity due to its tectonic setting. Surface rupture can occur when the ground surface is displaced due to fault movement at the earth’s surface during seismic events. Such hazards are generally assumed to occur in the vicinity of an active fault trace as they represent an existing plane of weakness. Active faults in the region include the San Andreas and the Seal Cove-San Gregorio faults. While fault rupture has not occurred in the project vicinity, it remains a potentially serious hazard along the existing fault traces (San Mateo County, 1986). The State of California, through the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) prohibits the development of structures for human occupancy across active fault traces without an adequate geotechnical study to demonstrate the hazard is not present.²⁰ Under the Alquist-Priolo Act, the California Geological Survey (CGS, formerly the California Division of Mines and Geology) establishes zones on either side of an active fault that</p>				

²⁰ The Alquist-Priolo Act designates zones that are most likely to experience fault rupture, although surface fault rupture is not necessarily restricted to those specifically zoned areas. The zones are defined by the California Geological Survey (CGS). An active fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. Sufficiently active is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches. A structure for human occupancy is one that is intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person hours per year (Hart, 1997).

<p>delineates areas considered most susceptible to surface fault rupture. These zones are referred to as fault rupture hazard zones and are shown on official maps published by the CGS. The closest active fault to the project area mapped under the Alquist-Priolo Act is the San Gregorio fault which is oriented northwest-southeast and is located approximately 4.5 miles southwest of the project site and well outside of the fault rupture hazard zone for this fault (CGS, 2006). In addition, the project is located approximately 7 miles southwest of the San Andreas and well outside of the respective fault rupture hazard zone. Although fault rupture is not necessarily bound by the limits of the hazard zone, it is considered unlikely to occur in areas outside of the mapped fault rupture hazard zone. Therefore, based on the current project location, the potential for damage to property or injury/loss of life to people as a result of fault rupture is considered less than significant.</p>				
ii. Strong seismic ground shaking?			X	
<p>Discussion: Seismic activity in the region is dominated by the San Andreas Fault system, which includes the San Andreas, Hayward, and Calaveras faults. According to the U.S. Geologic Survey (USGS) Working Group on California Earthquake Probabilities, there is a 72 percent likelihood that an earthquake of magnitude 6.7 or higher will occur in the Bay Area between 2014 and 2037 (USGS, 2015).</p> <p>The Association of Bay Area Governments (ABAG) developed Earthquake Shaking Hazard Maps, which predict the potential for ground shaking during major earthquakes on the active faults in the Bay Area. The proposed project is located in an area with high earthquake shaking potential (ABAG, 2003). Predicting seismic events is not possible, nor is providing mitigation that can entirely reduce the potential for injury and damage that can occur during a seismic event. Although some structural damage is typically not avoidable during an earthquake, the project does not include the construction of any habitable spaces. Further, because the purpose of the project is to repair and replace the existing wastewater system, with implementation of current building codes (California Building Code) and standards, including current seismic building code standards, the proposed improvements would likely withstand greater groundshaking than the existing system. Therefore, the proposed project would not increase the exposure of Memorial Park users or associated structures to increased risk of loss, injury, or death at the project site due to seismic ground shaking, and impacts would be less than significant.</p>				
iii. Seismic-related ground failure, including liquefaction and differential settling?			X	
<p>Discussion: Seismic shaking can also trigger secondary ground-failures caused by liquefaction. Liquefaction is a phenomenon where saturated subsurface soils lose strength because of increased pore pressure and exhibit properties of a liquid rather than those of a solid. In general, the soils most susceptible to liquefaction are clean, loose, uniformly graded, saturated and fine-grained, and occur close to the ground surface, usually at depths of less than 50 feet. Liquefaction risk maps for San Mateo County show that soils in the project site have a low to moderate risk for liquefaction (ABAG, 2005). The preliminary geotechnical investigation did not report findings for liquefaction susceptibility; however, the groundwater was found to be relatively</p>				

<p>shallow in a couple of borings at the site (approximately 10 to 16 feet below ground surface) and the boring logs indicate that sandy materials are present which could indicate a potential for liquefaction (CE&G, 2017). Regardless, the project would be constructed in accordance with the current version of the California Building Code that includes seismic standards, soil excavation and groundwork standards, and engineering standards, which would require measures to ensure the stability of the foundation under the proposed project components. Moreover, because the project does not involve the creation of habitable spaces, it would not increase the exposure of Memorial Park users or associated structures to increased risk of loss, injury, or death at the project site due to seismic-related ground failure. With site preparation, design, and construction of the proposed project elements in accordance with the most recent California Building Code requirements, the potential for substantial damage or injury from liquefaction would be minimized. As required by the California Building Code, the County would be required to adhere to the recommendations of a final geotechnical report prepared by a licensed geotechnical engineer or engineering geologist. Implementation of the recommendations from this report would minimize any potential damage or injury from seismic effects to less-than-significant levels.</p>				
iv. Landslides?			X	
<p>Discussion: Landslides generally consist of any type of ground movement that occurs primarily due to gravity acting on an over-steepened slope and can occur due to excessive precipitation, man-made activities, or induced by seismic activity. Areas that are more prone to landslides include old landslides, the bases or tops of steep or filled slopes, and drainage hollows. The existing WWTP is situated near the top of steeply-sloping bank of Pescadero Creek. Under the proposed project, the existing WWTP would be repurposed as a lift station, and no excavation or other earthwork would be required such that there would be no substantive change in slope stability for the proposed conversion of the WWTP to a lift station. Other project components including the new WWTP are proposed for areas with mostly level topography. The proposed new WWTP would be located farther from the creek than the existing WWTP, and thus farther from the steep banks located along the creek. Therefore, the proposed project would not increase the exposure of Memorial Park users or associated structures to increased risk of loss, injury, or death at the project site due to seismically-induced landslides and impacts would be less than significant.</p>				
v. Coastal cliff/bluff instability or erosion? Note: This question is looking at instability under current conditions. Future, potential instability is looked at in Section 7 (Climate Change).				X
<p>Discussion: As the project is not located along the Pacific Ocean coast, there would be no impact related to coastal cliff/bluff instability or erosion.</p>				
b. Result in significant soil erosion or the loss of topsoil?		X		
<p>Discussion: Construction of the proposed project would require land-disturbing activities such as grading, earthmoving, backfilling, and compaction that could expose soils to the effects of wind and stormwater runoff, and could result in erosion or loss of</p>				

topsoil (see also Section 2.9, Hydrology and Water Quality, for additional discussion of water quality) and result in a potentially significant impact. In addition, as described more fully in Section 2.9, Mitigation Measure HYD-1 would require preparation and implementation of a comprehensive stormwater pollution prevention plan (SWPPP). The plan would include Best Management Practices (BMPs) to temporarily control erosion from disturbed areas, minimize land disturbance during peak runoff periods, and carefully store and reuse topsoil removed during construction. Implementation of the SWPPP and prescribed BMPs to prevent erosion and sedimentation during construction would be effective in minimizing the potential for erosion and loss of topsoil.

Once constructed, the disturbed areas of the collection system improvements would be restored to their approximate pre-construction grade and elevation, preventing an increase in runoff. The site of the proposed replacement overflow parking area is presently used as a picnic area and is generally devoid of vegetation. Surface water runoff from the area drains overland, through the adjacent vegetated understory of the riparian corridor, to Pescadero Creek. Through compaction and its aggregate base, the new overflow parking area would increase the imperviousness of the approximately 4,500 square-foot parking lot area. This increase in impervious surface would result in reduced stormwater infiltration and greater surface runoff. However, given the site is already denuded and somewhat compacted due to substantial visitor use, and considering the small area of change relative to the considerably larger area of adjacent vegetated understory through which surface runoff would continue to flow, the change in surface hydrology would not be substantial, such that it could result in significant loss of topsoil or erosion.

There would be no net change in drainage patterns of the existing WWTP as it is converted to a lift station and thus no potential for erosion or loss of topsoil. The site of the new WWTP is an existing, well-compacted, aggregate-base overflow parking lot. The adjacent campground, which would be used for staging and subsequently recontoured to facilitate drainage and reduce ponding after heavy rains, is similarly denuded and somewhat compacted due to substantial visitor use. These areas currently drain to an existing concrete v-ditch which flows to Pescadero Creek. The new WWTP would result in an increase of approximately 1,700 square feet of new impervious surface within the existing overflow parking area. The approximately 10,000 square-foot staging area to be recontoured would not include new impervious surfaces. Given the existing parking surface and adjacent campsite are already well compacted and/or mostly devoid of vegetation, the net change in impervious surface would have a negligible effect on surface hydrology. The new WWTP site would be designed with drainage control features that direct surface runoff away from the facility. New concrete swales would be installed around the new WWTP site to capture surface runoff from the WWTP and adjacent campsite area. The new concrete swales would route surface runoff into the existing concrete v-ditch. Given the project would not substantially change the amount of impervious surface within the project area or the catchment area drained by the existing v-ditch, the project's drainage would not be expected to change such that a substantial adverse effect related to erosion or loss of topsoil would result. Section 2.9, Hydrology and Water Quality, discusses these swales and stormwater BMPs in more detail.

Because implementation of **Mitigation Measure HYD-1** would effectively prevent or minimize the potential for siltation and erosion into surface waters during construction, the potential for erosion impacts or loss of topsoil during project construction would be less than significant with mitigation. The implementation of required drainage control

features as described above would also ensure that the potential for erosion and loss of topsoil during operation of the project would be less than significant with mitigation.

<p>c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction or collapse?</p>			X	
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Discussion: The potential for seismic-related ground failure, including liquefaction, for the proposed project is discussed above for question 2.6a.iii. The potential landslide hazard for the proposed project is discussed above in response to question 2.6a.iv. The preliminary geotechnical investigation found surface soils at the site to include soft silt, clay with gravel, sandy clay, and stiff to hard silty sand (CE&G, 2017). The majority of the soil encountered during the investigation was fine-grained and hard with areas underlain by Santa Cruz Mudstone. The findings of the preliminary geotechnical investigation would be used to inform the foundation design of the proposed improvements which would be included in a final design level geotechnical report. The final report would include final site preparation recommendations as well as foundation requirements in accordance with the California Building Code. Implementation of the final design level geotechnical recommendations, consistent with building code requirements, would ensure that potential impacts related to landslides, lateral spreading, subsidence, severe erosion, liquefaction, or collapse would be less than significant.

<p>d. Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property?</p>			X	
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Discussion: Expansive soils can expand or shrink depending on exposure to changes in water content. In general, the effects of expansive soils can damage foundations, concrete slabs, and aboveground structures over long periods of time. Engineering and building practices in California are required to adhere to building code requirements that address expansive soils that may be present on the project site. The project is not likely to require the use of imported fill; however, any on-site materials that used as engineered fill would be required to meet minimum standards related to expansive properties consistent with building code requirements. The final design level geotechnical report would include specifications for engineered fill, and site preparation prior to construction of the foundation or other pipeline improvements in accordance with geotechnical standards found within the California Building Code. With implementation of the recommendations in this final design level geotechnical report, the potential for expansive soils, if present, to adversely affect proposed improvements would be reduced to less-than-significant levels.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
<p>Discussion: The site currently uses a septic system to discharge wastewater for the Homestead Youth Camp, ranger residence, and corporation yard. The proposed project may include suspending use of the existing septic line system and connecting these wastelines to the new WWTP. The proposed new WWTP would continue to use the spray fields for discharge of the effluent. There would be no new construction or use of a septic tank or alternative wastewater disposal system. Therefore, the proposed project would not employ the use of septic tanks or alternative wastewater disposal systems and there would be no impact.</p>				

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2.7 CLIMATE CHANGE. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Generate greenhouse gas (GHG) emissions (including methane), either directly or indirectly, that may have a significant impact on the environment?			X	
<p>Discussion: Based on the following analysis, construction and operation of the proposed project would not generate greenhouse gas (GHG) emissions, either directly or indirectly, that would have a significant impact on the environment.</p> <p>Construction activities that would be associated with the proposed project would include site preparation; below ground work such as pipe lining and installation; building construction and tank installation; system testing; and cleanup and restoration. Construction activities could occur over a 12-month period for each phase with a potential overlap of 6 months. The majority of the project-related GHG emissions would be generated on-site due to the use of heavy-duty off-road equipment, and a smaller amount of emissions would be generated off-site from trucks transporting equipment and material to the site.</p> <p>The 2017 Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines recommend an operational significance threshold of 1,100 metric tons per year of CO₂e (BAAQMD, 2017a). BAAQMD has not adopted significance thresholds for construction-related GHGs; however, it requires that the lead agency disclose those emissions and make a determination of impacts in relation to meeting AB 32 reduction goals. For construction-related GHGs, other air districts (e.g., South Coast Air Quality Management District) have recommended that total emissions from construction be amortized over 30 years, representing the lifetime of the project, and added to operational emissions and then compared to the operations significance threshold (SCAQMD, 2008).</p> <p>GHG emissions from construction activities were estimated using the CalEEMod emissions model with the same assumptions as discussed in Section 2.3, Air Quality. The results of the CalEEMod run indicate that the proposed project would generate a total of approximately 1,022 metric tons of CO₂e over the 18-month project construction period. Amortized over an estimated proposed project life of 30 years, the annual GHG emissions from proposed project construction would be 34 metric tons of CO₂e. In addition, there would be no additional operational GHG emissions generated as a result of the proposed project.</p> <p>Since proposed project construction GHG emissions would be below the BAAQMD's 1,100 metric tons per year significance threshold and the proposed improvements to the Memorial Park WWTP and conveyance system would not result in any new sources of GHG emissions, the proposed project would not generate GHG emissions that may have a significant impact on the environment. Therefore, the proposed project would generate construction GHG emissions that would result in a less-than-significant impact.</p>				

<p>Since the proposed project would replace existing pumps and generators and would not result in a greater number of vehicle trips, the project would not result in a net increase in operational GHG emissions over those of current operations. Therefore, the impact of the proposed project's operational GHG emissions would be less than significant.</p>				
<p>b. Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</p>			<p>X</p>	

Discussion: The proposed project would be located within an unincorporated area of San Mateo County. San Mateo currently has two climate action plans, which consist of the Government Operations Climate Action Plan (GOCAP) (San Mateo County, 2012) and the Energy Efficiency Climate Action Plan (EECAP) (San Mateo County, 2013). The San Mateo GOCAP identifies how the County will meet established reduction targets by 2020 and 2050 as required by AB 32 and Cool Counties Declaration. To achieve these GHG reduction targets, the GOCAP outlines GHG reduction measures in the areas of energy, transportation, and solid waste. Of the nine GHG measures identified in the GOCAP, none are relevant to the proposed project. The San Mateo EECAP establishes a target of 17 percent below 2005 GHG emission levels by 2020. To meet this target, the EECAP identifies GHG emission reduction measures in the areas of residential energy efficiency, commercial energy efficiency, green building ordinance, renewable energy, transportation, alternative fuels, waste diversion, water efficiency, sustainable agriculture practices, off-road technology and sequestration.

The proposed project would improve the treatment system reliability and efficiency of the existing Memorial Park WWTP and would not result in expansion of or increased demand for wastewater treatment services. The proposed project would not result in any new emission of operational GHG emissions. Furthermore, the proposed project GHG emissions from construction would be a one-time occurrence and would not continually contribute to the County's annual emissions, nor would it hinder the County's progress towards its reduction targets. Therefore, operational emissions would not result in conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This impact would be less than significant.

With regard to consistency with the applicable air district plan, the BAAQMD's 2017 Clean Air Plan (2017 CAP) (BAAQMD, 2017b) contains 85 control measures aimed at reducing air pollution in the Bay Area. The 2017 CAP has two GHG measures applicable to operation of WWTPs: WR1 (Limit Greenhouse gas' (GHGs) from POTWs [Publicly-Owned Treatment Works]) and WR2 (Support Water Conservation). Since the proposed improvements to the existing WWTP would not expand or otherwise increase demand for wastewater treatment services or result in a substantial increase in GHG emissions, the proposed project would not conflict with the implementation of the GHG reduction measures found in 2017 CAP. The BAAQMD GHG thresholds were developed to identify emissions that would be consistent with the AB32 goal of reducing GHG emissions to 1990 levels by 2020. As discussed in response to question 2.7a, the proposed project would not result in any temporary or new permanent sources of GHG emissions that would exceed the

<p>BAAQMD's 1,100 metric tons per year CO_{2e} significance threshold. Since the BAAQMD GHG significance threshold would not be exceeded, the proposed project would not result in a cumulatively considerable increase in GHG emissions that would impair the State's ability to implement AB 32. This impact would be less than significant.</p>				
<p>c. Result in the loss of forest land or conversion of forest land to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?</p>			X	
<p>Discussion: The proposed project would be constructed within Memorial Park. As discussed in Section 1, Project Description, Memorial Park contains a variety of tree species within a 673-acre area. The proposed project would require the removal of four trees to make room for the new WWTP; no additional trees are proposed for removal during the construction of the collection system improvements. The removal of the four trees would result in a minor reduction in carbon sequestration potential at Memorial Park. Since the removal of a small number of trees would not significantly affect Memorial Park's sequestration potential, the proposed project would have a less than significant effect related to the loss or conversion of forest lands resulting in reduced GHG sequestration. While not required to reduce this impact to a less-than-significant level, mitigation measure BIO-2 in Section 2.4, Biological Resources, calls for a replacement ratio of 1:1 for removal of trees measuring less than 12 inches DBH, and 3:1 for removal of trees measuring greater than 12 inches DBH. Implementation of this measure would further reduce potential impacts of the project on the site's GHG sequestration potential.</p>				
<p>d. Expose new or existing structures and/or infrastructure (e.g. – leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?</p>				X
<p>Discussion: As the project site is over 6 miles away from the coastline, the proposed project would result in no impact regarding the exposure of infrastructure or structures to negative effects of sea level rise.</p>				
<p>e. Expose people or structures to a significant risk of loss, injury or death involving sea level rise?</p>				X
<p>Discussion: For the same reason provided for question 2.7d, the proposed project would result in no impact regarding the exposure of structures or people to negative effects of sea level rise.</p>				

f. Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
Discussion: The proposed project would not place structures within a 100-year floodplain and, therefore, there would be no impact related to flood flows.				
g. Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?				X
Discussion: The proposed project would not place structures within a 100-year floodplain and, therefore, there would be no impact related to flood flows.				

References

Bay Area Air Quality Management District (BAAQMD), 2017a. *CEQA Air Quality Guidelines*, revised May 2017. Available at.

Bay Area Air Quality Management District (BAAQMD), 2017b. *Bay Area 2017 Clean Air Plan*, adopted April 19, 2017. Available at <http://www.baaqmd.gov>.

San Mateo County, 2012. County of San Mateo Government Operations Climate Action Plan. September 2012.

San Mateo County, 2013. San Mateo County Energy Efficiency Climate Action Plan. June 2013.

2.8 HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g. – pesticides, herbicides, other toxic substances, or radioactive material)?		X		

Discussion: Project construction would require the storage and use of certain hazardous materials, such as fuels and oils routinely used during construction activities. Inadvertent release of these materials into the environment could adversely impact soil, surface waters, or groundwater quality and potentially result in a significant hazard. Construction could also involve exposing sections of asbestos cement pipe to be replaced with PVC pipe. If not managed appropriately disturbances to the pipe could create airborne emissions of asbestos fibers which are considered a health hazard. Implementation of **Mitigation Measure HAZ-1** during construction activities would minimize potential for impacts from the routine transport, use, or disposal of hazardous materials. The impact would be less than significant with mitigation.

Mitigation Measure HAZ-1: The County shall require the construction contractor use the following best management practices (BMPs) to minimize potential release of hazardous materials used during construction activities:

- Follow manufacturer’s directions on use, storage and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- Provide secondary containment for any hazardous materials temporarily stored on site;
- During routine maintenance of construction equipment, properly contain and remove grease and oils;
- Perform regular inspections of construction equipment and materials storage areas for leaks and maintain records documenting compliance with the storage, handling and disposal of hazardous materials; and
- Properly dispose of discarded containers of fuels and other chemicals.
- Any disturbances to asbestos cement pipe or suspected asbestos cement pipe shall be performed by a California licensed asbestos contractor. Disturbances (including pipe cutting or removal) shall be done in accordance with California OSHA requirements for asbestos containing materials.

In addition, project construction would include excavation of subsurface soils and the possible interception of shallow groundwater. Such activity could result in the release

of hazardous materials, if the excavated soil or shallow groundwater that is intercepted is contaminated. This could expose construction workers and the public to hazardous materials during construction activities and could result in a release of hazardous materials into the environment, such as Pescadero Creek. Depending on the nature and extent of any contamination encountered, adverse health or environmental consequences could result if proper precautions are not taken.

The potential to encounter hazardous materials in soil and groundwater was evaluated utilizing database searches of the State Water Resources Control Board (SWRCB) Geotracker (SWRCB, 2015) and the California Environmental Protection Agency (Cal-EPA) and Department of Toxic Substances Control (DTSC) Envirostor online databases²¹ (DTSC, 2018). These databases were reviewed to identify known environmental cases listed within 0.5 mile of the proposed project site. Review of the databases did not identify any known environmental cases in the immediate project vicinity. However, if soil, groundwater, or other environmental medium with contamination were unexpectedly encountered during excavation or other construction activities, the impact on the environment or construction workers could be significant. Implementation of Mitigation Measure HAZ-2 would reduce impacts from unanticipated exposure to hazardous materials to a less-than-significant level.

Mitigation Measure HAZ-2: The County shall require the construction contractor to follow the procedures below in the event contaminated soil or groundwater is encountered (either visually or through odor detection) during construction:

- Stop work in the vicinity of the suspected material;
- Secure the area of suspected contamination;
- Notify the County and appropriate regulatory agencies;
- Identify the nature and extent of contamination;
- Contain the areas of contamination;
- Perform appropriate clean-up procedures (e.g., segregate, profile, and dispose of all contaminated soil). Required disposal method will depend on the type and concentration of contamination identified; and
- Any site investigation or remediation will be performed in accordance with applicable regulations. Work shall not resume in the area(s) affected until the above measures have been implemented under the oversight of the County or regulatory agency, as appropriate.

