PROPOSED MITIGATED NEGATIVE DECLARATION
and
INITIAL STUDY

Shasta County Service Area 17
Wastewater Collection and Treatment Improvement Project

Prepared for:

Shasta County Department of Public Works

February 2017

20.73

ENPLAN

MITIGATED NEGATIVE DECLARATION

LEAD AGENCY: **County of Shasta**
1855 Placer Street
Redding, CA 96001

PROJECT: The proposed project entails sewer system improvements in the unincorporated community of Cottonwood, including improvements to the existing wastewater treatment plant (WWTP), Black Lane Lift Station, Quail Lane Lift Station, and Cottonwood (Main) Lift Station; repair of approximately eight manholes; installation of parallel or replacement collection lines in approximately seven locations; and spot repairs of the collection lines at approximately 16 locations.

LOCATION: The WWTP is located at 3425 Live Oak Road, Cottonwood, California, in, Township 29N, R4W, Section 12, MDB&M. Collection system improvements are located in Township 29N, Range 4W, Sections 1, 2, 11 and 12. Centroid: Lat: 40° 23' 25.28" N Long: -122° 16' 28.842" W.

See **Figures 4, 5, and 6** of the Initial Study.

PROJECT PROPONENT: County of Shasta

PROJECT NAME: **Shasta County Service Area 17,**
Wastewater Collection and Treatment Improvement Project

Findings / Determination

As documented in the Initial Study, Project implementation could result in possible effects on special-status wildlife species, loss of riparian habitat, disturbance of nesting migratory birds, impacts to cultural resources and tribal cultural resources, temporarily increased risk of wildfires, temporarily increased air emissions, and temporarily increased noise levels.

Design features incorporated into the proposed Project would avoid or reduce certain potential environmental impacts, as would compliance with existing regulations and permit conditions. Remaining impacts can be reduced to levels that are less than significant through implementation of the mitigation measures presented in the Initial Study. Because the County of Shasta will adopt mitigation measures as conditions of project approval and will be responsible for ensuring their implementation, it has been determined that the proposed Project will not have a significant adverse impact on the environment.

Signature	Date
Name	Title

INITIAL STUDY

COUNTY OF SHASTA

SHASTA COUNTY SERVICE AREA NO. 17

WASTEWATER COLLECTION AND TREATMENT IMPROVEMENT PROJECT

SHASTA COUNTY, CALIFORNIA

LEAD AGENCY:

County of Shasta
1855 Placer Street
Redding, CA 96001

PREPARED BY:

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February 2017

Table of Contents

FIGURES		
Figure 1	Project Vicinity	3
Figure 2	CSA 17 Boundaries	4
Figure 3	Zoning Designations	7
Figure 4	Proposed Improvements - Southeast	8
Figure 5	Proposed Improvements - West	9
Figure 6	Proposed Improvements - Northeast	10
Figure 7	Staging Areas	26
Figure 4.4-1	Environmental Constraints (Elderberry Shrub, Oak Trees, Jurisdictional Waters)	49
Figure 4.4-2	Environmental Constraints (Oak Trees, Jurisdictional Waters)	52
Figure 4.4-3	Anderson-Cottonwood Irrigation District (ACID) Canals	53
PHOTOS		
Photo 1	Wastewater Treatment Plant	21
Photo 2	Main (Cottonwood) Lift Station	22
Photo 3	Black Lane Lift Station	22
Photo 4	Quail Lane Lift Station	22
Photo 5	Crowley Lift Station	23
TABLES		
Table 4.3-1	Thresholds of Significance for Criteria Pollutants of Concern	34
Table 4.3-2	National and California Ambient Air Quality Standards	36
Table 4.3-3	Projected Construction Emissions	40
Table 4.6-1	Soil Type and Characteristics	71
Table 4.7-1	Greenhouse Gases	73
Table 4.7-2	Greenhouse Gas Emissions Thresholds	73
Table 4.7-3	Construction-Related Greenhouse Gas Emissions	74
Table 4.12-1	Examples of Construction Equipment Noise Emission Levels	94

Appendices

Appendix A.....

CalEEMod.2016.3.1 Emissions Reports

Appendix B.....

- ENPLAN Summary Report: *Potential for Special-Status State and Federal Species to Occur in the Project Area.*
- California Natural Diversity Database RareFind Query Summary, September 2016.
- U.S. Fish and Wildlife Service List of Threatened and Endangered Species, September 20, 2016.
- National Marine Fisheries Service (NMFS) Species List.
- List of Vascular Plant Species Observed, December 1, 2016.
- List of Wildlife Species Observed, October 6, 2016.

SECTION 1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

Shasta County (County), as Lead Agency, has prepared this Initial Study to provide the general public and interested public agencies with information about the potential environmental impacts of the Shasta County Service Area No. 17 (CSA 17) Wastewater Collection and Treatment Improvement Project (Project; proposed Project). Details about the proposed Project are included in Section 3.0 (Project Description) of this Initial Study.

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (as amended), codified in California Public Resources Code §21000 et seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. Pursuant to these regulations, this Initial Study identifies potentially significant impacts and, where applicable, includes mitigation measures that would reduce all identified environmental impacts to less-than-significant levels. This Initial Study supports a Mitigated Negative Declaration (MND) pursuant to CEQA Guidelines §15070.

Because the County intends to apply for funding through the California Clean Water State Revolving Fund (CWSRF) Program, partially funded by the U.S. Environmental Protection Agency (USEPA), this Initial Study has been prepared to address certain federal environmental regulations, including regulations guiding the General Conformity Rule for the Clean Air Act (CAA), the federal Endangered Species Act (FESA), and the National Historic Preservation Act (NHPA). USEPA has allowed a modified CEQA document, called CEQA-Plus, to be the compliance basis for projects applying for CWSRF monies. CEQA-Plus requirements are addressed in Sections 4.4, Air Quality, 4.5, Biological Resources, and 4.6, Cultural Resources of this Initial Study, respectively.

1.2 EVALUATION TERMINOLOGY

The environmental analysis in this section is patterned after the Initial Study Checklist recommended in the State CEQA Guidelines. For the preliminary environmental assessment undertaken as part of this Initial Study, a determination that there is a potential for significant effects indicates the need to more fully analyze the proposed Project's impacts and to identify mitigation. For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the proposed Project. To each question, there are four possible responses:

- **No Impact.** The proposed Project will not have any measurable environmental impact on the environment.

- **Less-Than-Significant Impact.** The proposed Project has the potential to impact the environment; however, this impact will be below established thresholds of significance.

- **Potentially Significant Impact Unless Mitigation Incorporated.** The proposed Project has the potential to generate impacts which may be considered a significant effect on the environment; however, mitigation measures or changes to the proposed Project's physical or operational characteristics can reduce these impacts to levels that are less than significant.

- **Potentially Significant Impact**. The proposed Project will have significant impacts on the environment, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

1.3 ORGANIZATION OF THE INITIAL STUDY

This document is organized into the following sections:

Section 1.0: **Introduction:** Describes the purpose, contents, and organization of the document and provides a summary of the proposed Project.

Section 2.0: **CEQA Determination:** Identifies the determination of whether impacts associated with development of the proposed Project are significant, and what, if any, additional environmental documentation may be required.

Section 3.0: **Project Description:** Includes a detailed description of the proposed Project.

Section 4.0: **Environmental Impact Analysis (Checklist):** Contains the Environmental Checklist from CEQA Guidelines Appendix G with a discussion of potential environmental effects associated with the proposed Project. Mitigation measures, if necessary, are noted following each impact discussion.

Section 5.0: **List of Preparers**

Appendices: Contains information to supplement Section 4.0.

1.4 PROJECT SUMMARY

Project Title:	**Shasta County Service Area 17 Wastewater Collection and Treatment Improvement Project**
Lead Agency Name and Address:	**Shasta County** 1855 Placer Street Redding, CA 96001
Contact Person and Phone Number:	**Charleen Beard, Associate Engineer** 530.245.6806
County's Environmental Consultant:	**ENPLAN** 3179 Bechelli Lane Redding, CA 96002

Project Location: The proposed Project is located within the unincorporated community of Cottonwood, which is generally south of the City of Anderson at the southerly boundary of Shasta County (see **Figure 1**). All proposed improvements are located within the boundaries of CSA 17, which consists of approximately 1,665 acres (2.6 square miles) (see **Figure 2).**

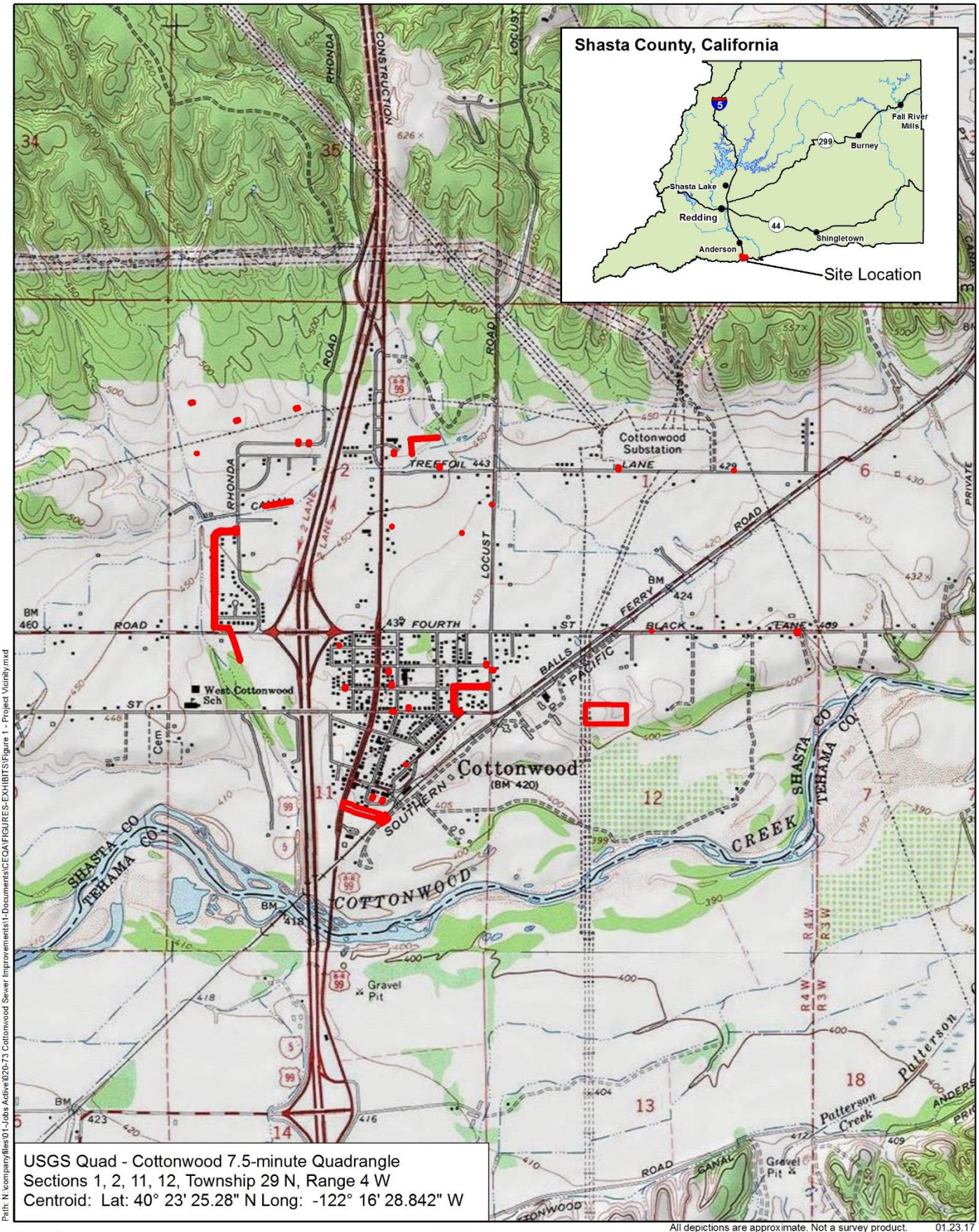

Figure 1
Project Vicinity

ENPLAN

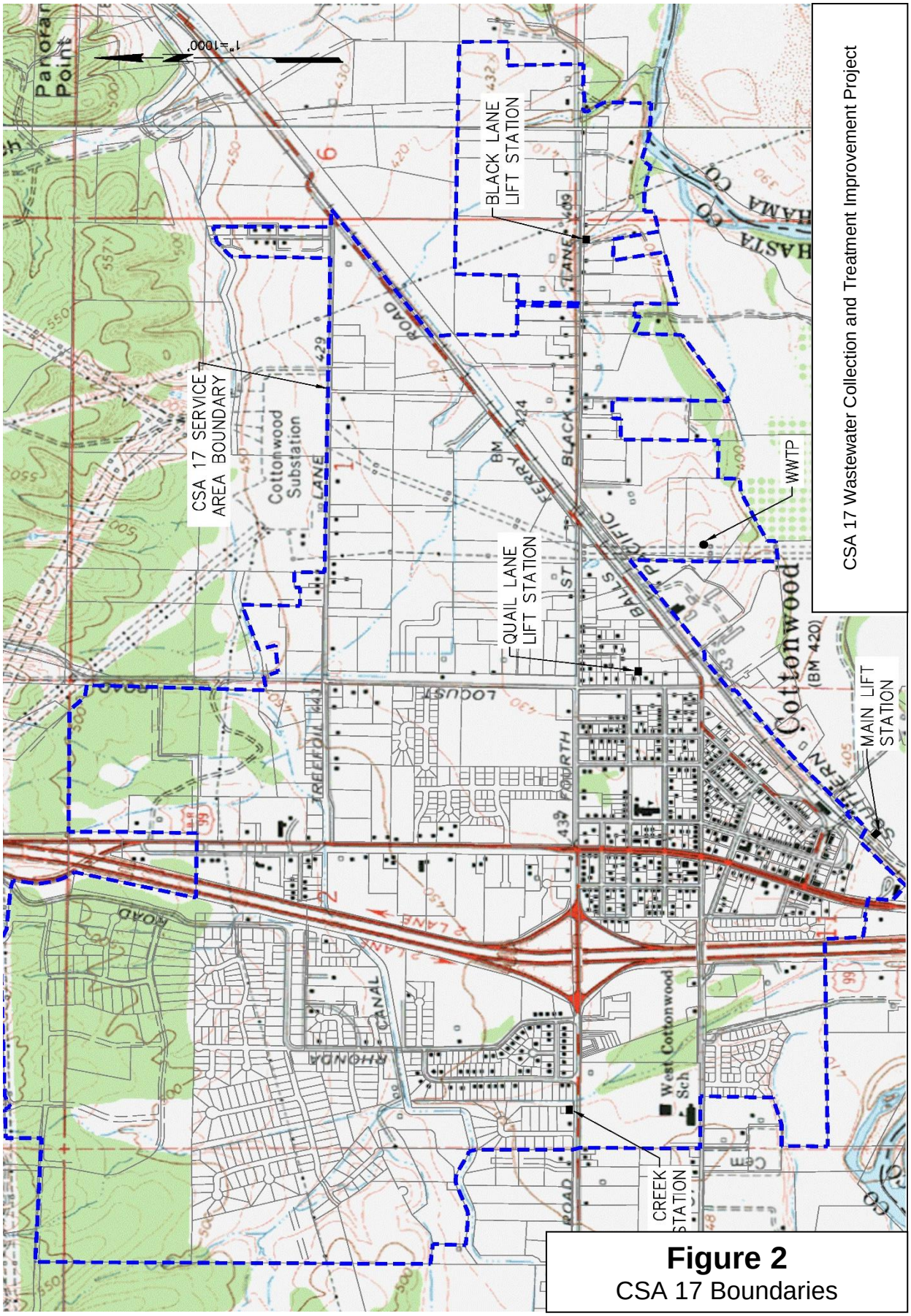

Figure 2
CSA 17 Boundaries

Assessor's Parcel Numbers:

WWTP: 088-360-005

Black Lane Lift Station: 088-350-031

Quail Lane Lift Station: 088-020-027

Cottonwood (Main Lift Station): 088-390-004, -005

Collection System Improvements: Located within public rights-of-way and/or public utility easements.

1.5 ENVIRONMENTAL SETTING

General Plan:

The General Plan designation for the WWTP is Public Facilities (PF). Collection system improvements are located in several areas within CSA 17 and include General Plan designations of Public Facilities, Urban Residential, Suburban Residential, Retail Commercial, and Commercial/Light Industrial.

Zoning:

As shown on **Figure 3,** zoning within CSA 17 on the west side of Interstate 5 (I-5) is mainly Single-Family Residential (R-1) with densities ranging from 1-3 units per acre. Multi-Family Residential areas (R-3-8DR and R-3-5DR) are located north of Gas Point Road adjacent to I-5.

Properties at the I-5/Gas Point Road Interchange are zoned for general commercial uses (C-2 and PD); Cottonwood Elementary School is zoned Public Facilities (PF), and the area between Cottonwood School and the Shopping Center is zoned Open Space.

Zoning on the east side of I-5 is mainly residential (R-1, IR and R-R) with densities ranging from 1-20 units per acre. The WWTP property is zoned PF. Properties south of the WWTP are designated Habitat Protection/Timber/Interim Mineral Resource IMR (HP-T-IMR). Properties south of the Cottonwood (Main Lift Station are zoned Mineral Resource (See **Figure 3**).

Surrounding Land Uses:

***WWTP*:**

Land uses surrounding the WWTP include low density single-family residential to the east, Southern Pacific Railroad to the north, habitat protection areas to the south and an abandoned industrial building to the west (See **Figure 4** and **Photo 1**).

***Black Lane Lift Station*:** Land uses surrounding this lift station are low density residential. The closest residence is approximately 100 feet to the west (See **Figure 4**).

***Quail Lane Lift Station*:** This lift station is located near Locust Street directly north of the Lion's Club. Surrounding land uses include medium-density residential. A trailer park is located to the northwest. The closest residence is approximately 25 feet to the north (See **Figure 4**).

***Cottonwood (Main) Lift Station*:** The Southern Pacific Railroad is located to the north. Properties to the south, east and west include commercial and light-industrial uses (See **Figure 4**).

***Collection System Improvements*:** Areas in which collection system improvements are proposed on the west side of I-5 include single-family residential, multi-family residential, Cottonwood Elementary School and open space (See **Figure 5**). Land uses on the east side of I-5 include single-family residential, commercial and office commercial/commercial-light industrial (See **Figures 4 and 6**).

Topography: Topography within CSA 17 generally slopes downward from northwest to southeast toward the Sacramento River.

Soils: According to the Natural Resources Conservation Service, soils within CSA 17 are mapped as Anderson series; Churn series, 0 to 8 percent slopes; Moda series, 0-5 percent slopes; Perkins series, 0 to 3 percent slopes; Red Bluff series, 3-8 percent slopes; and Redding series, 3-8 percent slopes.

Vegetation: Vegetation communities in the Project area include riparian, annual grassland, and urban associations. Riparian vegetation occurs along Cottonwood Creek, the Anderson-Cottonwood Irrigation District (ACID) irrigation canal, and other drainages in the proposed Project area. The annual grassland community is best developed along the sewer line corridor between Main Street and Trade Way.

An urbanized plant community consisting of both native and ornamental species exists on residential properties in the Project area. A list of vascular plant species observed in the Project area is included in **Appendix B**.

Water Features: Cottonwood Creek, a tributary to the Sacramento River, is located south of the WWTP. Two aerated sludge storage basins are located on the WWTP property. Other water features within CSA 17 include various drainageways and the ACID irrigation canal. The canal is adjacent to some of the collection system improvements as further described in this IS.

FIGURE 3

ZONING MAP

Figure 4
Proposed Improvements - Southeast

Figure 5

Proposed Improvements - West

Figure 6

Proposed Improvements - Northeast

1.6 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the Proposed Project, involving at least one impact requiring mitigation to bring it to a less-than-significant level. Impacts to these resources are evaluated using the checklist included in Section 4.0. The Proposed Project was determined to have a less-than-significant impact or no impact without mitigation on unchecked resource areas.

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

1.7 SUMMARY OF MITIGATION MEASURES

The following mitigation measures are proposed to reduce impacts of the proposed Project to less than significant levels.

AIR QUALITY

MM 4.3.1 The County shall ensure through contractual obligations that the following SCAQMD Standard Mitigation Measures are implemented

a. All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.

b. Unpaved areas with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.

c. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.

d. All land clearing, grading, earth moving or excavation activities on the project site shall be suspended when winds are expected to exceed 20 miles per hour.

e. The contractor shall be responsible for applying non-toxic stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours), in accordance with the Shasta County Grading Ordinance.

f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of CVC §23114. This provision is enforced by local law enforcement agencies.

g. During grading and earth disturbance in undeveloped areas, the project shall be required to construct a paved (or dust palliative treated apron, at least 100 feet in length, onto the project site from the adjacent paved road(s).

h. Paved streets adjacent to construction areas shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud which may have accumulated as a result of activities on the development site.

BIOLOGICAL RESOURCES

MM 4.4.1 A botanical field survey shall be conducted by a qualified biologist in the spring when special-status plants known to occur in the region would be identifiable. In the unlikely event that special-status plant species are present, a suitable buffer zone(s) shall be determined by a qualified biologist in consultation with the California Department of Fish and Wildlife (CDFW) and exclusionary fencing shall be placed prior to commencement of construction.

If avoidance is not possible, the project proponent shall consult with the CDFW to determine a satisfactory method of mitigation. Typical mitigation includes collecting and propagating seeds, and replanting the seedlings in a protected area, or transplanting the individual plants to a protected area. A detailed mitigation plan shall be submitted to CDFW for review and approval. The plan shall identify the mitigation site, methods to be employed to create offsetting special-status plant habitat, success criteria, monitoring requirements, remedial measures, and/or other pertinent data to ensure successful replacement of the affected plant populations. Mitigation shall be undertaken concurrently with or in advance of the start of project construction.

MM 4.4.2 Potential impacts to the Valley Elderberry Longhorn Beetle (VELB) shall be mitigated as follows:

1. Exclusionary fencing shall be placed at least 100 feet from the dripline of the elderberry shrubs prior to commencement of construction.

2. Signs shall be placed every 50 feet along the avoidance area which state the following: "*This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment."* The signs shall be readily visible from a distance of 20 feet and must be maintained for the duration of construction.

3. Prior to commencement of construction, construction workers shall be instructed about the status of the VELB and the need to protect its elderberry host plant.

4. The USFWS must be consulted before any disturbances within the buffer area occur. Any necessary mitigation measures prescribed by the USFWS shall be implemented.

MM 4.4.3 Final improvement plans for the following locations shall be modified to the maximum extent feasible to avoid impacts to healthy oak trees 12-inch diameter at breast height (DBH) or larger (e.g., tunneling under roots, placing improvements outside of the drip line, etc.).

a. Trade Way site west of the Southern Pacific Railroad (SPRR); and the Main (Cottonwood) Lift Station east of the SPRR.

b. Rhonda Road site north of the Anderson-Cottonwood Irrigation Canal.

MM 4.4.4 The following measures shall be implemented to ensure retention of the oak trees that are designated for preservation. The County shall ensure compliance through the enforcement of contractual obligations:

a. Fencing shall be provided at least 6 feet outside of the dripline of all trees to be preserved. The fencing is to remain throughout construction.

b. No storage of materials shall occur within the fenced area.

c. No construction activities (grading, cutting or trenching), including vehicle parking or materials stockpiling, shall occur within the fenced area.

MM 4.4.5 Prior to commencement of construction, the County shall verify the Project is eligible for coverage under a USACE Nationwide Permit. If necessary, the wetland delineation report shall be submitted to and verified by the USACE, and pre-construction notification shall be submitted to the USACE. Following completion of the improvements, all jurisdictional areas shall be restored to pre-construction contours.

MM 4.4.6 For fill requiring a USACE permit, water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the CDFW; and, if required, a streambed alteration agreement shall be obtained.

MM 4.4.7 To ensure that active nests of migratory birds are not disturbed, vegetation removal and construction activities shall occur between August 31 and February 1, if feasible. If vegetation removal or construction must occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area. The survey shall be conducted no more than one week prior to the initiation of vegetation removal or facility construction. If vegetation removal or other construction activities are delayed or suspended for more than two weeks after the pre-construction survey, the site shall be resurveyed.

If nesting birds are found, the nest sites shall not be disturbed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no vegetation removal or construction activities shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the CDFW and the

USFWS (the size of the construction buffer zone may vary depending on the species of nesting birds present).

A qualified biologist shall delineate the buffer zone with construction tape or pin flags that shall remain in place until the young have fledged. The biologist shall monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. Guidance from CDFW will be requested if the nestlings within the active nest appear disturbed. The monitoring biologist shall have the authority to stop any work determined to be adversely affecting the nesting activity. The monitoring biologist shall report any "take" of active nests to CDFW.

CULTURAL RESOURCES

MM 4.5.1 In order to comply with California Clean Water State Revolving Fund Program requirements, prior to commencement of construction, the State Water Board Cultural Resources Officer and Environmental Review Unit shall evaluate the Section 106 Report and provide a summary to SHPO in a letter seeking concurrence with the appropriate finding. Any necessary mitigation measures would be identified through the Section 106 consultation process pursuant to the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and/or the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

MM 4.5.2 In the event of any inadvertent discovery of archaeological or paleontological resources (i.e., burnt animal bone, midden soils, projectile points or other humanly-modified lithics, historic artifacts, etc.), all such finds shall be subject to PRC §21083.2 and CEQA Guidelines §15064.5. Procedures for inadvertent discovery include the following:

a. If the find is an archaeological resource, all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with NRHP and CRHR criteria.

b. If the find is a paleontological resource, all work within 50 feet of the find shall be halted until a professional paleontologist can evaluate the significance of the resource.

c. If any find is determined to be significant by the archaeologist, or paleontologist as appropriate, then representatives of the County shall meet with the archaeologist, or paleontologist, to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archeologist (or paleontologist), outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the County prior to resuming construction.

d. All significant cultural or paleontological materials recovered shall be subject to scientific analysis, professional curation, and a report prepared by the professional archaeologist, or paleontologist, according to current professional standards.

MM 4.5.3 In the event that human remains are encountered during construction activities, the County shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the county coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most

likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed.

HAZARDS / HAZARDOUS MATERIALS

MM 4.8.1 During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a fire break.

NOISE

MM 4.12.1 Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7:00 A.M. and 7:00 P.M., Monday through Friday, and 8:00 A.M. and 5:00 P.M., on Saturdays. Construction activities shall be prohibited on Sundays and federal/state recognized holidays.

MM 4.12.2 Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

MM 4.12.3 When not in use, motorized construction equipment shall not be left idling for more than five minutes.

MM 4.12.4 Stationary equipment (generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses. If necessary, noise attenuation measures sufficient to achieve compliance with the Shasta County General Plan Noise Element shall be implemented.

TRIBAL CULTURAL RESOURCES

Implementation of **Mitigation Measures MM 4.5.2 and MM 4.5.3**.

SECTION 2.0 CEQA DETERMINATION

On the basis of this initial evaluation:

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

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

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

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

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

Signature	Date
Name	Title

SECTION 3.0 PROJECT DESCRIPTION

3.1 INTRODUCTION

The proposed Project entails various improvements to the CSA 17 wastewater treatment and collection system that are required in order to repair and replace aging infrastructure and comply with Central Valley Regional Water Quality Control Board (CVRWQCB) requirements. A detailed description of the improvements is provided in Section 3.5 (Project Components/Physical Improvements).

The proposed Project will be completed in two phases. Phase 1 will be completion of the WWTP improvements, which are needed to meet regulatory requirements as discussed in Section 3.3 below. The WWTP improvements would not require the acquisition of easements or permits, and completion of the improvements could commence in a timely manner. Phase 2 will be the collection system improvements, which will likely require the acquisition of easements and encroachment permits, which could delay construction.

For purposes of this Initial Study, "study area" and "Project area" shall mean locations within the boundaries of CSA 17 in which improvements are proposed. Where impacts are significant at a specific location, this is described in detail in the applicable resource section.

3.2 PROJECT LOCATION / SERVICE AREA

The proposed Project is located within the unincorporated community of Cottonwood, which is generally south of the City of Anderson at the southerly boundary of Shasta County. All proposed improvements are located within the boundaries of CSA 17, which consists of approximately 1,665 acres (2.6 square miles) (See **Figure 1**).

In 2016, there were approximately 1,149 active service connections, serving primarily single-family homes, multi-family dwellings, farms, ranches and rural estates, and some small public institutions. The current population of Cottonwood, as a census designated place (CDP), is 4,178. However, the CDP is larger than the CSA 17 service area, which has a population of approximately 2,800.

3.3 PROJECT BACKGROUND, NEED AND OBJECTIVES

The CSA 17 wastewater collection and treatment system began operation in 1986 to alleviate problems resulting from failing septic systems. Mechanical equipment, such as pumps, typically has a service life of 15 to 20 years, and sewer mains have an approximate lifespan of 50 years; therefore, much of the existing WWTP and lift station equipment, as well as portions of sewer mains, are beyond or nearing their useful service life.

The Project objective is to correct existing system deficiencies in order to protect the health and safety of the community. The proposed Project will also improve pH and disinfection byproduct levels and improve overall effluent quality at the WWTP, bringing the County into compliance with CVRWQCB requirements as further discussed below.

State-Mandated Requirements

On April 8, 2013, the CVRWQCB issued a Notice of Violation (NOV) based on an NPDES Compliance Evaluation Inspection (CEI) report, which was completed by a USEPA contractor and the CVRWQCB on February 20, 2013. Thirteen major findings related to required record keeping and reporting, calibration of flow meters, self-monitoring program requirements, laboratory operations and procedures, and processes for Operations and Maintenance (O&M) were reported as violations.

As noted in the 2013 CEI report, nearly all existing lab and recording equipment is outdated, obsolete, inoperable, or inadequate; and influent and effluent composite samples need to be flow proportional in accordance with the Waste Discharge Requirements (WDRs). Following the 2013 NOV, PACE Engineering completed a Sewer Master Plan for CSA 17, which consisted of an engineering analysis of the wastewater collection system, lift stations, wastewater treatment plant (WWTP), and potential effects to these components due to future wastewater flow conditions.

On March 14, 2014, the CVRWQCB issued Administrative Civil Liability Complaint number R5-2014-0522 due to WDR violations related to pH, dichlorobromomethane and total coliform organisms, and subsequently issued a Compliance Project Needs letter, which outlined the requirement to meet effluent limitations when discharging to Cottonwood Creek. A Settlement Agreement and Stipulation for Entry of Order (R5-2014-0580) was issued on March 5, 2015.

Following is a description of existing deficiencies that need to be corrected:

Wastewater System Deficiencies

WWTP

- The WWTP does not meet effluent limitations and is in violation of WDRs. There is a need to provide a higher food-to-microorganism ratio which favors a better settling of sludge, reduces nitrates, and recycles alkalinity to increase pH buffering capacity. This in turn will reduce effluent ammonia and nitrate concentrations.

- The aeration basin aerators have met their useful life.

- Both secondary clarifiers need to be sand blasted and recoated, and it is recommended one clarifier drive be replaced. New launder and weir baffles are needed. Density current baffles are needed in order to decrease effluent suspended solids by directing solids toward the center of the tank, which also increases hydraulic capacity of the clarifier.

- The existing return activated sludge (RAS), waste activated sludge (WAS), scum, sludge, water, and drainage pumps are all original to the WWTP and are pitted from cavitation. An additional RAS pump is needed to return to approximately 100 to 150 percent of the design ADWF of 0.43 MGD.

- Disinfection byproduct violations have occurred, primarily due to filter overflows requiring excessive chlorination. The current carriage-mounted backwash hood has wheels that run along plates, which are not evenly aligned, thereby resulting in uneven

and inadequate backwashing and a plugged filter bed. The existing filter is obsolete so the backwash hood cannot be rehabbed, but the existing concrete basin can be utilized for all new mechanical components in an updated design.

- There is currently only one filter, and it cannot be taken offline for maintenance and does not provide for any filtration redundancy in the system.

- Existing aluminum slide gates in the chlorine contact basin channel are leaking and stuck in position, likely due to corrosion.

- The sludge storage basin surface aerators and motors have met their useful service lives.

- Existing composite auto samplers are original to the plant and are time-based, which does not allow for a flow-proportioned composite sample.

- The WWTP control panel located in the control building is obsolete and the County cannot get replacement parts.

- The diesel standby generator is obsolete and does not meet current air quality regulations.

Cottonwood (Main) Lift Station

- The generator does not meet current air quality standards.

- Electrical components cannot be ordered due to obsolete equipment.

- There is no float backup system at this lift station, and the controls are obsolete.

- The alarm is not currently functional.

Quail Lane Lift Station

- This lift station is more than 20 years old, and the pump equipment has met its useful service life.

- There is no standby generator or audible alarm at this lift station.

- Fencing needs to be installed for security reasons.

Black Lane Lift Station

- This lift station is more than 20 years old, and the pump equipment has met its useful service life.

- The existing pumps are not large enough to accommodate the Peak Wet Weather Flow (PWWF).

- There is no standby generator or audible alarm at this lift station.

Collection System Pipelines

Closed-circuit television (CCTV) inspection of the entire CSA 17 collection system was performed in February and March of 2016 in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) and Manhole Assessment and Certification Program (MACP) standards and procedures.

Results of the CCTV inspection identified 16 locations where there were mechanical deficiencies in existing pipelines, including significant root intrusion, offset joints, broken lateral connections, pipe deformities, etc. There were also a large number of pipelines identified with minor to significant sags, resulting in pipelines with fuller than anticipated water levels in many areas. In addition, at the Southern Pacific Railroad crossing prior to the Main Lift Station, the existing 12-inch carrier pipe needs to be upsized to a 15-inch carrier pipe to accommodate current wastewater flows.

Pipelines having the most significant sags and/or most closely grouped for ease of efficient construction will be replaced. Other less significant sags will be included in future aging pipeline replacement projects to be implemented as funding allows.

Additionally, of the 290 manholes inspected, 13 manholes were identified as having defects. Of these 13, eight manholes are recommended for repair to minimize system infiltration and inflow (I&I). The remaining five manholes have root intrusion and will be treated by the County to remove the roots.

3.4 EXISTING WASTEWATER SYSTEM DESCRIPTION

National Pollutant Discharge Elimination System (NPDES) Permit

On August 19, 2016, the CVRWQCB adopted order R5-2016-0066, Waste Discharge Requirements for CSA 17 (Cottonwood Wastewater Treatment Plant). The Order became effective on October 1, 2016, and expires September 30, 2021. The NPDES Permit establishes effluent limitations and discharge specifications for treated wastewater discharged into Cottonwood Creek. The Permit also requires technical and monitoring reports pursuant to a Monitoring and Reporting Program incorporated into the Permit.

Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ)

The State Water Resources Control Board (SWRCB) requires that public agencies that own or operate sanitary sewer systems greater than one mile in length apply for coverage under the general WDR's. The County has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

Wastewater Treatment Plant (WWTP)

The WWTP (Photo 1) has an average dry weather flow (ADWF) design capacity of 0.43 MGD, and a peak wet weather flow (PWWF) of 1.32 MGD. The WWTP is currently operating at an ADWF of 0.3 MGD, or 70 percent of the original design, and a PWWF of 0.99 MGD, or 75 percent of design.

Photo 1: Wastewater Treatment Plant

The WWTP provides secondary level biological treatment including biological nitrification, sedimentation, tertiary filtration, disinfection, and dechlorination of wastewater.

Treatment consists of a headworks (i.e., a bar screen, auger monster, Parshall flume, and ultrasonic level sensor for influent flow measurement); two oxidation ditches with brush aerators ran in parallel; two secondary clarifiers with skimmers ran in parallel; one traveling-bridge sand filter; a chlorine contact chamber using chlorine gas for disinfection; dechlorination by sulfur dioxide addition; and a single, multiport high-density polyethylene pipe outfall diffuser for discharging to Cottonwood Creek, a water of the U.S. Sludge is stabilized in two aerated sludge storage basins (i.e., a 4.3 acre-feet northern basin and a 0.63-acre-foot southern basin) and solar dried in sludge drying beds before hauling off to a landfill. Three sludge drying beds are currently in use.

In October 2011, in an effort to address pH issues occurring at the WWTP, the County installed a new automatic flow and concentration-based dosing control and electronic, real-time residual chlorine analyzer chlorination/dechlorination system. Pulse-type chemical feed pumps were replaced in February 2014 with new peristaltic-type continuous feed pumps. In late 2015, obsolete and inoperable circular chart recorders were replaced with computer-based recorders, and an effluent pH signal was installed.

These improvements have resulted in less chlorine being used at the WWTP, significantly reduced effluent pH swings, and have given the County a better handle on flows and chlorine dosage. An associated reduction in soda ash usage will decrease effluent total dissolved solids (TDS) and downstream salt loadings.

A detailed description of WWTP operations is included in the Planning Grant Project Report for Shasta County Service Area 17 prepared by PACE Engineering in December 2016.

Wastewater Collection System:

The CSA 17 collection system includes approximately 16 miles of mainline sewer, 1.5 miles of pressure force main, outfall piping, and four wastewater lift stations. The system currently consists of approximately 88,000 feet of 6-inch and 8-inch diameter sewer mains and approximately 9,000 feet of 10-inch and 12-inch diameter interceptor sewers.

Sewage Lift Stations:

There are presently four sewage lift stations in CSA 17: Cottonwood (Main), Black Lane, Quail Lane, and Crowley Creek.

The **Main Lift Station** (Photo 2) pumps about 90 percent of all wastewater to the WWTP. It consists of an inlet manhole, two wet wells, a valve vault, control panel, and 50 kW diesel engine standby generator, which allows the lift station to continue operating during a power outage. There are high-wet-well-level pump alarms at this lift station. Wastewater enters the inlet manhole through a 12-inch pipe, then passes through 10-inch pipes into the two wet wells. Each wet well contains a 150 gallon per minute (GPM) pump and a 300 GPM pump. Therefore, the lift station effective capacity with the largest pump out of service is 600 GPM (0.86 MGD).

Photo 2: Main Lift Station

Photo 3: Black Lane Lift Station

The **Black Lane Lift Station** (Photo 3) pumps wastewater from east Cottonwood to the WWTP. It consists of an inlet manhole, wet well, valve box, and control panel. Wastewater flows to the inlet box through an 8-inch pipe. A sluice gate on this pipe allows the pump station to be isolated. The wet well contains two submersible centrifugal non-clog pumps, each with a rated capacity of 150 GPM, for an effective lift station capacity of 0.22 MGD. The auto-dialer was recently replaced at this lift station.

The **Quail Lane Lift Station** (Photo 4) pumps raw wastewater from a low portion of the collection system into the main portion of the collection system in central Cottonwood via a 3-inch force main, where it flows by gravity to the Main Lift Station. There are two grinder pumps at this lift station, each with a capacity of 60 GPM, for an effective lift station capacity of 0.09 MGD. A new grinder pump was installed February 2014 when one of the pumps failed.

Photo 4: Quail Lane Lift Station

The **Crowley Creek Lift Station** (Photo 5) pumps sewage primarily from Cottonwood Elementary School into the main portion of the collection system in west Cottonwood via a 4-inch force main, where the sewage flows by gravity to the Main Lift Station. There are two submersible centrifugal non-clog pumps at this lift station, each with a capacity of 250 GPM, for an effective lift station capacity of 0.36 MGD.

Photo 5: Crowley Creek Lift Station

Only the Main and Crowley Creek Lift Stations have audible high-wet-well-level alarms, power failure alarms, and pump failure alarms; however, the audible alarms are not currently functional. Additionally, only these lift stations have automatic transfer switches (ATS) to provide emergency power in the event of a power outage. Black Lane and Quail Lane Lift Stations do not have audible alarms or generators, but Black Lane does have an auto-dialer that sends a signal via telephone to County staff. The Main and Crowley Creek Lift Stations also have auto-dialers.

3.5 PROJECT COMPONENTS / PHYSICAL IMPROVEMENTS

This section describes the proposed improvements that are the subject of this Initial Study.

Collection System:

- 16 pipeline mechanical deficiencies identified via CCTV will be repaired to remove roots, offset joints, etc.
- Eight manholes identified via CCTV will be rehabilitated.
- Approximately 5,700 linear feet of pipeline sags and/or undersized pipelines will be replaced.

The majority of the pipeline improvements will be installed in or immediately adjacent to paved streets using open cut technology. One exception is at the Southern Pacific Railroad from Trade Way to the Main Lift Station. At this location, it is recommended an 18-inch PVC carrier pipe within a 24-inch steel casing be bored and jacked underneath the railroad. The existing 12-inch carrier pipe is currently within an 18-inch steel casing and needs to be upsized to a 15-inch pipe to accommodate current wastewater flows.

Cottonwood (Main) Lift Station: New mechanical equipment, pumps, motors, ATS, electrical, controls, and alarms will be installed, along with a float backup system. The existing obsolete generator will be replaced. All work will be within the existing fence line of the lift station.

Black Lane Lift Station: New mechanical equipment, motors, electrical, guide rails, controls, and alarms will be installed. Both existing 150 GPM pumps will be replaced with 230 GPM pumps for an effective lift station capacity of 0.33 MGD. Given an annual growth rate of 1.7 percent as utilized in the Sewer Master Plan, this would be large enough to

meet anticipated future PWWF for the next 20 years. A new standby generator with an ATS will be installed.

Quail Lane Lift Station: New mechanical equipment, pumps, motors, electrical, controls, and alarms will be installed. A new standby generator with an ATS will be installed. The station will be fenced for security reasons.

Wastewater Treatment Plant: The following improvements to the WWTP are proposed to correct existing deficiencies in order to adequately and more efficiently treat current wastewater flows. None of these improvements are growth-related.

- Construction of an open channel biological selector with mixers prior to the aeration basins, complete with mixed liquor recycle pump station.
- Replacement of aeration basin aerators and motors.
- Sand blasting and recoating both secondary clarifiers; installation of a new launder and weir baffles and density current baffles (DCB); and replacement of one clarifier drive. The DCB would decrease effluent suspended solids by redirecting solids toward the center of the tank and also increase hydraulic capacity of the clarifier.
- Installation of an additional return activated sludge (RAS) pump and replacement of existing RAS, WAS, scum, sludge, water, and drainage pumps.
- Retrofitting the existing traveling bridge filter with a rail-mounted backwash system utilizing the existing concrete basin.
- Installation of an additional traveling bridge filter.
- Replacement of existing slide gates in the chlorine contact basin channel with stainless steel slide gates to minimize future corrosion issues.
- Replacement of sludge storage basin surface aerators and motors.
- Replacement of existing composite auto samplers and lab equipment as needed for quality assurance and/or quality control, including flow-proportional composite samplers.
- All WWTP and lift station electrical, controls, and alarms will be upgraded.
- The obsolete WWTP diesel standby generator will be replaced and sized to meet WWTP upgrades, complete with an updated automatic transfer switch.

Staging Areas:

Five temporary staging areas have been identified as shown in **Figure 7** for storage of materials and construction equipment during completion of the proposed Project. No physical improvements will need to be completed to establish the staging areas. Each staging area will measure approximately 20’ x 40’ and will be at the following locations:

1. WWTP County-owned property. Access will be from Live Oak Road, a paved public street, to an existing private access road through the WWTP property.

2. Quail Lane Lift Station in the Lion’s Club parking lot. Access will be from Locust Street, a paved public street.

3. Main Street south of Front Street, north of the SPRR on privately owned industrial property. Access will be from Main Street, a paved public street, to an existing paved driveway currently used by Northern California Performance diesel.

4. Oak Street on Frontier Mobile Home Park property. Access will be from Main Street, a paved public street, to an existing paved private road through the Mobile Home Park.

5. Gas Point Road south of the shopping center on privately owned vacant property. Access will be from Gas Point Road, a paved public street, to a paved access road that runs between the shopping center and West Cottonwood School.

1. Wastewater Treatment Plant

2. Quail Lane Lift Station

3. Main Street

4. Oak Street-Frontier Mobile Home Park

5. Gas Point Road

Staging Area

Figure 7
Staging Areas

3.6 REGULATORY REQUIREMENTS

Permits and approvals that may be necessary for construction and operation of the proposed Project are identified below.

SHASTA COUNTY:

- Adoption of a Mitigated Negative Declaration pursuant to the California Environmental Quality Act (CEQA).

- Adoption of a Mitigation Monitoring Plan for the Project that incorporates the mitigation measures identified in this Initial Study.

STATE WATER RESOURCES CONTROL BOARD:

- Approval for funding under the CWSRF Program.

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (CVRWQCB):

- Determination that the proposed Project qualifies for coverage under the Clean Water Act, Section 401 (CWA) NPDES General Construction Permit for the protection of surface waters from construction and other land-disturbing activity, and approval of a Stormwater Pollution Prevention Plan (SWPPP) (if disturbance area is over one acre).

- The CVRWQCB enforces the WDRs of the 2016 NPDES Permit for the discharge of effluent treated at the WWTP to Cottonwood Creek. The County must submit various reports to the CVRWQCB to demonstrate that operation of the proposed Project is in compliance with the 2016 NPDES Permit.

U.S. ARMY CORPS OF ENGINEERS:

- Section 404 Permit under the Federal Clean Water Act. The USACE requires that a permit be obtained if a project proposes the placement of structures within, over, or under navigable waters and/or would discharge dredged or fill material into waters of the U.S.

CALIFORNIA DEPARTMENT FISH AND WILDLIFE:

- Issuance of a Section 1600 Lake or Streambed Alteration Agreement for any activity that may obstruct or divert the natural flow of a creek or stream; change or use any material from the bed, channel, or bank of a creek or stream; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a creek or stream.

- Consultation should the proposed Project have the potential to impact State-listed plant or animal species.

U.S. FISH AND WILDLIFE SERVICE:

- Consultation pursuant to Section 7 of the Federal Endangered Species Act (FESA) if the proposed Project has the potential to impact the Valley Elderberry Longhorn Beetle (VELB).

STATE HISTORIC PRESERVATION OFFICE:

- Consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) regarding potential impacts to cultural resources resulting from the proposed Project (joint consultation with Indian tribes).

SECTION 4.0 ENVIRONMENTAL IMPACT ANALYSIS (CHECKLIST)

4.1 AESTHETICS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

REGULATORY CONTEXT

Shasta County General Plan: Chapter 6.8 (Scenic Highways).

Policy SH-a To protect the value of the natural and scenic character of the official scenic highway corridors and the County gateways dominated by the natural environment, the following provisions, along with the County development standards, shall govern new development:

- setback requirements
- regulations of building form, material, and color
- landscaping with native vegetation, where possible
- minimizing grading and cut and fill activities
- requiring use of adequate erosion and sediment control programs
- siting of new structures to minimize visual impacts from highway
- regulation of the type, size, and location of advertising signs
- utility lines shall be underground wherever possible; where undergrounding is not practical, lines should be sited in a manner which minimizes their visual intrusion.

Shasta County Zoning Code: Chapter 17.74 (Scenic Highway [SH] District); Section 17.84.050 (Lighting).

California Scenic Highway Program

The California Scenic Highway Program, administered by the California Department of Transportation (Caltrans), intends to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to scenic highways. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. Cities and counties can nominate eligible scenic highways for official designation by identifying and defining the

scenic corridor of the highway. The municipality must also adopt ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes.

DISCUSSION OF IMPACTS

Questions A and C

Scenic vistas are defined as expansive views of highly valued landscapes from publicly accessible viewpoints. Scenic vistas include views of natural features such as mountains, hills, valleys, water courses, outcrops, and natural vegetation, as well as man-made scenic structures.

The study area is located in the unincorporated community of Cottonwood, both east and west of Interstate 5 (I-5). The WWTP is located on the east side of I-5 and is surrounded by vacant land to the south and industrial uses to the southwest. The WWTP is not visible from single-family residences to the north and east due to existing vegetation surrounding the WWTP. Areas in which collection system and lift station improvements are proposed are developed primarily with single-family residences and commercial uses. However, no new structures are proposed that would create a visual barrier from surrounding uses. Furthermore, the Shasta County General Plan does not identify any scenic vistas in the area. Therefore, there would be no impact.

Question B

The nearest officially designated State Scenic Highway is Route 151 (Shasta Dam Boulevard), located approximately 22 miles north of the Project area. Portions of Highway 299, Highway 44, and Highway 89 in Shasta County are designated as Eligible State Scenic Highways by Caltrans. However, the Project area is located over 12 miles from these designated stretches of highway; therefore, there would be no impact to scenic resources within a designated State Scenic Highway.

Question D

The proposed Project does not include the installation of any new permanent exterior lighting. Temporary lighting needed during construction activities would be required to comply with Shasta County Zoning Code Section 17.84.050 (Lighting), which states: "*All lighting, exterior and interior, shall be designed and located so as to confine direct lighting to the premises. A light source shall not shine upon or illuminate directly on any surface other than the area required to be lighted. No lighting shall be of the type or in a location such that constitutes a hazard to vehicular traffic, either on private property or on abutting streets."* Compliance with this regulation will ensure impacts are less than significant.

CUMULATIVE IMPACTS

Potential cumulative projects in the area include growth according to the build-out projections in the County's General Plan. The proposed Project does not include any features that would change the visual character of the community. Project-related lighting would include the possibility of construction lighting, but this would be temporary in nature and cease at the completion of construction. Therefore, the proposed Project's aesthetic impacts would not be cumulatively considerable.

MITIGATION

None necessary

DOCUMENTATION

ENPLAN. Field survey. October 20, 2016.

Caltrans. 2015. California State Scenic Highway Mapping System. Shasta County. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed October 2016.

Shasta County. 2004. Shasta County General Plan, Chapter 6.8 (Scenic Highways). http://www.co.shasta.ca.us/docs/Resource_Management/docs/68scenic.pdf?sfvrsn=0. Accessed October 2016.

_____. 2004. Shasta County General Plan, Chapter 6.9 (Open Space and Recreation). http://www.co.shasta.ca.us/docs/Resource_Management/docs/69open.pdf?sfvrsn=0. Accessed November 2016.

4.2 AGRICULTURE AND FOREST RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g)) or result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
d. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 6.1 (Agricultural Lands)

Objective AG-5 Protection of agricultural lands from development pressures and or uses which will adversely impact or hinder existing or future agricultural operations.

Policy AG-h The site planning, design, and construction of on-site and off-site improvements for nonagricultural development in agricultural areas shall avoid unmitigable short- and long-term adverse impacts on facilities, such as irrigation ditches, used to supply water to agricultural operations.

Shasta County Zoning Code: Title 18 (Environment), Chapter 18.06 (Agriculture and Forestry Notification).

California Farmland Mapping and Monitoring Program (FMMP)

The FMMP, which monitors the conversion of the State's farmland to and from agricultural use, was established by the California Department of Conservation (DOC), under the Division of Land Resource Protection. The FMMP is an informational service only and does not constitute state regulation of local land use decisions. The four categories of farmland, which include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, are considered valuable and any conversion of land within these categories is typically considered to be an adverse impact.

Prime Farmland is land that has been used for irrigated agricultural production and meets the physical and chemical criteria for Prime Farmland as determined by the U.S. Department of Agriculture, Natural Resources Conservation Service. Unique Farmland is farmland of lesser quality soils used for the production of the state's leading agricultural crops. Farmland of Statewide Importance is similar to Prime Farmland but generally includes steeper slopes or less ability to store soil moisture. Farmland of Local Importance is land important to the local economy as determined by the County Board of Supervisors and a local advisory committee.

Williamson Act

The Williamson Act is a State program that was implemented to preserve agricultural land. Under the provisions of the Williamson Act (California Land Conservation Act 1965, §51200), landowners contract with the county to maintain agricultural or open space use of their lands in return for reduced property tax assessments. The contract is self-renewing; however, the landowner may notify the county at any time of intent to withdraw the land from its preserve status. Withdrawal from a Williamson Act contract involves a ten-year period of tax adjustment to full market value before protected agricultural/open space land can be converted to urban uses.

Forest Land and Timberland

Public Resources Code §12220(g) defines Forest Land as *"land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."*

Public Resources Code §4526 defines timberland as *"land, other than land owned by the federal government, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."*

Government Code §51104(g) defines Timberland Production Zone (TPZ) as *"an area which has been zoned pursuant to [Government Code]* §*51112 or* §*51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."*

DISCUSSION OF IMPACTS

Questions A and D

According to the *Important Farmland in California* map published by the FMMP, there are small areas southwest and directly north of the WWTP that are designated as Prime Farmland. Other areas in which improvements are proposed are designated as "Urban and Built-Up Land." According to the California Department of Conservation, Division of Land Resource Protection, in Shasta County, dryland grain producing lands are designated as Farmland of Local Importance. Also included are farmlands that are presently irrigated but do not meet the soil characteristics of Prime Farmland or Farmland of Statewide Importance. The majority of these farmlands are located within the Anderson

Cottonwood Irrigation District. These soils include Newton gravelly loam (8 to 15 percent slopes), Moda loam, seeped (0 to 3 percent slopes), Moda loam, shallow (0 to 5 percent slopes), and Hillgate loam.