Although it can reasonably be assumed that project construction planning would include avoidance of overhead electrical power lines, the movement of large construction equipment and vehicles could damage overhead utility lines and poles. Because there may be other underground utility lines (e.g., water, communication lines, etc.) in the project vicinity, project construction could potentially result in disturbance to these lines, a significant impact. In addition, any disturbance to the existing sewer lines, as noted above, could release asbestos fibers and present

²¹ The Geotracker website includes the following types of environmental cases: leaking underground storage tank (LUST) sites; land disposal sites; military sites; other cleanup sites; permitted underground storage tank (UST) facilities; and permitted hazardous waste generators. The Envirostor database identifies the following: Federal Superfund (National Priorities List) sites; state response sites; voluntary cleanup sites; school cleanup sites; corrective action sites; tiered permit sites; and hazardous waste facilities.

potential adverse health effects to workers or visitors. While it is generally required to contact Underground Service Alert prior to excavation, regulatory requirements are only applicable to public right of way and not private property; therefore, Mitigation Measure HAZ-2 ensures that underground utilities are identified in the park prior to excavation. Potential impacts would be reduced to a less than-significant level with implementation of **Mitigation Measure HAZ-3**.

Mitigation Measure HAZ-3: The contractor(s) shall identify underground utility lines such as natural gas, electricity, telephone, fuel, sewer, and water lines that may be encountered during excavation work. Information regarding the size, color, and location of existing utilities will be confirmed by the utility service provider. A detailed engineering and construction plan that identifies construction methods and protective measures to minimize impacts on aboveground and below-ground utilities shall be prepared. Construction shall be scheduled to minimize or avoid interruption of utility services to customers. The contractor(s) shall promptly reconnect any disconnected utility lines.

In addition, the WWTP is subject to the California Accidental Release Prevention (CalARP) program due to the use and storage of regulated substances (i.e., sodium hypochlorite). CalARP requires preparation of a Risk Management Plan (RMP), which describes the accidental release prevention and emergency response policies and procedures at the facility. The RMP contains a description of the prevention program that would be implemented at the site to minimize the potential for an unauthorized release. The program requirements also include measures to coordinate with local emergency responders to ensure that in the event of an unlikely release, emergency responders can be notified to stabilize the site. A list and map of CalARP facilities is made available to emergency responders.

Upon completion of the project, the County would continue to treat wastewater from the site as currently done and could increase the amount of wastewater currently treated with the future rerouting of wastewater from the separate septic system to the WWTP for treatment. However, even with the expansion, the amount of chemicals required for treatment would not increase substantially, nor would it increase the potential for a release of chemicals to the environment as the same regulatory requirements associated with the safe storage, use, and disposal of chemicals would apply. The project could include abandoning use of the septic system in place which would have a negligible effect on water quality since the use of system is already part of existing conditions. In addition, all hazardous substances associated with the WWTP would be transported, stored, used, and disposed of according to existing regulatory requirements; therefore, operational impacts would be less than significant.

<p>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?</p>		X		
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Discussion: See response to question 2.8a, above.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
<p>Discussion: One school is located within a quarter-mile of the project site: Exploring New Horizons Outdoor School at 9900 Pescadero Creek Road.</p> <p>During project construction, common hazardous materials such as paints, solvents, cements, adhesives, and petroleum products (such as asphalt, lubricants, degreasers, and fuel) would be used; none of these is considered extremely hazardous. Construction activities could result in the inadvertent release of small quantities of these materials. Due to the types and quantities of hazardous materials that would be utilized (e.g., fuels, oils, and solvents), combined with the distance between the site and project site and nearest school, a spill or release at the construction site is not likely to result in emissions with the potential to expose individuals at the school. Once constructed, the operation of the site would be substantially similar to the existing conditions and there would be no substantive emissions of hazardous materials. Because the potential for a release resulting from the use or handling of hazardous materials to affect individuals at nearby schools would be low, the potential impact related to the use of hazardous materials at these sites would be less than significant.</p> <p>In addition, while not required to reduce this impact to a less-than-significant level, implementation of Mitigation Measures HAZ-1 through HAZ-3, which call for use of BMPs, response protocols in the event contaminated soils are encountered, and pre-construction utility investigations, would further reduce the potential for hazardous materials releases which could affect the school.</p>				
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?				X
<p>Discussion: The project site is not included on any of the lists of hazardous materials sites maintained by the SWRCB or the DTSC (SWRCB, 2015; DTSC, 2018). Therefore, the proposed project would not cause a significant hazard to the public or the environment related to a known release of hazardous materials and no impact would occur.</p>				
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, result in a safety hazard for people residing or working in the project area?				X

Discussion: Because there are no public airports or private airstrips within two miles of the project area, no impact would occur.				
f. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?				X
Discussion: Because there are no public airports or private airstrips within two miles of the project area, no impact would occur.				
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		X		
Discussion: See response to question 2.16d, below.				
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?		X		
<p>Discussion: The ABAG maintains mapping databases that identify fire-threatened communities located at the wildland-urban interface and indicate wildfire hazards based on the existing fuel/ground cover present in a given area. Portions of the project site within Memorial Park are identified as Fire Threatened Communities with respect to fire threats at the wildland-urban interface. (ABAG, 2018a; ABAG, 2018b).</p> <p>A large portion of construction activities for the proposed project would occur adjacent to the Pescadero Creek riparian corridor, in areas covered with grasses, leaf litter, and vegetation that would be susceptible to fire. The risk of potential ignition is also similar to that found at other construction sites. Potential sources of ignition would include equipment with internal combustion engines, gasoline-powered tools, and equipment or tools that produce a spark, fire, or flame, such as welding equipment and blades or other metal parts scraping against rock. Smoking by on-site construction personnel would also be a potential source of ignition during construction. The risks to ignition are heightened at the project site because of the proximity to areas identified as Fire Threatened Communities, therefore resulting in a potentially significant impact.</p> <p>Mitigation Measure HAZ-4 would reduce potentially significant impacts associated with fire hazards created during construction to less than significant.</p> <p>Mitigation Measure HAZ-4: The County shall require the construction contractor(s) to ensure that the following fire safety construction practices are implemented:</p>				

- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire;
- Appropriate fire suppression equipment shall be maintained at the construction site;
- Flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame; and
- Construction personnel shall be trained in fire safe work practices, use of fire suppression equipment, and procedures to follow in the event of a fire.

i. Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
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Discussion: The project does not involve the construction of housing; therefore, no impact would occur.

j. Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?				X
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Discussion: The proposed project would not place structures within a 100-year floodplain and, therefore, there would be no impact to flood flows.

k. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
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Discussion: Portions of the project are adjacent to, but not within the 100-year flood zone for Pescadero Creek, including the new and old WWTP. The site of the new WWTP is farther from the creek than existing WWTP. There are no dams or significant levees upstream of the park whose failure could expose people or structures to a significant risk of loss, injury, or death from flooding.

The proposed project would not increase the exposure of park users to flood-related risk as no park users would be able to access the new WWTP site, and the project would not increase park user access to areas at risk of flooding. Given this lack of access, and low risk of flood potential within the project area, impacts related to flooding are considered less than significant.

l. Inundation by seiche, tsunami, or mudflow?				X
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Discussion: According to the California Emergency Management Agency, the project area is not located within a Tsunami Hazard Zone, so no tsunami related impact would

occur. Seiches form in enclosed bodies of water, such as lakes or reservoirs when exposed to significant ground shaking. There are no water bodies on San Mateo County's General Plan list of water bodies with potential to pose a significant hazard due to seiche (County of San Mateo, 1986). The possibility of mudflow is minimal because the majority of project components are proposed for sites that are mostly flat. The proposed project would not exacerbate nor be subject to the risks of tsunami, seiche, or mudflows and there would be no impact.

References

- Association of Bay Area Governments (ABAG), Wildland Urban Interface – Fire Threatened Communities, quake.abag.ca.gov/wildfires, Accessed May 29, 2018a.
- Association of Bay Area Governments (ABAG), Fire Threat in the San Francisco Bay Region, quake.abag.ca.gov/wildfires. Accessed May 29, 2018b.
- Association of Bay Area Governments (ABAG), Dam Failure Inundation Maps. Available online at <http://quake.abag.ca.gov/dam-failure>, May 29, 2018c.
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- California Department of Toxic Substances Control (DTSC), 2018. EnviroStor Database search, www.envirostor.dtsc.ca.gov/public, accessed May 29, 2018.
- County of San Mateo, General Plan, November 1986. www.co.sanmateo.ca.us/planning/genplan/, Accessed May 29, 2018.
- State Water Resources Control Board (SWRCB), 2015. GeoTracker. geotracker.waterboards.ca.gov, Accessed May 29, 2018.

2.9 HYDROLOGY AND WATER QUALITY. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a.	Violate any water quality standards or waste discharge requirements (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash))?		X	
<p>Discussion:</p> <p>Construction Impacts</p> <p>Project construction would require land disturbing activities such as excavation, grading, earthmoving, backfilling, and compaction. Construction and ground disturbance activities associated with the project would occur adjacent to Pescadero Creek and water quality impacts could be significant in the immediate vicinity of construction activities, as well as downstream. Exposed soil from stockpiles and excavated areas could be transported by wind or stormwater and, if not properly managed, could increase the sediment load (turbidity) in stormwater runoff into Pescadero Creek. In addition, construction activities would require use of hazardous materials such as fuels and oils, which, if not managed appropriately, could become mobilized by runoff and contribute to non-point source pollution and degradation of water quality.</p> <p>Although no groundwater study was conducted for this project, the SWRCB Groundwater Ambient Monitoring and Assessment includes seven monitoring wells located at 8150 Pescadero Road, approximately 2500 feet west of the project site. Groundwater was encountered between 1.25 and 11.5 feet below ground surface in those wells, and for the borings conducted as part of the geotechnical investigation at the site at depths of 10 and 16 feet below ground surface (SWRCB, 2017 and CE&G, 2017). Therefore, however unlikely, it is possible that groundwater could be encountered during excavations for the manhole and pipeline improvements, as well as during excavation for the new WWTP. Short-term dewatering may be required to accommodate excavation activities. Dewatering activities have the potential to result in degradation of water quality if water is sediment laden or discharged in a manner that would result in erosion or contamination of Pescadero Creek. Water resulting from dewatering operations would be required to comply with RWQCB dewatering permit waste discharge requirements (WDR) (Order No. R3-2017-0042, NPDES No. CAG993001). The RWQCB lists non-stormwater discharge controls specifically for dewatering operations with low threat to water quality which would apply to the proposed project. Compliance with the WDR would ensure that if dewatering is</p>				

needed during construction activities, potential impacts related to water quality would be less than significant.

As noted in Section 1, Project Description, Phase 1 would require about 2.4 acres of ground disturbance, while Phase 2a would require approximately 8.63 acres of disturbance, while Phase 2b would require approximately 6.6 acres of disturbance. Construction activities within these areas would increase potential for indirect water quality impacts through uncontrolled runoff of stormwater that has come into contact with fuels, oils, greases and sediments within the active construction area resulting in a significant impact. The potential for such impacts would be reduced through implementation of **Mitigation Measure HYD-1**, which calls for the preparation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would include various BMPs for all construction activities to ensure that adverse effects to receiving waters does not occur. For example, implementation of silt fences, fiber rolls and other erosion control BMPs would minimize the potential for discharge of sediment and pollutants from the construction site.

Because the area of impact is greater than one acre, the project would be subject to the requirements of the General Construction Permit under the National Pollutant Discharge Elimination System (NPDES), which call for the preparation and implementation of a SWPPP, among other requirements. Implementation of **Mitigation Measure HYD-1** as well as **Mitigation Measure HAZ-1** which also calls for use of BMPs to minimize potential for hazardous materials release (described in Section 2.8, Hazards and Hazardous Materials), would protect against water quality impacts associated with construction, regardless of the phasing scheme selected. The impact would be less than significant with mitigation.

Mitigation Measure HYD-1: The County shall, by contract specifications, ensure contractors prepare and implement a SWPPP for each phase of the proposed project to be implemented. Erosion control measures shall be in place prior to the start of each phase's respective construction activities and remain in place throughout the construction duration. The plan must provide a BMP monitoring and maintenance schedule and identify parties responsible for monitoring and maintenance of construction-phase BMPs. Erosion and water quality control measures identified in the plan must comply with the Construction Site Control requirements (C.6) of the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Order No. R2-2015-0049²²), and the County's standard Water Pollution Control Plan specifications. At a minimum, the SWPPP shall include, but not be limited to, the following measures (County of San Mateo, 2017):

- Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) shall be employed for disturbed areas. No disturbed surfaces will be left without erosion control measures in place.
- Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- A spill prevention and countermeasure plan shall be developed that will identify proper storage, collection, and disposal measures for potential pollutants (such

²² Or by extension, the requirements of the San Mateo Countywide Water Pollution Prevention Program, as applicable.

as fuel, fertilizers, pesticides, etc.) used on-site. The plan will also require the proper storage, handling, use, and disposal of petroleum products.

- Construction activities shall be scheduled to minimize land disturbance during peak runoff periods and to the immediate area required for construction. Existing vegetation will be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.
- Surface waters, including ponded waters, must be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation. Normal flows must be restored to the affected stream immediately upon completion of work at that location.
- Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out. Store, cover, and isolate construction materials, including topsoil and chemicals, to prevent runoff losses and contamination of groundwater.
- Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events. All removed topsoil shall be reused during construction to the extent feasible. Unused topsoil, if any, shall be broadly redistributed to the surrounding rural/developed areas in such a manner that topography and vegetation cover would not be adversely impacted.
- Establish fuel and vehicle maintenance areas away from all drainage courses and design these areas to control runoff.
- Disturbed areas will be re-vegetated after completion of construction activities.
- All necessary permits and approvals shall be obtained.
- Provide sanitary facilities for construction workers.

Operation Impacts

Operation and maintenance of the proposed project would be required to comply with General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems, State Water Resources Control Board Order WQ 2014-0153-DWQ. Operation of the existing WWTP is currently regulated under Order No. 86-46; however, an application for coverage under the Order WQ 2014-0153-DWQ has been drafted and submitted for approval. The application describes the collection system, influent wastewater characteristics, the proposed treatment system, sludge disposal, effluent quality and monitoring requirements, and details on the land disposal all consistent with the WDR requirements. Discharge limits would be included as part of the final approved permit to ensure that water quality standards are met. The discharge would be routinely monitored to ensure that acceptable thresholds for water

<p>quality are not exceeded. This program, administered by San Mateo County, ensures that no negative water quality impacts to surface or groundwater would occur due to operation of the wastewater system by limiting the amount of dry weather flows, managing the spray disposal area for any effluent runoff or soil saturation, and complying with all of the other control and water quality monitoring conditions of the WDR permit. In addition, use of the WWTP over the septic system provides greater adaptive management opportunities and ensures that water quality requirements are being met under the aforementioned monitoring requirements better than would occur over use of the septic system. The 1.28 acre sprayfield is located on a designated hillside that is approximately 0.2 miles from Pescadero Creek. Compliance with the final WDR and implementation of BMPs for erosion and sediment control would reduce impacts to water quality and waste discharge requirements and eliminate a potential for significant impacts to occur.</p>				
<p>b. Significantly deplete groundwater supplies or interfere significantly with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?</p>			<p>X</p>	
<p>Discussion: The proposed project would not result in the use or withdrawal of groundwater during operation. As described above for question 2.9a, excavation during project construction could intercept the shallow groundwater table and the proposed project may require short-term dewatering to accommodate installation of the WWTP. However, such dewatering activities would involve relatively small quantities of water and would be temporary in nature over a localized area, resulting in no long term impacts to groundwater supplies or aquifers. Accordingly, if construction-related groundwater dewatering is required, it would not affect municipal or private wells in the project vicinity. For these reasons, impacts related to the depletion of groundwater resources would be less than significant.</p> <p>The proposed project would not result in a substantial increase in impervious surface area and would not interfere significantly with groundwater recharge. Added impervious surfaces would be minimal (about 0.02 percent of the park area) and would consist of the concrete tank, the pre-engineered WWTP canopy, new aggregate base overflow parking area, and small electrical and motor control systems building and generator enclosure. Runoff from these impervious surfaces to adjacent areas could result in groundwater recharge. All manhole and pipeline improvements would either replace existing impervious surface areas or be located underground. Therefore, the project would not result in an increase in impervious surfaces that would affect groundwater recharge and impacts would be less than significant.</p>				

c. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in significant erosion or siltation on- or off-site?		X		
<p>Discussion: The proposed project would not result in the alteration of the course of Pescadero Creek. The new WWTP system and improvements would occur primarily in areas that are currently graded and would not substantively alter the existing drainage pattern of the park.</p> <p>Regarding alteration of drainage patterns of the site, during construction, as described for question 2.6b and 2.9a, soil disturbing activities in upland areas, such as excavation, grading, earthmoving, backfilling, and compaction related to the new WWTP, replacement overflow parking area, and manhole and pipeline improvements, could cause dislodging of soil and erosion. Stormwater runoff could mobilize these sediments, causing them to flow into Pescadero Creek, which could adversely and substantially affect water quality through sedimentation and increased turbidity, a significant impact. However, with implementation of Mitigation Measure HYD-1, construction activities would implement BMPs as described above in 2.9a, which would minimize the potential for erosion and discharge of sediment from the construction areas to a less-than-significant level.</p> <p>As discussed in response to question 2.6b, the project would introduce new impervious surface areas into the project area and modify the existing contours to facilitate improved drainage. However, as also discussed, the areal extent of these changes would be minimal, and the post-project drainage scheme would be similar to that under existing conditions. For these reasons, the project's drainage would not be expected to change such that a substantial adverse effect related to erosion or loss of topsoil would result. Accordingly, the impact of project operations would be less than significant.</p>				
d. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or significantly increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X	
<p>Discussion: The project would not cause a substantial change in runoff flow rates. As explained in response to questions 2.6b and 2.9c, the project would introduce a small amount of new impervious surface into areas that presently are compacted and/or denuded. The proposed drainage modifications would utilize existing drainage mechanisms (e.g., overland sheet flow for the new overflow parking lot and existing v-ditch for the new WWTP site). And as also explained, the catchment areas for these drainages would not change substantially under the project. For these reasons, there</p>				

would be no substantial increase in the rate or volume of surface runoff that could result in on- or off-site flooding. Therefore, the impact would be less than significant.				
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide significant additional sources of polluted runoff?		X		
<p>Discussion: See Discussion in response to questions 2.6b and 2.9c, above. The park is mostly unpaved open ground besides several buildings and access roads; there are no existing stormwater drainage systems in the project site.</p> <p>Construction activities associated with the project have the potential to result in polluted runoff, a potentially significant impact. As described in response to question 2.9a, BMPs are recommended to prevent discharge of polluted runoff from the construction site. With implementation of Mitigation Measure HYD-1, the impact would be less than significant.</p> <p>With respect to project operations, for the reasons set forth in responses to questions 2.6b and 2.9c, the project would not be expected to substantially alter the volume or flow rate of stormwater runoff such that existing drainage mechanisms would be overwhelmed. Nor would the project involve drainage of any new areas which could result in polluted runoff. Project operations would, therefore, have a less-than-significant impact regarding site drainage capacity.</p>				
f. Significantly degrade surface or groundwater water quality?		X		
Discussion: See 2.9a discussion, above.				
g. Result in increased impervious surfaces and associated increased runoff?			X	
Discussion: As discussed for question 2.6b, 2.9b and 2.9e, the proposed project would not result in a substantial increase in impervious surface area and there would be no substantial change above the current baseline in runoff flow rates. The impact would be less than significant.				

References

County of San Mateo, 2017. Planning & Building Department: Requirements for Erosion and Sediment Control. Available at: [https://planning.smcgov.org/sites/planning.smcgov.org/files/Erosion%20Control%20\(EC\)%20Guidance%20Packet%20\(updated%202017\).pdf](https://planning.smcgov.org/sites/planning.smcgov.org/files/Erosion%20Control%20(EC)%20Guidance%20Packet%20(updated%202017).pdf). Accessed on: May 29, 2018.

State Water Resources Control Board (SWRCB), 2017. GeoTracker Individual Well Analytical Data for Loma Mar Store T0608103909. Available at: http://geotracker.waterboards.ca.gov/profile_report?global_id=T0608103909&mytab=esidata#esidata.

2.10 LAND USE AND PLANNING. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Physically divide an established community?				X
<p>Discussion: The proposed project would involve improvements to the existing Memorial Park wastewater treatment system, primarily within the park and Pescadero Creek Road right-of-way. The project would not occur within, nor would it divide any established community. Project activities would, therefore, have no impact related to physically dividing an established community.</p>				
b. Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
<p>Discussion: The project would take place within the boundaries of Memorial Park and the Pescadero Creek Road right-of way. The park includes lands zoned Resource Management (RM) and Timber Preserve Zone (TPZ). Memorial Park is bordered by lands zoned TPZ, RM, R-1/S-1, and "H-1/S-10. Permitted uses in the RM and TPZ classifications include the park's existing land use of public recreation. The project would make no changes to the land use of the park and would not conflict with applicable park use regulations.</p> <p>Moreover, pursuant to California Government Code section 53091(e), the project would not be subject to local zoning regulations because its purpose is water treatment. Thus, the proposed project's impact with respect to plans and policies related to land use adopted for the purpose of avoiding or mitigating an environmental effect would be less than significant.</p>				
c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?				X
<p>Discussion: There are no habitat conservation plans (HCP) or natural community conservation plans (NCCP) in the park. The only HCP in San Mateo County is for San Bruno Mountain, and does not include the project site (CDFW, 2017). Therefore, the proposed project would have no impact related to applicable HCPs or NCCPs.</p>				

d.	Result in the congregating of more than 50 people on a regular basis?				X
Discussion: The proposed project does not include structures, facilities, other attractions that would cause people to congregate on a regular basis.					
e.	Result in the introduction of activities not currently found within the community?				X
Discussion: The proposed project would repair and replace the existing WWTP and segments of the collection system; and does not include or introduce an activity not found within the community.					
f.	Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?				X
Discussion: The proposed project would improve the existing wastewater treatment system in Memorial Park. The project would only serve the users of the park, and would not result in an increase in park users such that off-site development pressure would result. Therefore, the proposed project would have no impact with respect to encouragement of off-site development.					
g.	Create a significant new demand for housing?				X
Discussion: The proposed project would not include the provision of new services or employment that would attract new residents or otherwise increase demand for housing within the area and there would be no impact.					

References

California Department of Fish and Wildlife, 2017. California Regional Conservation Plans. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline>.

2.11 MINERAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the State?				X
Discussion: There are no mines, mineral plants, oil, gas, or geothermal wells located at the project site (USGS, 2003; CDC, 2018). The proposed project is not located in an area known to contain minerals that would be of value to the region or residents of the state. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region; no impact would occur.				
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?				X
Discussion: Locally important mineral resources are not delineated in any local land use plans for the project area, including the San Mateo County General Plan. Therefore, the project would not result in the loss of availability of a locally important mineral resource recovery site; no impact would occur.				

References

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (CDC), 2018. DOGGR Online Mapping System, accessed May 24, 2018.

U.S. Geological Survey (USGS), 2013. Active Mines and Mineral Plants in the U.S. 2003, mrddata.usgs.gov/mineral-resources/active-mines.html, accessed May 24, 2018.

2.12 NOISE. Would the project result in:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X	
<p>Discussion: The proposed project would occur entirely within an unincorporated area of San Mateo County. The San Mateo County Municipal Code, Section 4.88.360(e), exempts construction and demolition activities from its noise standards provided they do not occur between the hours of 6:00 p.m. and 7:00 a.m. weekdays, 5:00 p.m. and 9:00 a.m. on Saturdays or at any time on Sundays, Thanksgiving and Christmas. As described in Section 1, Project Description, construction activities would take place during daytime hours from 7:00 a.m. and 4:00 p.m., Monday through Friday; therefore, noise generated during the construction of the project would not result in a violation of the County's code.</p> <p>San Mateo County Municipal Code Section 4.88.330 establishes exterior noise standards for sensitive land uses, including residences, schools, hospitals, churches, and libraries. The code specifies that daytime exterior noise levels at sensitive land uses shall not exceed 55 dBA for more than 30 minutes in a one-hour time period. Campsites are not identified in the code as a sensitive land use. Section 4.88.360(d), exempts from its noise standards any mechanical device associated with emergency work, including work to maintain healthy conditions in the community and work to restore utility service. As a result, operational noise would not be in excess of standards established in the County's general plan or municipal code and would be considered a less-than-significant impact.</p> <p>Regarding the potential for a permanent increase in ambient noise levels in the project vicinity, there are several new features that could generate noise. The project proposes the installation of two new WWTP submersible pumps at each of the anoxic tanks, which would be completely enclosed and submerged in water. In addition, the County would install a new emergency backup generator to maintain treatment operations during power outages. The proposed generator would be housed in a sound enclosure.</p> <p>Since the proposed pumps and generators would be attenuated by submersion and enclosure, and located approximately 70 feet from campsites and more than 1,200 feet from the nearest sensitive land use (e.g., residences), project noise would not be noticeable above existing ambient levels. In addition, the proposed project would not generate new vehicle trips or result in new maintenance activities that would result in increased noise. Therefore, with regard to long-term operations, once construction is completed, noise levels would return to levels similar to the existing noise environment and would not result in a permanent increase in ambient noise levels above levels existing without the project resulting in a less-than-significant impact.</p>				

b. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?			X	
<p>Discussion: Vibration can be interpreted as energy transmitted as waves through the ground. These energy waves generally dissipate with distance from the vibration source. Since energy is lost during the transfer of energy from one particle to another, vibration attenuates rapidly with distance. Operations and maintenance of the proposed project would not include any sources of vibration that would be considered excessive.</p> <p>For the purposes of the assessment of potential vibration impacts on nearby sensitive land uses, the methodology described in Caltrans' Transportation and Construction Vibration Guidance Manual was used. For adverse human reaction, the analysis applies the "severe" threshold of 0.4 inch/second PPV for continuous/frequent sources (Caltrans, 2013). For risk of architectural damage to historic buildings and structures, this analysis applies a threshold of 0.25 inch/second PPV (Caltrans, 2013). A threshold of 0.3 in/sec PPV is used to assess risk of damage for all other building types.</p> <p>Groundborne vibration and noise associated with some construction activities, including the use of pile drivers, blasting and jack hammers can cause excessive vibration. The proposed project would not include any such activities. The piece of construction equipment that would generate the highest vibration levels during project construction is a loaded truck. According to the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment, a loaded truck can generate a vibration level of 0.076 inch/second PPV vibration level from a distance of 25 feet, which is well below Caltrans' adverse human reaction and building damage thresholds (FTA, 2006). Since there are no sensitive receptors within 25 feet of onsite construction areas, vibration from project construction equipment would not be noticeable by the nearest sensitive receptor or result in building damage, and the impact would be less than significant. Project operations would involve no new sources of groundborne vibration or noise and, therefore, would have no impact.</p>				
c. A significant permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
<p>Discussion: See 2.12a discussion, above.</p>				
d. A significant temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
<p>Discussion: Construction noise levels at and near the proposed project site would fluctuate depending on the type, number, and duration of use of various pieces of construction equipment. Proposed project construction is conservatively estimated to</p>				

occur over a 12-month period for each phase with a potential overlap of 6 months for the improvements to the WWTP and the improvements to the collection system. Construction activities would take place during daytime hours from 7:00 a.m. and 4:00 p.m., Monday through Friday.

Given the low level of construction-related vehicle trips (6-10 worker trips per day, 4-8 haul/delivery trucks per day) associated with hauling and commuting workers, these trips would not be expected to raise ambient noise levels along haul routes.

Table 5 shows typical noise levels produced by various types of construction equipment that would operate at the proposed project site.

**TABLE 5
REFERENCE CONSTRUCTION EQUIPMENT NOISE LEVELS – (50 FEET FROM SOURCE)**

Type of Equipment	L _{max} , dBA	Hourly L _{eq} , dBA/ Percent Used ¹
Air Compressor	80	76/40
Backhoe	80	76/40
Compactor	80	73/20
Concrete Saw	90	83/20
Crane	85	77/16
Fork Lift	85	78/20
Generator	82	79/50
Loader	80	76/40
Paver	85	82/50
pumps	77	74/50
Roller	85	78/20
Tractor	84	80/40

NOTES:

¹ "Percent used" were obtained from the FHWA Roadway Construction Noise Model User's Guide.

SOURCE: FHWA, 2006.

Although there are no applicable local policies or guidelines that establish noise exposure standards applicable to short-term daytime construction, the FTA's *Transit Noise and Vibration Impact Assessment* guidance document has identified a daytime 1-hour L_{eq} level of 90 dBA as a noise level where adverse community reaction could occur at residential land uses (FTA, 2006). This noise level is used here to assess whether construction-related noise levels would cause a substantial temporary or periodic increase in ambient noise levels at sensitive receptor locations.

Noise impacts from construction generally result when construction activities occur during the noise-sensitive times of the day (early morning, evening, or nighttime hours), in areas immediately adjacent to sensitive receptors, or when construction noise lasts for extended periods of time. Noise generated from the noisiest construction equipment (i.e., a concrete saw at 83 dBA L_{eq}) would attenuate to approximately 73 dBA L_{eq} at the residences located 130 feet north of the proposed project site.

In addition to residential uses, there are several camp sites within the vicinity of the proposed project site. Assuming noise generated from the noisiest construction equipment (i.e., a concrete saw at 83 dBA L_{eq}) and 7.5 dB drop-rate, campers located within 27 feet of active construction areas would be exposed to noise levels that would exceed the applied 90 dBA L_{eq} threshold. While, campsites within the park are

<p>generally farther than 50 feet from proposed onsite construction areas, the County would nevertheless coordinate collection system improvements with campsite closures such that no work would occur within 50 feet of an occupied campsite. As shown in Table 5, none of the construction equipment that would operate during project construction would generate a noise level greater than 83 dBA L_{eq} from a distance of 50 feet.</p> <p>Although proposed project-related construction noise levels may be audible at the nearest sensitive receptor locations, they would not exceed the 90 dBA L_{eq} threshold; therefore, the temporary increase in ambient noise levels would be less than significant.</p>					
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, expose people residing or working in the project area to excessive noise levels?				X
<p>Discussion: The proposed project site is not located within 2-miles of an airport land use plan. The proposed project area is located approximately 16 miles from the San Carlos Airport. According to the County of San Mateo Comprehensive Airport Land Use Plan (CALUP), the proposed project area is located approximately 16 miles from the airport's 55 dBA CNEL noise contour. Therefore, the proposed project would not expose people residing or working in the proposed project area to excessive noise levels. No impact would occur.</p>					
f.	For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels?				X
<p>Discussion: The proposed project is not located within 2-miles of a private airstrip. The nearest airstrip, Palo Alto Airport, is located approximately 15 miles from the proposed project area and would not influence the noise environment at the proposed project site. Therefore, no impact would occur.</p>					

References

Federal Transit Administration (FTA, 2006). *Transit Noise and Vibration Impact Assessment*. May 2006.

Federal Highway Administration (FHWA, 2006). *Roadway Construction Noise Model User's Guide*. January 2006.

2.13 POPULATION AND HOUSING. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Induce significant 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)?				X
<p>Discussion: The proposed project would not increase the demand for or capacity of the existing Memorial Park wastewater treatment system, nor would the project expand park facilities. Additionally, there is no permanent housing located within the park besides the ranger residence. During the construction period (estimated to be approximately 12 months for each phase), up to 10 construction workers would be employed regardless of whether Phase 2a or 2b is implemented. Given the site's proximity to several population centers, it is expected that regional labor would meet the construction workforce requirements. The proposed project would not construct new homes or businesses in the area or extend new roads or other infrastructure into undeveloped areas. Therefore, the proposed project would have no impact related to growth inducement.</p>				
b. Displace existing housing (including low- or moderate-income housing), in an area that is substantially deficient in housing, necessitating the construction of replacement housing elsewhere?				X
<p>Discussion: The project would improve the existing wastewater treatment system for Memorial Park and would not displace existing housing. No housing would need to be constructed due to displacement of existing housing. Therefore, no impact would occur.</p>				

2.14 PUBLIC SERVICES. Would the project result in significant adverse physical impacts associated with the provision of new or physically altered government 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>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Fire protection?			X	
<p>Discussion: The County contracts with the California Department of Forestry for fire protection and general rescue services in the unincorporated areas of the County not served by other fire districts or departments. The San Mateo Division is a “Combination Type” Division having both paid and volunteer personnel. In total, County Fire operates three volunteer fire stations and four paid stations. The nearest fire station is Fire Station 55, the Loma Mar Volunteer Fire Company, which is located within park boundaries and serves both the community of Loma Mar and other nearby areas (CalFire, 2018). In the event of a fire emergency, Fire Station 55 and Station 59 in Pescadero would respond (LoCocco, 2018).</p> <p>Because construction activities would be short-term and would involve a workforce of up to 10 construction workers on any given day, project construction would not significantly increase demand for fire protection services throughout the project vicinity. Similarly, the project would not change long-term use of the project area such that increased risk of fire would result. For these reasons, the project would not be expected to substantially affect the Loma Mar Volunteer Fire Company’s ability to maintain service ratios, response times, other performance objectives, such that new or physically altered facilities would be required. For these reasons, the project’s impact with respect to the provision of fire service would be less than significant.</p>				
b. Police protection?			X	
<p>Discussion: The project site is served by the San Mateo County Sheriff’s Office. The nearest San Mateo County Sheriff’s office is the North Fair Oaks Substation located at 3121 Middlefield Road, approximately 23 miles from the project site (County of San Mateo, 2018).</p> <p>For the reasons provided in response to question 2.14a, the project would not be expected to substantially affect the San Mateo County Sheriff’s Office’s ability to maintain service ratios, response times, or other performance objectives such that new or physically altered facilities would be required. For these reasons, the project’s impact with respect to the provision of police protection facilities would be less than significant.</p>				
c. Schools?				X
<p>Discussion: See also response to question 2.13a. The proposed project would result in a small temporary increase of construction worker in the project area which would not be expected to result in family relocations such that area school resources or</p>				

<p>facilities would be burdened. Project operations would not require hiring new staff. Nor would the project require new or modification of existing school facilities. For these reasons, the project would have no impact with respect to the adequate provision of school resources or facilities.</p>				
d. Parks?			X	
<p>Discussion: Other than the project site (Memorial Park), the nearest parks or recreational areas to the project site include Pescadero Creek Park, Portola Redwoods State Park, and Sam McDonald County Park. For the reasons described in response to question 2.13a, the project would not result in increased population such that there would be additional demand for parks facilities during or after construction. While the park would remain open during construction, some would-be park users may be diverted to other parks in the area. Nevertheless, given the short construction duration and the abundance of other parks in the area, any such displacement would not result in substantial impacts on the receiving parks such that there would be need for increased or expanded parks facilities. For these reasons, the project would have a less-than-significant impact related to the need for new or physically altered parks and recreational facilities.</p>				
e. Other public facilities or utilities (e.g. – hospitals, or electrical/natural gas supply systems)?			X	
<p>Discussion: The proposed project would not involve new permanent employees and, therefore, it is not expected to increase the use of other public facilities such as libraries or hospitals. Although the project does include a new WWTP and upgrades to the existing collections system, there would be no change in the demand for new wastewater treatment or other associated utilities for water or energy during operation. Similarly, although the park’s water and energy demands would increase during construction, these impacts would be temporary and would be within the capacity of the park’s existing water and energy utilities. Therefore, the project’s impact would be less than significant.</p>				

References

California Department of Forestry and Fire Protection (CalFire), 2018. http://www.fire.ca.gov/CZU/SanMateo_Division. Accessed on June 4, 2018.

County of San Mateo, 2018. San Mateo County Sheriff’s Office, www.smcsheriff.com. Accessed June 4, 2018.

LoCoco, Pamela, Firefighter/Emergency Medical Technician. Personal Correspondence with Air Frink (ESA) via email on June 7, 2018.

San Mateo County Office of Education, 2018. <http://www.smcoe.org/about-smcoe/districts-and-schools/>. Accessed on June 4, 2018.

2.15 RECREATION. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a.	Increase the use of existing neighborhood or regional parks or other recreational facilities such that significant physical deterioration of the facility would occur or be accelerated?		X	
<p>Discussion: The proposed project would replace the existing WWTP with a new system and upgrade and expand the existing collection system. The park would remain open during construction, although use of some park areas and campsites would be temporarily restricted during construction. The presence of construction activities and campsite closures may compel some would-be users to visit other nearby parks in the area, such as Sam McDonald County Park, Pescadero Creek Park, or Portola Redwoods State Park, among many others. The park would remain open during construction and active work areas at any given time would be limited to small portions of the park relative to total park area. Considering the abundance of other parks in the region, and given that most camping opportunities within those parks are restricted to designated areas and regulated via reservation and/or permit system, any such displacement would not result in increased use of receiving parks such that they would experience substantial physical deterioration. The project would improve existing park facilities; therefore, the project would have a less-than-significant effect on neighborhood or regional parks and recreational facilities.</p>				
b.	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		X	
<p>Discussion: While the project is not a recreation project per se, it would serve the recreational users of and enable recreation within Memorial Park. As discussed elsewhere in this IS/MND, some of the work associated with the proposed project could have an adverse physical effect on the environment. The specific types of effects and mitigation measures identified to minimize or avoid those impacts are discussed in the subsections of this document corresponding to the affected topic area (e.g., Section 2.4, Biological Resources). Please refer to those sections for specific discussions of potential physical adverse effects on the environment.</p>				

2.16 TRANSPORTATION/TRAFFIC. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a.	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		X	
<p>Discussion: Pescadero Creek Road bisects Memorial Park, located in unincorporated San Mateo County. Applicable policy related to the establishing measures of effectiveness for the performance of the circulation system includes the City/County Association of Governments of San Mateo County (C/CAG) Congestion Management Plan (CMP) and the San Mateo County General Plan – Transportation Policies (San Mateo County, 1986). Of particular applicability to this project are:</p> <p><i>Congestion Management Program</i></p> <p>The City/County Association of Governments of San Mateo County (C/CAG) serves as the Congestion Management Agency (CMA) for San Mateo County. C/CAG’s most recent Congestion Management Program (CMP), referred to as the CMP 2017, establishes the designated CMP Roadway network, which includes I-280, U.S. 101, the Bayfront Expressway (SR 84), El Camino Real (SR 82), and Willow Road (SR 114), and the LOS standard for each roadway in the network (C/CAG 2018). The project is not expected to generate trips during project operation, and Pescadero Creek Road is not included in the CMP Roadway system. Additionally, project-generated construction trips would be small in number and therefore would not substantially affect traffic on designated CMP roadways that serve as regional corridors. The project would not conflict with C/CAG’s Congestion Management Program.</p> <p><i>General Plan - 12.21 Local Circulation Policies</i></p> <p>In unincorporated communities, plan for providing:</p> <p>a. Maximum freedom of movement for all transportation users and adequate access to various land uses;</p> <p>d. Routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks;</p>				

- e. Access for emergency vehicles;
- j. Coordination of transportation improvement with adjacent jurisdictions.

To assess whether the project conflicts with the General Plan, the project's trips were calculated and assessed for their impact on the movement of existing transportation users and access for emergency vehicles. Project trucks would avoid residential areas, so there is no conflict with the 12.21 Local Circulation Policies for item j.

Regional access to the project site is from State Route 84 (SR 84; also known as La Honda Road), a 2-lane, undivided highway. Recent data published by California Department of Transportation (Caltrans) indicates that the Annual Average Daily Traffic (AADT) on the roadway is about 2,050 vehicles (Caltrans, 2017). There is no local or county (SamTrans) bus service in the area, and the road does not have a dedicated bicycle lane or sidewalk.

Table 6 below, presents the estimated number of one-way vehicle trips generated by project construction activities and the duration of such activities. As described in Section 1, Project Description, construction activities would occur over a 12-month period for each phase (with a potential overlap of 6 months), with pipeline construction proceeding at a rate of approximately 100 feet per day. Construction worker traffic would vary depending on scheduling and phasing, and the work crew size would consist of a maximum of 10 workers per day. To ensure that vehicle trip generation is not underestimated for this impact analysis, it is assumed that all workers would travel to and from the project site in their own vehicles (i.e., no carpooling).

TABLE 6
ESTIMATED MAXIMUM DAILY VEHICLE TRIPS FOR PROJECT CONSTRUCTION

Purpose of Truck/Vehicle Trip	Passenger Car Equivalent Trips Per Day	Duration (weeks)
WWTP (Phase 1)		
• Construction	48	52
• Workers ^a	20	52
<i>Maximum Truck/Vehicle Trips per Day^b</i>	68	
Pipeline and Manhole Improvements (Phase 2a or 2b)		
• Construction	48	52
• Workers	20	52
• Workers		
<i>Maximum Truck/Vehicle Trips per Day</i>	68	
Total Maximum Truck/Vehicle Trips per Day^b	136	

^a Represents the estimated maximum number of trips per day, assuming concurrent activities at each work site would occur.

^b Represents the estimated maximum number of roundtrips per day if Phases 1 and 2a or 2b are constructed with a 6-month overlap.

Truck trips associated with the project would include the transport/delivery of construction materials and equipment to each project work site, the transport/delivery of fill materials in areas affected by trenching or pile installation, and the transport of spoils and debris due to excavation-related activities. Heavy vehicles such as trucks are larger, heavier, slower, and less maneuverable than household (personal) automobiles, and typically have more noticeable effects on traffic flow. These effects can be simulated through the use of passenger car equivalent (PCE) factors, which

attempts to capture the effects of a given type of heavy vehicle by converting it to an equivalent number of passenger cars. For trucks, PCE factors are typically on the order of 2.0 to 3.0. Each project work site would require no more than 8 trucks per day, and the maximum number one-way truck trips would be approximately 16. As show in Table 6, this equates to roughly 48 one-way PCE trips. Depending on the scheduling and phasing of work at each project site, construction activities at each site would likely be scheduled concurrently and therefore the maximum number of trips per day from trucks and worker vehicles would be approximately 68 one-way PCE trips. In order to determine the extent to which construction activities would affect the surrounding transportation network, the maximum number of trips per day during the course of the construction period were evaluated. Construction activities are expected to occur during typical work hours, from 7:00 a.m. to 4:00 p.m. on weekdays.

Project construction would be confined within a determined construction corridor, such as Pescadero Creek Road and the temporary access points for trucks near the pipeline alignment and WWTP site. Staging of construction vehicles (temporary parking for construction machinery and workers' vehicles) may occur within the existing parking and staging areas with no disruption to public rights-of-way. Construction workers would walk or drive from the parking areas to the work sites. One or two trucks may be parked adjacent to each work site.

The ingress and egress movements of trucks would not result in intermittent closures of portions of Pescadero Creek Road because construction would be confined to either side of the road for most of the construction period. The construction along Pescadero Creek Road would result in temporary closures of the eastbound travel lane, which would require alternate one-way traffic flow on the westbound travel lane. Visitors and travelers using Pescadero Creek Road could experience delays of up to a few minutes several times per day during construction hours.

Assessment of the short-term effect that project construction traffic could have on local and regional roads is based on the following: (1) review of existing traffic volume information and, (2) consideration of both the percentage increase the project construction traffic would contribute over existing conditions and the capacity of the road to handle the additional traffic. Because the number of vehicles on roads varies from day to day (with routine fluctuation of plus or minus five percent), a change in traffic volume of five percent or less is generally not perceptible to the average motorist.

Traffic volumes on project area roads are typically highest during morning and evening peak commute hours (generally between 7:00 a.m. to 9:00 a.m., and 4:00 p.m. to 6:00 p.m.); traffic increases that occur during these peak periods may exacerbate short-term congestion.

The main road providing access from the highway system to the project site is Pescadero Creek Road. Compared to the average daily traffic volume on State Route 84 (about 2,050 vehicles), the maximum daily project-generated traffic for the potential 6-month period when the two phases of construction could overlap (136 one-way PCE trips) would represent a 6.6 percent increase in daily traffic. As the majority of this increase would be attributable to truck trips, which would be distributed throughout the day, the impact of construction traffic on Pescadero Creek Road traffic would not be substantial. Project-generated traffic under the Phase 2b option could result in slightly more trucks but distributed across the day and during non-peak hours would result in a negligible difference with the Phase 2a option.