However, no improvements are proposed that would convert any existing land uses; therefore, there would be no impact.

Question B

Proposed improvements are located in previously disturbed areas and would not conflict with existing zoning or current uses on surrounding properties. Furthermore, there are no Williamson Act contracts in the vicinity of the proposed Project. Therefore, there would be no impact.

Question C

The Project does not propose a zone change or other activity that would convert existing forest or timberland zoning, and no conversion of any land use is proposed. Therefore, there would be no impact.

CUMULATIVE IMPACTS

The proposed Project would not result in the conversion of agriculture or forest land; therefore, it would not contribute to cumulative impacts to agricultural or forest resources.

MITIGATION

None necessary

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan, Chapter 6.1 (Agricultural Lands). http://www.co.shasta.ca.us/index/drm_index/planning_index/plng_general_plan.aspx. Accessed October 2016.

_____. 2016. Shasta County Code, Chapter 18.06 (Agriculture and Forestry Notification). https://www.municode.com/library/ca/shasta_county/codes/code_of_ordinances?nodeId=CD_ORD_TIT18EN. Accessed November 2016.

State of California, Department of Conservation, Farmland Mapping and Monitoring Program. Shasta County Important Farmland 2012. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/sha12.pdf. Accessed October 2016.

State of California, Department of Conservation. 2013. Shasta County Williamson Act FY 2006/2007. ftp://ftp.consrv.ca.gov/pub/dlrp/wa/shasta_w_06_07_WA.pdf. Accessed October 2016.

4.3 AIR QUALITY

Would the project:

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

ENVIRONMENTAL SETTING

Shasta County resides in the northern end of the Sacramento Valley surrounded by the Klamath and Coastal Mountains to the northwest and the Cascade Mountains to the north and east. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Pollutant concentrations may intensify when a temperature inversion layer traps air at lower levels below an overlying layer of warmer air. Due to relatively stable atmospheric conditions, pollutants will not disperse until atmospheric conditions become unstable. In Shasta County, the potential for significant air pollution is considered high.

REGULATORY CONTEXT

Shasta County General Plan: Chapter 6.5 (Air Quality).

As shown in **Table 4.3-1**, Shasta County has adopted air quality thresholds for determination of impact significance for projects subject to CEQA review in its Rule 2:1 New Source Review Part 300 for emissions of Reactive Organic Gases (ROG), NOx and PM_{10}.

TABLE 4.3-1
Thresholds of Significance for Criteria Pollutants of Concern

Level	ROG	NOx	PM_{10}
Level A: Indirect Source	25 lbs/day	25 lbs/day	80 lbs/day
Level B: Indirect Source	137 lbs/day	137 lbs/day	137 lbs/day
Direct Sources	25 tons/year	25 tons/year	25 tons/year

Source: 2004 Shasta County General Plan, Chapter 6.5 (Air Quality).

AMBIENT AIR QUALITY STANDARDS:

National:

The U.S. Environmental Protection Agency (USEPA), under the Clean Air Act (CAA) establishes maximum ambient concentrations for criteria air pollutants (CAP), known as the National Ambient Air Quality Standards (NAAQSs). The six CAPs are:

Ozone (O_3). Ozone is a highly reactive and unstable gas that is formed primarily from photochemical reactions between two major classes of air pollutants: reactive organic gases (ROG) and oxides of nitrogen (NO_X). ROGs are emitted from a variety of sources, including motor vehicles, chemical manufacturing facilities, refineries, factories, consumer and commercial products, and natural (biogenic) sources (mainly trees). Nitrogen dioxide emissions are primarily emitted from motor vehicles, power plants, and off-road equipment.

Nitrogen dioxide (NO_2). Nitrogen oxides (NO_X) include nitric oxide (NO), nitrogen dioxide (NO_2), and nitrous oxide (N_2O) and are formed when nitrogen (N_2) combines with oxygen (O_2). Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere and is related to traffic density. Major sources: Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.

Sulfur dioxide (SO_2). Sulfur dioxide results mainly from burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_X). Major sources: Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.

Carbon monoxide (CO). Carbon monoxide is produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of carbon monoxide in the Northern Sacramento Valley Air Basin (NSVAB). Major sources: Motor vehicles and internal combustion engines.

Lead (Pb). Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. Major sources: Lead smelters, battery manufacturing, recycling facilities, and combustion of leaded aviation gasoline by piston-driven aircraft.

Particulate Matter, 10 and 2.5 microns in size (PM_{10} and $PM_{2.5}$). PM_{10} is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols and is generated during grading and earth-disturbance activities. $PM_{2.5}$ is formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and industrial facilities and nitrates that are formed from NO_X release from power plants, automobiles, and other types of combustion sources. Major sources: Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).

State

The California CAA establishes maximum concentrations for the six national CAPs, as well as the four additional air pollutants identified below. The four additional standards are intended to address regional air quality conditions, not project-specific emissions. These maximum concentrations are known as the California Ambient Air Quality Standards (CAAQSs). The California Air Resources Board (CARB) is part of the California EPA (CalEPA) and has jurisdiction over local air districts and has established its own standards and violation criteria for each CAP under the CAAQS.

Visibility-Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. Major sources: Natural wildfires and biogenic emissions, dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).

Sulfates (SO_4). SO_4 is oxidized to sulfur dioxide (SO_2) during the combustion process and is subsequently converted to sulfate compounds in the atmosphere. Major sources: Industrial processes and the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur.

Hydrogen sulfide (H_2S). Hydrogen sulfide is a colorless gas with the odor of rotten eggs. Major sources: Decomposition of sulfur-containing organic substances. It can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.

Vinyl chloride (chloroethene). Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Table 4.3-2 includes the National and State ambient air quality standards:

TABLE 4.3-2
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O_3)	8 Hour	0.070 ppm (137µg/m^3)	0.070 ppm (137µg/m^3)
	1 Hour	0.09 ppm (180 µg/m^3)	–
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide(NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	N/A
	3 Hour	–	N/A
	1 Hour	0.25 ppm (665 µg/m^3)	75 ppb
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N/A
	24 Hour	50 µg/m^3	150 µg/m^3
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3
	24 Hour	N/A	35 µg/m^3
Sulfates	24 Hour	25 µg/m^3	N/A
Lead	Calendar Quarter	N/A	1.5 µg/m^3
	30 Day Average	1.5 µg/m^3	N/A
	Rolling 3-Month Average	-	(0.15 µg/m^3)
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	N/A

Pollutant	Averaging Time	California Standards	National Standards
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 µg/m^3)	N/A
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	–	N/A

Source: CARB 2016. Notes: mg/m^3=milligrams per cubic meter; ppm=parts per million; ppb=parts per billion; µg/m^3=micrograms per cubic meter

NAAQS and CAAQS Attainment Designations

Shasta County has been designated a non-attainment area for State ozone standards and State PM_{10} standards. However, the County is designated as an attainment or unclassified area for all other federal and State ambient air quality standards.

Federal General Conformity

The General Conformity Rule of the federal CAA implements §176(c) of the CAA, and establishes minimum thresholds for volatile organic compounds (VOCs) and nitrous oxides (NOx; ozone precursors), PM_{10}, and other regulated constituents for non-attainment and maintenance areas. In accordance with Title 40 Part 93 of the Code of Federal Regulations (CFR), a lead agency must make a determination that a federal action conforms to the applicable State Implementation Plan (SIP) before the action is taken. A conformity determination is required for each pollutant where a total of direct and indirect emissions in a nonattainment or maintenance area caused by the federal action is greater than de minimis thresholds as listed in CFR §93.153(b).

Because Shasta County is designated as an attainment or unclassified area for all federal air quality standards, federal conformity requirements do not apply to the proposed Project.

California State Implementation Plan

California's SIP is comprised of the State's overall air quality attainment plans to meet the NAAQS, as well as the individual air quality attainment plans of each Air Quality Management District (AQMD) and Air Pollution Control District (APCD). The California SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), AQMD and APCD rules, State regulations, and federal controls for each air basin and California's overall air quality.

Many of the items within the California SIP rely on the same control strategies, such as emissions standards for cars and heavy trucks, fuel regulations, and limitations on emissions from consumer products. AQMDs and APCDs, as well other agencies such as the Bureau of Automotive Repair, prepare draft California SIP elements and submit them to CARB for review and approval. The California CAA identifies CARB as the lead agency for compiling items for incorporation into the California SIP and for submitting the items to the USEPA for approval.

Federal Class I Areas

The United States Environmental Protection Agency (U.S. EPA) adopted the Regional Haze Rule in 1999, which lays out specific requirements to protect visibility in Class I areas, which are the largest national parks and wilderness areas across the United States. The nearest federal Class I area is Lassen National Park, which is approximately 35 miles east of the Project area. Unlike SIPs, which require specific targets and attainment dates, the Regional Haze Rule requires states to provide for a series of interim goals to ensure continued progress. In 2009, CARB prepared the California Regional Haze Plan that sets forth the State's goals for improving visibility in Class I areas.

Toxic Air Contaminants

In addition to the California CAPs, Toxic Air Contaminants (TACs) are another group of pollutants regulated under the California CAA. TACs are less pervasive in the urban atmosphere than the CAPs, but are linked to short-term (acute) and long-term (chronic or carcinogenic) adverse human health effects. There are 244 chemicals listed by the State as TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), grading (asbestos), and diesel motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

Ambient air quality standards have not been set for TACs. Instead, these pollutants are typically regulated through a technology-based approach for reducing TACs. This approach requires facilities to install Maximum Achievable Control Technology (MACT) on emission sources.

Shasta County Air Quality Management District (SCAQMD)

The SCAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The SCAQMD, along with other air districts in the Northern Sacramento Valley Air Basin (NSVAB), has committed to jointly prepare the NSVAB Air Quality Attainment Plan for the purpose of achieving and maintaining healthful air quality throughout the air basin.

On November 1, 2016, the Shasta County AQMD Board adopted the Northern Sacramento Valley Planning Area (NSVPA) 2015 Triennial Air Quality Attainment Plan, which constitutes the region's SIP. The NSVPA 2015 AQAP includes updated control measures for the three-year period of 2016 through 2019. It is the County's goal to implement the 2015 Attainment Plan and attain the State ambient air standard for ozone at the earliest practicable date.

The SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air plans, and responding to citizen complaints concerning air quality. All projects in Shasta County are subject to applicable SCAQMD rules and regulations in effect at the time of construction. Descriptions of specific rules applicable to future construction resulting from implementation of the proposed Project may include, but are not limited to:

- SCAQMD Rule 3-2 Specific Air Contaminants. No person shall discharge contaminants from any single source into the atmosphere in the amounts designated in the Rule.
- Cutback and emulsified asphalt application shall be conducted in accordance with SCAQMD Rule 3-15, Cutback and Emulsified Asphalt.
- SCAQMD Rule 3-16, Fugitive, Indirect, or Non-Traditional Sources, controls the emission of fugitive dust during earth-moving, construction, demolition, bulk storage, and conditions resulting in wind erosion.
- Architectural coatings and solvents shall be compliant with SCAQMD Rule 3-31, Architectural Coatings.

Methodology

Project emissions were estimated using Version 2016.3.1 of the California Emissions Estimator Model (CalEEMod). CalEEMod reports construction emissions as totals for the entire construction period, while the air quality standard is based on daily emission levels. CalEEMod provides default values when site-specific inputs are not available. For the proposed Project, site-specific inputs and assumptions include, but are not limited to, the following:

- Emissions from construction are based on all construction-related activities, including but not limited to grading, use of construction equipment, material hauling, trenching, and site preparation.

- Construction would occur over a period of 12 months and would start in August 2019.

- Total land disturbance would be approximately 0.64 acres (0.45 acres for pipeline installation, 0.1 acre at the WWTP, and 0.09 acres for staging areas). 2,140 cubic yards (CY) of dirt would be imported; 2,900 CY would be exported.

- The total area to be re-paved following pipeline installation would be 0.34 acres.

- Round-trip truck distance used to determine criteria pollutant emissions is 20 miles, with five material haul trips per day occurring during the building phase of construction (pipeline installation).

- It is conservatively estimated that 15 worker vehicle trips per day would occur during the grading and site preparation phase of construction and 12 worker vehicle trips per day would occur during the building phase of construction. Worker one-way trip length used to estimate CAP emissions is 16.8 miles.

- New emergency standby generators would be installed at the Black Lane and Quail Lane lift stations.

Output files, including all site-specific inputs and assumptions, are provided in **Appendix A**.

DISCUSSION OF IMPACTS

Questions A and B

See discussion under Regulatory Context above and Section 4.7 (Greenhouse Gas Emissions).

Construction

The proposed Project would result in the temporary generation of ROG, NOx, and PM_{10} emissions during grading and construction activities. ROG and NOx emissions are associated with employee vehicle trips, delivery of materials, and construction equipment exhaust. PM_{10} is generated during site grading, excavation, road paving, and from exhaust associated with construction equipment.

To allow a direct comparison with SCAQMD's standards, emissions for each phase of construction (e.g., site preparation, grading, building construction, etc.) were averaged over the anticipated construction period for that specific phase of work. The values reflect SCAQMD rules and regulations, including implementation of Standard Mitigation Measures. In addition, the proposed Project is subject to the In-Use Off-Road Diesel Vehicle Regulation adopted by the California Air Resources Control Board (CARB). The off-road regulation:

- Imposes limits on idling
- Requires all vehicles be reported to CARB and subsequently labeled
- Restricts the adding of older vehicles into fleets starting on January 1, 2014
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) (i.e., exhaust retrofits).

Table 4.3-3 shows the highest daily levels regardless of construction phase and the total tons per year.

TABLE 4.3-3
Projected Construction Emissions

	Pollutants of Concern											
	ROG		NOx		PM_{10}		$PM_{2.5}$		CO		SO_2	
	Maximum lbs/day	tons/ year	Maximum lbs/day	tons/ year	Maximum lbs/day	tons/ year	Maximum lbs/day	tons/ year	Maximum lbs/day	tons/ year	Maximum lbs/day	tons/ year
2019	1.21	0.06	14.90	0.64	1.38	0.05	0.84	0.007	9.19	0.45	0.03	.001
2020	1.01	0.09	9.74	0.83	0.80	0.07	0.56	0.006	8.60	0.74	0.02	.001
Level A Threshold	25	25	25	25	80	25	-	-	-	-	-	-
Level B Threshold	137	25	137	25	137		-	-	-	-	-	-
Conformity De Minimis Levels	-	100	-	100	-	100	-	100	-	100	-	-
Exceeds Level A	No		No		No		-		-		-	-
Exceeds Level B	No		No		No		-		-		-	-
Exceeds Conformity De Minimis Levels	*Not Applicable* *Shasta County is designated as an attainment or unclassified area for all federal ambient air quality standards*											

As shown in **Table 4.3-3,** construction of the proposed Project would not exceed the County's Level A or Level B thresholds, and the Federal General Conformity Rule does not apply to the proposed Project.

Operational

The Black Lane and Quail Lane lift stations will receive generators, which will allow the lift stations to continue operating during a power outage. When operating, the generators would produce emissions that have the potential to impact air quality. However, because the generators would be used only in the event of an emergency, it is not expected this would generate emissions that exceed established thresholds or conflict with implementation of the 2015 NSVAB Air Quality Attainment Plan. In addition, the existing diesel generators at the WWTP and Main Lift Station will be replaced because they do not meet current air quality regulations, resulting in a decrease in emissions.

The proposed Project would not directly or indirectly increase the population or vehicle miles traveled that could result in a permanent increase in ROG or NO_X emissions and does not include any other components that would increase long-term operational emissions.

For both construction and operational emissions, the proposed Project would not result in significant impacts associated with ozone (O_3), lead (Pb), hydrogen sulfide (H_2S), vinyl chloride or visibility reducing particles as discussed below.

Ozone. CalEEMod does not directly calculate ozone emissions. Instead, the emissions associated with ozone precursors (ROG and NO_X) are calculated. Because project construction would generate relatively low amounts of both ROG and NO_x, the potential for ozone production/emissions is less than significant.

In addition, pursuant to the 2015 Triennial Air Quality Attainment Plan, Shasta County has four air quality monitoring stations. The station closest to the Project area is on North Street in the City of Anderson. None of the four stations recorded a day over the 1-hour standard for ozone between 2012 and 2014. Although Shasta County is designated nonattainment for ozone, all four locations show a decreasing number of days over the 8-hour standard for ozone since 2004.

Lead. Elevated levels of airborne lead at the local level are usually found near industrial operations that process materials containing lead, such as smelters and battery manufacturing/recycling facilities. As these conditions are not applicable to the proposed Project, the potential for lead emissions is less than significant.

Hydrogen Sulfide. Hydrogen sulfide is formed during the decomposition of organic material in anaerobic environments, including sewage treatment processes. However, the proposed Project would not result in an increase in the amount of wastewater treated at the WWTP; therefore, the potential for hydrogen sulfide emissions is less than significant.

Vinyl Chloride. Vinyl chloride is used to manufacture polyvinyl chloride (PVC) plastic and other vinyl products. Approximately 98 percent of vinyl chloride produced in the United States is used during the manufacture of PVC. Additionally, vinyl chloride is produced during the microbial breakdown of chlorinated solvents (e.g., engine cleaner, degreasing agent, adhesive solvents, paint removers, etc.). The potential for vinyl chloride exposure is primarily limited to areas in close proximity to PVC production facilities. Because PVC manufacturing facilities are absent from the Project area, and project implementation would not result in an increase of chlorinated solvents, potential vinyl chloride emissions associated with the proposed Project would be less than significant.

Visibility-reducing pollutants. Visibility-reducing pollutants generally consist of sulfates, nitrates, organics, soot, fine soil dust, and coarse particulates. These pollutants contribute to the regional haze that impairs visibility, in addition to affecting public health. According to the California Regional Haze Management Plan, natural wildfires and biogenic emissions are the primary contributors to visibility-reducing pollutants. For the proposed Project, visibility-reducing pollutants (e.g., $PM_{2.5}$ and PM_{10}), would be generated only during construction activities. Because only relatively low amounts of particulates would be generated, potential impacts with respect to visibility-reducing pollutants are less than significant.

Compliance with CARB and SCAQMD rules and regulations ensures emissions resulting from project construction and operation are less than significant and that the proposed Project would be in conformance with the applicable SIP.

Question C

See discussion under Questions A and B above and *Cumulative Impacts* below. Cumulative impacts would be less than significant.

Question D

See discussion under Questions A and B above. Land uses considered sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes and retirement homes. The proposed Project includes construction activities adjacent to schools, playgrounds, and residences. As discussed above, the proposed Project may generate PM_{10} emissions due to construction activities. Although these emissions would cease with completion of construction work, sensitive uses adjacent to the construction area could be exposed to elevated dust levels. **Mitigation Measure MM 4.3.1** will reduce impacts to a less than significant level.

Question E

Construction activities have the potential to emit odors from diesel equipment, paints, solvents, fugitive dust, and adhesives. Odors from construction are intermittent and temporary, and generally would not extend beyond the construction area. Due to the temporary and intermittent nature of construction odors, impacts would be less than significant.

Operation activities have the potential to emit odors from the WWTP process. The nearest sensitive odor receptor is approximately 300 feet from where WWTP operations would occur. Existing operational odor-emitting facilities at the WWTP include sludge storage basins, secondary clarifiers, oxidation ditch, influent pumping, biosolid drying beds and headworks. As of December 2016, the SCAQMD has not received any odor complaints related to the WWTP operations.

Given that the proposed Project does not include any new potential odor-generating components over current WWTP operations, as well as the distance to the nearest sensitive receptors and the fact that there have historically been no odor complaints from sensitive receptors, the proposed Project would not create objectionable odors affecting a substantial number of people. This impact is considered less than significant.

CUMULATIVE IMPACTS

Past, present, and future development projects contribute to a region's air quality conditions on a cumulative basis; therefore, by its very nature, air pollution is largely a cumulative impact. If a project's individual emissions contribute toward exceedance of the NAAQS or the CAAQS, then the project's cumulative impact on air quality would be considered significant.

In developing attainment designations for criteria pollutants, the USEPA considers the region's past, present, and future emission levels. In addition, AQMDs determine suitable significance thresholds based on an area's designated nonattainment status, which also considers the region's past, present, and future emissions levels.

Implementation of the proposed Project combined with future development within the Project area could lead to cumulative impacts to air quality. However, as discussed in detail above, emissions resulting from the proposed Project would not exceed the SCAQMD's thresholds, and construction would be in conformance with CARB and SCAQMD rules and regulations, and the applicable SIP developed to address cumulative emissions of criteria air pollutants in the NSVAB. Therefore, the proposed Project would have a less-than-significant cumulative impact on local and regional air quality.

MITIGATION

Mitigation Measure MM 4.3.1

The County shall ensure through contractual obligations that the following SCAQMD Standard Mitigation Measures are implemented

a. All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.

b. Unpaved areas with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.

c. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.

d. All land clearing, grading, earth moving or excavation activities on the project site shall be suspended when winds are expected to exceed 20 miles per hour.

e. The contractor shall be responsible for applying non-toxic stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours), in accordance with the Shasta County Grading Ordinance.

f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of CVC §23114. This provision is enforced by local law enforcement agencies.

g. During grading and earth disturbance in undeveloped areas, the project shall be required to construct a paved (or dust palliative treated apron, at least 100 feet in length, onto the project site from the adjacent paved road(s).

h. Paved streets adjacent to construction areas shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud which may have accumulated as a result of activities on the development site.

DOCUMENTATION

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4.4 BIOLOGICAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community, including oak woodland, identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c. Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?	☐	☒	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 6.7 (Fish and Wildlife).

Objective FW-1 Protection of significant fish, wildlife and vegetation resources.

Policy FW-c Projects that contain or may impact endangered and/or threatened plant or animal species, as officially designated by the California Fish and Game Commission and/or the U. S. Fish and Wildlife Service, shall be designed or conditioned to avoid any net adverse project impacts on those species.

Shasta County Code: Chapter 17.14 (Habitat Protection District); Chapter 12.12 (Grading, Excavating and Filling); Chapter 17.16 (Open Space).

Wetlands and Waters

The U.S. Army Corps of Engineers (USACE) has primary federal responsibility for administering regulations that concern waters of the U.S. (including wetlands). Section 404 of the Clean Water Act

(CWA), regulates the discharge of dredged or fill material into waters of the U.S. The USACE requires that a permit be obtained if a project proposes the placement of structures within, over, or under navigable waters and/or discharges dredged or fill material into waters below the ordinary high water mark (OHWM). The USACE has established a series of nationwide permits (NWP) that authorize certain activities in waters of the U.S.

Under CWA Section 401, an activity requiring a USACE Section 404 permit must obtain a State Water Quality Certification (or waiver) to ensure that the activity will not violate established State water quality standards. The Regional Water Quality Control Board (RWQCB) regulates waters of the State and has a policy of no-net-loss of wetlands. The RWQCB typically requires mitigation for all impacts to wetlands before it will issue a water quality certification.

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) implement the federal Endangered Species Act (FESA) of 1973 (16 USC §1531 et seq.). Under FESA, threatened and endangered species on the federal list and their habitats are protected from "take" (i.e., activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) as well as any attempt to engage in any such conduct, unless a Section 10 Permit is granted to an individual or a Section 7 consultation and a Biological Opinion with incidental take provisions are rendered from the lead federal agency.

FESA requires a federal agency reviewing a proposed project within its jurisdiction to determine whether any federally listed species may be present within the project site and vicinity and determine whether the project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. The agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat proposed to be designated by the Secretary of the Interior for such species. Therefore, project-related impacts to these species, or their habitats, would be considered significant and require mitigation.

Under Section 7 of the FESA, all federal agencies (including the USFWS and NMFS) are required to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of a federally listed species or modify their critical habitat.

Federal Migratory Bird Treaty Act

Most bird species, (especially those that are breeding, migrating, or of limited distribution) are protected under federal and/or State regulations. Under the Migratory Bird Treaty Act (MBTA) of 1918, migratory bird species, their nests, and their eggs are protected from injury or death, and any project-related disturbances during the nesting period.

Federal Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, also known as the Sustainable Fisheries Act (Public Law 104-297), requires that all federal agencies consult with NMFS on projects authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat of commercially managed marine and anadromous fish species.

Federal Bald and Golden Eagle Protection Act

This Act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds and their occupied and unoccupied nests. The bald eagle is full-protected under California law.

California Fish and Game Code §1600-1616 (Streambed Alteration)

California Fish and Game Code §1600-1616 regulate impacts to State waters and stream and lake beds. §1602 requires notification before beginning any activity that may obstruct or divert the natural flow of a perennial, intermittent, or ephemeral river, stream, or lake; change or use any material from the bed, channel, or bank of a river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. The Applicant and the CDFW must enter into an agreement prior to an action which will result in such an impact.

California Fish and Game Code §3503 and 3503.5 (Nesting Bird Protections)

These sections of the Code provide regulatory protection to resident and migratory birds and all birds of prey within the State and make it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Code.

California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the take of State-listed threatened and endangered species. Under CESA, state agencies are required to consult with the CDFW when preparing CEQA documents. Under CESA, the CDFW is responsible for maintaining a list of rare, threatened, and endangered species designated under state law. The CDFW can authorize take if an incidental take permit is issued by the Secretary of the Interior in compliance with the FESA, or if the director of the CDFW issues a permit under §2080 in those cases where it is demonstrated that the impacts are minimized and mitigated.

California Native Plant Protection Act (NPPA)

The NPPA (California Fish and Game Code §1900 – 1913) includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the Native Plant Protection Act includes those listed as rare and endangered under the CESA. The NPPA states that no person will take, possess, sell, or import into the state, any rare or endangered native plant, except in compliance with provisions of the act.

Oak Woodlands Conservation Act

The State of California provides for oak protection through SB 1334, the Oak Woodlands Conservation Act (Act), last amended in 2005. The Act applies only when the lead agency is a county and the project is located in an unincorporated county area.

The Act requires the county to determine whether the project may result in a conversion of oak woodlands that will have a significant effect on the environment and to implement one or more of the following oak woodland mitigation measures if necessary: 1) consider conservation easements as a vehicle for conservation; 2) enforce mitigation planting; 3) make an in-lieu contribution to the Oak Woodlands Conservation Fund. The Act also authorizes a county to impose mitigation measures other than those prescribed above, as long as substantial evidence supports the conclusion that the county's measures are equivalent or better.