<p>However, if Pescadero Creek Road lane closures for pipeline installation were to occur during peak travel periods, delays in eastbound and westbound traffic could occur during these times. Because this would affect the General Plan policy of “maximum freedom of movement for all transportation users,” this could conflict with the General Plan and could potentially constitute a significant impact, though this is unlikely, with implementation of Mitigation Measure TRA-1, which calls for avoidance of lane closures during peak travel periods, the impact would be reduced to less-than-significant with mitigation. The project would not result in increased visitation or require additional staffing. As a result, project operations would not affect traffic conditions.</p> <p>Mitigation Measure TRA-1: The County shall require the construction contractor to conduct 24-hour traffic counts on Pescadero Creek Road during a one-week period prior to construction in order to establish what the peak travel periods are. The county shall require the construction contractor to avoid lane closure during established peak travel periods.</p>				
b.	Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?			X
<p>Discussion: Level of service standards are established by congestion management agencies and other jurisdictional entities to assess and regulate long-term traffic impacts due to future permanent development; the standards do not directly apply to temporary construction projects. The project would require periodic inspection and monitoring of the WWTP and conveyance infrastructure performed by existing staff at the park. Therefore, no substantial increase in long-term trips would result from the proposed project. Further, there would be no increase in long-term trips to the project site once the project is completed and fully operational. Because the project would not result in an increase in long-term trips relative to existing conditions, impacts to traffic congestion on affected roadways would be less than significant.</p>				
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in significant safety risks?			X
<p>Discussion: The project site is not located close to any airport, and the project would not include any elements that would intrude into an airport’s air space, nor would construction or operational activities affect air traffic patterns; therefore, no impact would occur.</p>				

<p>d. Significantly increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</p>		X		
<p>Discussion: Project-generated traffic (including worker vehicles and large trucks) would interact with other vehicles as well as bicyclists on the roads used to access the project work sites, which could create traffic safety hazards. During the construction period, trucks delivering materials and equipment would travel to and from the project site via SR 84 and along Pescadero Creek Road, a narrow arterial roadway. The presence of slow-moving, large construction vehicles could obstruct passenger vehicles' field of vision and make turns or passing more hazardous for all roadway users. Furthermore, activities along Pescadero Creek Road would require the temporary closure of one of the eastbound travel lanes along Pescadero Creek Road, which would affect vehicles using the roadway in both directions. Drivers encountering the closure of the eastbound travel lane could drive into oncoming traffic if proper safety measures are not put in place, and the narrowed travel corridor could put construction workers at risk of being hit by cars. The creation of potential traffic safety hazards as a result of project construction would be a significant impact. However, Mitigation Measure TRA-2 would reduce project construction impacts to a less-than-significant level through preparation and implementation of a project-specific traffic control plan.</p> <p>Mitigation Measure TRA-2: The County shall require the construction contractor(s) to prepare and implement a traffic control plan to reduce traffic impacts on the roadways at and near the work sites, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders and construction vehicles, as appropriate. The County and construction contractor(s) shall coordinate development and implementation of this plan with the community of Loma Mar and Caltrans, as appropriate. To the extent applicable, the traffic control plan shall conform to the California Manual on Uniform Traffic Control Devices (MUTCD), Part 6 (Temporary Traffic Control) (Caltrans, 2014). The traffic control plan shall include, but not be limited to, the following elements:</p> <ul style="list-style-type: none"> • Circulation and detour plans to minimize impacts on local road circulation during road and lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the construction zone. • Identifying truck routes designated by the County. Haul routes that minimize truck traffic on local roadways shall be utilized to the extent possible. • Sufficient staging areas for trucks accessing construction zones to minimize disruption of access to adjacent public right-of-ways. • Controlling and monitoring construction vehicle movement through the enforcement of standard construction specifications by on-site inspectors • Scheduling truck trips outside the peak morning and evening commute hours to the extent possible. • Limiting the duration of road and lane closures to the extent possible. 				

- Implementing roadside safety protocols. Advance “Road Work Ahead” warning and speed control signs (including those informing drivers of State legislated double fines for speed infractions in a construction zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone.
- Coordinating construction administrators of emergency service providers (including all fire protection agencies), and recreational facility managers. Operators shall be notified at least one month in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures, where applicable. All roads shall remain passable to emergency service vehicles at all times.
- Repairing and restoring affected roadway rights-of-way to their original condition after construction is completed.

e.	Result in inadequate emergency access?		X	
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Discussion: Vehicle access to and from the project site would occur along Pescadero Creek Road, which would include various ingress/egress access points for project-only vehicles. In the event of an emergency, vehicles would have access to the work sites along these ingress/egress access points and continued access the rest of the park. Project construction activities would not fully block Pescadero Creek Road. However, lane closure could inadvertently result in delays of emergency vehicles, which would be a significant impact. As noted in response to question 2.16d, Mitigation Measure TRA-2 would require the preparation and implementation of a traffic control plan, including provisions for coordinating construction with emergency service providers and ensuring emergency service vehicle access during all times. With implementation of this measure, this impact would be reduced to less than significant with mitigation.

f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X
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Discussion: The San Mateo County Comprehensive Bicycle and Pedestrian Plan (2011) addresses the planning, design, funding, and implementation of bicycle and pedestrian projects of countywide significance. The Plan identifies a County Bikeway network. However, the project is not located along an existing or proposed bikeway. Although the project would result in temporary disruptions to existing circulation patterns along Pescadero Creek Road, the project would not directly or indirectly eliminate alternative transportation corridors or facilities (e.g., bicycle lanes, bus routes/stops, pedestrian pathways, etc.). In addition, the proposed project would not include changes in policies or programs that support modes of alternative transportation. Therefore, the project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities impacts would be less than significant.

g. Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?			X	
<p>Discussion: The proposed project would not generate additional pedestrian traffic or change pedestrian patterns. After construction of the project is complete, the park would continue to accommodate the same level of pedestrian traffic served by the park system, and as such, would result in a less than significant impact.</p>				
h. Result in inadequate parking capacity?			X	
<p>Discussion: The project would create a temporary parking demand for construction workers and construction vehicles within the park limits. Construction staging of vehicles may occur in the overflow parking lot and laydown areas, and would be transported from these parking areas to the work sites. The limited number of workers and the use of the existing overflow parking areas would not have a significant impact of parking capacity at Memorial Park.</p> <p>As stated in response to question 2.16a, previously, the project would require a maximum of 10 construction workers at any given time. Assuming all personnel would drive alone to each day's work location, project construction would generate a parking demand of up to 10 parking spaces. Given the area allotted for the staging of worker vehicles, the designated areas would be able to accommodate this anticipated demand from construction workers. Construction workers would walk or drive from the parking areas to the work sites; one to two trucks may be parked near any of the specific repair locations.</p> <p>The project would replace a portion of the existing overflow parking lot with the new WWTP. The 1,553 square foot footprint of the new WWTP would remove approximately 15 parking spaces in the overflow parking lot. This would reduce the amount of existing parking in the park from approximately 145 parking spaces to 130, a loss of approximately 10 percent of the existing parking spaces. The overflow parking lot is usually filled through the summer camping season (second Sunday in May – second Sunday in October), making this loss of parking potentially significant. However, this parking would be replaced by an additional 15 parking spaces, including an Americans with Disabilities Act (ADA) parking space, located approximately 150 feet south of the existing overflow parking lot site. Therefore, there would be no net loss of parking spaces. Due to this replacement of parking space, the impact of losing these overflow parking spaces would be less than significant.</p>				

References

CalTrans, 2014. California Manual on Uniform Traffic Control Devices (MUTCD), Part 6 (Temporary Traffic Control).
<http://www.dot.ca.gov/trafficops/camutcd/camutcd2014rev3.html>.

CalTrans, 2017. 2016 Traffic Volumes for all vehicles on CA state highways.
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City/County Association of Governments of San Mateo County, 2018. Congestion Management Program 2017. <http://ccag.ca.gov/wp-content/uploads/2018/03/2017-CMP-Final-v2.0.pdf>.

San Mateo County, 1986. County General Plan – Transportation Policies. https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/GP%20Ch%2012-Transportation%20Policies_0.pdf.

San Mateo County, 2011. San Mateo County Comprehensive Bicycle and Pedestrian Plan. http://ccag.ca.gov/wp-content/uploads/2014/07/CBPP_Main-Report__Sept2011_FINAL.pdf.

San Mateo County, 2018. Planning and Building Department - Zoning Regulations. https://planning.smcgov.org/sites/planning.smcgov.org/files/SMC_Zoning_Regulations.pdf

2.17 UTILITIES AND SERVICE SYSTEMS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
<p>Discussion: During project construction, dust abatement and equipment testing would account for the majority of water required for treatment and conveyance facility construction. As discussed in Section 2.9, Hydrology and Water Quality, water utilized or produced during construction and dewatering would be disposed in accordance with the <i>General WDRs NPDES General Permit for Discharges with Low Threat to Water Quality</i> (Order No. R3-2017-0042, NPDES Permit No. CAG993001). As needed, onsite treatment, such as a baker tank or settling basin, would be used to ensure turbidity is within the allowable discharge levels. Depending upon turbidity levels, pumping development and pump testing water may be able to be discharged without treatment. Through adherence to applicable regulations, project construction would not exceed wastewater treatment requirements. For these reasons, project construction would have a less-than-significant effect related to exceeding water treatment requirements or wastewater treatment provider capacities.</p> <p>As also discussed in Section 2.9, the County would obtain and the project would be required to comply with a project-specific Waste Discharge Requirement/NPDES permit update or reissuance. Through adherence to these mandatory, non-discretionary permit terms, project operations would not exceed treatment requirements. For these reasons, project operations would have a less-than-significant impact regarding wastewater treatment requirements.</p>				
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		X		
<p>Discussion: The subject of this Initial Study is a new wastewater treatment plant. As discussed herein, the construction of project facilities could result in adverse environmental effects. The specific types of effects and mitigation measures identified to minimize or avoid those impacts are discussed in the subsections of this document corresponding to the affected topic area (e.g., Section 2.4, Biological Resources). Please refer to those sections for specific discussions of potential physical adverse effects on the environment.</p>				

c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
<p>Discussion: The project would include the construction of new concrete swales to capture and route drainage away from the new WWTP site. The new concrete swales would connect to an existing concrete v-ditch that drains the proposed WWTP site to Pescadero Creek. For the reasons set forth in responses to questions 2.6b and 2.9c, the project would not be expected to substantially alter the volume or flow rate of stormwater runoff such that the existing drainage mechanisms would be overwhelmed or otherwise require substantial modifications which could result in significant environmental effects. The impact would, therefore, be less than significant.</p>				
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
<p>Discussion: Water for Memorial Park is provided by a local system whose source is Pescadero Creek and a groundwater well used as a backup source. Project construction would require water for dust control and project facilities testing. Water for dust control would likely be provided by the construction contractor(s), but could be accommodated within existing entitlements, if needed.</p> <p>Project operations would not result in increased water demands, as it would not increase the number of park visitors or accommodate offsite users. For these reasons, the project would have sufficient water supplies available to serve the project and the impact would be less than significant.</p>				
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?		X		
<p>Discussion: See response to question 2.17b, above.</p>				
f. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
<p>Discussion: To the extent practicable, the project would utilize excavated soil on site. However, up to an estimated 1,500 cubic yards of total excess soil could require off-</p>				

<p>site disposal at the Corinda Los Trancos Landfill (formerly Ox Mountain), located at 12310 San Mateo Rd (Hwy 92), Half Moon Bay, CA 94019. The landfill has a remaining capacity of 22,180,000 cubic yards as of December 31, 2015 (CalRecycle, 2018), the latest date at which remaining capacity estimates were available. The addition of 1,643 cubic yards would be negligible, and not contribute substantially to landfill capacity reduction. The project would also comply with all applicable local, state, and federal regulations concerning solid waste, including the County's Construction and Demolition (C&D) Debris Ordinance (No. 04099). Therefore, the impact would be less than significant.</p>					
g.	Comply with Federal, State, and local statutes and regulations related to solid waste?			X	
<p>Discussion: See 2.17f discussion, above.</p>					
h.	Be sited, oriented, and/or designed to minimize energy consumption, including transportation energy; incorporate water conservation and solid waste reduction measures; and incorporate solar or other alternative energy sources?			X	
<p>Discussion: Construction of the proposed project would require the use of fuels (primarily gasoline, diesel, and motor oil) for a variety of construction activities, including excavation, grading, demolition, and vehicle travel during the estimated 12-month construction period. Fuel use for construction worker commute trips is difficult to determine because workers would be commuting from various locations; however, fuel use for construction worker commute trips is expected to be minor. Water would be used during project construction as necessary for dust control, cleaning, and other activities. Additionally, as discussed in response to question 2.17f, above, excavated soil would be reused on site to the extent feasible.</p> <p>Project operation would require water to treat wastewater and energy to pump wastewater to the spray fields with newer equipment that is more efficient in the use of water and energy than the current, 50 year-old WWTP. The project would also be required to comply with San Mateo County's Energy Efficiency Climate Action Plan (EECAP). For these reasons, project construction and operation would not substantially affect energy consumption, water demand, or waste generation. This impact would be less than significant.</p>					
i.	Generate any demands that will cause a public facility or utility to reach or exceed its capacity?			X	
<p>Discussion: The proposed project would not generate any demands that would cause a public facility or utility to reach or exceed its capacity. The project currently receives</p>					

potable water from a locally developed system that has Pescadero Creek as its water source. Electricity is provided by Pacific Gas & Electric (PG&E, 2014). As discussed, the project would replace and upgrade existing roughly 50-year-old treatment and conveyance system with newer and more efficient ones. The project is designed to meet the park's existing and reasonably foreseeable future wastewater treatment and disposal requirements, but would not increase park visitation. For these reasons, the project would have a less-than-significant impact related to increased public facility or utility demands.

References

CalRecycle, 2018. Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mtn) (41-AA-0002). Available at: <http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/>. Accessed on June 11, 2018.

PG&E, 2014. Electric Service Area Maps. Available at: https://www.pge.com/tariffs/tm2/pdf/ELEC_MAPS_Service_Area_Map.pdf. Accessed on June 11, 2018.

2.18 MANDATORY FINDINGS OF SIGNIFICANCE.				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
a.	Does the project have the potential to degrade the quality of the environment, significantly reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X	
<p>Discussion: Potentially significant impacts identified for biological resources (special-status plant species, birds, fish, amphibians, and reptiles) can be mitigated using Mitigation Measures BIO-1a through BIO-1f and BIO-2 to a less-than-significant level and are not expected to degrade environmental quality, or substantially reduce the habitat or affect populations of any wildlife, fish, or plant species. It has been determined that construction of the proposed project would not have any impact on any examples of the major periods of California history or prehistory. Mitigation Measures CUL-1 and CUL-2 would be implemented to ensure that any impacts resulting from the incidental discovery of cultural or paleontological resources during construction would be less than significant with mitigation.</p>				
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.)			X
<p>Discussion: Consideration of past, present, and reasonably foreseeable projects in the project area and vicinity indicate that the proposed project would have a less than significant impact. In the project vicinity, the closest project proposed includes the Loma Mar Mutual Water Company and Butano State Park Streamflow Enhancements</p>				

Projects (approximately 0.5 mile west of the proposed project site and 3 miles south of the proposed project site). This particular project includes updating and reconfiguring water supply systems and increasing water storage at two locations in San Mateo County. Other than the Loma Mar Mutual Water Company Project, Public Works recently implemented a minor cape seal and chip seal repair project to roads in La Honda (approximately 2.5 miles north east of the project site) and along Pomponio Creek Road (approximately 1 mile northwest of the project site). There are no other ongoing projects in the immediate project vicinity and none are anticipated in the foreseeable future (County of San Mateo, 2018).

The project would not result in impacts on agriculture or forestry resources, land use and planning, mineral resources, or population and housing that would combine with other projects. The proposed project could have potential impacts with respect to aesthetics, biological and cultural resources, geology, hazards and hazardous materials, hydrology and water quality, recreation, transportation and traffic, and utilities and service systems. However, such impacts would be localized to the project construction site, and, where necessary, mitigated such that they would not substantially combine with other off-site impacts.

The project's potential impacts with respect to air quality and greenhouse gas emissions, however, could extend beyond the site to combine with impacts from other projects. As described in Sections 2.3 and 2.7, Air Quality and Climate Change, respectively, the BAAQMD considered the emission levels at which a project's individual emissions would be cumulatively considerable in developing its CEQA significance thresholds. The BAAQMD considers projects that result in emissions that exceed its CEQA significance thresholds to result in individual impacts that are cumulatively considerable and significant. As discussed in the above sections, the proposed project's emissions would be limited to the construction period and would be below the BAAQMD cumulatively considerable threshold. For the reasons presented previously, the proposed project would not be expected to result in adverse impacts to human beings, either directly or indirectly. Impacts identified in this document would be less than significant, or reduced to less-than-significant levels with implementation of mitigation measures, and the project's incremental contribution to potential cumulative impacts would not be cumulatively considerable. Therefore, the project's impact would be considered less than significant.

c. Does the project have environmental effects which will cause significant adverse effects on human beings, either directly or indirectly?			X	
Discussion: See 2.18b discussion, above.				

References

County of San Mateo, 2018. San Mateo County Public Works Projects. Available at: <https://publicworks.smcgov.org/our-projects>. Accessed on June 13, 2018.

RESPONSIBLE AGENCIES. Check what agency has permit authority or other approval for the project.

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (CE)		x	
State Water Resources Control Board	x		
Regional Water Quality Control Board	x		National Pollutant Discharge Elimination System (NPDES) Construction General Permit for stormwater discharges associated with construction activities that disturb more than one acre of land. (Order No. R3-2017-0042, NPDES No. CAG993001). Coverage under General Waste Discharge Requirements for Discharges to Land by Small Domestic Systems, Water Quality Order 2014-013-DWQ.
State Department of Public Health		x	
San Francisco Bay Conservation and Development Commission (BCDC)		x	
U.S. Environmental Protection Agency (EPA)		x	
County Airport Land Use Commission (ALUC)		x	
CalTrans		x	
Bay Area Air Quality Management District (BAAQMD)		x	
U.S. Fish and Wildlife Service (USFWS)		x	
Coastal Commission		x	
City		x	
Sewer/Water District:		x	

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SECTION 3

Summary of Mitigation Measures

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Aesthetics				
	None.			
Agricultural and Forest Resources				
	None.			
Air Quality				
AIR-1	<p>Mitigation Measure AIR-1: During construction, the County shall require its contractor(s) to implement all the BAAQMD's Basic Construction Mitigation Measures, listed below:</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., unpaved parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day when the construction site is active and when no precipitation is evident. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations. 	The County shall require BAAQMD's Basic Construction Measures be included in contractor specifications. The contractor will implement measures in the program.	Prior to and during construction.	The County will review construction specifications. The County's contractor will document that measures are being implemented.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources				
BIO-1a	<p>Mitigation Measure BIO-1a: A qualified botanist with a minimum of four years of academic training and professional experience in botanical sciences and a minimum of two years of experience conducting rare plant surveys shall conduct appropriately timed surveys for special-status plant species with a moderate or high potential to occur in the study area (i.e., Santa Cruz cypress, minute pocket moss, Dudley's lousewort, and white-flowered rein orchid) in all suitable habitat that would be potentially disturbed by the project (i.e., where vegetation removal [including downed logs] may occur). Surveys shall be conducted following the most recent CDFW protocol (CDFW, 2018b). If no special-status plants are found during focused surveys, the botanist shall document the survey findings in a report to CDFW, and no further mitigation will be required.</p> <p>If special-status plants are found during focused surveys, the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. Information regarding the special-status plant populations shall be reported to the CNDDDB, mapped, and documented in a technical memorandum provided to the County. 2. If any population can be avoided during project implementation, it shall be clearly marked in the field by a qualified botanist and avoided during construction activities. Before vegetation removal, ground clearing or ground disturbance, all on site construction personnel shall be instructed as to the species' presence and the importance of avoiding impacts to this species and its habitat through the Worker Environmental Awareness Program training (see Measure BIO-1b). 3. If special-status plant populations cannot be avoided, the County shall coordinate with CDFW on relocation of special-status plants. To the extent feasible, special-status plants that would be impacted by the project shall be relocated within local suitable habitat. This can be done either through salvage and transplanting or by collection and propagation of seeds or other vegetative material. Any plant relocation would be done under the supervision of a qualified botanist or restoration ecologist. 	<p>The County-approved biologist will conduct preconstruction surveys.</p> <p>The County will incorporate survey results and avoidance recommendations into construction specifications.</p> <p>The County/contractor will avoid buffer zones during construction and/or transplant special-status plants, as necessary.</p>	<p>Prior to construction and during construction.</p>	<p>The County will review construction specifications for inclusion of recommendations and document that measures are being implemented.</p>
BIO-1b	<p>Mitigation Measure BIO-1b: A project-specific Worker Environmental Awareness Program (WEAP) training shall be developed and implemented by a qualified biologist for the project and attended by all construction personnel prior to beginning work onsite. The training could consist of a recorded presentation that could be reused for new personnel. The WEAP training shall generally address but not be limited to the following:</p> <ol style="list-style-type: none"> 1. Applicable State and federal laws, environmental regulations, project permit conditions, and penalties for non-compliance; 2. Special-status animal species with potential to occur at or in the vicinity of the project site, their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve these species as they 	<p>The County-approved qualified biologist will develop Worker Environmental Awareness Program. WEAP training will be attended by all new personnel.</p>	<p>Prior to and during construction, with worker awareness training taking place no more than 2 weeks prior to construction.</p>	<p>The County shall have sign-in sheets for those who attended the WEAP training.</p> <p>The construction foreman will ensure that biologist conducts worker awareness training.</p>