The Act defines "oak woodlands" as *"an oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover."* Public Resources Code §21083.4 defines "oak" as "*a native tree species in the genus Quercus, not designated as Group A or Group B commercial species pursuant to regulations adopted by the State Board of Forestry and Fire Protection pursuant to §4526, and that is 5 inches or more in diameter at breast height."*

DISCUSSION OF IMPACTS

Question A

The following evaluation of potential impacts on special-status species is based on a review of California Natural Diversity Data Base (CNDDB) and USFWS records, as well as botanical and wildlife surveys completed by ENPLAN. Evaluation of potential effects on federally listed, proposed, or Candidate species entailed review of plant and animal species under jurisdiction of the USFWS and anadromous fish species under the jurisdiction of NMFS. A USFWS Official Species List for the proposed Project was generated for species of concern to the USFWS. An official species list for the Project area, located in the Cottonwood quadrangle, was obtained from the NMFS. **Appendix B** includes the following:

- ENPLAN Summary Report: *Potential for Special-Status State and Federal Species to Occur in the Project Area.*
- California Natural Diversity Database RareFind Query Summary, September 2016.
- U.S. Fish and Wildlife Service List of Threatened and Endangered Species, September 20, 2016.
- National Marine Fisheries Service (NMFS) Species List.
- List of Vascular Plant Species Observed, December 1, 2016.
- List of Wildlife Species Observed, October 6, 2016.

Special-Status Plant Species

Review of the USFWS species list for the Project area identified one federally listed plant species, slender Orcutt grass, as potentially being affected by the proposed Project. The Project area does not contain designated critical habitat for federally listed plant species.

Review of CNDDB records showed that no special-status plant species have been previously reported in the Project area; however, in addition to an occurrence of slender Orcutt grass, two other special-status plant species, pink creamsacs and silky cryptantha, have been reported within a five-mile radius of the Project area. To determine the presence/absence of special-status plant species, ENPLAN conducted a field survey of the Project area on December 1, 2016. A list of plant species observed during the field review is included in Appendix B.

Included in Appendix B is a summary report indicating the potential for state and federally threatened, endangered or rare plant species to occur in the Project area. As indicated, no special-status plant species were observed or are expected to occur.

However, a follow-up botanical survey should be conducted in the spring when other special-status species potentially occurring in the area would be identifiable. Implementation of **Mitigation Measure MM 4.4.1** would avoid or offset any loss of special-status plants due to Project implementation.

Special-Status Wildlife Species

Review of the USFWS species list for the Project area and the NMFS species list for the Cottonwood quadrangle identified the following federally listed animal species as potentially being affected by the proposed Project: bald eagle, California red-legged frog, Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle (VELB), delta smelt, steelhead (northern California DPS and Central Valley DPS), and green sturgeon.

Review of the NMFS species list found that critical habitat is designated in the Cottonwood quadrangle for the following federally listed species: Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, and green sturgeon. The USFWS species list

does not identify designated critical habitat in the study area for any federally listed animal species and review of the USFWS critical habitat map confirmed this finding.

Review of CNDDB records showed that no special-status animal species have been previously reported in the Project area. The following special-status wildlife species have been reported within a five-mile radius of the Project area: bald eagle, bank swallow, least Bell's vireo, tricolored blackbird, Sacramento River winter-run Chinook salmon, Central Valley steelhead, Townsend's big-eared bat, western red bat, VELB, western pond turtle, and western spadefoot.

To determine the presence/absence of special-status animal species, ENPLAN conducted a wildlife survey of the Project area on October 6, 2016. Most of the special-status animal species potentially occurring in the Project area would not have been evident at the time the fieldwork was conducted. However, the potential presence of special-status species was readily determined on the basis of observed habitat characteristics. No special-status animal species were observed during the survey. However, the Project area has potentially suitable habitat for the following:

Townsend's Big-Eared Bat

The WWTP and lift station buildings have a slight potential to be utilized for roosting by Townsend's big-eared bats. However, because no buildings would be removed, no mitigation measures are warranted.

Valley Elderberry Longhorn Beetle (VELB)

Elderberry shrubs, the host plant of the larval stage of the VELB, occur in the vicinity of the proposed pipeline replacement near Trade Way and the Main Lift Station. **Figure 4.4-1** shows the location of the elderberry shrubs as well as wetlands and oak trees larger than 12-inch diameter at breast height (DBH) in this area.

Although no VELB or VELB exit holes were observed on the shrubs, the USFWS may still consider the shrubs to be potential habitat for the beetle. Depending on final design of the proposed improvements, construction activities may impact the shrubs.

According to the U.S. Fish and Wildlife Service *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (1999), complete avoidance (i.e., no adverse effects) may be assumed when a minimum 100-foot buffer is established and maintained around elderberry plants containing stems measuring 1.0 inch or greater in diameter. The USFWS must be consulted before any disturbances within the buffer area are considered.

With implementation of **Mitigation Measure MM 4.4.2**, impacts would be less than significant.

Figure 4.4-1

Environmental Constraints (Elderberry Shrubs, Oak Trees, Jurisdictional Waters)

ENPLAN

Question B

The USFWS does not identify any critical habitats within the Project area. The CNDDB Rarefind Report identifies Great Valley Cottonwood Riparian Forest and Valley Oak Riparian Forest as natural communities in the Project area. In addition, the Shasta County General Plan states one of the most ecologically significant communities is the riparian woodland association found along the Sacramento River, which provides habitat for many animals and plants and also helps prevent erosion of the Sacramento River banks.

The proposed Project has the potential to directly impact oak woodlands and indirectly impact anadromous fish habitat and open-water habitat as further discussed below:

Oak Woodlands

Shasta County does not currently have an Oak Woodland Management Plan; however, voluntary Oak Woodland Management Guidelines were adopted by the County in 1995. When developing within oak woodlands, the Guidelines suggest protecting existing oaks during construction. In addition, the proposed Project is subject to the Oak Woodlands Conservation Act (Act) of 2004.

Shasta County has previously evaluated impacts on oak woodlands based on pre-project canopy cover and the relative loss of this cover that would result from project implementation. In addition, the County has referenced the *Oak Woodland Impact Decision Matrix* (Decision Matrix) prepared under the direction of the University of California Integrated Hardwood Range Management Program (IHRMP) in determining the significance of impacts to oak woodlands.

The first step is determining whether the site represents an oak woodland whose ecological functions are still relatively "intact," "moderately degraded," or "severely degraded" and then determining whether the proposed Project would result in a low, moderate or high impact as described below.

Intact Site. An intact site is currently in a "wild" state being managed for grazing, open space, recreation, etc., where all of the ecological functions are still being provided; roads and buildings are rare on the site; trees (dead and alive) dominate the landscape and the site is capable of natural regeneration of oaks and other plant species; and the site allows for movement of wildlife and the existing development is localized and limited to a small number of residences with service buildings or barns.

Moderately Degraded Site. A moderately degraded site has been altered from a "wild" condition, but is currently in a state where oak trees are present; natural regeneration is capable of occurring; limited ecological services are still being provided and the site still provides for utilization by wildlife; road and stream crossings are present, but limited or clustered; and developed areas are centralized and concentrated over a small percentage of the site.

Highly Degraded Site. A highly degraded site has been dramatically altered and is currently in a condition that has no trees, or very few remain; it is being managed in such a way that the natural regeneration is not possible or practical; the soil is compacted or contaminated; it has been used for residential, commercial, or industrial purposes; roads and stream crossings are commonplace; and fencing and other obstructions limit wildlife access and movement.

The criteria for determining the significance of impacts is as follows:

Low Impact. Minimal disturbance is anticipated or can easily be avoided, minimized, or mitigated. A low level of impact would result in the removal of less than 10 trees, but does not change the overall stand structure or canopy cover. In addition, small isolated stands less than one acre with lower than 10 percent cover are often not considered to be part of a woodland but rather represent remnant trees which can have ecological value but may not be part of a functioning woodland.

Moderate Impact. Mitigation or minimization of impacts is sometimes possible to offset overall alterations. Both tree and non-tree components of the oak woodland are being considered for removal or alteration. Removal of trees will result in the creation of more edge impacts.

High Impact. There is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time consuming, or some combination of these. A high level of impact would result in the removal of a majority of the existing trees.

The proposed Project is located mainly in previously disturbed areas and will require minimal vegetation removal to accommodate the proposed improvements. However, there are two locations within the Project area where there is potential for damage to the oak trees as discussed below.

Tree surveys were completed by ENPLAN on December 22, 2016, January 12, 2017, and January 25, 2017, to determine the number of trees that could be impacted at these two locations. The survey identified all oak trees 12-inch DBH and greater, which was determined to be the significance threshold based on characteristics of the sites.

Trade Way/SPRR Crossing/ Main Lift Station

For purposes of analyzing impacts to oak woodlands at this location, the study area is approximately four acres north and west of the railroad, and approximately 0.35 acres near the Main Lift Station. As shown in **Figure 4.4-1**, it is feasible to avoid impacts to oak trees in this area.

ACID Canal East of Rhonda Road

For purposes of analyzing impacts to oak woodlands at this location, the study area is the corridor along the proposed pipeline, 10 feet on each side. As shown in **Figure 4.4-2**, proposed improvements in the vicinity of Rhonda Road adjacent to the ACID canal have the potential to impact one oak tree larger than 12 DBH.

Both areas are considered "moderately disturbed" due to previous clearing of utility line corridors and adjacent uses. This has reduced the complexity of the grassland understory and has reduced natural regeneration of oaks; however, the sites still retain ecological functions. The impact level for both sites is considered low because it is feasible to avoid the oak trees with the exception of one 12-inch DBH oak at the ACID site. Implementation of **Mitigation Measures MM 4.4.3 and MM 4.4.4** would protect existing oaks during construction; therefore, impacts would be less than significant.

Figure 4.4-2
Environmental Constraints (Oak Trees, Jurisdictional Waters)

Anadromous Fish Habitat

Chapter 4 (Grading and Erosion Control) of the Shasta County Development Standards Manual requires effective erosion and sediment control measures to be employed throughout construction. This includes implementation of Best Management Practices (BMPs) to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. In addition, compliance with local and State regulations will ensure that the potential for indirect impacts resulting from accidental spills of oils and hazardous materials during construction activities is less than significant.

In addition, as stated above, the CVRWQCB issued an Administrative Civil Liability Complaint due to WDR violations related to effluent limitations when discharging to Cottonwood Creek. The discharge limitations in the NPDES permit were developed to protect the beneficial uses of Cottonwood Creek, which include warm and cold freshwater habitat, spawning, and wildlife habitat. Completion of the proposed Project would resolve the violations and improve the effluent quality discharged to Cottonwood Creek, resulting in beneficial impacts to wildlife habitat, particularly anadromous fish habitat.

Other Water Features

Although not subject to state or federal jurisdiction as wetlands or "Other Waters," the two existing storage basins at the wastewater treatment facility are considered open-water habitat. Both basins are lined with concrete to prevent leakage. In addition, the ACID Canal, which is subject to USACE jurisdiction, is considered open-water habitat and is located adjacent to two areas in which improvements are proposed (See **Figure 4.4-3**). However, no work is proposed in the basins or in the Canal, and impacts to riparian and other natural communities would be less than significant.

Question C

ENPLAN conducted field investigations on October 20, 2016, December 22, 2016, and January 12, 2017, to identify potential U.S. Army Corps of Engineers (USACOE) jurisdictional wetlands and other waters of the U.S. To identify these waters and wetlands, ENPLAN followed the methodology prescribed in the USACE 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), September 2008.*

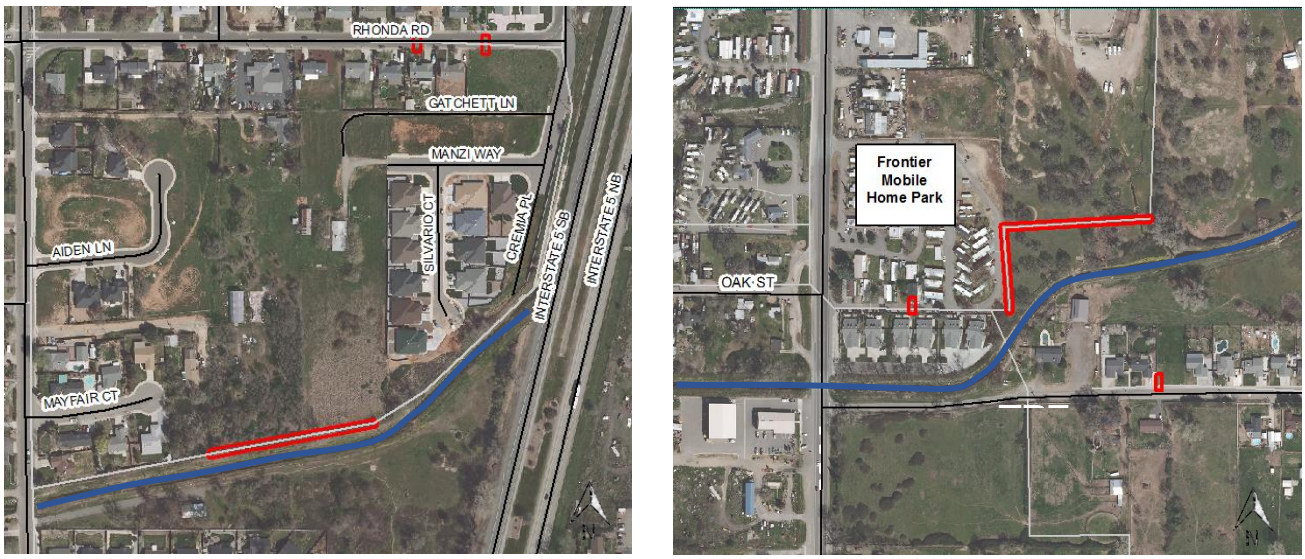

Figure 4.4-3
ACID Irrigation Canal

During the field investigations, ENPLAN identified dominant hydrophytic plant species and indicators of wetland hydrology and hydric soils in two locations within the Project area. Soil pits were dug in each wetland feature to a depth sufficient to document hydric soil and hydrology indicators. Soils were examined to assess field indicators of hydric soils in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the U.S.* The hydric status of each soil map unit was reviewed using the Web Soil Survey. At least one set of data points was selected to represent the wetland feature type and the adjacent uplands. Data points were also placed in suspect areas to confirm wetland or upland status.

All waters of the U.S. identified during the field investigations are shown in **Figures 4.4-1 and 4.4-2.** As indicated, the Trade Way/SPRR Crossing/ Main Lift Station site includes approximately 0.18 acres of wet meadow and approximately 0.01 acres of intermittent stream, for a total of approximately 0.19 acres of waters of the U.S. However, as shown in **Figure 4.4-1**, the wet meadow and intermittent stream will be avoided and there would be no impact.

The Rhonda Road/ACID site includes approximately 0.11 acres of riparian scrub wetland and 0.07 acres of seasonal wetlands, for a total of approximately 0.18 acres of waters of the U.S. that would be impacted in this location.

The proposed Project qualifies for a USACE Nationwide Permit (NWP). NWP 12 applies to utility lines when less than ½ acre is impacted. For NWP 12, pre-construction notification is required only when the line exceeds 500 linear feet in waters of the U.S., or if the utility line runs parallel to a stream bed within the jurisdictional area. A delineation is not required when Pre-Construction Notification is not required. The area must be restored to pre-construction contours. **Mitigation Measures MM 4.4.5 and MM 4.4.6** ensure impacts are less than significant.

Question D

Numerous native resident and migratory fish and wildlife species inhabit Shasta County, most notable of the migratory species are anadromous salmonids, black-tailed deer, and various species of migratory birds.

The proposed improvements are needed to meet effluent limitations in the NPDES permit, which were developed to protect the beneficial uses of Cottonwood Creek. These uses include warm and cold freshwater habitat; cold migration of aquatic organisms; spawning; reproduction and/or early development; and wildlife habitat. Completion of the proposed Project would resolve the violations and improve the effluent quality discharged to Cottonwood Creek. Therefore, the proposed Project would have a beneficial effect on water quality and would be beneficial for anadromous fish.

The Shasta County General Plan does not identify the Project area as a critical deer wintering area; therefore, project implementation would have no impact on critical deer wintering areas.

The Project area is located within the Pacific Flyway, and it is possible that migratory birds could nest in or adjacent to the Project area. American crow, acorn woodpecker, black phoebe, Brewer's blackbird, killdeer, Northern flicker, Northern mockingbird, turkey vulture, western scrub jay, white-breasted nuthatch and yellow-billed magpie, all migratory birds, were observed in the Project area. Several abandoned nests were observed near the Main Lift Station during the December 1, 2016, site visit.

Vegetation clearing and construction activities could adversely affect nesting birds. In the local area, most birds nest between February 1 and August 31. As required by **Mitigation Measure MM 4.4.7**, the potential for adversely affecting nesting birds can be greatly minimized by removing vegetation and conducting construction activities either before February 1 or after August 31.

If this is not possible, a nesting survey would be conducted within one week prior to removal of vegetation and/or the start of construction. If active nests are found on the Project site, work would

need to be postponed in the vicinity of the nests until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, vegetation removal and construction activities would not occur within 500 feet of an active nest unless a smaller buffer zone is authorized by CDFW and USFWS. If required by the agencies, a qualified biologist could monitor active nest(s) during construction for signs of disturbance to the nesting birds.

Question E

Chapter 6.7 (Fish and Wildlife Habitat) of the Shasta County General Plan addresses the need to preserve unique and important aquatic, fish and wildlife habitats, and plant communities for their biological resource and ecological values, as well as for their direct and indirect benefits to the citizens of Shasta County. **Mitigation Measures MM 4.4.1 through 4.4.7** are included to ensure consistency with General Plan policies and objectives. There are no other local policies or ordinances related to the protection of biological resources that would apply to the proposed Project. Impacts are considered less than significant.

Question F

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the Federal Endangered Species Act (FESA). A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. There are no HCPs, NCCPs or other habitat conservation plans in Shasta County. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area, including growth resulting from build-out of the County's General Plan, are anticipated to permanently remove plant and wildlife resources.

As development in the area continues, sensitive plant and wildlife species native to the region and their habitat, including those species listed under CESA and FESA and those identified by state and federal resources agencies as threatened, endangered, fully protected, sensitive, species of concern, or candidate species, will be lost through conversion of existing open space to urban development.

Although mobile species may have the ability to adapt to modifications to their environment by relocating, less mobile species may be locally extirpated. With continued conversion of natural habitat to human use, the availability and accessibility of remaining foraging and natural habitats in this ecosystem would dwindle and those remaining natural areas may not be able to support additional plant or animal populations above their current carrying capacities. The conversion of plant and wildlife habitat on a regional level as a result of cumulative development would potentially result in a regional significant cumulative impact on special-status species and their habitats.

Implementation of BMPs for erosion and sediment control, and implementation of **Mitigation Measures MM 4.4.1 through MM 4.4.7** avoid, reduce, or mitigate potential impacts to special-status species and their habitat. With these measures, the proposed Project's contribution to cumulative regional impacts to biological resources would be less than significant.

MITIGATION

MM 4.4.1 A botanical field survey shall be conducted by a qualified biologist in the spring when special-status plants known to occur in the region would be identifiable. In the unlikely event that special-status plant species are present, a suitable buffer zone(s) shall be determined by a qualified biologist in consultation with the California Department of Fish and Wildlife (CDFW) and exclusionary fencing shall be placed prior to commencement of construction.

If avoidance is not possible, the project proponent shall consult with the CDFW to determine a satisfactory method of mitigation. Typical mitigation includes collecting and propagating seeds,

and replanting the seedlings in a protected area, or transplanting the individual plants to a protected area. A detailed mitigation plan shall be submitted to CDFW for review and approval. The plan shall identify the mitigation site, methods to be employed to create offsetting special-status plant habitat, success criteria, monitoring requirements, remedial measures, and/or other pertinent data to ensure successful replacement of the affected plant populations. Mitigation shall be undertaken concurrently with or in advance of the start of project construction.

MM 4.4.2 Potential impacts to the Valley Elderberry Longhorn Beetle (VELB) shall be mitigated as follows:

1. Exclusionary fencing shall be placed at least 100 feet from the dripline of the elderberry shrubs prior to commencement of construction.

2. Signs shall be placed every 50 feet along the avoidance area which state the following: "*This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment."* The signs shall be readily visible from a distance of 20 feet and must be maintained for the duration of construction.

3. Prior to commencement of construction, construction workers shall be instructed about the status of the VELB and the need to protect its elderberry host plant.

4. The USFWS must be consulted before any disturbances within the buffer area occur. Any necessary mitigation measures prescribed by the USFWS shall be implemented.

MM 4.4.3 Final improvement plans for the following locations shall be modified to the maximum extent feasible to avoid impacts to healthy oak trees 12-inch diameter at breast height (DBH) or larger (e.g., tunneling under roots, placing improvements outside of the drip line, etc.).

a. Trade Way site west of the Southern Pacific Railroad (SPRR); and the Main (Cottonwood) Lift Station east of the SPRR.

b. Rhonda Road site north of the Anderson-Cottonwood Irrigation Canal.

MM 4.4.4 The following measures shall be implemented to ensure retention of the oak trees that are designated for preservation. The County shall ensure compliance through the enforcement of contractual obligations:

a. Fencing shall be provided at least 6 feet outside of the dripline of all trees to be preserved. The fencing is to remain throughout construction.

b. No storage of materials shall occur within the fenced area.

c. No construction activities (grading, cutting or trenching), including vehicle parking or materials stockpiling, shall occur within the fenced area.

MM 4.4.5 Prior to commencement of construction, the County shall verify the Project is eligible for coverage under a USACE Nationwide Permit. If necessary, the wetland delineation report shall be submitted to and verified by the USACE, and pre-construction notification shall be submitted to the USACE. Following completion of the improvements, all jurisdictional areas shall be restored to pre-construction contours.

MM 4.4.6 For fill requiring a USACE permit, water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks,

notification of streambed alteration shall be submitted to the CDFW; and, if required, a streambed alteration agreement shall be obtained.

MM 4.4.7 To ensure that active nests of migratory birds are not disturbed, vegetation removal and construction activities shall occur between August 31 and February 1, if feasible. If vegetation removal or construction must occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area. The survey shall be conducted no more than one week prior to the initiation of vegetation removal or facility construction. If vegetation removal or other construction activities are delayed or suspended for more than two weeks after the pre-construction survey, the site shall be resurveyed.

If nesting birds are found, the nest sites shall not be disturbed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no vegetation removal or construction activities shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the CDFW and the USFWS (the size of the construction buffer zone may vary depending on the species of nesting birds present).

A qualified biologist shall delineate the buffer zone with construction tape or pin flags that shall remain in place until the young have fledged. The biologist shall monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. Guidance from CDFW will be requested if the nestlings within the active nest appear disturbed. The monitoring biologist shall have the authority to stop any work determined to be adversely affecting the nesting activity. The monitoring biologist shall report any "take" of active nests to CDFW.

DOCUMENTATION

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4.5 CULTURAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐
d. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

REGULATORY CONTEXT

Shasta County General Plan: Chapter 6.10 (Heritage Resources).

Objective HER-1 Protection of significant prehistoric and historic cultural resources.

Policy HER-a Development projects in areas of known heritage value shall be designed to minimize degradation of these resources. Where conflicts are unavoidable, mitigation measures which reduce such impacts shall be implemented. Possible mitigation measures may include clustering, buffer or nondisturbance zones, and building siting requirements.

Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA, as amended, and its implementing regulations found at 36 CFR Part 800, require federal agencies to identify cultural resources that may be affected by actions involving federal lands, funds, or permitting actions. Shasta County is applying for funding for the proposed Project through the California Clean Water State Revolving Fund (CWSRF) Program, which is partially funded by the USEPA; therefore, the Proposed Project is subject to Section 106 review.

The significance of the resources must be evaluated using established criteria outlined at 36 CFR 60.4, as described below. If a resource is determined to be a *historic property*, Section 106 of the NHPA requires that effects of the undertaking on the resource be determined. A historic property is:

> *…any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property. (NHPA Sec. 301[5])*

Section 106 of the NHPA prescribes specific criteria for determining whether an undertaking would adversely affect prehistoric or historic archaeological sites, structures, or objects that are National Register of Historic Places (NRHP) listed, or eligible for NRHP listing. An impact may be considered significant if it results in any of the following:

1. Physical destruction or damage to all or part of the property;
2. Alteration of a property;
3. Removal of the property from its historic location;
4. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
5. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; and/or
6. Neglect of a property that causes its deterioration; and the transfer, lease, or sale of the property.

If it is determined that a project will adversely affect a historic property, feasible mitigation measures must be incorporated. The State Historic Preservation Officer (SHPO) must be provided an opportunity to review and comment on these measures prior to commencement of the proposed Project.

National Register of Historic Places (NRHP)

The eligibility of a resource for listing in the NRHP is determined by evaluating the resource using criteria defined in 36 CFR 60.4. In order to be eligible for listing, the property/site must meet at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of our history;

2. Is associated with the lives of persons significant in our past;

3. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

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

In addition to meeting one of the criteria outlined above, the property must also retain enough integrity to enable it to convey its historic significance. The National Register recognizes seven aspects or qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. To retain integrity a property will always possess several, and usually most, of these aspects. Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

California Environmental Quality Act (CEQA)

CEQA requires that, for projects financed by or requiring the discretionary approval of public agencies in California, the effects that a project has on historical and unique archaeological resources be considered (Public Resources Code [PRC] Section 21083.2). Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance (PRC Section 5020.1). Section 15064.5 of the CEQA Guidelines defines three cases in which a property may qualify as a historical resource for the purpose of CEQA review:

a. The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR).
b. The resource is included in a local register of historic resources, as defined in Section 5020.1(k) of the PRC, or is identified as significant in a historical resources survey that meets the requirements of Section 5024.1(g) of the PRC (unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant).

c. The lead agency determines that the resource may be a historical resource as defined in PRC Section 5020.1(j), 5024.1, or significant as supported by substantial evidence in light of the whole record. Section 5024.1 defines eligibility requirements and states that a resource may be eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

Resources must retain integrity to be eligible for listing on the CRHR. Resources that have formally been determined eligible for listing or are listed in the NRHP are included in the CRHR, and thus are significant historical resources for the purposes of CEQA (PRC Section 5024.1(d)(1)).

PRC Section 21083.2 governs the treatment of a unique archaeological resource, which is defined as an archaeological artifact, object, or site about which it can be clearly demonstrated that it meets any of the following criteria:

a. It contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information.
b. It has a special and particular quality such as being the oldest of its type or the best example of its type.
c. It is directly associated with a scientifically recognized important prehistoric or historic event or person.

DISCUSSION OF IMPACTS

Questions A and B

A Cultural Resources Inventory and Evaluation Report was completed for the proposed Project by ENPLAN. The study included a records search, Native American consultation and field evaluation. The records search included review of records at the Northeast Information Center of the California Historical Resources Information System (NEIC/CHRIS), and a review of the *National Register of Historic Places, California Register of Historic Resources*, *California Historical Landmarks*, *California Inventory of Historic Resources*, *Historic Properties Directory*, and *Archaeological Determinations of Eligibility.* Pedestrian surveys were conducted on October 6, 2016, and December 21, 2016.

The records search resulted in the identification of fourteen previously recorded sites within a one-half mile radius of the Area of Potential Effects (APE), which is defined as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. No archaeological sites have previously been recorded within the Project APE.

In response to ENPLAN's request for information, on September 21, 2016, the Native American Heritage Commission (NAHC) indicated that a search of the Sacred Lands File did not reveal any known sacred sites in the Project area. The NAHC also provided contact information for several Native American representatives and organizations, who were contacted with a request to provide comments on the proposed Project. No comments or concerns were reported by any Native American representative or organization.

Based on ENPLAN's evaluation, the proposed Project has the potential to impact the following historical resources.

Anderson-Cottonwood Irrigation District Canal

The Anderson-Cottonwood Irrigation District (ACID) canal was constructed between 1913 and 1924, and is assumed to be eligible for listing on the NRHP and the CRHR. The proposed Project includes installation of pipeline segments in proximity to the Anderson-Cottonwood Irrigation District (ACID) canal in two locations as shown in **Figure 4.4-3.** However, construction activities have the potential to impact the canal in only one location as shown in **Figure 4.4-2.**

In this location, it will not be possible to avoid activities within the ACID-owned property. Access to the construction site will be from Rhonda Road to the east, and there is little flexibility in this area to shift the pipeline improvements further north in order to avoid the canal. Sewer line replacement is not expected to affect the characteristics of the canal that make it eligible for listing. However, review by an historical archaeologist is expected to be required by the federal lead agency for the project.

Cottonwood Historic District

The Cottonwood Historic District (District) is listed on the National Register of Historic Places as an architectural resource. The District encompasses both sides of Front Street from the old railroad station to the junction of Front Street with Old Highway 99. The District also includes the old Cottonwood School and Sanctuary of First Baptist Church, both on Brush Street. Two pipeline improvements are proposed in public right-of-way (alley) south of Front Street; however, these improvements appear to be outside the District.

Southern Pacific Railroad

The historic Central and Southern Pacific railroad (SPRR) line runs from the border of Tehama and Glenn counties, north to the southern portion of the City of Anderson. The segment through the community of Cottonwood was completed in 1872. However, in terms of integrity, no intact ties or rails from the original lines are known to exist, and it is assumed they have been replaced by the modern track. As shown in **Figure 4**, the Main Lift Station is located generally south of the SPRR, southeast of Trade Way. In this area, it is proposed a PVC carrier pipe within a 24-inch steel casing be bored and jacked underneath the railroad.

Because the proposed Project will receive federal funding, Section 106 review applies to the proposed Project. According to the Clean Water SRF Guidelines, the State Water Board Cultural Resources Officer and Environmental Review Unit will evaluate the Section 106 Report and provide a summary to SHPO in a letter seeking concurrence with the appropriate finding. It is possible the Water Board and/or SHPO will require further evaluation of the three historical resources described above. Any necessary mitigation measures would be identified through the Section 106 consultation process pursuant to the Secretary of the Interior's regulations to ensure impacts would be less than significant (see **Mitigation Measure MM 4.5.1**).

Pursuant to §15064.5(b)(3) of the CEQA Guidelines, the proposed Project would have less than significant impacts on historical resources:

> "…a project that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* or the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource."

Although no other cultural or historical resources were discovered during field investigations, the study area is considered moderately sensitive for the presence of historic and prehistoric features, and it is possible that undocumented cultural remains could be encountered during subsurface excavations. Mitigation Measures **MM 4.5.2 and 4.5.3** address the inadvertent discovery of archaeological resources and human remains.

Question C

According to the California Geological Survey, the Project area is comprised of sedimentary rock with nonmarine alluvium, lake, playa, and terrace deposits, of the Holocene and Pleistocene ages. These formations are old enough to contain paleontological resources. However, there is no record of paleontological resources in the Project area. In addition, the Project area has no unique geological features or fossil-bearing strata. Although no unique geologic features, or paleontological sites are known to exist in the Project area, implementation of **Mitigation Measures MM 4.5.2** would ensure that potential impacts to inadvertent discoveries associated with the proposed Project would be less than significant.

Question D

The Project area does not include any known cemeteries, burial sites, or human remains. However, it is possible human remains may be unearthed during construction activities. **Mitigation Measure 4.5.3** ensures if human remains are discovered, there shall be no further excavation or disturbance of the site until the County coroner has been contacted and has made the necessary findings as to origin and disposition in accordance with Section 15064.5(e) of the CEQA Guidelines. Therefore, impacts are less than significant.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area have the potential to impact cultural resources. Archaeological and historic resources are afforded special legal protections designed to reduce the cumulative effects of development. Cumulative projects and the proposed Project are subject to the protection of cultural resources afforded by the CEQA *Guidelines* Section 15064.5 and related provisions of the PRC. In addition, projects with federal involvement would be subject to Section 106 of the NHPA.

Given the non-renewable nature of cultural resources, any impact to protected sites could be considered cumulatively considerable. As discussed above, no protected archaeological or historic resources would be impacted by the proposed Project with implementation of **Mitigation Measures MM 4.5.1, MM 4.5.2** and **MM 4.5.3**, and the proposed Project's cumulative impacts to cultural resources is less than significant.

MITIGATION

MM 4.5.1 In order to comply with California Clean Water State Revolving Fund Program requirements, prior to commencement of construction, the State Water Board Cultural Resources Officer and Environmental Review Unit shall evaluate the Section 106 Report and provide a summary to SHPO in a letter seeking concurrence with the appropriate finding. Any necessary mitigation measures would be identified through the Section 106 consultation process pursuant to the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and/or the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

MM 4.5.2 In the event of any inadvertent discovery of archaeological or paleontological resources (i.e., burnt animal bone, midden soils, projectile points or other humanly-modified lithics, historic artifacts, fossils, etc.), all such finds shall be subject to PRC §21083.2 and CEQA Guidelines §15064.5. Procedures for inadvertent discovery include the following:

1. If the find is an archaeological resource, all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with NRHP and CRHR criteria.

2. If the find is a paleontological resource, all work within 50 feet of the find shall be halted until a professional paleontologist can evaluate the significance of the resource.

3. If any find is determined to be significant by the archaeologist, or paleontologist as appropriate, then representatives of the County shall meet with the archaeologist, or paleontologist, to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archeologist (or paleontologist), outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the County prior to resuming construction.

4. All significant cultural or paleontological materials recovered shall be subject to scientific analysis, professional curation, and a report prepared by the professional archaeologist, or paleontologist, according to current professional standards.

MM 4.5.3 In the event that human remains are encountered during construction activities, the County shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the county coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed.

DOCUMENTATION

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4.6 GEOLOGY AND SOILS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 5.1 (Seismic and Geologic Hazards).

Objectives:

SG-1 Protection of all development from seismic hazards by developing standards for the location of development relative to these hazards; and protection of essential or critical structures, such as schools, public meeting facilities, emergency services, high-rise and high-density structures, by developing standards appropriate for such protection.

SG-2 Protection of development on unstable slopes by developing standards for the location of development relative to these hazards.

SG-3 Protection of development from other geologic hazards, such as volcanoes, erosion, and expansive soils.

SG-4 Protection of waterways from adverse water quality impacts caused by development on highly erodible soils.

Policies:

SG-d Shasta County shall develop and maintain standards for erosion and sediment control plans for new land use development. Special attention shall be given to erosion prone hillside areas, including those with extremely erodible soils types such as those evolved from decomposed granite.

SG-e When soil tests reveal the presence of expansive soils, engineering design measures designed to eliminate or mitigate their impacts shall be employed.

Shasta County Code: Chapter 12.12 (Grading, Excavating and Filling); Title 16 (Buildings and Construction), Chapter 16.08 (Uniform Codes Adopted).

Federal Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the National Earthquake Hazards Reduction Act (NEHRA) to *"reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program."* The Act established the National Earthquake Hazards Reduction Program, which was most recently amended in 2004. The Federal Emergency Management Agency (FEMA) is designated as the lead agency of the program. Other NEHR Act agencies include the National Institute of Standards and Technology, National Science Foundation, and USGS.

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed to mitigate the hazard of surface faulting to structures. The act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Before a project can be permitted in a designated Alquist-Priolo Fault Study Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (PRC §2690–2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

National Pollutant Discharge Elimination System Permit (NPDES)

The SWRCB administers regulations and permitting for the USEPA for pollution generated from stormwater under the National Pollutant Discharge Elimination System (NPDES). The CVRWQCB implements these regulations and requires that an operator of any construction activities with ground disturbances of one acre or more obtain a General Permit through the NPDES Stormwater Program. The General Permit requires the implementation of BMPs to reduce sedimentation into surface waters and to control erosion. The preparation of a SWPPP addresses control of water pollution that includes the effects of sediments in the water during construction activities.

California Building Standards Code

The State of California provides minimum standards for building design through the California Building Standards Code (CBSC). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The CBSC also applies to building design and construction in the state and is based on the International Building Code (IBC) used widely throughout the country. The CBSC has been modified for California conditions with numerous more detailed and/or more stringent regulations.

DISCUSSION OF IMPACTS

Question A

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

According to the Alquist-Priolo Earthquake Fault Zoning Map for Shasta County, there are no Alquist-Priolo Special Study Zones in the Project area. The nearest Alquist-Priolo Special Study Zone, which identify fault areas considered to be of greatest risk in the state, occur primarily in eastern Shasta County. Review of the U.S. Geological Survey's earthquake fault map shows that the nearest earthquake faults are east and west trending faults located approximately 40 miles northeast of the Project area. The USGS maps "inferred" faults that run nearly parallel with Cottonwood Creek, directly south of the study area.

Also see discussion under Question A(ii). Impacts are anticipated to be less than significant.

ii) Strong seismic ground shaking?

According to the *Shasta County and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan*, fault lines located in southern and eastern Shasta County could produce low to moderate ground shaking, which is the principal cause of damage in a seismic event and could catalyze dam failures, landslides, and fires.

In addition, the Shasta County General Plan states that although not as active as some areas of the State, Shasta County is a seismically active region. Earthquake activity has not been a serious hazard in Shasta County's history, nor is it probable that it will become a serious hazard in the future. There has been no significant damage or loss of life due to earthquakes occurring near or in the County. The strongest known earthquake experienced in the Shasta County region was in November of 1998 when an earthquake magnitude of 5.2 occurred three to six miles northwest of Redding. To date, there have been no reported surface ruptures in the immediate Cottonwood area.

According to the U.S. Geological Survey, lifeline systems such as highways, bridges, water and gas pipelines, railroads, and utility services, can experience substantial damage from ground shaking. However, areas within the County have not sustained damages attributed to earthquakes, dam failures, or landslides as far as records have been maintained. Also, Shasta County has never proclaimed a state of emergency due to earthquakes events.

In addition, as stated in Section 16.08.010 of the Shasta County Code of Ordinances, the County has adopted the California Building Standards Code (CBSC). These codes provide standardized building requirements for all new structures and are intended to promote public safety. Compliance with these standards ensures that potential impacts associated with new construction, such as those related to seismic ground shaking or seismic-related ground failure, are less than significant.

iii) Seismic-related ground failure, including liquefaction?

Liquefaction results from an applied stress on the soil, such as earthquake shaking or other sudden change in stress condition, and is primarily associated with saturated, cohesionless soil layers located close to the ground surface. During liquefaction, soils lose strength and ground failure may occur. This is most likely to occur in alluvial (geologically recent, unconsolidated sediments) and stream channel deposits, especially when the groundwater table is high. Soils in the Project area may be underlain with Quaternary deposits which are considered geologically recent and include alluvium or stream channel deposits. However, the Project area is not located on or in close proximity to any known active seismic sources; thus, the potential for liquefaction is less than significant.

iv) Landslides?

According to the *Shasta County and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan*, landslides may occur throughout Shasta County; however, landslides are more prevalent in the eastern and northern portions of the County and are commonly related to the sedimentary and volcanic rocks in these vicinities. The proposed Project would not result in substantial earthwork or vegetation removal that could increase exposure of people or structures to landslides. In addition, topography of the Project area is relatively flat with no potential for landslides. Potential effects from landslides in the Project area would be less than significant.

Question B

Construction of the proposed Project would involve excavation, grading activities, and installation of Project components, which would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events. This could generate accelerated runoff, localized erosion, and sedimentation. In addition, construction activities could expose soil to wind erosion that could adversely affect on-site soils and the re-vegetation potential of the area. According to the Natural Resources Conservation Service, soils mapped within the boundaries of CSA 17 are shown in **Table 4.6-1**. None are shown to have a high potential for erosion.

TABLE 4.6-1
Soil Type and Characteristics

Soil Name	Soil Type	Slope (%)	Erosion Potential	Drainage	Runoff Rate
Anderson series (Ad)	Gravelly sandy loam	0-3	None-slight	Somewhat excessive	Very low
Churn series (CeA)	Gravelly loam	0-3	Low	Well drained	Medium
Churn series (CfA)	Gravelly loam, deep	0-3	Low	Well drained	Slow
Moda Series (MhA)	Loam, shallow	0-5	None-slight	Well drained	Very high
Moda series (MkB)	Loam, shallow	0-5	None-slight	Well drained	Very high
Perkins series (PIA)	Loam, moist	0-3	Low	Well drained	High
Perkins series (PmA)	Gravelly loam	0-3	Low	Well drained	Very slow
Perkins series (PnA)	Gravelly loam, seeped	0-3	Low	Moderately well	High
Perkins series (PoB)	Gravelly loam, moderately deep	3-8	Slight	Moderately well	Very high
Reiff loam (RIA)	Loam	0-3	Low	Well drained	Very low

Sources: U.S. Department of Agriculture, Natural Resources Conservation Service, 2016; U.S. Department of Agriculture, Soil Conservation Service et al., 1974.

Chapter 4 (Grading and Erosion Control) of the Shasta County Development Standards Manual requires effective erosion and sediment control measures to be employed throughout construction. This includes implementation of Best Management Practices (BMPs) to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. Measures that may be implemented to minimize erosion include, but are not limited to, limiting construction to the dry season; use of straw wattles, silt fences, and/or gravel berms to prevent sediment from discharging off-site; and revegetating temporarily disturbed sites upon completion of construction. Because BMPs for erosion and sediment control would be implemented in accordance with existing requirements, the potential for soil erosion and loss of top soil would be less than significant.

Question C

See discussion under Question A(iii) and (iv) and Question B above. According to the Natural Resources Conservation Service (NRCS), soils in the Project area have a low likelihood of becoming unstable, and are not likely to be limited in regard to shallow excavations. Compliance with the provisions of the California Building Standards Code, which has been adopted by Shasta County, will ensure that geologic and soils hazards associated with the proposed Project are less than significant.

Question D

Some soils have a potential to swell when they absorb water and shrink when they dry out. These expansive soils generally contain clays that expand when moisture is absorbed into the crystal structure. According to Chapter 5.1 (Seismic and Geologic Hazards) of the Shasta County General Plan, most of Shasta County is characterized by moderately expansive soils with areas of low expansiveness in the South Central Region and southeastern corner of the County. Small scattered areas of highly expansive soils occur in the mountains of the Western Upland, French Gulch, and North East Shasta County Planning Areas. This hazard is identifiable through standard soil tests.

NRCS data shows that some soils in the Project area have some potential for soil expansion/contraction; however, the CBSC includes common engineering practices that require special design and construction methods to reduce or eliminate potential impacts related to expansive soils. Therefore, impacts would be less than significant.

Question E

The proposed Project does not include the installation or use of alternative wastewater disposal systems. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Completion of the proposed Project and other potential cumulative projects in the region, including growth resulting from build-out of the County General Plan, could result in increased erosion and soil hazards and could expose additional structures and people to seismic hazards. However, these impacts can be fully mitigated with implementation of construction-related erosion control programs and with the incorporation of standard seismic safety measures; therefore, cumulative impacts are less than significant.

MITIGATION

None necessary.

DOCUMENTATION

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U.S. Geological Survey. 2015. Interactive Fault Map. http://earthquake.usgs.gov/hazards/qfaults/map/. Accessed October 2016.

4.7 GREENHOUSE GAS EMISSIONS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

REGULATORY CONTEXT

Shasta County

Shasta County developed a draft Shasta Regional Climate Action Plan (CAP) in August 2012. The plan shows that the County would show a reduction in GHG emissions in the year 2020 below 2008 business as usual (BAU) emissions with the implementation of state and federal reduction measures. The CAP

provides additional GHG reduction measures to further reduce GHG emissions beyond 2020. However, the County has not adopted thresholds of significance for greenhouse gases. According to SCAQMD staff, the District's greenhouse gas policy is to quantify, minimize, and mitigate greenhouse gas emissions, as feasible.

Federal

In August 2016, the Council on Environmental Quality (CEQ) released a final memorandum providing guidance on how project-related Greenhouse Gas Emissions (GHG) and the effects of climate change should be analyzed in National Environmental Policy Act (NEPA) documents. The guidance is applicable to all Federal actions subject to NEPA, including site-specific actions, certain funding of site-specific projects, rulemaking actions, permitting decisions, and land and resource management decisions.

This guidance:

- Recommends that agencies quantify direct and indirect GHG emissions, taking into account available data and GHG quantification tools that are suitable for the proposed agency action;
- Recommends that agencies use projected GHG emissions (to include carbon sequestration implications where applicable) as a proxy for assessing potential climate change effects when preparing a NEPA analysis for a proposed agency action;
- Recommends that where agencies do not quantify projected GHG emissions because tools, methodologies, or data inputs are not reasonably available, agencies should include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available;
- Counsels agencies that the "rule of reason" inherent in NEPA and the CEQ Regulations allows agencies to determine, based on their expertise and experience, how to consider an environmental effect and prepare an analysis based on the available information.

California Executive Order S-3-05

California Executive Order S-03-05 (June 1, 2005) established the goal of reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. CARB's first update to the Climate Change Scoping Plan (2014) set the groundwork to reach post-2020 goals set forth in the Executive Order.

California Executive Order B-30-15

California Executive Order B-30-15 (April 2015) established a goal that by 2030, GHG emissions would be reduced to 40 percent below 1990 levels. This Executive Order also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in Executive Order S-3-05. The Order also required CARB to update its Scoping Plan to address the 2030 goal, and the update is underway.

Assembly Bill 32 (Global Warming Solutions Act of 2006)

Assembly Bill (AB) 32 (September 27, 2006) codifies the requirement of Executive Order (EO) S-3-05, to reduce statewide GHG emissions to year 1990 levels by the year 2020. In accordance with AB 32, CARB prepared the Climate Change Scoping Plan (Scoping Plan) for California, which was approved in 2008 and identifies all strategies necessary to fully achieve the required 2020 emissions reductions. The Scoping Plan calls for an achievable reduction in California's carbon footprint.

CARB, per the Scoping Plan, recommends that local governments utilize a 15 percent GHG reduction below "today's" levels by 2020 to ensure that community emissions match the State's reduction target, where today's levels would be considered 2010 levels or BAU levels. The Scoping Plan relies on existing

technologies and improving energy efficiency to achieve the 30 percent reduction in GHG emission levels by 2020. The Scoping Plan provides the following key recommendations to reduce GHG emissions:

1. Expand and strengthen existing energy efficiency programs as well as building and appliance standards;
2. Achieve a statewide renewable energy mix of 33 percent;
3. Develop a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
4. Establish targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
5. Adopt and implement measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.

In March 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* to define CARB's climate change priorities for the next five years. This update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. CARB is currently preparing a second update to the Scoping Plan to reflect the 2030 target established by Executive Order B-30-15. **Table 4.7-1** provides descriptions of the GHGs identified in California Health and Safety Code Section 38505(g).

TABLE 4.7-1
Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	Carbon dioxide (CO_2) is the primary greenhouse gas emitted through human activities. In 2014, CO_2 accounted for about 80.9 percent of all U.S. greenhouse gas emissions from human activities. The main human activity that emits CO_2 is the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation, although certain industrial processes and land-use changes also emit CO_2.
Methane (CH_4)	Methane (CH_4) is the second most prevalent greenhouse gas emitted in the United States from human activities. Methane is emitted by natural sources such as wetlands, as well as human activities such as the raising of livestock, the production, refinement, transportation and storage of natural gas, methane in landfills as waste decomposes, and in the treatment of wastewater.
Nitrous Oxide (N_2O)	In 2014, nitrous oxide (N_2O) accounted for about 6 percent of all U.S. greenhouse gas emissions from human activities. Nitrous oxide is naturally present in the atmosphere as part of the Earth's nitrogen cycle. Human activities such as agricultural soil management (adding nitrogen to soil through use of synthetic fertilizers), fossil fuel combustion, wastewater management, and industrial processes are also increasing the amount of N_2O in the atmosphere.
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products such as refrigerants, aerosol propellants, solvents, and fire retardants. They are released into the atmosphere through leaks, servicing, and disposal of equipment in which they are used.

Perfluorocarbons (PFCs)	Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F_4). Perfluorocarbons are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors.
Sulfur Hexafluoride (SF_6)	Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used in magnesium processing and as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF_6 produced worldwide.
Nitrogen Trifluoride (NF_3)	Nitrogen trifluoride is a colorless, odorless, nonflammable gas that is highly toxic by inhalation. It is one of several gases used in the manufacture of liquid crystal flat-panel displays, thin-film photovoltaic cells and microcircuits.

Global Warming Potential

All greenhouse gases are not equal and have a unique atmospheric lifetime and heat-trapping potential. For this reason, each GHG is assigned a global warming potential (GWP). Gases with a high GWP, such as HFCs, PFCs, and SF_6, are the most heat absorbent. For example, methane traps over 21 times more heat per molecule than CO_2, and N_2O absorbs 310 times more heat per molecule than CO_2. The atmospheric lifetime of methane is approximately 12 years, whereas perfluoromethane has an atmospheric lifetime of up to 50,000 years. The GWP metric is used to convert all GHGs into CO_2 equivalent (CO_2e) units, which allows policy makers to compare impacts of GHG emissions on an equal basis.

Senate Bill 375

The Sustainable Communities Strategy and Climate Protection Act, Senate Bill (SB) 375 (2008), required each Metropolitan Planning Organization (MPO) to develop a Sustainable Communities Strategy (SCS) showing how its region will integrate transportation, housing, and land use planning to meet the GHG reduction targets established by the State. The Shasta Regional Transportation Agency (SRTA), the designated MPO for Shasta County, prepared the SCS as part of the 2015 Regional Transportation Plan.

SB 375 also required the California Air Resources Board (CARB) to establish targets for the reduction of GHG emissions from cars and light trucks for the years 2020 and 2035. CARB established a regional GHG target for Shasta County of no increase in per capita GHG emissions for the planning year 2020 and no increase in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005.

CEQA Guidelines

Section 15064.4 of the CEQA Guidelines states a lead agency has the discretion to determine whether to use a model or methodology to quantify GHG emissions or to rely on a qualitative or performance-based standards. The GHG analysis should consider 1) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; 2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project and 3) the extent to which the project complies with any regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

DISCUSSION OF IMPACTS

Question A

Because there are no local quantitative GHG thresholds, predicted Project-related GHG emissions were compared to thresholds established by the Bay Area Air Quality Management District and Sacramento Metropolitan Air Quality Management District as shown in **Table 4.7-2**. Both Shasta County and Sacramento County are located in the NSVAB. These thresholds are tied directly to AB 32 and state-wide emissions reduction goals for 2020.

TABLE 4.7-2
Greenhouse Gas Emissions Thresholds

Category	Bay Area AQMD	Sacramento Metropolitan AQMD
Construction	None Recommended	1,100 tons/year CO2e
Stationary Sources (Operation)	10,000 metric tons/year CO2e	10,000 metric tons/year CO2e
Land Use Projects	1,100 metric tons/year CO_2e or 4.6 tons CO_2e/service population/year	1,100 metric tons/year CO2e

Shasta County has determined the more conservative and commonly adopted numeric threshold for land use projects of 1,100 metric tons CO_2e per year for both construction and operational emissions is appropriate for the proposed Project. If emissions exceed 1,100 metric tons of CO_2e per year, then the impact is considered significant.

Project GHG Emissions

GHG emissions for the proposed Project were estimated using the CalEEMod.2016.3.1 software. CalEEMod is a statewide model designed to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod does not directly calculate ozone (O_3) emissions. Instead, the emissions associated with ozone precursors are calculated. Ozone precursors are quantified as ROG and NO_X which, when released, interact in the atmosphere and produce ozone.

Construction

Construction GHG emissions are a one-time release and are typically considered separate from operational emissions because global climate change is inherently a cumulative effect that occurs over a long period of time and is quantified on a yearly basis. Construction of the proposed Project would emit GHG emissions as shown in **Table 4.7-3**, primarily from the combustion of diesel fuel in heavy equipment. Because CO_2e associated with construction of the proposed Project would not exceed the numerical threshold of 1,100 metric tons/year, impacts during construction would be less than significant.

TABLE 4.7-3
Construction-Related Greenhouse Gas Emissions

Project Phase	Maximum Emissions (Total Metric Tons)			
	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Carbon Dioxide Equivalent (CO_2e)
2019	94.30	0.02	0	94.74
2020	119.11	0.03	0	119.85
Total	213.41	0.05	0	214.59

Operational

The treatment of wastewater can produce methane (CH_4), nitrous oxide (N_2O), and carbon dioxide (CO_2) emissions. Anaerobic decomposition in treatment ponds can produce fugitive methane emissions. Nitrous oxide is produced when treated wastewater is discharged to water bodies as effluent. CO_2 emissions are generated from both aerobic and anaerobic processes. However, the proposed Project would not result in an increase in the amount of wastewater treated in a manner that would increase treatment-related GHGs above existing levels.