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1b (cont.)	<p>relate to the project, and the boundaries within which the project construction shall occur, avoidance measures, and a protocol for encountering such species including a communication chain;</p> <ol style="list-style-type: none"> 3. Pre-construction surveys and biological monitoring requirements associated with each phase of work and at each project site; 4. Known sensitive resource areas in the project vicinity that are to be avoided and/or protected as well as approved project work areas; and 5. Best management practices (BMPs) and their location on the project site for erosion control and/or species exclusion. 			
BIO-1c	<p>Mitigation Measure BIO-1c: The County shall ensure that the following general measures are implemented by the contractor while working in the project site during construction to prevent and minimize impacts on special-status species and sensitive biological resources:</p> <ol style="list-style-type: none"> 1. Project-related vehicles shall observe a 10 mile-per-hour speed limit on unpaved roads in the project site. 2. No pets shall be allowed in the project site. 3. The contractor shall provide wildlife-proof (closed) garbage containers for the disposal of all food-related trash items. All garbage shall be collected daily from the project sites and placed in a closed container from which garbage shall be removed weekly. Construction personnel shall not feed or otherwise attract wildlife to the project site. 4. As necessary, erosion control measures shall be implemented to prevent any soil or other materials from entering any nearby aquatic habitat. Erosion control measures shall be installed adjacent to aquatic habitat (i.e., at work site boundaries adjacent to Pescadero Creek) when excavation or ground disturbance is necessary to prevent soil from eroding or falling into the area. 5. Sediment control measures shall be furnished, constructed, maintained, and later removed. Plastic monofilament coir rolls or mats (including those labeled as biodegradable, photodegradable, or UV-degradable) shall not be used. Only natural burlap, coir, or jute wrapped fiber rolls and mats shall be used. 6. If vehicle or equipment maintenance is necessary, it shall be performed in designated upland staging areas, and spill kits containing cleanup materials shall be available onsite. Maintenance activity and fueling must occur away at least 100 feet from Pescadero Creek. 7. No staff, equipment, or materials in support of project implementation (e.g., small Bobcat skid steer or motorized wheelbarrow) shall enter or cross creeks while water is flowing (with the exception of the road crossing on Sequoia Flat Road). 	<p>The County shall ensure that construction specifications include appropriate measures.</p> <p>Contractor shall implement construction measures.</p>	Prior to and during construction	The County will review construction specifications and Contractor will monitor to ensure compliance.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1c (cont.)	<p>8. Project personnel shall be required to report immediately any harm, injury, or mortality of a listed species (federal or State) during construction, including entrapment, to the construction foreman, qualified biologist, or County staff. County staff or their consultant shall provide verbal notification to the USFWS Endangered Species Office in Sacramento, California, and/or to the local CDFW warden or biologist (as applicable) within 1 working day of the incident. County staff shall follow up with written notification to the appropriate agencies within 5 working days of the incident. All special-status species observations shall be recorded on California Natural Diversity Data Base (CNDDDB) field sheets and sent to the CDFW by the County staff or their consultant.</p> <p>9. The spread of invasive non-native plant species and plant pathogens shall be avoided or minimized by implementing the following measures:</p> <ul style="list-style-type: none"> a. Construction equipment shall arrive at the project clean and free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species. b. Any imported fill material, soil amendments, gravel, or other materials required for construction and/or restoration activities that will be placed within the upper 12 inches of the ground surface shall be free of vegetation and plant material. c. Certified weed-free imported erosion control materials (or rice straw in upland areas) shall be used exclusively, if possible. d. To reduce the movement of invasive weeds into uninfested areas, the contractor shall stockpile topsoil removed during excavation (e.g., during excavation for open-cut-trench construction) and shall subsequently reuse the stockpiled soil for re-establishment of disturbed project areas, if possible. 			
BIO-1d	<p>Mitigation Measure BIO-1d: The following conservation measures shall be implemented to minimize or eliminate potential adverse impacts on California red-legged frog, foothill yellow-legged frog, Santa Cruz black salamander, California giant salamander, western pond turtle, and red-bellied newt during project-related activities:</p> <p>1. A qualified biologist shall survey the work sites 2 weeks before the onset of construction for California red-legged frog (CRLF), foothill yellow-legged frog (FYLF), Santa Cruz black salamander (SCBS), California giant salamander (CAGS), western pond turtle (WPT), and red-bellied newt (RBN to determine presence (and life stage) of these species within the project sites, particularly those in proximity to Pescadero Creek.</p> <p>Typical credentials for a qualified biologist include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities, and a minimum of two years of experience conducting surveys for each species that may be present within the project area.</p>	<p>County shall include avoidance and minimization measures in the construction specifications.</p> <p>Qualified biologist will survey work sites 2 weeks prior to construction.</p> <p>Project work areas will be monitored by a qualified biologist during exclusion fence installation and ground disturbing activities</p> <p>Qualified biologist will contact USFWS in the event that a special-status species is observed.</p>	<p>Two weeks prior to construction and during construction</p>	<p>The County will review construction specifications. The qualified biologist will document that measures are being implemented.</p>

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1d (cont.)	<p>A qualified biologist shall conduct a pre-construction survey of these project work areas for CRLF, FYLF, SCBS, CAGS, WPT, and RBN immediately prior to the start of construction activities. The surveys will consist of walking the project work limits in areas where natural habitat will be disturbed or removed to ascertain presence of these species.</p> <p>Unless explicitly authorized by the USFWS and CDFW (e.g., through issuance of an Incidental Take Permit (ITP)), neither CRLF nor FYLF shall be relocated if encountered in project areas. Rather they shall be allowed to disperse of their own volition while all work is halted within 50 feet of individuals. If they do not disperse on their own volition, the on-site biologist shall monitor the frog while work continues, as long as the on-site biologist can ensure the safety of the frog. The qualified biologist shall immediately inform the construction manager that work should be halted or modified (in the case of a buffer or non-dispersing individual), if necessary, to avert take of listed species.</p> <p>USFWS and CDFW approval is not required for the relocation of SCBS, CAGS, WPT, or RBN as these species are not federally- or State-listed threatened or endangered. If adult SCBS, CAGS, WPT, or RBN are found within project sites during surveys, they will be relocated outside of the work area by a qualified biologist. The specific methods for handling amphibians or reptiles and decontamination shall follow USFWS (2005) and USGS (2015) protocols, respectively. These protocols describe field equipment maintenance, disinfection, and field hygiene procedures designed to minimize potential spread of pathogens when handling amphibians or reptiles.</p> <p>Should egg masses, metamorphs, or tadpoles of CRLF, FYLF, SCBS, CAGS, WPT, or RBN be identified within the Pescadero Creek corridor adjacent to a work site, a 100-foot no-disturbance buffer shall be established around the location(s) within the creek corridor until juveniles disperse from the breeding sites. The 100-foot no-disturbance buffer around egg masses, metamorphs, or tadpoles would not extend into the upland area if species exclusion fencing is installed at the worksite boundary.</p> <p>2. Project work areas shall be monitored by a qualified biologist during exclusion fence installation and ground disturbing activities to identify, capture, and relocate non-listed sensitive amphibians (SCBS, CAGS, WPT, or RBN) if found, and halt or observe work in the vicinity of CRLF and FYLF if encountered onsite. The qualified biologist shall have the authority to stop construction activities and develop alternative work practices, in consultation with construction personnel and resource agencies (as appropriate), if construction activities are likely to affect special-status species or other sensitive biological resources.</p> <p>3. County staff or its contractors shall install temporary exclusion fencing around key project boundaries, including project sites where ground disturbance will occur adjacent to Pescadero Creek, at the existing treatment plant and new plant sites, and around all project staging and laydown areas throughout the Park.</p>			

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1d (cont.)	<ul style="list-style-type: none"> • Fencing shall be installed immediately prior to the start of construction activities under the supervision of a qualified biologist. • The County staff or their contractor shall ensure that the temporary exclusion fencing is continuously maintained until all construction activities are completed. • County staff or their consultant shall ensure daily visual inspections of the fence for any amphibians or reptiles that may get stuck by the fence, including weekends. These daily checks shall be conducted by the qualified biologist for the first week of construction. If no species are observed, the qualified biologist may train the contractor to conduct daily inspections and call the qualified biologist if any species are encountered. • The fencing shall be of a material that meets CDFW standards for species exclusion, a minimum height of 3 feet above ground surface, with an additional 4 to 6 inches of fence material buried such that species cannot crawl under the fence, and shall include escape funnels to allow species to exit the work areas. • The exclusion fence shall not cross Pescadero Creek to allow wildlife movement to continue through the creek corridor when work is not occurring. <p>4. All excavations of a depth of 8 inches or greater shall be either backfilled at the end of each workday, covered with heavy metal plates, or escape ramps shall be installed at a 3:1 grade to allow wildlife that fall in a means to escape.</p> <p>5. Vehicles or equipment parked overnight at the project staging areas or creek sites shall be inspected for harboring species each morning by the qualified biologist before vehicles or equipment are moved.</p>			
BIO-1e	<p>Measure BIO-1e: Breeding birds, their nests, and marbled murrelet nest trees shall be protected during construction through the following measures:</p> <ol style="list-style-type: none"> 1. Tree removal, tree trimming, ground vegetation removal, and building demolition and removal shall occur outside of the bird breeding season (February 1 to September 15), to the extent feasible. If these activities cannot be avoided during bird breeding season, the measures in parts 5 and 6, below, shall apply. 2. Trees identified for removal under the project shall first be assessed for suitability as marbled murrelet nest trees by a qualified wildlife biologist. <p>Typical credentials for a qualified biologist include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities, and a minimum of two years of experience conducting surveys for each species that may be present within the project area.</p> <p>Those trees determined to have suitable elements for nesting marbled murrelet will be retained under the project, if feasible. If suitable nest trees cannot be retained in order to achieve project objectives, County staff shall coordinate with USFWS and CDFW regarding removal of a potential marbled murrelet nest tree from occupied and designated critical habitat.</p>	The County-approved biologist shall conduct nesting bird survey and tree assessment. In the event that any active nests are discovered near the construction zone, biologist shall contact CDFW to establish buffer. The County shall include in its construction specifications that buffer zones shall be avoided during construction.	Prior to and during construction, with nesting bird surveys taking place within 7 days prior to the start of such activities or after any construction breaks of 14 days or more during bird breeding season (February 1 to September 15)	The County will obtain appropriate biologist to conduct survey. The County will consult with CDFW. The County will document that measures are being implemented.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1e (cont.)	<p>3. If known suitable nest trees for marbled murrelet occur within 50-meters of trees to be removed or trimmed or buildings to be demolished under the project, these activities shall not occur during the marbled murrelet breeding season (April 1 to September 15).</p> <p>4. Project activities which produce noise levels between 70 dB and 90 dB shall be restricted to between two-hours after sunrise and two-hours before sunset during the marbled murrelet breeding season (April 1 to September 15). Project activities which produce noise levels of 91 dB or greater shall be prohibited during marbled murrelet breeding season.</p> <p>5. If tree removal, tree trimming, ground vegetation removal, and building demolition and removal during bird breeding season (February 1 to September 15) cannot be fully avoided, a qualified wildlife biologist shall conduct pre-construction nesting surveys within 7 days prior to the start of such activities or after any construction breaks of 14 days or more.</p> <p>Surveys shall be performed for the individual project sites, vehicle and equipment staging areas, and suitable habitat within 250-feet in order to locate any active passerine (perching bird) nests and within 500-feet of these individual sites to locate any active raptor (birds of prey) nest sites.</p> <p>County staff shall additionally coordinate with CDFW and USFWS offices to identify any recent or historic marbled murrelet nest sites within 0.5-mile of the project sites. Focused marbled murrelet surveys shall be performed if warranted based on agency communications.</p> <p>6. If active nests or nest trees presumed to be occupied are located during the pre-construction nesting bird surveys or identified prior to or during project construction, the wildlife biologist shall evaluate if the schedule of construction activities could affect the active nests and the following measures shall be implemented based on their determination:</p> <p>a. If construction is not likely to affect the active nest, construction may proceed without restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the surrounding construction activity to confirm there is no adverse effect. Spot-check monitoring frequency would be determined on a nest-by-nest basis considering the particular construction activity, duration, proximity to the nest, and physical barriers which may screen activity from the nest. The qualified biologist may revise his/her determination at any time during the nesting season in coordination with the County staff.</p> <p>b. If it is determined that construction may affect the active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s) and all project work would halt within the buffer until a qualified biologist determines the nest is no longer in use. Typically, these buffer distances are 250 feet for passerines and 500 feet for raptors; however, the buffers may be adjusted if an obstruction, such as a building, is within line-of-sight between the nest and construction. Buffer distances for nesting marbled murrelet shall initially be 0.25 mile from the project area.</p>			

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1e (cont.)	<p>For special-status bird species (i.e., fully protected, endangered, threatened, species of special concern), a County representative, supported by the wildlife biologist, shall coordinate with CDFW (and USFWS for FESA-protected species nests such as marbled murrelet) regarding modifying nest buffers, prohibiting construction within the buffer, and modifying or restricting construction activities until nesting is complete.</p> <p>c. Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests of all other non-listed species protected under the MBTA and California Fish and Game Code shall be done at the discretion of the qualified biologist and in coordination with the County staff.</p> <p>d. Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed and could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged.</p> <p>7. With the exception of marbled murrelet nest sites, any birds that begin nesting within the project site and survey buffers amid construction activities shall be assumed to be habituated to construction-related or similar noise and disturbance levels and no work exclusion zones shall be established around active nests in these cases; however, should birds nesting nearby begin to show disturbance associated with construction activities, no-disturbance buffers shall be established as determined by the qualified wildlife biologist.</p>			
BIO-1f	<p>Mitigation Measure BIO-1f: A qualified biologist who is experienced with bat surveying techniques (including auditory sampling methods), behavior, roosting habitat, and identification of local bat species shall conduct a pre-construction habitat assessment of the project study area to characterize potential bat habitat and identify potentially active roost sites. No further action is required if the pre-construction habitat assessment does not identify bat habitat or signs of potentially active bat roosts within the project study area (e.g., guano, urine staining, dead bats, etc.).</p> <p>If the surveying biologist identifies potential roosting habitat or potentially active bat roosts within or in the immediate vicinity of project sites, including trees that could be trimmed or removed under the project or buildings that would be disturbed under the project (e.g., existing treatment plant), the following measures shall be implemented:</p> <p>1. Removal of- or disturbance to trees or structures (e.g., buildings, other man-made structures) identified as potential bat roosting habitat or active roosts shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, to the extent feasible. These dates avoid bat maternity roosting season (approximately April 15 to August 31) and period of winter torpor (approximately October 15 to February 28).</p>	<p>The County shall contract with a qualified biologist to conduct pre-construction surveys for bat surveys. The Biologist shall perform pre-construction surveys, make recommendations as necessary, and County implements appropriate measures.</p> <p>If potential roosting habitat or active bat roosts are identified, the contractor shall implement measures that avoid disturbance or removal of trees and structures during specified seasonal restrictions.</p>	Prior to and during construction	The County will document that appropriate recommendations are implemented.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1f (cont.)	<p>2. If removal of- or disturbance to trees and structures identified as potential bat roosting habitat or active roosts during the periods when bats are active is not feasible, a qualified biologist will conduct pre-construction surveys within 14 days prior to disturbance to further evaluate bat activity within the potential habitat or roost site.</p> <p>a. If active bat roosts are not identified in potential habitat during pre-construction surveys, no further action is required prior to removal of- or disturbance to trees and structures within the pre-construction survey area.</p> <p>b. If active bat roosts or evidence of roosting is identified during pre-construction surveys, the qualified biologist shall determine, if possible, the type of roost and species.</p> <p>i. If special-status bat species or maternity or hibernation roosts are detected during these surveys, appropriate species- and roost-specific avoidance and protection measures shall be developed by the qualified biologist. County staff or their consultant may choose to coordinate with CDFW depending on what species has been found roosting within the project study area. Such measures may include postponing the removal of or disturbance to structures or trees, or establishing exclusionary work buffers while the roost is active. A minimum 100-foot no disturbance buffer shall be established around special-status species, maternity, or hibernation roosts until the qualified biologist determines they are no longer active. The size of the no-disturbance buffer may be adjusted by the qualified biologist, in coordination with CDFW, depending on the species present, roost type, existing screening around the roost site (such as dense vegetation or a building), as well as the type of construction activity that would occur around the roost site, and if construction would not alter the behavior of the adult or young in a way that would cause injury or death to those individuals.</p> <p>Under no circumstances shall active maternity roosts be disturbed until the roost disbands at the completion of the maternity roosting season or otherwise becomes inactive, as determined by the qualified biologist.</p> <p>ii. If a common species, non-maternity or hibernation roost (e.g., bachelor daytime roost) is identified, disturbance to- or removal of trees or structures may occur under the supervision of a qualified biologist as described under 3).</p> <p>3. The qualified biologist shall be present during tree and structure disturbance or removal if active non-maternity or hibernation bat roosts or potential roosting habitat are present. Trees and structures with active non-maternity or hibernation roosts of common species or potential habitat shall be disturbed or removed only under clear weather conditions when precipitation is not forecast for three days and when nighttime temperatures are at least 50°F, and when wind speeds are less than 15 mph.</p>			

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-1f (cont.)	<p>a. Trimming or removal of trees with active (non-maternity or hibernation) or potentially active roost sites of common bat species shall follow a two-step removal process:</p> <ol style="list-style-type: none"> i. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using hand tools (e.g., chainsaws). ii. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using hand tools or other equipment (e.g. excavator or backhoe). iii. All felled trees shall remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats to escape, or be inspected once felled by the qualified biologist to ensure no bats remain within the tree and/or branches. <p>b. Disturbance to- or removal of structures containing or suspected to contain active (non-maternity or hibernation) or potentially active common bat roosts shall be done in the evening and after bats have emerged from the roost to forage. Structures shall be partially dismantled to significantly change the roost conditions, causing bats to abandon and not return to the roost. Removal will be completed the subsequent day.</p> <p>4. Bat roosts that begin during construction are presumed to be unaffected as long as a similar type of construction activity continues, and no buffer would be necessary. Direct impacts on bat roosts or take of individual bats will be avoided.</p>			
BIO-2	<p>Mitigation Measure BIO-2: The County or its contractor shall implement the following measures to avoid or minimize impacts to protected trees:</p> <ol style="list-style-type: none"> 1. The County or its contractor shall contract a certified arborist to perform a tree survey of the project sites to determine presence of significant trees within 100 feet of Pescadero Creek Road and heritage trees anywhere within the project site which could be adversely affected by project implementation prior to initiation of construction activities, and identify trees to be removed or trimmed under the project at each such project site. 2. Should heritage trees be identified within the project sites or significant trees be present at project sites within 100 feet of Pescadero Creek Road, a certified arborist shall determine appropriate protective measures to be implemented during construction and which may include but is not limited to the following: <ol style="list-style-type: none"> a. A certified arborist shall accurately locate root protection zones and identify other specific measures that would limit potential indirect impacts on trees that may be encroached upon (e.g., fencing around 1.5 times the canopy area) consistent with the County's tree protection measures. Tree protection measures shall be maintained throughout the duration of the project. 	<p>The County shall retain a certified arborist to perform tree survey. If heritage trees are present within the project site, the County shall ensure protective measures are incorporated in construction specifications or permits are obtained for tree trimming or removal. The County shall review construction specifications to ensure that replanting requirements are incorporated.</p> <p>The County shall replant affected trees measuring 12 inches DBH or greater at a 3:1 ratio and shall replace trees measuring less than 12 inches DBH at a ratio of 1:1.</p>	Prior to, during, and after construction	The County will obtain appropriate arborist to conduct survey. The qualified arborist reviews construction specifications. The County will document that measures are being implemented. If appropriate, the County shall complete permit application process for heritage trees. The County will document that trees are monitored for at least 5 years.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Biological Resources (cont.)				
BIO-2 (cont.)	<p>b. Construction drawings shall depict areas to be avoided such as tree trunks and root protection zones.</p> <p>c. If any large roots or large masses of roots need to be cut, the roots shall be inspected by a certified arborist or forester prior to cutting. Any root cutting shall be undertaken by an arborist or forester and documented. Roots to be cut shall be severed cleanly with a saw or toppers.</p> <p>d. If pruning is necessary (proceed to 3), pruning should be done by an arborist or forester to clean and raise canopy per International Society of Arboriculture pruning standards.</p> <p>3. If trimming or removal of heritage trees within the project sites or significant trees within 100 feet of Pescadero Creek Road cannot be avoided, the County or its contractor shall complete the permit application process and obtain a permit from the County to trim or remove trees. The permit application process requires an Existing Tree Plan be prepared and an Arborists Report that assesses tree health and provides tree protection measures which may be incorporated into a Tree Protection Plan for trees that could be indirectly affected by work in their immediate vicinity. Any heritage tree removed under the project would also be replaced according to step 4, below, unless otherwise specified in the County permit.</p> <p>4. If trimming or removal of significant trees cannot be avoided, qualifying trees identified for removal measuring 17.5 inches DBH or greater shall be replaced at a 1:1 ratio (replacement trees to removed trees) with the species removed (if native) or other native species (if non-native) within the immediate vicinity of the removal site of at least a 5-gallon stock. Replacement trees shall be monitored at least once a year for at least five years or longer, concurrent with restored areas of riparian habitat or wetlands.</p>			
Cultural Resources				
CUL-1	<p>Mitigation Measure CUL-1: If prehistoric or historic-era archaeological resources are encountered, all construction activities within 100 feet of the find shall halt and the San Mateo County Parks Department shall be notified. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. An archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology (qualified archaeologist) shall inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the</p>	<p>The County shall review construction specifications to ensure procedures for inadvertent discovery of cultural resources are included. In the event of a historic-period archaeological resource discovery, construction in the area shall be halted and the contractor shall notify the County.</p> <p>The qualified archaeologist shall be contacted and inspect the findings to determine appropriate mitigation and feasibility of preservation.</p>	Prior to and during construction	The County will review construction specifications. The contractor shall notify the County of the discovery. The Qualified archaeologist shall inspect the findings and determine appropriate next steps, consistent with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Cultural Resources (cont.)				
CUL-1 (cont.)	<p>CEQA Guidelines), mitigation shall be implemented in accordance with Public Resources Code (PRC) § 21083.2 and CEQA Guidelines § 15126.4, with a preference for preservation in place.</p> <p>Consistent with CEQA Guidelines § 15126.4(b)(3), preservation in place may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan in consultation with the County Parks Department. Treatment of unique archaeological resources shall follow the applicable requirements of PRC § 21083.2. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.</p>			
CUL-2	<p>Mitigation Measure CUL-2: In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall cease until the San Mateo County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission (NAHC) will be contacted within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American (PRC § 5097.98), who in turn would make recommendations to the County Parks Department for the appropriate means of treating the human remains and any associated funerary objects [CEQA Guidelines § 15064.5(d)].</p>	<p>The County shall review construction specifications to ensure procedures for human remains discovery are included. In the event human remains are discovered, construction in the area shall be halted and the contractor shall notify the County Coroner.</p> <p>Native American Heritage Commission will be contacted within 24 hours if necessary.</p>	Prior to and during construction	The County will review construction specifications. The contractor shall notify County of the discovery.
Geology and Soils				
	None.			
Climate Change				
	None.			