In addition, the proposed Project would result in a decrease in operational GHG emissions over existing levels for the following reasons:

1. Improvements to the wastewater collection system will reduce I&I, thereby reducing the amount of waste that must be treated and reducing the pump horsepower necessary to treat PWWFs. This leads to an increase in both water and energy efficiency.

2. National Electrical Manufacturers Association (NEMA) Premium motors and generators will be used. NEMA Premium motors and optimized systems reduce electrical consumption, thereby reducing pollution associated with electrical power generation. Based on U.S. Department of Energy data, it is estimated that nationwide, the NEMA Premium motor program will save 5,800 gigawatts of electricity and prevent the release of nearly 80 million metric tons of carbon into the atmosphere over the next ten years. This is equivalent to keeping 16 million cars off the road. (NEMA 2015).

Therefore, there would be no long-term operational impacts from the proposed Project.

Question B

See discussion under Regulatory Context and Question A above. The proposed Project would generate minimal GHG emissions on a temporary basis during construction activities. However, CO_2e is well below the referenced threshold of 1,100 metric tons/year. This threshold is tied directly to AB 32 and state-wide emissions reduction goals for 2020.

In addition, the proposed Project would not result in a permanent increase in vehicle miles travelled (VMT) and, therefore, would be consistent with SB 375. There are no other adopted plans that regulate GHG emissions that would apply to the proposed Project. Therefore, impacts would be less than significant.

CUMULATIVE IMPACTS

GHG emissions and global climate change are, by nature, cumulative impacts. However, the proposed Project would not create significant new sources of GHG emissions or significantly contribute to adverse

impacts associated with cumulative GHG emissions. In addition, the proposed Project would result in the reduction of GHG emissions through replacement of outdated diesel generators, mechanical equipment, and electrical components; therefore, cumulative impacts are considered less than significant.

MITIGATION

None necessary.

DOCUMENTATION

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4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

REGULATORY CONTEXT

Shasta County General Plan: Chapter 5.6 (Hazardous Materials); Chapter 5.4 (Fire Safety and Sheriff Protection).

Objectives

HM-1 Protection of life and property from contact with hazardous materials through site design and land use regulations and storage and transportation standards.

HM-2 Protection of life and property in the event of the accidental release of hazardous materials through emergency preparedness planning.

FS-1 Protect development from wildland and non-wildland fires by requiring new development projects to incorporate effective site and building design measures commensurate with level of potential risk presented by such a hazard and by discouraging and/or preventing development from locating in high risk fire hazard areas.

Policies

FS-a All new land use projects shall conform to the County Fire Safety Standards.

Shasta County Code: Chapter 2.72 (Emergency Services); Chapter 8.08 (Fire Hazard Regulations).

Shasta County Hazardous Materials Area Plan, 2013.

The Area Plan describes the County's pre-incident planning and preparedness for hazardous materials releases and clarifies the roles and responsibilities of federal, state, and local agencies during a hazardous materials incident.

California Code of Regulations, Title 22, Definition of Hazardous Material

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22, Section 66260.10 of the CCR as: *"A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed."*

United States Environmental Protection Agency

The USEPA administers numerous statutes pertaining to human health and the environment. Section 112(r) of the federal CAA (referred to as the USEPA's Risk Management Plan) specifically covers "extremely hazardous materials" which include acutely toxic, extremely flammable, and highly explosive substances. Facilities involved in the use or storage of extremely hazardous materials must implement a Risk Management Plan (RMP), which requires a detailed analysis of potential accident factors and implementation of applicable mitigation measures. The USEPA also regulates the activities of waste generators, transporters, and handlers through the Resource Conservation and Recovery Act (RCRA). Detailed tracking and record keeping of hazardous waste is required from its generation to its final disposal through a process often referred to as the "cradle-to-grave" regulation.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a federal fund to clean up uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through various enforcement mechanisms, the USEPA obtains private-party cleanup orders and recovers costs from financially viable individuals and companies once a response action has been completed. Uncontrolled or abandoned hazardous-waste site identification, monitoring, and response activities in states are coordinated though the state environmental protection or waste management agencies.

Federal Occupational Safety and Health Administration (OSHA)

The Occupational Safety and Health Act (OSHA) regulates the preparation and enforcement of occupational health and safety regulations with the goal of providing employees a safe working environment. OSHA regulations apply to the work place and cover activities ranging from confined space entry to toxic chemical exposure. OSHA regulates workplace exposure to hazardous chemicals and activities through regulations governing work place procedures and equipment.

U.S. Department of Transportation (USDOT)

The United States Department of Transportation (USDOT) regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load labeling procedures, and container design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA, discussed previously.

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the RCRA and the State Hazardous Waste Control Law. Both laws impose "cradle-to-grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

California Occupational Safety and Health Administration (Cal/OSHA)

California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing state workplace safety regulations, including requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which include identifying and labeling hazardous substances, communicating information related to hazardous substances and their handling, and preparing health and safety plans to protect workers and employees at hazardous waste sites.

Regional Water Quality Control Board

The SWRCB and RWQCBs regulate hazardous substances, materials and wastes through a variety of state statutes, including the Porter Cologne Water Quality Control Act and underground storage tank cleanup laws. The Regional Boards regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Any person proposing to discharge waste within any region must file a report of waste discharge with the appropriate regional board. The proposed Project is located within the jurisdiction of the CVRWQCB.

Hazardous Materials Emergency Response/Contingency Plan

Chapter 6.95, §25503, of the California Health & Safety Code (HSC) requires businesses that handle/store a hazardous material or a mixture containing a hazardous material, to establish and implement a Business Plan for Emergency Response (Business Plan).

A Business Plan is required when the amount of hazardous materials exceeds 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases; or exceeds the applicable federal threshold planning quantity (TPQ), for an extremely hazardous substance (EHS) listed in Appendix A, Part 355, Title 40, of the Code of Federal Regulations (CFR); for radioactive materials that are handled in quantities for which an emergency plan is required pursuant to the CFR; or pursuant to any regulations adopted by the state in accordance with those regulations. The Business Plan includes procedures to deal with emergencies following a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment.

California Accidental Release Prevention Program, Risk Management Plan (RMP)

The California Accidental Release Prevention (CalARP) Program requires the preparation of a RMP in compliance with CCR Title 19, Division 2, Chapter 4.5 (California Accidental Release Prevention), and OSHA Process Safety Management (PSM) standards (Section 5189 of Title 8 of CCR, or CFR, Title 29, Section 1910.119). A RMP is required if the amounts of chlorine and sulfur dioxide stored at the WWTP exceed CalARP's established thresholds of 100 pounds of chlorine or 500 pounds of sulfur dioxide.

DISCUSSION OF IMPACTS

Questions A and B

Construction

During construction activities, it is anticipated that limited quantities of hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc. would temporarily be brought into areas where improvements are proposed. Temporary storage units (bulk above-ground storage tanks, 55-gallon drums, sheds/trailers, etc.) would likely be used by various contractors for fueling and maintenance purposes. As with any liquid and solid, the handling and transfer between one container to another has the potential for an accidental release.

Construction contractors would be required to comply with applicable federal and state environmental and workplace safety laws. Additionally, construction contractors are required to implement BMPs for the storage, use, and transportation of hazardous materials. Therefore, impacts during construction would be less than significant.

WWTP Operation

Because the amount of hazardous materials stored at the WWTP exceeds reportable quantities, the County has a Hazardous Materials Business Plan. The Business Plan includes an evacuation plan, emergency contacts, and emergency procedures that are implemented in the event of a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment. A copy of the Business Plan is available at the WWTP for use in an emergency.

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., chlorine, sulfur dioxide). 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 an analysis of the off-site consequence of an accidental release at the facility. These off-site analyses consider sensitive populations including schools, hospitals, long term health care and child care facilities, park and recreation areas, and major commercial, office, and industrial businesses. A list and map of CalARP facilities is made available to emergency responders.

According to the Shasta County Hazardous Materials Area Plan prepared in May 2013, the Shasta County Environmental Health Division (EHD) has been designated as the Certified Unified Program Agency (CUPA) for Shasta County by CalEPA and is the administering agency responsible for implementing the CalARP Program in Shasta County.

Completion of the proposed Project would not result in a permanent increased use of hazardous materials, nor would it increase the potential for a release of hazardous materials to the environment. In addition, all hazardous substances associated with the WWTP would be transported, stored and used according to regulatory requirements and existing procedures for the handling of hazardous materials; therefore, impacts are less than significant.

Question C

The proposed Project includes pipeline replacement within one-quarter mile of West Cottonwood School. As described under Question A above, project construction would involve use of relatively small quantities of materials such as diesel, gasoline, oils, and other engine fluids. However, existing State standards govern the transport, use, and disposal of hazardous materials. Because work would be conducted in accordance with these existing requirements, and potential impacts could occur only during construction activities, impacts would be less than significant.

Question D

According to the Department of Toxic Substances Control EnviroStor database, there are three properties within Shasta County on the Cortese list. The site closest to the study area is Short's Scrap Iron and Metal, Inc., on Girvan Road in the City of Redding, approximately nine miles north of the Project area.

The SWRCB GeoTracker database lists the PG&E Cottonwood Substation at 21212 Trefoil Lane as an active Cleanup Program Site. Pipeline improvements are proposed in proximity to the Substation, as shown in **Figure 6.** In April 2002, a transformer failure at the Substation released approximately 4,300 gallons of mineral oil containing polychlorinated biphenyls to the surrounding pavement, and the liquid flowed into the Spill Prevention Control and Countermeasure retention pond. The response action included removal of oil from the pond and excavation of soil with visible traces of mineral oil (approximately 153 cubic yards). Excavated soil was disposed off-site. On February 25 2016, the CVRWQCB approved an investigation work plan to perform soil and groundwater sampling.

Activities included in the work plan were completed and an Investigation Summary Report prepared by Environmental Resources Management (ERM) was submitted to the CVRWQB on January 4, 2017, for review and concurrence with a "No Further Action" determination.

It is not anticipated additional soil and groundwater sampling will need to be completed by PG&E at the substation, and no conflicts with the planned collection system improvements on Trefoil Lane are anticipated. Therefore, impacts would be less than significant.

Questions E and F

According to the Shasta County General Plan, the Project area is not within an airport land use plan area or in the vicinity of a private airstrip. According to the Federal Aviation Administration, the nearest public airport is Redding Municipal Airport, approximately 6 miles north of the Project area; and the closest private airstrip is Lake California Air Park, a private residential airstrip approximately four miles southeast of the Project area. Therefore, there would be no impact.

Question G

The proposed Project does not involve a use or activity that could interfere with long-term emergency response or emergency evacuation plans for the area. Although a temporary increase in traffic could occur during construction and could interfere with emergency response times, construction-related traffic would be minor due to the overall scale of the construction activities. Further, construction-related traffic would be spread over the duration of the construction schedule and would be minimal on a daily basis.

In addition, pursuant to Shasta County's conditions for issuance of an encroachment permit, which will be obtained by the County's contractor, temporary traffic control during completion of activities that require work in the public right-of-way is required and must adhere to the procedures, methods and guidance given in the current edition of the California Manual on Uniform Traffic Control Devices (California MUTCD).

Controlled one- or two-way traffic must be able to pass at all times, except that temporary suspension of travel through the work area may be enacted when required due to the nature of the work. In such cases, the temporary suspension of travel through the work area may not exceed 10 minutes unless specifically authorized by the encroachment permit. Unimpeded two-way traffic shall be maintained during hours of darkness and at all times when there are no California MUTCD-approved temporary traffic control measures in place.

At the discretion of the County, the contractor may be required to submit a temporary traffic control plan for review and approval by the County prior to issuance of an encroachment permit. The plan must illustrate the location of the work, affected roads and types and locations of temporary traffic control measures (i.e., signs, cones, flaggers, etc.) that will be implemented during the work. These requirements ensure that impacts are less than significant.

Question H

The California Department of Forestry and Fire Protection (CAL FIRE) adopted Fire Hazard Severity Zone (FHSZ) Maps for State Responsibility Areas (SRA) in November 2007 (Updated May 2008). Pursuant to California Government Code §51175-51189, CAL FIRE also recommended FHSZs for Local Responsibility Areas (LRA)

According to CAL FIRE, neither the WWTP nor any of the lift stations are within or adjacent to a FHSZ. None of the collection system improvements are within FHSZs; however, collection system improvements on the west side of Interstate 5 north of Robinson Glen Drive are adjacent to Very High FHSZs. In addition, the Shasta County General Plan indicates that properties on the west side of Interstate 5 at the northerly boundary of CSA 17 are adjacent to High FHSZs.

The proposed Project does not include any development or improvements that would increase the long-term risk of wildland fires or expose people or structures to wildland fires. However, equipment used during construction activities may create sparks, that could ignite dry grass. Also, the use of power tools and/or acetylene torches may increase the risk of wildland fire hazard. Mitigation Measure **MM 4.8.1** will ensure impacts are less than significant.

CUMULATIVE IMPACTS

Hazard-related impacts from the proposed Project are site specific and have the potential to affect only a limited area on a temporary basis during completion of the improvements. Use and storage of hazardous materials during completion of the collection system improvements would take place in a limited area surrounding the Project site(s) and in designated staging areas. Operation of the WWTP would be limited to the existing site. The transport of hazardous chemicals to the WWTP would be regulated in a similar fashion to other cumulative projects that require the transport of hazardous chemicals for site-specific operations.

Completion of the proposed improvements requires implementation of mitigation measures to reduce the potential for adverse impacts associated with hazards and hazardous materials. These measures ensure that impacts are less than significant and that activities do not result in impacts that would be cumulatively considerable.

MITIGATION

MM 4.8.1 During construction, all areas in which work will be completed using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a fire break.

DOCUMENTATION

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=&npl=&funding=&reporttype=CORTESE&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST&federal_superfund=&state_response=&voluntary_cleanup=&school_cleanup=&operating=&post_closure=&non_operating=&corrective_action=&tiered_permit=&evaluation=&spec_prog=&national_priority_list=&senate=&congress=&assembly=&critical_pol=&business_type=&case_type=&display_results=&pub=&hwmp=False&permitted=&pc_permitted=&inspections=&complaints=&ORDERBY=city&next=Next+50. Accessed October 2016.

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4.9 HYDROLOGY AND WATER QUALITY

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	☒
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☒	☐
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?	☐	☐	☐	☒
j. Inundation by seiche, tsunami or mudflow?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 5.2 (Flood Protection); Chapter 6.6 (Water Resources and Water Quality).

Objectives

FL-1 Protection of public health and safety, both on-site and downstream, from flooding through floodplain management which regulates the types of land uses which may locate in the floodplain, prescribes construction designs for floodplain development, and requires mitigation measures for development which would impact the floodplain by increasing runoff quantities.

Policies

FL-c Whenever possible, flood control measures should consist of channel diversions or limited floodplain designs which avoid alteration of creeks and their immediate environs.

FL-h The impacts of new development on the floodplain or other downstream areas due to increased runoff from that development shall be mitigated. In the case of the urban or suburban areas, and in the urban and town centers, the County may require urban or suburban development to pay fees which would be used to make improvements on downstream drainage facilities in order to mitigate the impacts of upstream development.

W-a Sedimentation and erosion from proposed developments shall be minimized through grading and hillside development ordinances and other similar safeguards as adopted and implemented by the County.

Shasta County Code: Section 13.20.020 (County Health Officer – Duties – Protection of Water Supply from Contamination); Section 16.04.140 (Surface Drainage Report); Chapter 12.12 (Grading, Excavating and Filling); Chapter 18.10 (Storm Water Quality Management and Discharge Control).

Clean Water Act (CWA)

The CWA (33 USC §1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality and was established to *"restore and maintain the chemical, physical, and biological integrity of the Nation's waters."* Pertinent sections of the Act are as follows:

1. Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the USEPA publishes a list every two years of impaired bodies of water for which water quality objectives (WQOs) are not attained. Total Maximum Daily Loads (TMDLs) are established for contaminants of concern in order to ensure contamination levels decrease over time.

2. Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the Act.

3. Section 402 establishes the NPDES, a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the SWRCB and is discussed in detail below.

4. Section 404, jointly administered by the USACE and USEPA, establishes a permit program for the discharge of dredged or fill material into waters of the United States.

Federal Anti-Degradation Policy

The federal Anti-Degradation Policy is part of the CWA (Section 303(d)) and is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that includes the following primary provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and (3) where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Safe Drinking Water Act

Under the 1974 Safe Drinking Water Act (SDWA) (Public Law 93-523), most recently amended in 1996, USEPA regulates contaminants of concern to domestic water supply, which are those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are classified as either primary and secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially.

National Pollution Discharge Elimination System

Under Section 402(p) of the CWA, the USEPA established the NPDES to enforce discharge standards for both point source and non-point-source pollution. Dischargers can apply for individual discharge permits, or apply for coverage under the General Permits that cover certain qualified dischargers. Point source discharges include municipal and industrial wastewater, stormwater runoff, combined sewer overflows, sanitary sewer overflows, and municipal separate storm sewer systems. NPDES permits impose limits on discharges based on minimum performance standards or the quality of the receiving water, whichever type is more stringent in a given situation.

NPDES Permit – WWTP

The discharge of wastewater from the WWTP is regulated under NPDES Permit No. CA0081507, titled *Waste Discharge Requirements for Shasta County Service Area No. 17, Cottonwood Wastewater Treatment Plant,* which became effective on October 1, 2016. These regulations are further discussed under Question A below.

NPDES Permit – Stormwater Drainage

Stormwater drainage is regulated under NPDES General Permit No. CAS000004, titled *Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems*. The General Permit effectively prohibits the discharge of materials other than stormwater that are not authorized. Permittees must implement BMPs that reduce pollutants in stormwater runoff to the technology-based standard of Maximum Extent Practicable (MEP) to protect water quality.

NPDES Program – Construction Activity

Discharges from construction sites that disturb one acre or more of total land area are subject to the NPDES permit for *Discharges of Storm Water Runoff associated with Construction Activity* (currently Order No. 2009-009-DWQ). The permitting process requires the development and implementation of an effective SWPPP. The Project applicant must submit a Notice of Intent to the SWRCB to be covered by a NPDES permit and prepare the SWPPP prior to the beginning of construction. The SWPPP must include BMPs to reduce pollutants and any more stringent controls necessary to meet water quality standards. Dischargers must also comply with water quality objectives as defined in the Central Valley Basin Plan. If Basin Plan objectives are exceeded, corrective measures are required.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) provides the basis for water quality regulation within California. The Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. The CVRWQCB implements waste discharge requirements identified in the Report.

State Anti-Degradation Policy

In 1968, as required under the Federal Anti-Degradation Policy, the SWRCB adopted an Anti-Degradation Policy, formally known as the *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Water Board Resolution No. 68-16). The Policy restricts degradation of surface and ground waters and protects water bodies where existing quality is higher than necessary for the protection of beneficial uses.

Under the Anti-Degradation Policy, any actions that can adversely affect water quality in surface and ground waters must be consistent with maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial use of the water, and not result in water quality less than that prescribed in water quality plans and policies.

Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins (Basin Plan)

The CVRWQCB adopted a Water Quality Control Plan, Fourth Edition (revised July 2016), for the Sacramento and San Joaquin River Basins (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. WDRs were adopted in order to attain the beneficial uses listed for the Basin Plan area. Water quality objectives are established for numerous constituents, including bacteria;

chemical constituents such as trace elements, mercury, and methylmercury; pH; dissolved oxygen; pesticides; and salinity.

The Basin Plan identifies Cottonwood Creek as one of the larger tributaries to the Sacramento River. In addition, the Basin Plan states the direct discharge of municipal and industrial wastes (excluding storm water discharges) into the ACID Irrigation Canal in Cottonwood is prohibited. The WDRs in the County's NPDES Permit, discussed in **Section 4.9.a.**, were established to protect beneficial uses of Cottonwood Creek and its downstream receiving waters.

DISCUSSION OF IMPACTS

Questions A and F

See discussion under Question 4.6 B. The proposed Project has the potential to temporarily degrade water quality due to increased erosion during project construction.

The 2016 NPDES Permit for the WWTP incorporates the *Water Quality Control Plan, Fourth Edition (Revised April 2016), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan. The Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The NPDES Permit describes existing beneficial uses applicable to Cottonwood Creek, including domestic and agricultural supply; recreation; warm and cold freshwater habitat; cold migration of aquatic organisms; spawning; reproduction and/or early development; and wildlife habitat. Discharge limits are included to ensure that water quality standards are met. The discharge is routinely monitored to ensure that acceptable thresholds for water quality are not exceeded. Compliance with the NPDES Permit and implementation of BMPs for erosion and sediment control ensure impacts to water quality and waste discharge requirements are less than significant.

In the long term, the proposed Project will improve pH and disinfection byproduct levels and improve overall effluent quality at the WWTP, bringing the County into compliance with CVRWQCB Stipulation for Entry of Order (R5-2014-0580).

Question B

The proposed Project would not require new groundwater supplies for construction or operation. The proposed Project would not increase the amount of impervious surfaces in any area of CSA 17 in a manner that would prevent the infiltration of water into the soil. For these reasons, impacts on groundwater supplies and recharge are less than significant.

Questions C and D

Proposed improvements would occur primarily in previously disturbed areas within the existing footprint of the WWTP, lift stations and other previously disturbed areas within CSA 17. In areas where earth disturbance occurs, properties would be restored to pre-construction contours to ensure work does not alter the topography or existing drainage patterns in any area within CSA 17. Additionally, BMPs for erosion and sediment control would be implemented during project construction. Therefore, impacts would be less than significant.

Question E

See discussion under Questions 4.6 B and 4.9 C. Construction activities would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events, which could generate

accelerated runoff, localized erosion, and sedimentation. However, this is a temporary impact during grading and construction activities. Runoff would not exceed the capacity of stormwater drainage systems, and no long-term impacts to stormwater drainage systems would occur.

Question G

The proposed Project does not involve the construction of any housing; therefore, there would be no impact.

Question H

None of the proposed improvements are located within a 100-year flood hazard area; therefore, there would be no impact.

Question I

According to Chapter 5.3 of the Shasta County General Plan (Dam Failure Inundation), more than 3,000 reservoirs are presently located in Shasta County. Of these, 36 are dams whose design, operation, and maintenance come under the authority of the California Department of Water Resources because of their size. The State Office of Emergency Services has further identified those jurisdictional dams whose failure may cause injury or loss of life. The General Plan identifies thirteen whose failure could result in injury or loss of life in the South Central Region. However, there are no dams, levees or special flood hazard areas within the boundaries of CSA 17. Therefore, impacts would be less than significant.

Question J

A seiche is a large wave generated in an enclosed body of water in response to ground shaking. A tsunami is a wave generated in a large body of water (typically the ocean) by fault displacement or major ground movement. The Project area is located 100 miles east of the Pacific Ocean and approximately 20 miles south of Lake Shasta and is not at risk for inundation by tsunami or seiche.

A mudflow is a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity. According to Chapter 5.1 of the Shasta County General Plan (Seismic and Geologic Hazards), landslides occur throughout Shasta County, although they have not been considered a major problem. Due to the lack of hillsides in the area, there is no risk of mudflow. Therefore, there would be no impact.

CUMULATIVE IMPACTS

All projects in Shasta County are required to comply with the State Water Board General Construction NPDES permit and/or the County's regulations for stormwater runoff, and erosion and sediment control. These regulations are intended to reduce the potential for cumulative impacts to water quality during construction. Cumulatively considerable projects would be subject to subsequent environmental review. Mitigation measures for the proposed Project, in combination with compliance with County, State, and federal regulations, would reduce cumulatively considerable impacts to a less than significant level.

MITIGATION

None necessary.

DOCUMENTATION

Central Valley Regional Water Quality Control Board. 2016. Order R5-2016-0066; NPDES No. CA0081507. Waste Discharge Requirements for Shasta County Service Area No. 17, Cottonwood Wastewater Treatment Plant, Shasta County.

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Federal Emergency Management Agency. National Flood Hazard Map (Panel 06089C1945G, effective March 17, 2011; Panel 06103C0070H, effective September 29, 2011). http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30. Accessed October 2016.

Shasta County. 2011. *Shasta County and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan*. http://www.co.shasta.ca.us/docs/Resource_Management/generalplanupdate/HazardMitigationPlan.pdf?sfvrsn=0. Accessed January 2017.

_____. 2004. Shasta County General Plan, Chapter 5.3 (Dam Failure Inundation) http://www.co.shasta.ca.us/docs/Resource_Management/docs/53damf.pdf?sfvrsn=0. Accessed October 2016.

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PACE Engineering. January 2017. Wastewater Collection and Treatment Improvement Project: Planning Grant Project Report for Shasta County Service Area 17.

4.10 LAND USE AND PLANNING

Would the project:

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

REGULATORY CONTEXT

Shasta County General Plan

The Shasta County General Plan includes objectives and policies designed for the purpose of avoiding or minimizing environmental impacts to the natural environment. The General Plan recognizes major factors of the natural environment are landforms, water, climate, minerals, soils, vegetation and wildlife.

Shasta County Code

The Shasta County Code implements the County's General Plan. The purpose of the land use and planning provisions of the Code (Title 17, Zoning) is to provide for the orderly and efficient application of regulations and to implement and supplement related laws of the state of California, including but not limited to the California Environmental Quality Act (CEQA).

DISCUSSION OF IMPACTS

Question A

Land use impacts are considered significant if a proposed project would physically divide an existing community (a physical change that interrupts the cohesiveness of the neighborhood). The proposed Project would not create a barrier for existing or planned development and there would be no impact.

Question B

As discussed in each resource section of this Initial Study, the proposed Project is consistent with applicable Policies and Objectives of the Shasta County General Plan and regulations of the regulatory agencies identified in Section 3.6 of this Initial Study. Where necessary, mitigation measures are included to reduce impacts to less than significant levels. Therefore, the proposed Project would not conflict with any plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

Question C

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the Federal Endangered Species Act (FESA). A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. There are no HCPs, NCCPs or other habitat conservation plans in Shasta County. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area, including population growth resulting from build-out of the County's General Plan, would be developed in accordance with local and regional planning documents. Thus, cumulative impacts associated with land use compatibility are expected be less than significant. In addition, the proposed Project is consistent with the General Plan land use designations, goals, and policies, and would not contribute to the potential for adverse cumulative land use effects.

MITIGATION

No additional mitigation necessary.

DOCUMENTATION

California Department of Fish and Wildlife. 2014. California Regional Conservation Plans Map. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline. Accessed November 2016.

Shasta County. 2004. Shasta County General Plan, Chapter 6.7 (Fish and Wildlife Habitat). http://www.co.shasta.ca.us/docs/Resource_Management/docs/67fish.pdf?sfvrsn=0. Accessed November 2016.

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_____. 2016. Shasta County Code of Ordinances. Title 17, Zoning. https://www.municode.com/library/ca/shasta_county/codes/code_of_ordinances?nodeId=CD_ORD_TIT17ZO. Accessed October 2016.

4.11 MINERAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 6.4 (Minerals)

Objective MR-1 To identify, conserve, develop, and utilize Shasta County mineral resources while protecting mineral resource sites and access routes from potential conflicts with incompatible land uses.

Shasta County Code Title 18 (Environment): Chapter 18.04 (Surface Mining and Reclamation).

Surface Mining and Reclamation Act of 1975 (SMARA)

The Surface Mining and Reclamation Act (SMARA), Chapter 9, Division 2 of the Public Resources Code (PRC), requires the State Mining and Geology Board to adopt State policy for the reclamation of mined lands and the conservation of mineral resources. PRC §2710-2796 provide a comprehensive surface mining and reclamation policy to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. Mineral Resource Zones are classified according to the presence of significant mineral deposits and indicate the potential for an area to contain significant mineral resources as follows:

MRZ-1: Areas with little or no likelihood for presence of significant mineral resources.

MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant resources are present. Lands classified MRZ-2a contain discovered mineral deposits and are of prime importance due to known economic mineral deposits.

MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present or are deposits that presently are sub-economic. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.

MRZ-3a: Areas containing known mineral occurrences of undetermined significance. Further exploration within these areas could result in the reclassification of specific localities as MRZ-2a or MRZ-2b.

MRZ-3b: Areas containing inferred mineral occurrences of undetermined significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas as MRZ-3a or specific localities as MRZ-2a or MRZ-2b.

MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

DISCUSSION OF IMPACTS

Questions A and B

A mineral resource is land on which known deposits of commercially viable mineral or aggregate deposits exist. The designation is applied to sites determined by the California Geological Survey as being a resource of regional significance, and is intended to help maintain any mining operations and protect them from encroachment of incompatible uses.

The Shasta County General Plan (Chapter 6.3, Minerals), recognizes that mining is important to the economy of Shasta County and mineral resources are known to occur in local creeks, including Cottonwood Creek. According to the California Geological Survey, several areas along the southerly boundary of CSA 17 adjacent to Cottonwood Creek are included in Mineral Resource Zone (MRZ)-2a and MRZ-2b designations.

The County General Plan includes Mining Resource Buffer (MRB) land use designations, which are combined with the principal land use designation to allow for compatible land uses while protecting the potential for mineral resource development. However, there are no MRB designations within the boundaries of CSA 17. In addition, there are no areas zoned for mining within the boundaries of CSA 17. Furthermore, the proposed Project would not result in a change in land use patterns and would have no impact on the on-site or off-site availability of mineral resources. Therefore, there would be no impact on mineral resources.

CUMULATIVE IMPACTS

As documented herein, the proposed Project would not result in impacts to mineral resources; therefore, the proposed Project would not contribute to adverse impacts associated with cumulative impacts to mineral resources. This impact is considered less-than-significant.

MITIGATION

None necessary

DOCUMENTATION

Department of Conservation, California Geological Survey. 2007. SMARA Mineral Land Classification Maps. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_97-03/OFR_97-03_Plate3.pdf. Accessed November 2016.

Shasta County. 2004. Shasta County General Plan, Chapter 6.3 (Minerals). http://www.co.shasta.ca.us/docs/Resource_Management/docs/63minerals.pdf?sfvrsn=0. Accessed October 2016.

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4.12 NOISE

Would the project result in:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☐	☒	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e. For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 5.5 (Noise)

Objectives

N-1 To protect County residents from the harmful and annoying effects of exposure to excessive noise.

N-2 To protect the economic base of the County by preventing incompatible land uses from encroaching upon existing or programmed land uses likely to create significant noise impacts.

N-3 To encourage the application of state-of-the-art land use planning methodologies in the area of managing and minimizing potential noise conflicts.

Policies

N-b Noise likely to be created by a proposed non-transportation land use shall be mitigated so as not to exceed the noise level standards of Table N–IV as measured immediately within the property line of adjacent lands designated as noise-sensitive. Noise generated from existing

or proposed agricultural operations conducted in accordance with generally accepted agricultural industry standards and practices is not required to be mitigated.

N-i Where noise mitigation measures are required to achieve the standards of Tables N-IV and N-VI, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving compliance with the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

N-l The use of site planning and building materials/design as primary methods of noise attenuation is encouraged. Recommended techniques include, but are not limited to, such items as:

Site Planning

- Use of building setbacks and dedication of noise easements to increase the distance between the noise source and the receiver.
- Locating uses and orienting buildings that are compatible with higher noise levels adjacent to noise-generators or in clusters as a means to shield more noise-sensitive areas and uses.
- Using noise-tolerant structures, such as garages or carports, to shield noise-sensitive areas.
- Clustering office, commercial, or multiple-family residential structures to reduce interior open-space noise levels.
- Locate automobile and truck access to commercial or industrial land uses abutting residential parcels at the maximum practical distance from the residential parcels.
- Avoid the siting of commercial and industrial loading and shipping facilities adjacent to residential parcels whenever practicable.

DISCUSSION OF IMPACTS

Questions A, C, and D

The General Plan Noise Element includes noise level performance standards for new projects affected by or including non-transportation sources as follows:

Noise Level Descriptor:	L_{eq}, or energy-equivalent noise level (hourly average)
Daytime (7:00 AM – 10:00 PM):	55 decibels
Nighttime (10:00 PM – 7:00 AM):	50 decibels

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure and the types of activities typically involved. The General Plan identifies residential areas, parks, schools, churches, hospitals and long-term care facilities as noise sensitive areas and uses. A sensitive receptor is defined as any living entity or aggregate of entities whose comfort, health, or well-being could be impaired or endangered by the existence of noise. The General Plan acknowledges public service facilities that have the potential for producing objectionable noise levels at nearby noise-sensitive uses include, but are not limited to, pump stations, emergency generators, and lift stations.

Construction

Construction of the proposed Project would generate noise and may temporarily increase noise levels at nearby sensitive land uses. Most areas in which collection system improvements will occur are residential. Areas near the Cottonwood (Main) Lift Station are commercial and light industrial. Areas

on Gas Point Road on the west side of I-5 are adjacent to West Cottonwood School and a Community Park. Areas near the WWTP include industrial and low density single-family residential uses. (See **Figure 4**).

Noise impacts resulting from construction would depend on: 1) the noise generated by various pieces of construction equipment; 2) the timing and duration of noise-generating activities; 3) the distance between construction noise sources and noise sensitive receptors; and 4) existing ambient noise levels.

Construction equipment anticipated to be used for project construction typically generates maximum noise levels ranging from 80 to 89 decibels (dBA) at a distance of 50 feet. Noise from construction activities generally attenuates at a rate of 6 dBA per doubling of distance, assuming the intervening ground is a smooth surface without much vegetation. At an attenuation rate of 6 dBA, 80 to 89 dBA, noise levels would drop to 74 to 83 dBA at a distance of 100 feet and 68 to 77 dBA at a distance of 200 feet. **Table 4.12-1** shows the approximate noise levels of common construction equipment that may be used during construction of the Proposed Project

TABLE 4.12-1
Examples of Construction Equipment
Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Loader	85
Paver	89
Pump	76
Saw	76
Truck	88

Source: Federal Transit Administration 2006:12-6, adapted by ENPLAN 2016

Shasta County does not have a noise ordinance or General Plan policy for noise impacts specifically associated with construction activities; however, **Mitigation Measures MM 4.12.1 – 4.12.4** ensure temporary impacts are less than significant.

Operational

WWTP

Improvements at the WWTP with the potential to increase noise levels include operation of a new biological selector with mixers, complete with mixed liquor recycle pump station; operation of an additional return activated sludge (RAS) pump; and replacement of an old diesel standby generator with a new generator sized to meet WWTP upgrades. However, these improvements are not anticipated to result in significant noise impacts.

Cottonwood (Main) Lift Station: New pumps, motors, and controls will be installed, along with a float backup system. An old diesel generator will be replaced with a new generator.

Black Lane Lift Station: All mechanical equipment will be replaced, including existing guide rails, pumps, and motors. Both existing 150 GPM pumps will be replaced with 230 GPM pumps for an effective lift station capacity of 0.33 MGD. A generator will be installed with an automatic transfer switch in case of power outages, and alarms will be installed.

Quail Lane Lift Station: All mechanical equipment will be replaced including pump guide rails, pumps, motors, electrical, and controls. A generator will be installed with an automatic transfer switch in case of power outages, and alarms will be installed.

Completion of the proposed improvements would not result in a perceptible permanent increase in noise levels. Periodic maintenance of the various project components may result in temporary sources of noise, but it will be the same as what currently occurs within the boundaries of CSA 17. The generators and alarms would be used only in the event of an emergency or power outage. In some cases, noise levels will decrease because mechanical equipment, pumps, and generators that are over 20 years old will be replaced with components that generate less noise. Therefore, impacts would be less than significant.

Question B

Excessive vibration during construction occurs only when high vibration equipment (i.e., compactors, large dozers, or pile drivers) are operated. The proposed Project may require limited use of equipment with high vibration levels during construction. Use of this equipment, however, would be infrequent, and **Mitigation Measure MM 4.12.1** would limit construction activities to daytime hours. Long-term operation of the proposed Project would not create groundborne vibration. Therefore, impacts would be less than significant.

Questions E and F

According to the Shasta County General Plan, the Project area is not within an airport land use plan area or in the vicinity of a private airstrip. According to the Federal Aviation Administration, the nearest public airport is Redding Municipal Airport, approximately six miles north of the Project area; and the closest private airstrip is Lake California Air Park, a private residential airstrip approximately four miles southeast of the Project area. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Operation of the proposed Project would require maintenance work at the WWTP, lift stations and other areas where sewer lines are located; however, this would be conducted in the same manner as current system maintenance, and an increase in ambient noise levels would not occur.

The proposed Project would result in a temporary increase in daytime noise levels during construction activities. Other projects within the study area would also contribute to increases in noise levels during construction, and in some cases construction periods may overlap. However, all construction would take place in compliance with applicable policies governing noise levels. Therefore, cumulative noise impacts are considered less than significant.

MITIGATION

MM 4.12.1 Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7:00 A.M. and 7:00 P.M., Monday through Friday, and 8:00 A.M. and 5:00 P.M., on Saturdays. Construction activities shall be prohibited on Sundays and federal/state recognized holidays.

MM 4.12.2 Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

MM 4.12.3 When not in use, motorized construction equipment shall not be left idling for more than five minutes.

MM 4.12.4 Stationary equipment (generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses. If necessary, noise attenuation measures sufficient to achieve compliance with the Shasta County General Plan Noise Element shall be implemented.

DOCUMENTATION

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Washington, DC: Office of Planning and Environment. http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed October 2016.

Shasta County. 2004. Shasta County General Plan, Chapter 5.5 (Noise). http://www.co.shasta.ca.us/docs/Resource_Management/docs/55noise.pdf?sfvrsn=0. Accessed October 2016.

_____. Shasta County Department of Public Works. Personal communications with ENPLAN. October - December 2016.

4.13 POPULATION AND HOUSING

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION OF IMPACTS

Questions A and C

Proposed improvements are for the purpose of repairing aging infrastructure and complying with CVRWQCB requirements and are not growth related. No expansion of the WWTP is proposed that would increase its original design capacity of 0.43 MGD. Therefore, the proposed Project would not induce substantial population growth in the area, either directly or indirectly, and there would be no impact.

Question B

No structures would be demolished to accommodate the proposed improvements; therefore, there would be no impact.

CUMULATIVE IMPACTS

Cumulative growth in the area has been addressed in the County's General Plan. Because the purpose of the proposed Project is to repair aging infrastructure and attain compliance with CVRWQCB regulations, it would not increase growth beyond that projected in the General Plan; therefore, no cumulative impacts would occur.

MITIGATION

None necessary

DOCUMENTATION

PACE Engineering. January 2017. Wastewater Collection and Treatment Improvement Project: Planning Grant Project Report for Shasta County Service Area 17.

Shasta County. 2011. Shasta County General Plan, Housing Element. http://www.co.shasta.ca.us/index/drm_index/planning_index/housing_element.aspx. Accessed November 2016.

4.14 PUBLIC SERVICES

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

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	☒
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

DISCUSSION OF IMPACTS

Questions A and B

The proposed Project includes improvements to the WWTP and collection system and would not result in the need for additional long-term fire protection services. In the event of an emergency during construction activities, fire protection services would be provided by the Cottonwood Fire Protection District. No new facilities related to fire protection would need to be constructed. Therefore, there would be no impact. The proposed Project would not result, either directly or indirectly, in an increase in population or new commercial development requiring additional law enforcement services. Therefore, there would be no impact.

Questions C and D

The proposed Project would not result, either directly or indirectly, in an increase in population requiring additional schools or parks, or the expansion of existing schools or parks. Therefore, there would be no impact.

Question E

The proposed Project would not result, either directly or indirectly, in an increase in population or new commercial development that would result in a permanent increase in traffic that would require roadway improvements. No other public facilities would be impacted.

CUMULATIVE IMPACTS

As described above, the proposed Project would not increase the demand for long-term public services; therefore, no cumulatively considerable impacts would occur.

MITIGATION

None necessary

DOCUMENTATION

PACE Engineering. January 2017. Wastewater Collection and Treatment Improvement Project: Planning Grant Project Report for Shasta County Service Area 17.

4.15 RECREATION

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION OF IMPACTS

Questions A and B

The proposed Project does not include the construction of houses or businesses that would increase the number of residents or employees in the area. Therefore, the proposed Project would not result in an increased demand for recreational facilities.

CUMULATIVE IMPACTS

The proposed Project would not impact any existing recreational facilities. Therefore, it would not contribute toward cumulative impacts to recreational facilities.

MITIGATION

None necessary

DOCUMENTATION

Shasta County Department of Public Works. Personal communications with ENPLAN. November 2016.

4.16 TRANSPORTATION/TRAFFIC

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e. Result in inadequate emergency access?	☐	☐	☒	☐
f. Result in inadequate parking capacity?	☐	☐	☐	☒
g. Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 7.4 (Circulation).

Objective C-6 Formulate and adopt circulation design standards that:

- are uniformly applied on a Countywide basis according to development type;
- respond to public safety and health considerations, especially vehicle and pedestrian safety, emergency access, evacuation routes, and the existing noise environments of communities;
- address all modes of transportation; and
- will not result in substantial deterioration of air quality.

DISCUSSION OF IMPACTS

Questions A and B

The proposed improvements would not, either directly or indirectly, result in an increase in housing or commercial/industrial development that would cause an increase in traffic in the area. As such, implementation of the proposed Project would not substantially affect the surrounding transportation network in the long term, and would not conflict with existing plans, ordinances, policies, or programs.

Short-term increases in traffic volume on the local road network would occur during construction; however, as discussed in Question 4.8 G, temporary traffic control is required and must adhere to the procedures, methods, and guidance given in the current edition of the California Manual on Uniform Traffic Control Devices (California MUTCD). Impacts would be less than significant.

Question C

The proposed Project does not involve any aviation-related uses and would not increase the need for air travel that would result in aviation-related safety risks. Therefore, there would be no impact.

Questions D and E

See Question 4.8 G for a discussion of potential construction-related impacts. The proposed Project would not result in a permanent alteration of public access routes or an increase in hazards due to transportation design features or incompatible uses. Emergency access would be maintained throughout construction. Therefore, impacts would be less than significant.

Question F

The proposed Project consists of improvements to the WWTP and collection system and would not result in the need for additional long-term parking. Parking for construction equipment and employees would be provided throughout construction at designated staging areas to ensure impacts are less than significant:

Question G

The proposed Project does not include any components that would remove or change the location of any sidewalk, bicycle lane, ride sharing or public transportation facility. There are no adopted policies, plans or programs related to alternative transportation that would apply to the proposed Project. Therefore, there would be no impact.

CUMULATIVE IMPACTS

The proposed Project would not result in a permanent increase in traffic. Traffic impacts would occur temporarily during construction activities. However, no significant concurrent construction activities near the roadway network are anticipated. Therefore, no cumulative impacts would occur.

MITIGATION

None necessary

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan, Chapter 7.4 (Circulation). http://www.co.shasta.ca.us/docs/Resource_Management/docs/74circ.pdf?sfvrsn=0. Accessed October 2016.

4.17 TRIBAL CULTURAL RESOURCES

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

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. A resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC §5020.1(k)?	☐	☒	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1? In applying the criteria set forth in subdivision (c) of PRC §5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

REGULATORY CONTEXT

Assembly Bill 52 (2014)

Public Resources Code §21084.2 establishes that *"a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."* In order to determine whether a project may have such an effect, a lead agency is required to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if:

1. The California Native American tribe requested to the lead agency, in writing, to be informed through formal notification of proposed projects in the geographical area; and

2. The tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation.

The consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Pursuant to PRC §21084.3, lead agencies must, when feasible, avoid damaging effects to a tribal cultural resource and must consider measures to mitigate any identified impact. PRC Section 20184.3 (b)(2) provides the following examples of mitigation measures that lead agencies may consider:

1. Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

2. Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

    a. Protecting the cultural character and integrity of the resource

b. Protecting the traditional use of the resource

c. Protecting the confidentiality of the resource

3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places

4. Protecting the resource

Definition of Tribal Cultural Resource

PRC §21074 states:

(a) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of §5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of §5024.1. In applying the criteria set forth in subdivision (c) of §5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in §21084.1, a unique archaeological resource as defined in subdivision (g) of §21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of §21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

DISCUSSION OF IMPACTS

Questions A and B

See discussion under Question 4.5 A. Although no California Native American tribe submitted a written request to the County for formal consultation pursuant to AB 52, ENPLAN contacted the NAHC and several Native American representatives and organization and requested information related to cultural resources that could be impacted by the proposed Project. Consultation with the NAHC and local Native American community did not reveal any known sacred sites or cultural resources in the study area. In addition, Shasta County, as lead agency, has not identified any resources in the Project area that would be significant to a California Native American tribe. **Mitigation Measures MM 4.5.2 and 4.5.3** ensure impacts are less than significant.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area have the potential to impact tribal cultural resources. Tribal cultural resources are afforded special legal protections designed to reduce the cumulative effects of development. Potential cumulative projects and the proposed Project would be subject to the protection of tribal cultural resources afforded by Public Resources Code §21084.3. Given the non-renewable nature of tribal cultural resources, any impact to tribal cultural sites, features, places, landscapes or objects could be

considered cumulatively considerable. As discussed above, no cultural resources of significance to a California Native American tribe were identified within the Project area; therefore, the proposed Project would have less than significant cumulative impacts to tribal cultural resources.

MITIGATION

Implementation of **Mitigation Measures MM 4.5.2 and 4.5.3.**

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan, Chapter 6.10 (Heritage Resources). http://www.co.shasta.ca.us/docs/Resource_Management/docs/6_10heritage.pdf?sfvrsn=0. Accessed November 2016.

4.18 UTILITIES AND SERVICE SYSTEMS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g. Comply with federal, state and local statutes and regulations related to solid waste?	☐	☐	☐	☒

REGULATORY CONTEXT

Shasta County General Plan: Chapter 7.5 (Public Facilities).

Objectives

PF-1 Development of a comprehensive, long-term plan for wastewater treatment within the County, coordinated with community development objectives and designed to provide this service in a manner making the most effective use of public resources.

PF-3 Develop the Shasta County solid waste program in accordance with the adopted management plans.

DISCUSSION OF IMPACTS

Question A

See discussion under Question 4.9 A. Wastewater treatment requirements for the WWTP are regulated by NPDES Permit CA0081507, which became effective on October 1, 2016. Compliance with these regulations ensures impacts are less than significant. The proposed Project also addresses WDR violations related to pH, dichlorobromomethane and total coliform organisms and brings the County into compliance with CVRWQCB Stipulation for Entry of Order (R5-2014-0580).

Question B

The proposed Project includes improvements to the WWTP and collection system to replace aging infrastructure and comply with CVRWQCB requirements. The proposed Project does not include the construction of new facilities other than the improvements discussed in this Initial Study. Therefore, there would be no impact.

Question C

Completion of the proposed Project would not require the construction or expansion of storm water drainage facilities. Therefore, there would be no impact.

Questions D and E

Relatively small amounts of water would be used during project construction, but this is a temporary impact. As discussed under Question 4.13 A, the proposed Project would not induce population growth either directly or indirectly that would require additional long-term water supplies or increase the demand for wastewater treatment. Therefore, impacts would be less than significant.

Question F

The proposed Project would generate a minimal amount of waste from construction-related activities. This waste would be disposed of at the West Central Landfill, a regional solid waste disposal facility for the disposal of nonhazardous, municipal solid waste. The landfill is located approximately 12 miles southwest of Redding on property owned by the County of Shasta.

According to the Final Environmental Impact Report prepared for the operation of the landfill (August 2003), the West Central Landfill has a design capacity of 6,605,722 cubic yards and is expected to reach its permitted capacity in 2025. This landfill has sufficient permitted capacity to accommodate construction-related waste generated by the proposed Project. Construction contractors would be required to comply with federal, State, and local statutes and regulations relating to solid waste.

In addition, the proposed improvements to the WWTP would not increase solid waste generation above existing levels in the long term. Therefore, impacts would be less than significant.

Question G

See discussion under Question F above. The use, disposal, storage, and transportation of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes must be disposed of in a manner approved by the CVRWQCB and must comply with Consolidated Regulations for Treatment, Storage, processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, §20005, *et seq.* In addition, the disposal of biosolids must comply with existing federal

and state laws and regulations, including permitting requirements and technical standards included in 40 C.F.R. part 503. Compliance with these regulations will ensure there are no impacts.

CUMULATIVE IMPACTS

Utility and service systems in the area would not experience a permanent increase in demand for services over existing conditions. Therefore, the proposed Project would not contribute to cumulative impacts to utility and service systems.

MITIGATION

None necessary

DOCUMENTATION

California Regional Water Quality Control Board, Central Valley Region. 2016. Waste Discharge Requirements for Shasta County Service Area No. 17, Cottonwood Wastewater Treatment Plant, Shasta County (Order R5-2016-066; NPDES No. CA0081507). http://www.swrcb.ca.gov/rwqcb5/board_decisions/adopted_orders/shasta/r5-2016-0066.pdf. Accessed November 2016.

Shasta County. 2003. Final Environmental Impact Report, Operation of the Richard W. Curry West Central Landfill, Shasta County Department of Public Works. August 2003. http://www.co.shasta.ca.us/docs/Public_Works/docs/WCL-FinalEnvironRpt.pdf?sfvrsn=0. Accessed November 2016.

_____. 2004. Shasta County General Plan, Chapter 7.5 (Public Facilities). http://www.co.shasta.ca.us/docs/Resource_Management/docs/75pubfac.pdf?sfvrsn=0. Accessed November 2016.

4.19 MANDATORY FINDINGS OF SIGNIFICANCE

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.	☐	☒	☐	☐
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION OF IMPACTS

Question A

As discussed in each environmental resource section above, the proposed Project could result in possible effects to special-status wildlife species, loss of riparian habitat, disturbance of nesting migratory birds, impacts to cultural resources and tribal cultural resources, temporarily increased risk of wildfires, temporarily increased air emissions, and temporarily increased noise levels. However, mitigation measures are included to reduce all potential impacts to a less than significant level.

Question B

The potential cumulative impacts of the proposed Project have been analyzed within the discussion of each environmental resource area above. Mitigation measures are included to reduce all potential impacts to a less than significant level.

Question C

Environmental impacts that may have an adverse effect on human beings, either directly or indirectly, are analyzed in each environmental resource section above. Mitigation measures are included to reduce all potential impacts to a less than significant level.

SECTION 5.0 LIST OF PREPARERS

ENPLAN

Donald Burk ..... Environmental Services Manager
Carla L. Thompson, AICP ..... Senior Environmental Planner
Lindsay Kantor ..... Environmental Planner
John Luper ..... Environmental Scientist
Darrin Doyle ..... Environmental Scientist
Jessica McCoy ..... Archaeologist
Heidi Shaw ..... Archaeologist
Teresa Baarts ..... Production Coordinator

County of Shasta

Charleen Beard, P.E., Associate Engineer

PACE Engineering

Laurie McCollum, P.E., Associate Engineer

Appendix A .....

- CalEEMod.2016.3.1 Emissions Reports

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Cottonwood Sewer Project

Shasta County AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.64	27,878.00	0
Parking Lot	0.00	Acre	0.34	14,810.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - u

Land Use - Per PACE, disturbance ac est at 0.64 ac. Includes 0.45 acr for pipeline install; 0.1 ac at the WWTP; and five staging areas measuring 20' x 40' -- 0.09 ac (4,000 sq.ft.). Of the 0.64 ac, approx. 0.34 acres will be repaved (0.10 ac at WWTP; 0.24 acre for pipe install).

Construction Phase - Per PACE, e-mail dated 12-06-16.

Off-road Equipment -

Grading - Per PACE, 2,140 CY imported; 2,900 CY exported (e-mail 10-4-16).