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Hazards and Hazardous Materials				
HAZ-1	<p>Mitigation Measure HAZ-1: The County shall require the construction contractor to use the following best management practices (BMPs) to minimize potential adverse effects of the project to groundwater and soils from chemicals used during construction activities:</p> <ul style="list-style-type: none"> • Follow manufacturer's recommendations on use, storage and disposal of chemical products used in construction; • Avoid overtopping construction equipment fuel gas tanks; • Provide secondary containment for any hazardous materials temporarily stored onsite; • During routine maintenance of construction equipment, properly contain and remove grease and oils; • Perform regular inspections of construction equipment and materials storage areas for leaks and maintain records documenting compliance with the storage, handling and disposal of hazardous materials; and • Properly dispose of discarded containers of fuels and other chemicals • Any disturbances to asbestos cement pipe or suspected asbestos cement pipe shall be performed by a California licensed asbestos contractor. Disturbances (including pipe cutting or removal) shall be done in accordance with California OSHA requirements for asbestos containing materials. 	The County shall review construction specifications to ensure that BMPs for handling hazardous materials are included. The Contractor implements required BMPs.	Prior to and during construction	The County will document that measures are being implemented.
HAZ-2	<p>Mitigation Measure HAZ-2: The County shall require the construction contractor to follow the procedures below in the event contaminated soil or groundwater is encountered (either visually or through odor detection) during construction:</p> <ul style="list-style-type: none"> • Stop work in the vicinity of the suspected material; • Secure the area of suspected contamination; • Notify the County and appropriate regulatory agencies; • Retain a qualified environmental specialist to identify the nature and extent of contamination; • Contain the areas of contamination; • Perform appropriate clean-up procedures (e.g., segregate, profile, and dispose of all contaminated soil). Required disposal method will depend on the type and concentration of contamination identified; and • Any site investigation or remediation shall be performed in accordance with applicable regulations. Work shall not resume in the area(s) affected until the above measures have been implemented under the oversight of the County or regulatory agency, as appropriate. 	The County shall require construction specifications include protective measures. The contractor implements required measures in the event contaminated soil or groundwater is encountered.	Prior to and during construction	The County will review construction specifications. The County will document that measures are being implemented.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Hazards and Hazardous Materials (cont.)				
HAZ-3	<p>Mitigation Measure HAZ-3: The contractor(s) shall identify underground utility lines such as natural gas, electricity, sewer, telephone, fuel, and water lines that may be encountered during excavation work. Information regarding the size, color, and location of existing utilities will be confirmed by the utility service provider. A detailed engineering and construction plan that identifies construction methods and protective measures to minimize impacts on aboveground and belowground utilities shall be prepared. Construction shall be scheduled to minimize or avoid interruption of utility services to customers. The contractor(s) shall promptly reconnect any disconnected utility lines.</p>	The County shall require construction specifications include utility identification, preparation of an engineering and construction plan, protection and avoidance measures. The Contractor observes required restrictions.	Prior to and during construction	The County will document that measures are being implemented.
HAZ-4	<p>Mitigation Measure HAZ-4: The County shall require the construction contractor to ensure that the following fire safety construction practices are implemented:</p> <ul style="list-style-type: none"> • Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire; • Appropriate fire suppression equipment shall be maintained at the construction site; • Flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame; and • Construction personnel shall be trained in fire safe work practices, use of fire suppression equipment, and procedures to follow in the event of a fire. 	The County shall require construction specifications include fire safety construction practices. The contractor implements required fire hazard construction practices.	Prior to and during construction	The County will document that measures are being implemented.
Hydrology and Water Quality				
HYD-1	<p>Mitigation Measure HYD-1: The County shall, by contract specifications, ensure contractors prepare and implement a SWPPP for each phase of the proposed project to be implemented. Erosion control measures shall be in place prior to the start of each phase's respective construction activities and remain in place throughout the construction duration. The plan must provide a BMP monitoring and maintenance schedule and identify parties responsible for monitoring and maintenance of construction-phase BMPs. Erosion and water quality control measures identified in the plan must comply with the Construction Site Control requirements (C.6) of the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Order No. R2-2015-0049²³), and the County's standard Water Pollution Control Plan specifications. At a minimum, the SWPPP shall include, but not be limited to, the following measures (County of San Mateo, 2017):</p> <ul style="list-style-type: none"> • Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) shall be employed for disturbed areas. No disturbed surfaces will be left without erosion control measures in place. 	The County shall require construction specifications include requirements regarding preparation and implementation of a comprehensive stormwater pollution and erosion control plan. The contractor implements BMPs.	Prior to and during construction	The County will document that BMPs are being implemented.

²³ Or by extension, the requirements of the San Mateo Countywide Water Pollution Prevention Program, as applicable.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Hydrology and Water Quality (cont.)				
HYD-1 (cont.)	<ul style="list-style-type: none"> • Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures. • A spill prevention and countermeasure plan shall be developed that will identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site. The plan will also require the proper storage, handling, use, and disposal of petroleum products. • Construction activities shall be scheduled to minimize land disturbance during peak runoff periods and to the immediate area required for construction. Existing vegetation will be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction. • Surface waters, including ponded waters, must be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation. Normal flows must be restored to the affected stream immediately upon completion of work at that location. • Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out. Store, cover, and isolate construction materials, including topsoil and chemicals, to prevent runoff losses and contamination of groundwater. • Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events. All removed topsoil shall be reused during construction to the extent feasible. Unused topsoil, if any, shall be broadly redistributed to the surrounding ruderal/developed areas in such a manner that topography and vegetation cover would not be adversely impacted. • Establish fuel and vehicle maintenance areas away from all drainage courses and design these areas to control runoff. • Disturbed areas will be re-vegetated after completion of construction activities. • All necessary permits and approvals shall be obtained. • Provide sanitary facilities for construction workers. 			
Land Use and Planning				
	None.			

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Mineral Resources				
	None.			
Noise				
	None.			
Population and Housing				
	None.			
Public Services				
	None.			
Recreation				
	None.			
Transportation/Traffic				
TRA-1	Mitigation Measure TRA-1: The County shall require the construction contractor to conduct 24-hour traffic counts on Pescadero Creek Road during a one-week period prior to construction in order to establish what the peak travel periods are. The county shall require the construction contractor to avoid lane closure during established peak travel periods.	The County shall require construction specifications include avoidance of lane closures during commute hours. The contractor implements measures.	Prior to and during construction	The County will review construction specifications. The County will document that avoidance measures are being implemented.
TRA-2	Mitigation Measure TRA-2: The County shall require the construction contractor(s) to prepare and implement a traffic control plan to reduce traffic impacts on the roadways at and near the work sites, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders and construction vehicles, as appropriate. The County and construction contractor(s) shall coordinate development and implementation of this plan with the community of Loma Mar and Caltrans, as appropriate. To the extent applicable, the traffic control plan shall conform to the California Manual on Uniform Traffic Control Devices (MUTCD), Part 6 (Temporary Traffic Control) (Caltrans, 2014). The traffic control plan shall include, but not be limited to, the following elements: <ul style="list-style-type: none"> • Circulation and detour plans to minimize impacts on local road circulation during road and lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the construction zone. • Identifying truck routes designated by the County. Haul routes that minimize truck traffic on local roadways shall be utilized to the extent possible. 	The County shall require construction specifications include traffic control plan. The Contractor implements measures.	Prior to and during construction	The County will review construction specifications. The county will document that traffic control plan measures are being implemented.

Summary of Mitigation Measures

Mitigation No.	Mitigation Measure	Implementation Responsibility	Implementation Timing	Monitoring, Enforcement, and Reporting Responsibility
Transportation/Traffic (cont.)				
TRA-2 (cont.)	<ul style="list-style-type: none"> • Sufficient staging areas for trucks accessing construction zones to minimize disruption of access to adjacent public right-of-ways. • Controlling and monitoring construction vehicle movement through the enforcement of standard construction specifications by on-site inspectors • Scheduling truck trips outside the peak morning and evening commute hours to the extent possible. • Limiting the duration of road and lane closures to the extent possible. • Implementing roadside safety protocols. Advance "Road Work Ahead" warning and speed control signs (including those informing drivers of State legislated double fines for speed infractions in a construction zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone. • Coordinating construction administrators of emergency service providers (including all fire protection agencies), and recreational facility managers. Operators shall be notified at least one month in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures, where applicable. All roads shall remain passable to emergency service vehicles at all times. • Repairing and restoring affected roadway rights-of-way to their original condition after construction is completed. 			
Utilities and Service Systems				
	None.			

SECTION 4

Report Preparers

4.1 Lead Agency

County of San Mateo Department of Public Works

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Anthony Lum, P.E., Civil Engineer
Carter Choi, P.E., Senior Civil Engineer

4.2 Consultants

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Alisa Moore	<i>Project Director</i>
Elijah Davidian, AICP	<i>Project Manager, Sr. Technical Reviewer</i>
Ari Frink	<i>Deputy Project Manager, Agriculture & Forest Resources, Land Use and Land Use Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Utilities and Service, Mandatory Findings of Significance</i>
Eric Schniewind	<i>Geology, Soils, and Seismicity, Hazards & Hazardous Materials, Hydrology & Water Quality</i>
Stan Armstrong, Chris Sanchez	<i>Air Quality, Greenhouse Gas Emissions, Noise</i>
Robin Hoffman	<i>Cultural and Tribal Resources</i>
Shadde Rosenblum	<i>Transportation and Traffic</i>
Rachel Haines	<i>Biological Resources</i>
Erin Higbee-Kollu	<i>Sr. Technical Reviewer</i>

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APPENDIX A

Project-Related Construction Emissions

Averaging of Construction Emissions

Memorial Park WWT

Annual Emission from CalEEMod:

ROG	Nox	PM10	PM2.5
0.6407	6.0452	0.2652	0.2581

 tons/year

Days of Construction = (from CalEEMod input file)
Days

Total = 390

Average daily Emissions =

ROG	Nox	PM10	PM2.5
3.29	31.00	1.36	1.32

 pound/day

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.40	Acre	2.40	104,544.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	70
Climate Zone	5			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project Specific Information

Off-road Equipment - Project specific construction equipment

Off-road Equipment - Project Specific Information

Off-road Equipment - Project specific construction equipment

Trips and VMT - Assumed 16 one-way haul trips per day over 12 months

Construction Off-road Equipment Mitigation - Tier 4 Engines as Mitigation

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Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	220.00	260.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,176.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,176.00
tblTripsAndVMT	VendorTripNumber	17.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	20.00
tblTripsAndVMT	WorkerTripNumber	44.00	20.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2596	2.2827	1.7623	3.8300e-003	0.0433	0.1056	0.1489	0.0115	0.1023	0.1138	0.0000	341.9661	341.9661	0.0537	0.0000	343.3083
2020	0.3811	3.7625	3.1977	7.4400e-003	0.0939	0.1596	0.2534	0.0251	0.1558	0.1808	0.0000	676.6782	676.6782	0.0897	0.0000	678.9202
Maximum	0.3811	3.7625	3.1977	7.4400e-003	0.0939	0.1596	0.2534	0.0251	0.1558	0.1808	0.0000	676.6782	676.6782	0.0897	0.0000	678.9202

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1416	1.8189	1.8333	3.8300e-003	0.0433	0.0363	0.0796	0.0115	0.0352	0.0466	0.0000	341.9658	341.9658	0.0537	0.0000	343.3081
2020	0.1664	2.9109	3.4141	7.4400e-003	0.0939	0.0242	0.1181	0.0251	0.0241	0.0492	0.0000	676.6777	676.6777	0.0897	0.0000	678.9197
Maximum	0.1664	2.9109	3.4141	7.4400e-003	0.0939	0.0363	0.1181	0.0251	0.0352	0.0492	0.0000	676.6777	676.6777	0.0897	0.0000	678.9197

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	51.93	21.76	-5.79	0.00	0.00	77.18	50.87	0.00	77.05	67.48	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	4-1-2019	6-30-2019	0.3569	0.2748
6	7-1-2019	9-30-2019	1.0944	0.8429
7	10-1-2019	12-31-2019	1.1007	0.8492
8	1-1-2020	3-31-2020	1.6217	1.2396
9	4-1-2020	6-30-2020	1.2817	0.9652
10	7-1-2020	9-30-2020	0.6202	0.4349
		Highest	1.6217	1.2396

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.9000e-004	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.2800e-003	0.0133	0.0469	1.5000e-004	0.0133	1.6000e-004	0.0134	3.5700e-003	1.5000e-004	3.7200e-003	0.0000	13.6453	13.6453	5.2000e-004	0.0000	13.6582
Waste						0.0000	0.0000		0.0000	0.0000	0.0426	0.0000	0.0426	2.5200e-003	0.0000	0.1056
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.9116	2.9116	1.3000e-004	3.0000e-005	2.9230
Total	5.2700e-003	0.0133	0.0470	1.5000e-004	0.0133	1.6000e-004	0.0134	3.5700e-003	1.5000e-004	3.7200e-003	0.0426	16.5569	16.5995	3.1700e-003	3.0000e-005	16.6868

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.9000e-004	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.2800e-003	0.0133	0.0469	1.5000e-004	0.0133	1.6000e-004	0.0134	3.5700e-003	1.5000e-004	3.7200e-003	0.0000	13.6453	13.6453	5.2000e-004	0.0000	13.6582
Waste						0.0000	0.0000		0.0000	0.0000	0.0426	0.0000	0.0426	2.5200e-003	0.0000	0.1056
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.9116	2.9116	1.3000e-004	3.0000e-005	2.9230
Total	5.2700e-003	0.0133	0.0470	1.5000e-004	0.0133	1.6000e-004	0.0134	3.5700e-003	1.5000e-004	3.7200e-003	0.0426	16.5569	16.5995	3.1700e-003	3.0000e-005	16.6868

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Collection System (Phase 2)	Trenching	1/1/2020	12/30/2020	5	261	
2	WWTP & Lift Station (Phase 1)	Building Construction	6/1/2019	5/31/2020	5	260	

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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Collection System (Phase 2)	Air Compressors	2	3.00	78	0.48
Collection System (Phase 2)	Concrete/Industrial Saws	1	0.20	81	0.73
Collection System (Phase 2)	Dumpers/Tenders	1	2.00	16	0.38
Collection System (Phase 2)	Generator Sets	1	4.00	84	0.74
Collection System (Phase 2)	Off-Highway Trucks	1	1.00	402	0.38
Collection System (Phase 2)	Pavers	1	1.00	130	0.42
Collection System (Phase 2)	Plate Compactors	1	1.00	8	0.43
Collection System (Phase 2)	Pumps	2	6.00	84	0.74
Collection System (Phase 2)	Rollers	1	1.00	80	0.38
Collection System (Phase 2)	Skid Steer Loaders	1	2.00	65	0.37
Collection System (Phase 2)	Sweepers/Scrubbers	1	1.00	64	0.46
Collection System (Phase 2)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Collection System (Phase 2)	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Collection System (Phase 2)	Welders	1	1.00	46	0.45
WWTP & Lift Station (Phase 1)	Concrete/Industrial Saws	1	0.20	81	0.73
WWTP & Lift Station (Phase 1)	Dumpers/Tenders	1	4.00	16	0.38
WWTP & Lift Station (Phase 1)	Forklifts	1	4.00	89	0.20
WWTP & Lift Station (Phase 1)	Forklifts	1	2.00	89	0.20
WWTP & Lift Station (Phase 1)	Generator Sets	1	6.00	84	0.74

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WWTP & Lift Station (Phase 1)	Off-Highway Trucks	1	1.00	402	0.38
WWTP & Lift Station (Phase 1)	Plate Compactors	1	0.30	8	0.43
WWTP & Lift Station (Phase 1)	Pumps	3	4.00	84	0.74
WWTP & Lift Station (Phase 1)	Signal Boards	1	0.30	6	0.82
WWTP & Lift Station (Phase 1)	Skid Steer Loaders	1	4.00	65	0.37
WWTP & Lift Station (Phase 1)	Skid Steer Loaders	1	4.00	65	0.37
WWTP & Lift Station (Phase 1)	Sweepers/Scrubbers	1	1.00	64	0.46
WWTP & Lift Station (Phase 1)	Tractors/Loaders/Backhoes	1	4.00	97	0.37
WWTP & Lift Station (Phase 1)	Cranes	1	8.00	231	0.29
WWTP & Lift Station (Phase 1)	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Collection System (Phase 2)	16	20.00	0.00	4,176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
WWTP & Lift Station (Phase 1)	19	20.00	0.00	4,176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

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3.2 Collection System (Phase 2) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1897	1.5861	1.6366	2.8500e-003		0.0920	0.0920		0.0903	0.0903	0.0000	244.7672	244.7672	0.0305	0.0000	245.5286
Total	0.1897	1.5861	1.6366	2.8500e-003		0.0920	0.0920		0.0903	0.0903	0.0000	244.7672	244.7672	0.0305	0.0000	245.5286

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0185	0.6738	0.2809	1.7000e-003	0.0349	2.1000e-003	0.0370	9.6000e-003	2.0100e-003	0.0116	0.0000	174.4136	174.4136	0.0218	0.0000	174.9578
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1200e-003	4.8200e-003	0.0508	1.9000e-004	0.0206	1.3000e-004	0.0207	5.4700e-003	1.2000e-004	5.5900e-003	0.0000	17.1093	17.1093	3.3000e-004	0.0000	17.1177
Total	0.0256	0.6787	0.3317	1.8900e-003	0.0555	2.2300e-003	0.0577	0.0151	2.1300e-003	0.0172	0.0000	191.5229	191.5229	0.0221	0.0000	192.0754

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3.2 Collection System (Phase 2) - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0481	0.9918	1.7952	2.8500e-003		-0.0013	-0.0013		-0.0006	-0.0006	0.0000	244.7669	244.7669	0.0305	0.0000	245.5283
Total	0.0481	0.9918	1.7952	2.8500e-003		-0.0013	-0.0013		-0.0006	-0.0006	0.0000	244.7669	244.7669	0.0305	0.0000	245.5283

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0185	0.6738	0.2809	1.7000e-003	0.0349	2.1000e-003	0.0370	9.6000e-003	2.0100e-003	0.0116	0.0000	174.4136	174.4136	0.0218	0.0000	174.9578
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1200e-003	4.8200e-003	0.0508	1.9000e-004	0.0206	1.3000e-004	0.0207	5.4700e-003	1.2000e-004	5.5900e-003	0.0000	17.1093	17.1093	3.3000e-004	0.0000	17.1177
Total	0.0256	0.6787	0.3317	1.8900e-003	0.0555	2.2300e-003	0.0577	0.0151	2.1300e-003	0.0172	0.0000	191.5229	191.5229	0.0221	0.0000	192.0754

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3.3 WWTP & Lift Station (Phase 1) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2429	1.8532	1.5658	2.7000e-003		0.1038	0.1038		0.1006	0.1006	0.0000	228.2594	228.2594	0.0409	0.0000	229.2807
Total	0.2429	1.8532	1.5658	2.7000e-003		0.1038	0.1038		0.1006	0.1006	0.0000	228.2594	228.2594	0.0409	0.0000	229.2807

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0122	0.4263	0.1639	1.0100e-003	0.0313	1.7000e-003	0.0330	8.2900e-003	1.6300e-003	9.9100e-003	0.0000	103.4157	103.4157	0.0126	0.0000	103.7313
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-003	3.1700e-003	0.0326	1.1000e-004	0.0120	8.0000e-005	0.0120	3.1800e-003	7.0000e-005	3.2500e-003	0.0000	10.2909	10.2909	2.2000e-004	0.0000	10.2964
Total	0.0167	0.4295	0.1966	1.1200e-003	0.0433	1.7800e-003	0.0451	0.0115	1.7000e-003	0.0132	0.0000	113.7066	113.7066	0.0128	0.0000	114.0277

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3.3 WWTP & Lift Station (Phase 1) - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1248	1.3894	1.6368	2.7000e-003		0.0345	0.0345		0.0335	0.0335	0.0000	228.2592	228.2592	0.0409	0.0000	229.2804
Total	0.1248	1.3894	1.6368	2.7000e-003		0.0345	0.0345		0.0335	0.0335	0.0000	228.2592	228.2592	0.0409	0.0000	229.2804

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0122	0.4263	0.1639	1.0100e-003	0.0313	1.7000e-003	0.0330	8.2900e-003	1.6300e-003	9.9100e-003	0.0000	103.4157	103.4157	0.0126	0.0000	103.7313
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-003	3.1700e-003	0.0326	1.1000e-004	0.0120	8.0000e-005	0.0120	3.1800e-003	7.0000e-005	3.2500e-003	0.0000	10.2909	10.2909	2.2000e-004	0.0000	10.2964
Total	0.0167	0.4295	0.1966	1.1200e-003	0.0433	1.7800e-003	0.0451	0.0115	1.7000e-003	0.0132	0.0000	113.7066	113.7066	0.0128	0.0000	114.0277

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3.3 WWTP & Lift Station (Phase 1) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1552	1.2158	1.0917	1.9200e-003		0.0644	0.0644		0.0624	0.0624	0.0000	160.8596	160.8596	0.0279	0.0000	161.5582
Total	0.1552	1.2158	1.0917	1.9200e-003		0.0644	0.0644		0.0624	0.0624	0.0000	160.8596	160.8596	0.0279	0.0000	161.5582

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6800e-003	0.2799	0.1167	7.1000e-004	0.0299	8.7000e-004	0.0307	7.7600e-003	8.3000e-004	8.5900e-003	0.0000	72.4487	72.4487	9.0400e-003	0.0000	72.6748
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9400e-003	2.0000e-003	0.0210	8.0000e-005	8.5000e-003	5.0000e-005	8.5600e-003	2.2600e-003	5.0000e-005	2.3100e-003	0.0000	7.0797	7.0797	1.4000e-004	0.0000	7.0832
Total	0.0106	0.2819	0.1377	7.9000e-004	0.0384	9.2000e-004	0.0393	0.0100	8.8000e-004	0.0109	0.0000	79.5284	79.5284	9.1800e-003	0.0000	79.7579

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3.3 WWTP & Lift Station (Phase 1) - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0821	0.9586	1.1494	1.9200e-003		0.0223	0.0223		0.0217	0.0217	0.0000	160.8595	160.8595	0.0279	0.0000	161.5580
Total	0.0821	0.9586	1.1494	1.9200e-003		0.0223	0.0223		0.0217	0.0217	0.0000	160.8595	160.8595	0.0279	0.0000	161.5580

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6800e-003	0.2799	0.1167	7.1000e-004	0.0299	8.7000e-004	0.0307	7.7600e-003	8.3000e-004	8.5900e-003	0.0000	72.4487	72.4487	9.0400e-003	0.0000	72.6748
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9400e-003	2.0000e-003	0.0210	8.0000e-005	8.5000e-003	5.0000e-005	8.5600e-003	2.2600e-003	5.0000e-005	2.3100e-003	0.0000	7.0797	7.0797	1.4000e-004	0.0000	7.0832
Total	0.0106	0.2819	0.1377	7.9000e-004	0.0384	9.2000e-004	0.0393	0.0100	8.8000e-004	0.0109	0.0000	79.5284	79.5284	9.1800e-003	0.0000	79.7579

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.2800e-003	0.0133	0.0469	1.5000e-004	0.0133	1.6000e-004	0.0134	3.5700e-003	1.5000e-004	3.7200e-003	0.0000	13.6453	13.6453	5.2000e-004	0.0000	13.6582
Unmitigated	4.2800e-003	0.0133	0.0469	1.5000e-004	0.0133	1.6000e-004	0.0134	3.5700e-003	1.5000e-004	3.7200e-003	0.0000	13.6453	13.6453	5.2000e-004	0.0000	13.6582

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	4.54	54.60	40.18	35,822	35,822
Total	4.54	54.60	40.18	35,822	35,822

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.490452	0.049742	0.253638	0.136789	0.017926	0.006526	0.021436	0.006323	0.003943	0.003278	0.008771	0.000435	0.000741

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.9000e-004	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	9.9000e-004	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Total	9.8000e-004	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005
Total	9.8000e-004	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	5.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.9116	1.3000e-004	3.0000e-005	2.9230
Unmitigated	2.9116	1.3000e-004	3.0000e-005	2.9230

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.85956	2.9116	1.3000e-004	3.0000e-005	2.9230
Total		2.9116	1.3000e-004	3.0000e-005	2.9230

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 2.85956	2.9116	1.3000e-004	3.0000e-005	2.9230
Total		2.9116	1.3000e-004	3.0000e-005	2.9230

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0426	2.5200e-003	0.0000	0.1056
Unmitigated	0.0426	2.5200e-003	0.0000	0.1056

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.21	0.0426	2.5200e-003	0.0000	0.1056
Total		0.0426	2.5200e-003	0.0000	0.1056

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.21	0.0426	2.5200e-003	0.0000	0.1056
Total		0.0426	2.5200e-003	0.0000	0.1056

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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memorial Park WWT - Construction Only - San Mateo County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

Special-Status Species Considered

Based on review of the biological literature of the region, information presented in previous environmental documentation, and an evaluation of the habitat conditions of the study area, a species was designated as “absent” if: (1) the species’ specific habitat requirements (e.g., serpentine grasslands, as opposed to grasslands occurring on other soils) are not present, or (2) the species is presumed, based on the best scientific information available, to be extirpated from the study area or region. A species was designated as having a “low potential” for occurrence if: (1) its known current distribution or range is outside of the study area, or (2) only limited or marginally suitable habitat is present within the study area. A species was designated as having a “moderate potential” for occurrence if: (1) there is low to moderate quality habitat present within the study area or immediately adjacent areas, or (2) the study area is within the known range of the species, even though the species was not observed during biological surveys. A species was designated as having a “high potential” for occurrence if: (1) moderate to high quality habitat is present within the study area, and (2) the study area is within the known range of the species. A species was designated as “present” if it is known to occur within the project study area. Many of the species listed in **Table B-1** have only a low potential for occurrence or are absent from the study area and were eliminated from further evaluation, primarily because the study area does not provide suitable habitat for them or the park is outside of their understood range.

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
FEDERAL OR STATE LISTED SPECIES				
Plants				
San Mateo thorn-mint <i>Acanthomintha duttonii</i>	FE/CE/1B.1	Chaparral and valley grassland. Affinity for serpentine soil. 30 – 260m.	Absent. Suitable habitat is not found in the project study area. Serpentine soils not found in the project study area. No occurrences documented within 5 miles.	April – June
Ben Lomond spineflower <i>Chorizanthe pungens</i> var. <i>hartwegiana</i>	FE/--/1B.1	Yellow pine forest in disturbed areas along the coast. 90 – 350m.	Low. Marginal habitat is found in the project study area though sandy soils on which this species typically grows are not present. No occurrences documented within 5 miles.	April – July
Crystal Springs fountain thistle <i>Cirsium fontinale</i> var. <i>fontinale</i>	FE/CE/1B.1	Chaparral, valley grassland, wetland riparian communities and in seeps. Occurs almost always under natural conditions in wetlands. Affinity to serpentine soil.	Absent. Project study area is outside of known species range. Serpentine soils not found in the project study area.	March – October
San Mateo woolly sunflower <i>Eriophyllum latilobum</i>	FE/CE/1B.1	Foothill woodland, coastal scrub, and lower montane coniferous forest. Affinity to serpentine soil. 20 – 630m.	Low. Possibly extirpated. Single occurrence documented within 5 miles is located on a grassy hillside 4 miles south west of La Honda on road to Pescadero Beach. Serpentine soils not found in the project study area.	March – June
Santa Cruz cypress <i>Hesperocyparis abramsiana</i> var. <i>abramsiana</i>	FE/CE/1B.2	Closed-cone coniferous forest, chaparral, and low montane coniferous forest with sandstone or granite substrate.	Present. One tree is located at the entrance to the Park. Others are located on Butano Ridge.	Year-round
Butano Ridge cypress <i>Hesperocyparis abramsiana</i> var. <i>butanoensis</i>	FE/CE/1B.2	Closed-cone coniferous forest, chaparral, and low montane coniferous forest with sandstone or granite substrate. Only seven known stands of this cypress variety occur in the Santa Cruz Mountains. 260 – 770m.	Absent. Not identified within Memorial Park. The single occurrence within 5 miles is located 3 miles southwest of the project study area and consists of a small grove within a well-developed redwood forest.	Year-round
Marin western flax <i>Hesperolinon congestum</i>	FT/CT/1B.1	Chaparral and valley and foothill grassland. Affinity to serpentine soil. 4 – 420m.	Absent. Suitable habitat is not found in the project study area. Serpentine soils not found in the project study area. No occurrences documented within 5 miles.	April – July
Point Reyes meadowfoam <i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	--/CE/1B.2	Coastal prairie, freshwater wetlands and wetland-riparian areas. 40 – 110m.	Low. Suitable habitat is not found in the project study area. Single occurrence documented within 5 miles is located 4.5 miles southwest of the project site in a moist grassy meadow near Butano Creek Canyon.	March – May
white-rayed pentachaeta <i>Pentachaeta bellidiflora</i>	FE/CE/1B.1	Open, dry, rocky slopes and grassy areas, usually on serpentine. 35 – 620m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrence documented in Big Basin Redwoods State Park more than 5 miles south of the project site.	March – May

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
FEDERAL OR STATE LISTED SPECIES (cont.)				
Plants (cont.)				
San Francisco popcornflower <i>Plagiobothrys diffusus</i>	--/CE/1B.1	Coastal prairie and valley grassland. 17 – 260m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles.	March – June
two fork (=showy rancheria) clover <i>Trifolium amoenum</i>	FE/--/1B.1	Valley grassland and wetland-riparian areas. Usually occurs in wetlands, but occasionally not wetlands. 8 – 160m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles.	April – June
Invertebrates				
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE/--/--	Coastal scrub and bunchgrass grassland habitats, with larval foodplant, broadleaf stonecrop (<i>Sedum spathulifolium</i>); adults nectar on bladder parsnip (<i>Lomatium utriculatum</i>), common yarrow (<i>Achillea millefolium</i>), coast rock cress (<i>Arabis blepharophylla</i>), San Francisco wallflower (<i>Erysimum franciscanum</i>), California buttercup (<i>Ranunculus californicus</i>), and wood strawberry (<i>Fragaria vesca</i>).	Absent. Suitable habitat for this species is not found in the project study area and supportive host plant and nectar plants not observed during reconnaissance survey. No occurrences documented within 5 miles of the project site.	March – April
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT/*/--	Native grasslands on serpentine soils in San Francisco Bay area. Host plants: foothill plantain (<i>Plantago erecta</i>) (primary); denseflower Indian paintbrush (<i>Castilleja densiflora</i>) and owl's clover (<i>C. exserta</i>).	Absent. Suitable habitat for this species is not found in the project study area and supportive host plants not observed during reconnaissance survey.	March – May
Myrtle's silverspot butterfly <i>Speyeria zerene myrtleae</i>	FE/*/--	Coastal dune and prairie communities with host plants including gumweed (<i>Grindelia hirsutula</i>), sand verbena (<i>Abronia latifolia</i>), Monardella (<i>Monardella</i> spp.), bull thistle (<i>Cirsium vulgare</i>), and seaside daisy (<i>Erigeron glaucus</i>) where found on the San Francisco and Marin peninsulas.	Absent. Extirpated from San Mateo County.	late June – early September
Fish				
tidewater goby <i>Eucyclogobius newberryi</i>	FE/CSC/--	Brackish water habitats along the California 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 and high oxygen levels.	Absent. Suitable habitat for this species is not found in the project study area.	--

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
FEDERAL OR STATE LISTED SPECIES (cont.)				
Fish (cont.)				
delta smelt <i>Hypomesus transpacificus</i>	FT/CE/--	Endemic to the Sacramento-San Joaquin Delta distributed from Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, and Solano Counties. Spawning occurs in brackish-water river channels and sloughs of the Delta.	Absent. The project study area is outside of the species range.	--
coho salmon - central California coast ESU <i>Oncorhynchus kisutch</i>	FE/CE/--	Spawns and rears in coastal streams with stable gravel substrates south of Punta Gorda, CA, south to and including Aptos Creek, as well as tributaries to San Francisco Bay.	Moderate. Previously known to spawn in Pescadero Creek through currently at extreme risk of extirpation from Pescadero Creek. Adults observed in 2014/2015 spawning season.	
Steelhead – Central CA Coast DPS <i>Oncorhynchus mykiss</i>	FT/--/--	Spawns and rears in coastal streams between the Russian River and Aptos Creek, as well as drainages tributary to San Francisco Bay, where gravelly substrate and shaded riparian habitat occurs. ^c	High. Known to occur in Pescadero Creek within the project study area.	Year-round
longfin smelt <i>Spirinchus thaleichthys</i>	FC/ CT, CSC /--	Found throughout the nearshore coastal waters and open waters of San Francisco Bay-Delta including the river channels and sloughs of the Delta. Spawns in the Delta.	Absent. The project study area is outside of the species range.	late summer
Reptiles				
green sea turtle <i>Chelonia mydas</i>	FT*/--	Range in the eastern North Pacific Ocean from Baja California to Alaska, most commonly from San Diego South. When in nearshore foraging grounds, turtles feed on seagrasses and algae.	Absent. Suitable habitat for this species is not found in the project study area.	--
San Francisco garter snake <i>Thamnophis sirtalis tetrataenia</i>	FE/CE, FP/--	Most often observed in the vicinity of standing water; ponds, lakes, marshes, and sloughs. Temporary ponds and seasonal bodies of water are also used. Banks with emergent and bankside vegetation are preferred and used for cover.	Low. Not previously documented within Memorial Park. No substantial grassland area, standing freshwater, or freshwater emergent vegetation in or around the project study area. May occur in Pescadero Creek County Park where more suitable habitat for this species is present.	March–November
Amphibians				
California tiger salamander <i>Ambystoma californiense</i>	FT/CT, WL/--	Vernal or temporary pools in annual grasslands, or open stages of woodlands. Typically, adults use mammal burrows.	Absent. Suitable habitat for this species is not found within the project study area. No occurrences documented within 5 miles of the project site.	Year-round

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
FEDERAL OR STATE LISTED SPECIES (cont.)				
Amphibians (cont.)				
foothill yellow-legged frog <i>Rana boylei</i>	--/CCT, CSC/- -	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Moderate. Suitable habitat is found in the project study area. Documented in Pescadero Creek between Jones Gulch and Hardwood Creek within Pescadero Creek County Park though not previously documented within Memorial Park.	Year-round
California red-legged frog <i>Rana draytonii</i>	FT/CSC/--	Streams, freshwater pools, and ponds with overhanging vegetation. Also found in woods adjacent to streams. Requires permanent or ephemeral water sources such as reservoirs and slow moving streams and needs pools of >0.5 m depth for breeding.	Moderate. Suitable aquatic habitat for this species is present in Pescadero Creek within the project study area. Not previously documented within Memorial Park. Two occurrences documented in similar redwood forest habitat within 1 mile of the project site. The project study area occurs within designated critical habitat for this species.	Year-round
Birds				
marbled murrelet <i>Brachyramphus marmoratus</i>	FT/CE/--	Breeds in coniferous forests near the coast and prefers old growth, mature stands. Nests on large horizontal branches high in the trees. Winters at sea.	Present (potential to nest). Memorial Park is considered occupied habitat for this species though previous nesting activity has not been identified within the park. The project study area occurs within designated critical habitat for this species.	late March – July
western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT/CSC/--	Sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, salt pond levees, and gravel bars. Nests in sandy substrate and forages in sandy marine and estuarine bodies.	Absent (no potential to nest). Suitable habitat for this species is not found within the project study area. No occurrences documented within 5 miles of the project site.	Year-round
American peregrine falcon <i>Falco peregrinus anatum</i>	FD/CD, CFP /--	Nests near wetlands, lakes, rivers, or other water on cliffs, banks, human structures. Feeds on birds taken in flight.	Low (unlikely to nest). Typical foraging habitat is not found within the project study area. Documented occurrences within 5 miles of the project site occur on limestone cliffs or rock outcroppings among coniferous forest.	Year-round
California black rail <i>Laterallus jamaicensis coturniculus</i>	--/CT/--	Salt marshes along large bays, also freshwater marshes.	Absent (no potential to nest). Suitable habitat for this species is not found in the project study area.	Year-round
Ridgway's rail <i>Rallus obsoletus obsoletus</i>	FE/CE/--	Salt-water and brackish marshes with tidal sloughs.	Absent (no potential to nest). Only occurs in densely-vegetated tidal marsh habitat which is not found within the project study area.	Year-round
Bank swallow (nesting) <i>Riparia riparia</i>	--/CT/--	Vertical banks and cliffs with sandy soil, near water. Nests in holes dug in cliffs and river banks.	Absent (no potential to nest). Suitable nesting habitat for this species is not found in the project study area. Nearest nesting site documented 5 miles west of the project site on vertical cliffs abutting the ocean north of Pescadero.	March – October (migration)

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
FEDERAL OR STATE LISTED SPECIES (cont.)				
Birds (cont.)				
California least tern <i>Sterna antillarum</i>	FE/CE, FP/--	Feeds in relatively shallow, near-shore waters, coastal freshwater ponds, channels, and lakes occupied by small fish. Colonial nesters on sand, gravel, or shell beaches where visibility is good.	Absent (no potential to nest). Suitable habitat for this species is not found in the project study area.	April – August
Mammals				
Saltmarsh harvest mouse <i>Reithrodontomys raviventris</i>	FE/CE/--	Salt marsh habitat dominated by pickleweed.	Absent. Suitable habitat for this species is not found in the project study area.	Year-round
OTHER SPECIAL STATUS SPECIES				
Plants				
Blasdale's bent grass <i>Agrostis blasdalei</i>	--/--/1B.2	Coastal strand, coastal prairie, northern coastal scrub and dunes. 5 – 350m.	Absent. Suitable habitat not found in the study area.	May – July
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	--/--/1B.2	Clay, volcanic, or serpentine substrate in valley and foothill grassland and cismontane woodland. 20 – 740m.	Low. Marginal habitat is found in the project study area. Closest populations documented more than 5 miles north of the project site in Jasper Ridge Biological Preserve.	May – June
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	--/--/1B.2	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland. 3 – 500m.	Low. Marginal habitat is found in the project study area. Closest occurrence is documented more than 5 miles northeast of the project site in Redwood City.	March – June
California androsace <i>Androsace elongata</i> ssp. <i>acuta</i>	--/--/4.2	Chaparral, foothill woodland, pinyon and juniper woodland, northern coastal scrub, meadows and seeps, valley and foothill grassland, and coastal sage scrub. Often found on slopes. 50 – 2120m.	Low. Marginal habitat is found in the project study area. No occurrences documented within 5 miles of the project site.	March – June
slender silver moss <i>Anomobryum julaceum</i>	--/--/4.2	Broadleaved upland forest, lower montane coniferous forest, north coast coniferous forest. Found on damp rock and soil on outcrops, usually on roadcuts. 100 – 1000m.	Low. Marginal habitat is found in the project study area. No occurrences documented within 5 miles of the project site.	Year-round
coast rockress <i>Arabis blepharophylla</i>	--/--/4.3	Rocky areas in broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub. 3 – 1100m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	February – May
Anderson's (=Santa Cruz) manzanita <i>Arctostaphylos andersonii</i>	--/--/1B.2	Chaparral, mixed evergreen forest, and redwood forests in openings and along edges. 80 – 820m.	Low. Suitable habitat for this species is present within the project study area. No manzanita shrubs were observed during the reconnaissance survey of the project site.	November – March

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
Schreiber's manzanita <i>Arctostaphylos glutinosa</i>	--/--/1B.2	Chaparral and closed-cone pine forests. 210 – 770m.	Absent. No occurrences documented within 5 miles of the project site. No manzanita shrubs were observed during the reconnaissance survey of the project site.	March – April
Ohlone manzanita <i>Arctostaphylos ohloneana</i>	--/--/1B.1	Siliceous shale outcrops, chaparral and knobcone-pine woodland. 400 – 500m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site. No manzanita shrubs were observed during the reconnaissance survey of the project site.	February – March
King's Mountain manzanita <i>Arctostaphylos regismontana</i>	--/--/1B.2	Chaparral, mixed evergreen forest, and north coastal coniferous forest. 200 – 660m.	Absent. No occurrences documented within 5 miles of the project site. No manzanita shrubs were observed during the reconnaissance survey of the project site.	January – April
Boony Doon manzanita <i>Arctostaphylos silvicola</i>	--/--/1B.2	Chaparral, yellow pine forest and closed-cone pine forests. 100 – 890m.	Absent. No occurrences documented within 5 miles of the project site. No manzanita shrubs were observed during the reconnaissance survey of the project site.	February – March
ocean bluff milk-vetch <i>Astragalus nuttallii</i> var. <i>nuttallii</i>	--/--/4.2	Coastal bluff scrub and coastal dunes. 3 – 120m.	Absent. Suitable habitat is not found in the project study area.	January – November
coastal marsh milk-vetch <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	--/--/1B.2	Coastal dunes, coastal scrub, streamside and coastal marshes or swamps. 0 – 330m.	Absent. Suitable habitat is not found in the project study area. Occurrences documented within 5 miles are located 4.5 miles west of the project site and are historical.	April – October
alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	--/--/1B.2	Playas, valley foothill grasslands, vernal pools/alkaline habitats. 1 – 170m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	March – June
Brewer's calandrinia <i>Calandrinia breweri</i>	--/--/4.2	Chaparral, northern coastal scrub and coastal sage scrub in disturbed habitat. 10 – 1220m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrences are documented near Monte Bello Open Space and Big Basin Redwoods State Park.	March – June
round-leaved filaree <i>California macrophylla</i>	--/--/1B.1	Valley grassland and foothill woodland. 15 – 1200m.	Absent. Suitable habitat is not found in the project study area. Single occurrence documented within 5 miles is historical and within the vicinity of Pescadero.	March – May
Oakland star-tulip <i>Calochortus umbellatus</i>	--/--/4.2	Chaparral, valley grassland, yellow pine forest and mixed evergreen forest. Has an affinity to serpentine soils. 100 – 700m.	Low. Suitable habitat is found in the project study area. Nearest occurrence is documented in Big Basin Redwoods State Park south of the project study area.	March – May

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
Santa Cruz Mountains pussypaws <i>Calyptridium parryi</i> var. <i>hesseae</i>	--/--/1B.1	Chaparral, cismontane woodlands and foothill woodlands in sandy or gravelly openings. 305 – 1530m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrence is documented in Big Basin Redwoods State Park south of the project study area.	May – August
johnny-nip <i>Castilleja ambigua</i> var. <i>ambigua</i>	--/--/4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and margins of vernal pools. 0 – 435m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrences are documented along the coast in the vicinity of Pescadero.	March – August
Cogdon's tarplant <i>Centromadia parryi</i> ssp. <i>cogdonii</i>	--/--/1B.2	Valley and foothill grasslands/alkaline habitats, low water tolerance. 0 – 260m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	May – October, uncommon in November
Franciscan thistle <i>Cirsium andrewsii</i>	--/--/1B.2	Mixed evergreen forest, northern coastal scrub, coastal prairie, and wetland, riparian areas along the coast. Affinity to serpentine soil. 13 – 1950m.	Low. Marginally suitable habitat is found in the project study area. Single occurrence documented within 5 miles is located south of Butano State Park.	March – July
lost thistle <i>Cirsium praeteriens</i>	--/--/1A	Presumed extinct; habitat unknown. Species has low water tolerance.	Absent. Species presumed extinct.	June – July
Santa Clara red-ribbons <i>Clarkia concinna</i> ssp. <i>automixa</i>	--/--/4.3	Cismontane woodland and chaparral. Found on slopes and near drainages. 90-1500m.	Low. Marginally suitable habitat is found in the project study area. Single occurrence documented within 5 miles is located east of Monte Bello Open Space on a rocky road-cut slope.	May – June
round-headed Chinese houses <i>Collinsia corymbosa</i>	--/--/1B.2	Coastal strand and dunes. 9 – 100m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	April – June
San Francisco collinsia <i>Collinsia multicolor</i>	--/--/1B.2	Closed-cone coniferous forests, coastal scrub, sometimes on serpentine derived soils. 10 – 430m.	Low. Suitable habitat is found in the project study area. Nearest occurrence is documented in Big Basin Redwoods State Park south of the project study area. Other regional occurrences are further south in the Santa Cruz Mountains.	March – May
clustered lady's slipper <i>Cypripedium fasciculatum</i>	--/--/4.2	Yellow pine forest, redwood forest, Douglas-fir forest, and wetland-riparian areas. Occurs in stream banks and seeps, often on serpentine derived soils. 640 – 1890m.	Low. Suitable habitat is found in the project study area. Nearest documented occurrences are documented east of the project study area on the Ridge Trail near Sunny Jim Trail, Skyline Ridge Open Space Preserve.	March – August
mountain lady's-slipper <i>Cypripedium montanum</i>	--/--/4.2	Yellow pine forest, mixed evergreen forest and wetland, riparian areas. 370 – 1980m.	Low. Suitable habitat is found in the project study area. Single regional occurrence is documented in the Felton quadrangle, more than 10 miles south of the project study area.	March – August

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
western leatherwood <i>Dirca occidentalis</i>	--/--/1B.2	Chaparral, foothill woodland, mixed evergreen forest, broadleaved upland forest, closed-cone pine forest, north coastal coniferous forest, and wetland-riparian areas. Equally likely to occur in wetlands and non-wetlands. 12 – 560m.	Low. Suitable habitat is found in the project study area. Nearest occurrences are documented in the La Honda quadrangle, in which Memorial Park is located, and in Mindego Hill quadrangle to the east. Other occurrences are located more than 3 miles north of the project site.	January – March
California bottle-brush grass <i>Elymus californicus</i>	--/--/4.3	Evergreen forests, foothill woodlands and riparian areas. 19 – 460m.	Low. Suitable habitat is found in the project study area. Single regional occurrence is documented in the La Honda quadrangle in which Memorial Park is located.	May – August
Ben Lomond buckwheat <i>Eriogonum nudum</i> var. <i>decurrens</i>	--/--/1B.1	Chaparral, foothill woodland, and yellow pine forest in coastal areas. Occurs almost always under natural conditions in non-wetlands. 80 – 220m.	Low. Marginally suitable habitat is found in the project study area. Regional occurrences are documented in the Mindego Hill quadrangle and more than 10 miles south of the project site near Quail Hollow Ranch County Park.	June – October
Hoover's button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	--/--/1B.1	Found in alkaline depressions, vernal pools, roadside ditches and other freshwater wet places near the coast. 3 – 45m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrences are concentrated around the south Bay shoreline.	July
Jepson's coyote thistle <i>Eryngium jepsonii</i>	--/--/1B.2	Valley and foothill grasslands and vernal pools. 6 – 110m.	Absent. No suitable habitat is present in the project study area. Nearest documented occurrences are located in the Jasper Ridge Biological Preserve at Stanford University, northeast of the project study area.	April – August
sand-loving wallflower <i>Erysimum ammophilum</i>	--/--/1B.2	Coastal strand and dunes. 0 – 70m.	Absent. Suitable habitat not found in the study area.	February – June
San Francisco wallflower <i>Erysimum franciscanum</i>	--/--/4.2	Northern foredune, northern coastal scrub, northern coastal bluff scrub, central dune scrub.	Absent. Suitable habitat not found in the study area.	March – June
minute pocket moss <i>Fissidens pauperculus</i>	--/--/1B.2	North coast coniferous forest with damp coastal soils. 10 – 1024m.	High. Suitable habitat is found in the project study area. Nearest documented occurrence is within 1 mile of the project site below an old haul road and across Pescadero Creek from Oakland Camp. Found on moist, diffusely lit soil under a rotten log in forest of coast redwood and tanbark oak.	Year-round
stinkbells <i>Fritillaria agrestis</i>	--/--/4.2	Chaparral, valley grassland, foothill woodland and wetland, riparian areas. Affinity to serpentine soils. 11 – 1640m.	Absent. No suitable habitat is present in the project study area. No occurrences documented within 5 miles of the project site.	March – June

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
fragrant fritillary <i>Fritillaria liliacea</i>	--/--/1B.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; clayey soils, often serpentinite. 6 – 370m	Absent. No suitable habitat is present in the project study area. No occurrences documented within 5 miles of the project site.	February – April
Toren's grimmia <i>Grimmia torenii</i>	--/--/1B.3	Chaparral, cismontane woodland and lower montane coniferous forest in openings of rocky areas, boulders, and on rock walls.	Low. Marginally suitable habitat is found within the project study area. Nearest occurrence is located 5 miles southeast of the project below the Butano fire road north of Gazos Creek. Found on a hillside on a calcareous sandstone rock outcrop in knobcone pine forest with dense manzanita understory.	Year-round
vaginate grimmia <i>Grimmia vaginulata</i>	--/--/1B.1	Chaparral in openings of rocky areas, boulders, and on rock walls.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	Year-round
San Francisco gumplant <i>Grindelia hirsutula</i> var. <i>maritima</i>	--/--/3.2	Coastal scrub and grasslands. 19 – 200m.	Absent. Suitable habitat is not found in the project study area.	June – September
short-leaved evax <i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>	--/--/1B.2	Sandy bluffs and flats in coastal scrub and coastal dunes. 4 – 250m.	Absent. Suitable habitat is not found in the project study area.	March – June
Diablo helianthella <i>Helianthella castanea</i>	--/--/1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. On unusually rocky, axonal soils and often in partial shade. 60 – 1300m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	March – June
Kellogg's horkelia <i>Horkelia cuneata</i> var. <i>sericea</i>	--/--/1B.1	Coastal scrub, dunes, and openings of closed-cone coniferous forests. 0 – 1690m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	February – July
harlequin lotus <i>Hosackia gracilis</i>	--/--/4.2	Broadleaved upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, north coast coniferous forest, valley and foothill grassland. Often in wetlands and roadsides. 0-700m.	Low. Marginally suitable habitat is found in the project study area. Regional occurrences are documented more than 5 miles west of the project site near the coast south of Pescadero.	March – July
coast iris <i>Iris longipetala</i>	--/--/4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps, mesic sites. 5 – 430m.	Low. Marginally suitable habitat is found in the project study area. Few occurrences documented in the regional project vicinity within similar redwood forest community of the project site.	March – May

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
<i>Plants (cont.)</i>				
perennial goldfields <i>Lasthenia californica</i> ssp. <i>macrantha</i>	--/--/1B.2	Coastal bluff scrub, coastal dunes, and coastal scrub. 5 – 520m.	Absent. Suitable habitat is not found in the project study area.	January – November
legenere <i>Legenere limosa</i>	--/--/1B.1	Vernal pools. Found in beds of vernal pools. 1-880m.	Absent. Suitable habitat is not found in the project study area.	April – June
serpentine leptosiphon <i>Leptosiphon ambiguus</i>	--/--/4.2	Valley grassland, foothill woodland, and northern coastal scrub. Has an affinity to serpentine soils.	Absent. Suitable habitat is not found in the project study area.	March – June
coast yellow leptosiphon <i>Leptosiphon croceus</i>	--/--/1B.1	Coastal bluff scrub and coastal prairie. 10 – 150m.	Absent. Suitable habitat is not found in the project study area.	April – June
rose leptosiphon <i>Leptosiphon rosaceus</i>	--/--/1B.1	Coastal bluff scrub. Species has a low water tolerance.	Absent. Suitable habitat is not found in the project study area.	April – July
Crystal Springs lessingia <i>Lessingia arachnoidea</i>	--/--/1B.2	Valley grassland, foothill woodlands and northern coastal scrub in disturbed areas. 70 – 210m.	Absent. Suitable habitat is not found in the project study area.	July – October
wooly-headed lessingia <i>Lessingia hololeuca</i>	--/--/3	Valley grassland, yellow pine forest and northern coastal scrub. Has an affinity to serpentine soils. 15 – 305m.	Low. Marginally suitable habitat is found in the project study area. Nearest occurrences are documented in the Mindego Hill and Big Basin quadrangles.	June – October
Point Reyes meadowfoam <i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	--/--/1B.2	Coastal prairie, meadows and seeps, freshwater marshes and swamps, and vernal pools. 0 – 140m.	Absent. Suitable habitat is not found in the project study area. Nearest documented occurrence is 4.5 miles south of the project site within Butano Creek canyon in a moist grassy meadow.	March – May
San Mateo tree lupine <i>Lupinus arboreus</i> var. <i>eximius</i>	--/--/3.2	Coastal scrub and dunes. 90 – 550m.	Absent. Suitable habitat is not found in the project study area. Lupine shrubs not observed during reconnaissance survey.	April – July
arcuate bush-mallow <i>Malacothamnus arcuatus</i>	--/--/1B.2	Gravelly alluvium in chaparral and cismontane woodland. 15 – 355m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrences are documented in the La Honda quadrangle, in which Memorial Park is located, and in Mindego Hill quadrangle to the east.	April – September
Davidson's bush-mallow <i>Malacothamnus davidsonii</i>	--/--/1B.2	Chaparral, northern coastal scrub, coastal sage scrub, and riparian areas. Usually occurs in non-wetlands but occasionally found in wetlands. 140 – 1850m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrence is documented in the Mindego Hill quadrangle to the east.	June – January
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	--/--/3.2	Valley grassland, foothill woodlands and mixed evergreen forest. Has an affinity to serpentine soils. 45 – 825m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	March – May

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
march microseris <i>Microseris paludosa</i>	--/1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. 5 – 355m.	Low. Marginally suitable habitat is found in the project study area. Nearest occurrences are documented in the San Gregorio and Pigeon Point quadrangles.	April – June
elongate copper moss <i>Mielichhoferiaceae elongata</i>	--/4.3	Metamorphic rock, usually acidic, vernal mesic, often on roadsides and sometimes carbonate. Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, and subalpine coniferous forest. 0 – 1960m.	Low. Suitable habitat is found in the project study area. No occurrences documented within 5 miles of the project site.	Year-round
woodland woollythreads <i>Monolopia gracilens</i>	--/1B.2	Mixed evergreen forest, broadleaved upland forest, redwood forest, and chaparral, and valley and foothill grasslands. Affinity to serpentine soil. 60 – 1360m.	Low. Suitable habitat is found in the project study area. Nearest occurrence within 5 miles is historical or generally located within the Mindogo Hill or La Honda quadrangles.	March – July
Kellman's bristle moss <i>Orthotrichum kellmanii</i>	--/1B.2	Chaparral and cismontane woodland with sandstone and carbonate substrate. 343 – 685m.	Absent. Suitable habitat is not found in the project study area. Single occurrence documented within 5 miles of the project site is located north of the headwaters of Gazos Creek.	Year-round
Dudley's lousewort <i>Pedicularis dudleyi</i>	--/1B.1	Chaparral, cismontane woodland, valley grassland, and redwood forest in coastal areas. 8 – 360m.	Moderate. Suitable habitat is found in the project study area. Nearest documented occurrence is 4.5 miles southeast of the project study area in Portola Redwoods State Park.	April – June
Santa Cruz Mountains beardtongue <i>Penstemon rattanii</i> var. <i>kleei</i>	--/1B.2	Chaparral, yellow pine forest and northern coastal coniferous forests. 10 – 660m.	Low. Marginally suitable habitat is found in the project study area. Nearest occurrences are documented in the Big Basin quadrangle.	May – June
Monterey pine <i>Pinus radiata</i>	--/1B.1	Closed-cone coniferous forest and cismontane woodland. 25 – 185m.	Absent. Native stands not documented within Memorial Park.	Year-round
white-flowered rein orchid <i>Piperia candida</i>	--/1B.2	Yellow pine forest, north coastal coniferous forest, and broadleaved upland forest. Affinity to serpentine soil. 40 – 730m.	Moderate. Suitable habitat is found in the project study area. Nearest documented occurrence is 4.5 miles southeast of the project study area in Portola Redwoods State Park.	May – September
Michael's rein orchid <i>Piperia michaelii</i>	--/4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, and cismontane woodland. 3 – 915m.	Low. Marginally suitable habitat is found in the project study area. No documented occurrences within 5 miles of the project site.	April – August

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
Choris' popcornflower <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	--/--/1B.2	Mesic sites in chaparral, coastal scrub, and coastal prairie. 4 – 300m.	Absent. Suitable habitat is not found in the project study area.	March – June
Oregon polemonium <i>Polemonium carneum</i>	--/--/2B.2	Northern coastal scrub, coastal prairie and yellow pine forest. 0 – 1830m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	April – September
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	--/--/4.2	Valley grassland, foothill woodland, redwood forest, freshwater wetlands, wetland-riparian areas and vernal pools. Occurs almost always under natural conditions in wetlands. 12 – 810m.	Low. Marginally suitable habitat is found in the study area. Nearest occurrence is documented in the Mindego Hill quadrangle.	February – May
Hoffmann's sanicle <i>Sanicula hoffmannii</i>	--/--/4.3	Chaparral, mixed evergreen forest, northern coastal scrub and coastal sage scrub. Affinity to serpentine soils. 0 – 280m.	Low. Marginally suitable habitat is found in the study area. Nearest occurrence is documented in the Franklin Point quadrangle.	March – May
chaparral ragwort <i>Senecio aphanactis</i>	--/--/2B.2	Chaparral, cismontane woodland, and coastal scrub. Sometimes alkaline. 15 – 800m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	January – April
Marin checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	--/--/1B.1	Chaparral. Affinity to serpentine soils. 50 – 430m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	May – June
San Francisco campion <i>Silene verecunda</i> ssp. <i>verecunda</i>	--/--/1B.2	Mudstone, shale, or serpentine substrates in coastal scrub, coastal prairie, chaparral and valley and foothill grassland. 30 – 645m.	Absent. Suitable habitat is not found in the project study area. Nearest occurrence is documented in Big Basin Redwoods State Park south of the project study area.	March – June
Santa Cruz microseris <i>Stebbinsoseris decipiens</i>	--/--/1B.2	Coastal prairie, chaparral, mixed evergreen forest, closed-cone pine forest and northern coastal scrub. 0 – 510m.	Low. Marginally suitable habitat is found in the study area. Nearest occurrences are documented in the Franklin Point and Big Basin quadrangles.	April – May
slender-leaved pondweed <i>Stuckenia filiformis</i> ssp. <i>alpina</i>	--/--/2B.2	Marshes and swamps, in shallow, clear water of lakes and drainage channels. 15 – 2310m.	Low. Marginally suitable habitat is found in the project study area. Single regional occurrence is located in the Franklin Point quadrangle.	May – July
Santa Cruz clover <i>Trifolium buckwestiorum</i>	--/--/1B.1	Moist grasslands with gravelly margins in broadleaved upland forest, cismontane woodland, and coastal prairie. 105-610m.	Low. Marginally suitable habitat is found in the project study area. Nearest occurrence is located 7 miles northeast of the project site in the vicinity of Coal Mine Ridge.	April – October

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Plants (cont.)				
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	--/--/1B.1	Valley and foothill grassland. Alkaline clay. 1-455m.	Absent. Suitable habitat is not found in the project study area. No occurrences documented within 5 miles of the project site.	March – April
Methuselah's beard lichen <i>Usnea longissima</i>	--/--/4.2	Found on tree branches in old growth hardwood or coniferous forests, broadleaf upland forests, and north coast coniferous forests. 50 – 1460m.	Low. Suitable habitat is found in the project study area. No occurrences documented in regional vicinity.	Year-round
Invertebrates				
Monarch butterfly <i>Danaus plexippus</i> (wintering sites)	--/*/--	Eucalyptus groves (winter sites).	Absent. Eucalyptus trees not observed in the project study area. No wintering sites documented within 5 miles of the project site.	Winter
California brackishwater snail <i>Tryonia imitator</i>	--/*/--	Found in permanently submerged areas in coastal lagoons, estuaries, and salt marshes.	Absent. Suitable habitat is not found in the project study area.	Year-round
unsilvered fritillary <i>Speyeria adiaeste</i>	--/*/--	Openings in redwood and coniferous forests, oak woodlands, and chaparral. Preferred caterpillar hosts is the goosefoot yellow violet (<i>Viola purpurea</i> ssp. <i>quercetorum</i>).	Low. Suitable habitat is found in the project study area. Not documented within 5 miles of the project site.	June – July
Amphibians				
Santa Cruz black salamander <i>Aneides niger</i>	--/CSC/--	Occurs in mixed deciduous woodland, coniferous forests, and coastal grasslands from southern San Mateo County, western Santa Clara County, and Santa Cruz County. Found under rocks near streams, in talus, under damp logs, and other objects. Reproduction is terrestrial and females lay eggs in moist subterranean cavities in July and August.	Moderate. Suitable habitat is found in the project study area. The two occurrences documented within 5 miles of the project site are historical though presumed extant and located within the Midpenninsula Regional Open Space District.	Year-round
California giant salamander <i>Dicamptodon ensatus</i>	--/CSC/--	Wet coastal forests in or near cold, permanent and semi-permanent streams and seepages.	High. Suitable habitat is found in the project study area. Previously documented within Memorial Park. Several occurrences are documented within 5 miles of the project site in similar habitat.	Winter (rainy season)
red-bellied newt <i>Taricha rivularis</i>	--/CSC/--	Stream and river dweller found in coastal woodlands and redwood forests of northern California. Eggs are laid in fast-moving portions of rocky streams. Adults retreat into vegetation and under stones during the day.	Moderate. Suitable habitat is found in the project study area. Not previously documented in Memorial Park though known to similar habitat in the regional vicinity.	Year-round

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Reptiles				
Western pond turtle <i>Actinemys marmorata</i>	--/CSC/--	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	Moderate. Suitable habitat is found in the project study area. Not previously documented in Memorial Park though known to similar habitat in the regional vicinity.	February - November
Birds				
Cooper's hawk <i>Accipiter cooperii</i>	--/WL/--	Nests in riparian areas and oak woodlands, and hunts songbirds at woodland edges.	Moderate (potential to nest). Suitable nesting habitat is present in the project study area.	Year-round
sharp-shinned hawk <i>Accipiter striatus</i>	--/WL/--	Nests in dense forests and hunts songbirds along edge habitat. May prefer conifer but also occur in mixed woodlands.	Moderate (potential to nest). Suitable nesting habitat is present in the project study area.	Year-round
Great blue heron <i>Ardea herodias</i>	--/*/-- Rookeries only	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Low (unlikely to nest). May forage in Pescadero Creek within the project study area. No known rookeries are documented in the project vicinity.	Year-round
long-eared owl <i>Asio otus</i>	--/CSC/--	Breeds in dense coniferous or mixed woodland or riverine areas.	Moderate (potential to nest). Suitable nesting habitat is present in the project study area though not previously documented in Memorial Park.	Year-round
olive-sided flycatcher <i>Contopus cooperi</i>	BCC/CSC/--	Nests in open conifer forest and woodland habitats.	Moderate (potential to nest). Suitable nesting habitat is present in the project study area.	Year-round
yellow rail <i>Coturnicops noveboracensis</i>	--/CSC/--	Shallow marshes (fresh and brackish) and wet meadows with dense grass, sedges, or rushes and shallow standing water.	Absent (no potential to nest). Suitable habitat is not found in the project study area. Nearest occurrence is located 7 miles northwest along San Francisco Bay near Mayfield.	Year-round
black swift <i>Cypseloides niger</i>	BCC/CSC/--	Breeds in areas with cliff faces, on coasts or inland canyons. Nests are in sheltered crevices or ledges under overhangs near water, such as a seep or waterfall.	Low (unlikely to nest). Project study area contains marginally suitable nesting habitat. Individuals could forage within the project study area.	Year-round
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	--/CSC/--	Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting. Resident of San Francisco Bay region salt and fresh water marshes.	Low (no potential to nest). Suitable foraging and nesting habitat is not found in the project study area. May occur on a transient basis.	Year-round

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
Birds (cont.)				
Bald eagle <i>Haliaeetus leucocephalus</i>	BCC, FD /CE,FP /--	Nests and forages on inland lakes, reservoirs, and rivers.	Low (no potential to nest). Suitable nesting and foraging habitat is not found in the project study area.	Winter
Alameda song sparrow <i>Melospiza melodia pusillula</i>	--/CSC/--	Salt marshes of central San Francisco Bay. Nests occur in salt marsh areas hidden by dense vegetation.	Absent (no potential to nest). Suitable habitat is not found in the project study area which is outside of the species known range.	Year-round
Mammals				
Pallid bat <i>Antrozous pallidus</i>	--/CSC/ WBWG-High	Day roosts in caves, crevices, mines, and hollow trees and buildings. Night roosts can occur in more open areas, like porches and open buildings.	Moderate. Suitable roosting habitat exists in mature trees and buildings of the project study area. Single occurrence documented within 5 miles is approximately 2.5 miles southwest of the project site along Pescadero Road near Newell Gulch.	Year-round
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	--/CSC/ WBWG-High	Inhabits caves and mines, but may also use bridges, buildings, rock crevices and tree hollows in coastal lowlands, cultivated valleys and nearby hills characterized by mixed vegetation throughout California below 3,300 meters.	Moderate. Suitable roosting and foraging habitat exists in mature trees and buildings of the project study area. Several occurrences documented within 5 miles of the project site in similar habitat. Species has sensitivity to human disturbance and is unlikely to take up roosts in more occupied portions of the study area.	Year-round
Santa Cruz kangaroo rat <i>Dipodomys venustus venustus</i>	--/*/--	Pine forest with chaparral habitat in the low foothills of the Santa Cruz Mountains in areas with sandy or loamy soils.	Absent. Suitable habitat is not found in the project study area which is outside of the species known range.	Year-round
hoary bat <i>Lasiurus cinereus</i>	--/*/WBWG- Medium	Typically roosts in large trees hidden from above with ground cover below. Also known to roost in buildings.	Moderate. Suitable roosting habitat exists in mature trees and buildings of the project study area. Single occurrence documented within 5 miles is approximately 2.5 miles northeast of the project site near La Honda.	Year-round
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	--/CSC/--	Forests with moderate canopy cover and brushy understory.	Low. Marginally suitable habitat is found in the project study area. No middens observed within the project study area during reconnaissance survey.	Year-round
Salt marsh wandering shrew <i>Sorex vagrans halicoetes</i>	--/CSC	Salt marshes of the south arm of San Francisco Bay. Found at medium to high marsh 6-8 ft above sea level. Often in band of marsh daily inundated by tides, or at slightly higher elevations with driftwood or other debris for cover among pickleweed.	Absent. Suitable habitat is not found in the project study area which is outside of the species known range.	Year-round

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE EVALUATION OF THE
MEMORIAL PARK WASTEWATER TREATMENT INFRASTRUCTURE REPLACEMENT PROJECT

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFW/Other ^b	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
OTHER SPECIAL STATUS SPECIES (cont.)				
<i>Mammals (cont.)</i>				
American badger <i>Taxidea taxus</i>	--/CSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents.	Absent. Suitable habitat is not found in the project study area.	Year-round

NOTES:

^a Abbreviations are as follows: ssp. = subspecies; var. = variety.

^b Listing status codes are as follows:

FEDERAL: (U.S. Fish and Wildlife Service)

FE = Listed as Endangered (in danger of extinction) by the Federal Government

FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.

FC = Candidate for listing as Threatened or Endangered by the Federal Government

FD = Delisted by the Federal Government

FSC = Former Federal Species of Concern. The USFWS no longer lists Species of Concern but recommends that species considered to be at potential risk by a number of organizations and agencies be addressed during project environmental review. NMFS, however, still lists Species of Concern.

STATE: (California Department of Fish and Game)

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CR = Listed as Rare by the State of California (plants only)

CD = Delisted by the State of California

CFP = Fully Protected by the State of California

CCE = Candidate for listing as Endangered by the State of California

CCT = Candidate for listing as Threatened by the State of California

CSC = California Species of Special Concern

* = CDFG Special animal—identified on CDFW's Special Animals List.

California Native Plant Society

List 1A=Plants presumed extinct in California

List 1B=Plants rare, Threatened, or Endangered in California and elsewhere

List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere

List 3= Plants about which more information is needed

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

.1 – Seriously endangered in California

.2 – Fairly endangered in California

.3 – Not very endangered in California

WBWG = Western Bat Working Group:

Low = Stable population

Medium = Need more information about the species, possible threats, and protective actions to implement.

High= Imperiled or at high risk of imperilment.

^c Although the southern limits of the federal listing for central California coast coho are at the San Lorenzo River, the State listing covers this species 'south of San Francisco Bay' as well.

SOURCE: USFWS, 2018; CDFW, 2018a; CNPS, 2018; eBird, 2018; Ramona Arechiga, personal communication, November 6-7, 2017.