Energy Use -

Construction Off-road Equipment Mitigation -

Operational Off-Road Equipment - i

Stationary Sources - Emergency Generators and Fire Pumps - Per PACE e-mail 12-19-16.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	100.00	217.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	1.00	14.00
tblConstructionPhase	PhaseEndDate	12/23/2019	7/30/2020
tblConstructionPhase	PhaseEndDate	8/5/2019	10/1/2019
tblConstructionPhase	PhaseEndDate	12/30/2019	9/3/2020
tblConstructionPhase	PhaseEndDate	8/1/2019	8/20/2019
tblConstructionPhase	PhaseStartDate	8/6/2019	10/2/2019
tblConstructionPhase	PhaseStartDate	8/2/2019	8/21/2019
tblConstructionPhase	PhaseStartDate	12/24/2019	7/31/2020
tblGrading	AcresOfGrading	0.00	0.55
tblGrading	AcresOfGrading	7.00	0.55
tblGrading	MaterialExported	0.00	2,900.00
tblGrading	MaterialImported	0.00	2,140.00

tblLandUse	BuildingSpaceSquareFeet	0.00	27,878.00
tblLandUse	BuildingSpaceSquareFeet	0.00	14,810.00
tblLandUse	LandUseSquareFeet	0.00	27,878.00
tblLandUse	LandUseSquareFeet	0.00	14,810.00
tblLandUse	LotAcreage	0.00	0.64
tblLandUse	LotAcreage	0.00	0.34
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	0.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	0.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	0.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	15.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	25.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00

2.0 Emissions Summary

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	0.0594	0.6405	0.4501	1.0300e-003	0.0282	0.0311	0.0593	0.0107	0.0289	0.0395	0.0000	94.2994	94.2994	0.0178	0.0000	94.7445
2020	0.0870	0.8334	0.7369	1.3500e-003	0.0225	0.0451	0.0676	6.0600e-003	0.0416	0.0476	0.0000	119.1101	119.1101	0.0298	0.0000	119.8547
Maximum	**0.0870**	**0.8334**	**0.7369**	**1.3500e-003**	**0.0282**	**0.0451**	**0.0676**	**0.0107**	**0.0416**	**0.0476**	**0.0000**	**119.1101**	**119.1101**	**0.0298**	**0.0000**	**119.8547**

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	0.0594	0.6405	0.4501	1.0300e-003	0.0208	0.0311	0.0518	6.8000e-003	0.0289	0.0357	0.0000	94.2993	94.2993	0.0178	0.0000	94.7444
2020	0.0870	0.8334	0.7369	1.3500e-003	0.0225	0.0451	0.0676	6.0600e-003	0.0416	0.0476	0.0000	119.1100	119.1100	0.0298	0.0000	119.8546
Maximum	**0.0870**	**0.8334**	**0.7369**	**1.3500e-003**	**0.0225**	**0.0451**	**0.0676**	**6.8000e-003**	**0.0416**	**0.0476**	**0.0000**	**119.1100**	**119.1100**	**0.0298**	**0.0000**	**119.8546**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**14.73**	**0.00**	**5.89**	**23.09**	**0.00**	**4.43**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2019	10-31-2019	0.4391	0.4391
2	11-1-2019	1-31-2020	0.3797	0.3797
3	2-1-2020	4-30-2020	0.3461	0.3461
4	5-1-2020	7-31-2020	0.3525	0.3525
5	8-1-2020	9-30-2020	0.1000	0.1000
		Highest	0.4391	0.4391

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	0.1427	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
Energy	3.1500e-003	0.0286	0.0241	1.7000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	107.8674	107.8674	4.0700e-003	1.2900e-003	108.3531
Mobile	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
Stationary	3.9000e-004	2.0500e-003	1.7000e-003	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	0.1828	0.1828	3.0000e-005	0.0000	0.1834
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1462**	**0.0307**	**0.0258**	**1.7000e-004**	**0.0000**	**2.3700e-003**	**2.3700e-003**	**0.0000**	**2.3700e-003**	**2.3700e-003**	**0.0000**	**108.0502**	**108.0502**	**4.1000e-003**	**1.2900e-003**	**108.5365**

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	0.1427	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
Energy	3.1500e-003	0.0286	0.0241	1.7000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	107.8674	107.8674	4.0700e-003	1.2900e-003	108.3531
Mobile	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
Stationary	3.9000e-004	2.0500e-003	1.7000e-003	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	0.1828	0.1828	3.0000e-005	0.0000	0.1834
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1462**	**0.0307**	**0.0258**	**1.7000e-004**	**0.0000**	**2.3700e-003**	**2.3700e-003**	**0.0000**	**2.3700e-003**	**2.3700e-003**	**0.0000**	**108.0502**	**108.0502**	**4.1000e-003**	**1.2900e-003**	**108.5365**

	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	N20	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	Site Preparation	Site Preparation	8/1/2019	8/20/2019	5	14	
2	Grading	Grading	8/21/2019	10/1/2019	5	30	
3	Building Construction	Building Construction	10/2/2019	7/30/2020	5	217	
4	Paving	Paving	7/31/2020	9/3/2020	5	25	

Acres of Grading (Site Preparation Phase): 0.55

Acres of Grading (Grading Phase): 0.55

Acres of Paving: 0.34

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
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	630.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	18.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Site Preparation - 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					
Fugitive Dust					2.9000e-004	0.0000	2.9000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0400e-003	0.0624	0.0290	7.0000e-005		2.5700e-003	2.5700e-003		2.3600e-003	2.3600e-003	0.0000	6.1291	6.1291	1.9400e-003	0.0000	6.1776
Total	**5.0400e-003**	**0.0624**	**0.0290**	**7.0000e-005**	**2.9000e-004**	**2.5700e-003**	**2.8600e-003**	**3.0000e-005**	**2.3600e-003**	**2.3900e-003**	**0.0000**	**6.1291**	**6.1291**	**1.9400e-003**	**0.0000**	**6.1776**

3.2 Site Preparation - 2019

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	0.0000	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
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	2.2000e-004	2.0000e-004	1.8200e-003	0.0000	4.3000e-004	0.0000	4.3000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.4027	0.4027	2.0000e-005	0.0000	0.4031
Total	**2.2000e-004**	**2.0000e-004**	**1.8200e-003**	**0.0000**	**4.3000e-004**	**0.0000**	**4.3000e-004**	**1.1000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4027**	**0.4027**	**2.0000e-005**	**0.0000**	**0.4031**

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					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0400e-003	0.0624	0.0290	7.0000e-005		2.5700e-003	2.5700e-003		2.3600e-003	2.3600e-003	0.0000	6.1291	6.1291	1.9400e-003	0.0000	6.1776
Total	**5.0400e-003**	**0.0624**	**0.0290**	**7.0000e-005**	**1.1000e-004**	**2.5700e-003**	**2.6800e-003**	**1.0000e-005**	**2.3600e-003**	**2.3700e-003**	**0.0000**	**6.1291**	**6.1291**	**1.9400e-003**	**0.0000**	**6.1776**

3.2 Site Preparation - 2019

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	0.0000	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
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	2.2000e-004	2.0000e-004	1.8200e-003	0.0000	4.3000e-004	0.0000	4.3000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.4027	0.4027	2.0000e-005	0.0000	0.4031
Total	**2.2000e-004**	**2.0000e-004**	**1.8200e-003**	**0.0000**	**4.3000e-004**	**0.0000**	**4.3000e-004**	**1.1000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4027**	**0.4027**	**2.0000e-005**	**0.0000**	**0.4031**

3.3 Grading - 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					
Fugitive Dust					0.0120	0.0000	0.0120	6.2900e-003	0.0000	6.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1291	0.1154	1.8000e-004		8.0600e-003	8.0600e-003		7.6900e-003	7.6900e-003	0.0000	15.7804	15.7804	3.0100e-003	0.0000	15.8556
Total	**0.0143**	**0.1291**	**0.1154**	**1.8000e-004**	**0.0120**	**8.0600e-003**	**0.0200**	**6.2900e-003**	**7.6900e-003**	**0.0140**	**0.0000**	**15.7804**	**15.7804**	**3.0100e-003**	**0.0000**	**15.8556**

3.3 Grading - 2019

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	2.8400e-003	0.0962	0.0137	2.6000e-004	5.2800e-003	4.7000e-004	5.7500e-003	1.4600e-003	4.5000e-004	1.9000e-003	0.0000	24.4392	24.4392	1.4500e-003	0.0000	24.4755
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	9.6000e-004	8.5000e-004	7.8100e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.7257	1.7257	7.0000e-005	0.0000	1.7274
Total	**3.8000e-003**	**0.0971**	**0.0215**	**2.8000e-004**	**7.1000e-003**	**4.8000e-004**	**7.5900e-003**	**1.9500e-003**	**4.6000e-004**	**2.4000e-003**	**0.0000**	**26.1650**	**26.1650**	**1.5200e-003**	**0.0000**	**26.2029**

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					
Fugitive Dust					4.6600e-003	0.0000	4.6600e-003	2.4500e-003	0.0000	2.4500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1291	0.1154	1.8000e-004		8.0600e-003	8.0600e-003		7.6900e-003	7.6900e-003	0.0000	15.7803	15.7803	3.0100e-003	0.0000	15.8556
Total	**0.0143**	**0.1291**	**0.1154**	**1.8000e-004**	**4.6600e-003**	**8.0600e-003**	**0.0127**	**2.4500e-003**	**7.6900e-003**	**0.0101**	**0.0000**	**15.7803**	**15.7803**	**3.0100e-003**	**0.0000**	**15.8556**

3.3 Grading - 2019

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	2.8400e-003	0.0962	0.0137	2.6000e-004	5.2800e-003	4.7000e-004	5.7500e-003	1.4600e-003	4.5000e-004	1.9000e-003	0.0000	24.4392	24.4392	1.4500e-003	0.0000	24.4755
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	9.6000e-004	8.5000e-004	7.8100e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.7257	1.7257	7.0000e-005	0.0000	1.7274
Total	**3.8000e-003**	**0.0971**	**0.0215**	**2.8000e-004**	**7.1000e-003**	**4.8000e-004**	**7.5900e-003**	**1.9500e-003**	**4.6000e-004**	**2.4000e-003**	**0.0000**	**26.1650**	**26.1650**	**1.5200e-003**	**0.0000**	**26.2029**

3.4 Building Construction - 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	0.0311	0.3192	0.2452	3.7000e-004		0.0197	0.0197		0.0181	0.0181	0.0000	33.2477	33.2477	0.0105	0.0000	33.5106
Total	**0.0311**	**0.3192**	**0.2452**	**3.7000e-004**		**0.0197**	**0.0197**		**0.0181**	**0.0181**	**0.0000**	**33.2477**	**33.2477**	**0.0105**	**0.0000**	**33.5106**

3.4 Building Construction - 2019

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	0.0000	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
Vendor	1.1500e-003	0.0292	6.8300e-003	6.0000e-005	1.3400e-003	2.2000e-004	1.5600e-003	3.9000e-004	2.1000e-004	6.0000e-004	0.0000	5.8442	5.8442	5.5000e-004	0.0000	5.8580
Worker	3.7600e-003	3.3000e-003	0.0305	7.0000e-005	7.1100e-003	5.0000e-005	7.1600e-003	1.8900e-003	5.0000e-005	1.9400e-003	0.0000	6.7304	6.7304	2.6000e-004	0.0000	6.7368
Total	**4.9100e-003**	**0.0325**	**0.0373**	**1.3000e-004**	**8.4500e-003**	**2.7000e-004**	**8.7200e-003**	**2.2800e-003**	**2.6000e-004**	**2.5400e-003**	**0.0000**	**12.5746**	**12.5746**	**8.1000e-004**	**0.0000**	**12.5948**

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	0.0311	0.3192	0.2452	3.7000e-004		0.0197	0.0197		0.0181	0.0181	0.0000	33.2476	33.2476	0.0105	0.0000	33.5106
Total	**0.0311**	**0.3192**	**0.2452**	**3.7000e-004**		**0.0197**	**0.0197**		**0.0181**	**0.0181**	**0.0000**	**33.2476**	**33.2476**	**0.0105**	**0.0000**	**33.5106**

3.4 Building Construction - 2019

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	0.0000	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
Vendor	1.1500e-003	0.0292	6.8300e-003	6.0000e-005	1.3400e-003	2.2000e-004	1.5600e-003	3.9000e-004	2.1000e-004	6.0000e-004	0.0000	5.8442	5.8442	5.5000e-004	0.0000	5.8580
Worker	3.7600e-003	3.3000e-003	0.0305	7.0000e-005	7.1100e-003	5.0000e-005	7.1600e-003	1.8900e-003	5.0000e-005	1.9400e-003	0.0000	6.7304	6.7304	2.6000e-004	0.0000	6.7368
Total	**4.9100e-003**	**0.0325**	**0.0373**	**1.3000e-004**	**8.4500e-003**	**2.7000e-004**	**8.7200e-003**	**2.2800e-003**	**2.6000e-004**	**2.5400e-003**	**0.0000**	**12.5746**	**12.5746**	**8.1000e-004**	**0.0000**	**12.5948**

3.4 Building Construction - 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	0.0655	0.6728	0.5615	8.7000e-004		0.0397	0.0397		0.0365	0.0365	0.0000	76.0460	76.0460	0.0246	0.0000	76.6608
Total	**0.0655**	**0.6728**	**0.5615**	**8.7000e-004**		**0.0397**	**0.0397**		**0.0365**	**0.0365**	**0.0000**	**76.0460**	**76.0460**	**0.0246**	**0.0000**	**76.6608**

3.4 Building Construction - 2020

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	0.0000	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
Vendor	2.1900e-003	0.0625	0.0139	1.4000e-004	3.1300e-003	3.3000e-004	3.4600e-003	9.1000e-004	3.2000e-004	1.2200e-003	0.0000	13.5753	13.5753	1.1800e-003	0.0000	13.6047
Worker	7.8900e-003	6.7300e-003	0.0624	1.7000e-004	0.0166	1.2000e-004	0.0167	4.4200e-003	1.1000e-004	4.5300e-003	0.0000	15.2409	15.2409	5.1000e-004	0.0000	15.2536
Total	**0.0101**	**0.0692**	**0.0763**	**3.1000e-004**	**0.0198**	**4.5000e-004**	**0.0202**	**5.3300e-003**	**4.3000e-004**	**5.7500e-003**	**0.0000**	**28.8162**	**28.8162**	**1.6900e-003**	**0.0000**	**28.8584**

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	0.0655	0.6728	0.5615	8.7000e-004		0.0397	0.0397		0.0365	0.0365	0.0000	76.0459	76.0459	0.0246	0.0000	76.6608
Total	**0.0655**	**0.6728**	**0.5615**	**8.7000e-004**		**0.0397**	**0.0397**		**0.0365**	**0.0365**	**0.0000**	**76.0459**	**76.0459**	**0.0246**	**0.0000**	**76.6608**

3.4 Building Construction - 2020

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	0.0000	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
Vendor	2.1900e-003	0.0625	0.0139	1.4000e-004	3.1300e-003	3.3000e-004	3.4600e-003	9.1000e-004	3.2000e-004	1.2200e-003	0.0000	13.5753	13.5753	1.1800e-003	0.0000	13.6047
Worker	7.8900e-003	6.7300e-003	0.0624	1.7000e-004	0.0166	1.2000e-004	0.0167	4.4200e-003	1.1000e-004	4.5300e-003	0.0000	15.2409	15.2409	5.1000e-004	0.0000	15.2536
Total	**0.0101**	**0.0692**	**0.0763**	**3.1000e-004**	**0.0198**	**4.5000e-004**	**0.0202**	**5.3300e-003**	**4.3000e-004**	**5.7500e-003**	**0.0000**	**28.8162**	**28.8162**	**1.6900e-003**	**0.0000**	**28.8584**

3.5 Paving - 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	9.6400e-003	0.0903	0.0889	1.4000e-004		4.9400e-003	4.9400e-003		4.5900e-003	4.5900e-003	0.0000	11.7412	11.7412	3.4200e-003	0.0000	11.8267
Paving	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0101**	**0.0903**	**0.0889**	**1.4000e-004**		**4.9400e-003**	**4.9400e-003**		**4.5900e-003**	**4.5900e-003**	**0.0000**	**11.7412**	**11.7412**	**3.4200e-003**	**0.0000**	**11.8267**

3.5 Paving - 2020

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	0.0000	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
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	1.3000e-003	1.1100e-003	0.0103	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.5067	2.5067	8.0000e-005	0.0000	2.5088
Total	**1.3000e-003**	**1.1100e-003**	**0.0103**	**3.0000e-005**	**2.7300e-003**	**2.0000e-005**	**2.7500e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.5067**	**2.5067**	**8.0000e-005**	**0.0000**	**2.5088**

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	9.6400e-003	0.0903	0.0889	1.4000e-004		4.9400e-003	4.9400e-003		4.5900e-003	4.5900e-003	0.0000	11.7411	11.7411	3.4200e-003	0.0000	11.8266
Paving	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0101**	**0.0903**	**0.0889**	**1.4000e-004**		**4.9400e-003**	**4.9400e-003**		**4.5900e-003**	**4.5900e-003**	**0.0000**	**11.7411**	**11.7411**	**3.4200e-003**	**0.0000**	**11.8266**

3.5 Paving - 2020

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	0.0000	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
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	1.3000e-003	1.1100e-003	0.0103	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.5067	2.5067	8.0000e-005	0.0000	2.5088
Total	**1.3000e-003**	**1.1100e-003**	**0.0103**	**3.0000e-005**	**2.7300e-003**	**2.0000e-005**	**2.7500e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.5067**	**2.5067**	**8.0000e-005**	**0.0000**	**2.5088**

4.0 Operational Detail - Mobile

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.514295	0.033300	0.182894	0.110648	0.035005	0.006975	0.013104	0.092427	0.001351	0.001296	0.005878	0.001311	0.001516
Parking Lot	0.514295	0.033300	0.182894	0.110648	0.035005	0.006975	0.013104	0.092427	0.001351	0.001296	0.005878	0.001311	0.001516

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	76.7006	76.7006	3.4700e-003	7.2000e-004	77.0011
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	76.7006	76.7006	3.4700e-003	7.2000e-004	77.0011
NaturalGas Mitigated	3.1500e-003	0.0286	0.0241	1.7000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	31.1668	31.1668	6.0000e-004	5.7000e-004	31.3520
NaturalGas Unmitigated	3.1500e-003	0.0286	0.0241	1.7000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	31.1668	31.1668	6.0000e-004	5.7000e-004	31.3520

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					
General Light Industry	584044	3.1500e-003	0.0286	0.0241	1.7000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	31.1668	31.1668	6.0000e-004	5.7000e-004	31.3520
Parking Lot	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		**3.1500e-003**	**0.0286**	**0.0241**	**1.7000e-004**		**2.1800e-003**	**2.1800e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**31.1668**	**31.1668**	**6.0000e-004**	**5.7000e-004**	**31.3520**

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					
General Light Industry	584044	3.1500e-003	0.0286	0.0241	1.7000e-004		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	31.1668	31.1668	6.0000e-004	5.7000e-004	31.3520
Parking Lot	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		**3.1500e-003**	**0.0286**	**0.0241**	**1.7000e-004**		**2.1800e-003**	**2.1800e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**31.1668**	**31.1668**	**6.0000e-004**	**5.7000e-004**	**31.3520**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	250623	72.9092	3.3000e-003	6.8000e-004	73.1949
Parking Lot	13032.8	3.7914	1.7000e-004	4.0000e-005	3.8063
Total		**76.7006**	**3.4700e-003**	**7.2000e-004**	**77.0011**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	250623	72.9092	3.3000e-003	6.8000e-004	73.1949
Parking Lot	13032.8	3.7914	1.7000e-004	4.0000e-005	3.8063
Total		**76.7006**	**3.4700e-003**	**7.2000e-004**	**77.0011**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1427	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
Unmitigated	0.1427	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

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	0.0328					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1098					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	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	**0.1427**	**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**

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	0.0328					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1098					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	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	**0.1427**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	0	0.00	0	0	0.74	Diesel
Generator Sets	0	0.00	0	0	0.74	Diesel

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	12	15	0.73	Diesel
Emergency Generator	1	1	12	25	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (11 - 25 HP)	1.5000e-004	7.7000e-004	7.1000e-004	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0685	0.0685	1.0000e-005	0.0000	0.0688
Emergency Generator - Diesel (25 - 50 HP)	2.5000e-004	1.2800e-003	9.9000e-004	0.0000		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	0.1142	0.1142	2.0000e-005	0.0000	0.1146
Total	**4.0000e-004**	**2.0500e-003**	**1.7000e-003**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.1828**	**0.1828**	**3.0000e-005**	**0.0000**	**0.1834**

11.0 Vegetation

Cottonwood Sewer Project

Shasta County AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.64	27,878.00	0
Parking Lot	0.00	Acre	0.34	14,810.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Cottonwood Sewer Project - Shasta County AQMD Air District, Summer

Project Characteristics - u

Land Use - Per PACE, disturbance ac est at 0.64 ac. Includes 0.45 acr for pipeline install; 0.1 ac at the WWTP; and five staging areas measuring 20' x 40' -- 0.09 ac (4,000 sq.ft.). Of the 0.64 ac, approx. 0.34 acres will be repaved (0.10 ac at WWTP; 0.24 acre for pipe install).

Construction Phase - Per PACE, e-mail dated 12-06-16.

Off-road Equipment -

Grading - Per PACE, 2,140 CY imported; 2,900 CY exported (e-mail 10-4-16).

Energy Use -

Construction Off-road Equipment Mitigation -

Operational Off-Road Equipment - i

Stationary Sources - Emergency Generators and Fire Pumps - Per PACE e-mail 12-19-16.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	100.00	217.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	1.00	14.00
tblConstructionPhase	PhaseEndDate	12/23/2019	7/30/2020
tblConstructionPhase	PhaseEndDate	8/5/2019	10/1/2019
tblConstructionPhase	PhaseEndDate	12/30/2019	9/3/2020
tblConstructionPhase	PhaseEndDate	8/1/2019	8/20/2019
tblConstructionPhase	PhaseStartDate	8/6/2019	10/2/2019
tblConstructionPhase	PhaseStartDate	8/2/2019	8/21/2019
tblConstructionPhase	PhaseStartDate	12/24/2019	7/31/2020
tblGrading	AcresOfGrading	0.00	0.55
tblGrading	AcresOfGrading	7.00	0.55
tblGrading	MaterialExported	0.00	2,900.00
tblGrading	MaterialImported	0.00	2,140.00

tblLandUse	BuildingSpaceSquareFeet	0.00	27,878.00
tblLandUse	BuildingSpaceSquareFeet	0.00	14,810.00
tblLandUse	LandUseSquareFeet	0.00	27,878.00
tblLandUse	LandUseSquareFeet	0.00	14,810.00
tblLandUse	LotAcreage	0.00	0.64
tblLandUse	LotAcreage	0.00	0.34
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	0.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	0.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	0.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	15.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	25.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	1.2142	14.8981	9.1871	0.0307	1.2925	0.6137	1.8612	0.5544	0.5649	1.0971	0.0000	3,114.6389	3,114.6389	0.3845	0.0000	3,122.8331
2020	1.0107	9.7435	8.5607	0.0158	0.2728	0.5282	0.8011	0.0733	0.4861	0.5595	0.0000	1,549.7623	1,549.7623	0.3815	0.0000	1,559.2988
Maximum	**1.2142**	**14.8981**	**9.1871**	**0.0307**	**1.2925**	**0.6137**	**1.8612**	**0.5544**	**0.5649**	**1.0971**	**0.0000**	**3,114.6389**	**3,114.6389**	**0.3845**	**0.0000**	**3,122.8331**

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	lb/day										lb/day					
2019	1.2142	14.8981	9.1871	0.0307	0.8064	0.6137	1.3750	0.2984	0.5649	0.8411	0.0000	3,114.6389	3,114.6389	0.3845	0.0000	3,122.8331
2020	1.0107	9.7435	8.5607	0.0158	0.2728	0.5282	0.8011	0.0733	0.4861	0.5595	0.0000	1,549.7623	1,549.7623	0.3815	0.0000	1,559.2988
Maximum	**1.2142**	**14.8981**	**9.1871**	**0.0307**	**0.8064**	**0.6137**	**1.3750**	**0.2984**	**0.5649**	**0.8411**	**0.0000**	**3,114.6389**	**3,114.6389**	**0.3845**	**0.0000**	**3,122.8331**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.06**	**0.00**	**18.26**	**40.78**	**0.00**	**15.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.7817	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0173	0.1569	0.1318	9.4000e-004		0.0119	0.0119		0.0119	0.0119		188.2495	188.2495	3.6100e-003	3.4500e-003	189.3682
Mobile	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
Stationary	0.0656	0.3423	0.2840	3.2000e-004		0.0324	0.0324		0.0324	0.0324		33.5806	33.5806	4.7100e-003		33.6983
Total	**0.8646**	**0.4992**	**0.4158**	**1.2600e-003**	**0.0000**	**0.0444**	**0.0444**	**0.0000**	**0.0444**	**0.0444**		**221.8301**	**221.8301**	**8.3200e-003**	**3.4500e-003**	**223.0664**

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	lb/day										lb/day					
Area	0.7817	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0173	0.1569	0.1318	9.4000e-004		0.0119	0.0119		0.0119	0.0119		188.2495	188.2495	3.6100e-003	3.4500e-003	189.3682
Mobile	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
Stationary	0.0656	0.3423	0.2840	3.2000e-004		0.0324	0.0324		0.0324	0.0324		33.5806	33.5806	4.7100e-003		33.6983
Total	**0.8646**	**0.4992**	**0.4158**	**1.2600e-003**	**0.0000**	**0.0444**	**0.0444**	**0.0000**	**0.0444**	**0.0444**		**221.8301**	**221.8301**	**8.3200e-003**	**3.4500e-003**	**223.0664**

	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	N20	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	Site Preparation	Site Preparation	8/1/2019	8/20/2019	5	14	
2	Grading	Grading	8/21/2019	10/1/2019	5	30	
3	Building Construction	Building Construction	10/2/2019	7/30/2020	5	217	
4	Paving	Paving	7/31/2020	9/3/2020	5	25	

Acres of Grading (Site Preparation Phase): 0.55

Acres of Grading (Grading Phase): 0.55

Acres of Paving: 0.34

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
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	630.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	18.00	7.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Site Preparation - 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	lb/day										lb/day					
Fugitive Dust					0.0417	0.0000	0.0417	4.5000e-003	0.0000	4.5000e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378		965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0417**	**0.3672**	**0.4089**	**4.5000e-003**	**0.3378**	**0.3423**		**965.1690**	**965.1690**	**0.3054**		**972.8032**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0374	0.0262	0.3172	7.1000e-004	0.0639	4.5000e-004	0.0643	0.0169	4.2000e-004	0.0174		70.8183	70.8183	2.7800e-003		70.8878
Total	**0.0374**	**0.0262**	**0.3172**	**7.1000e-004**	**0.0639**	**4.5000e-004**	**0.0643**	**0.0169**	**4.2000e-004**	**0.0174**		**70.8183**	**70.8183**	**2.7800e-003**		**70.8878**

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	lb/day										lb/day					
Fugitive Dust					0.0163	0.0000	0.0163	1.7500e-003	0.0000	1.7500e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378	0.0000	965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0163**	**0.3672**	**0.3835**	**1.7500e-003**	**0.3378**	**0.3396**	**0.0000**	**965.1690**	**965.1690**	**0.3054**		**972.8032**

3.2 Site Preparation - 2019

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	lb/day										lb/day					
Hauling	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
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
Worker	0.0374	0.0262	0.3172	7.1000e-004	0.0639	4.5000e-004	0.0643	0.0169	4.2000e-004	0.0174		70.8183	70.8183	2.7800e-003		70.8878
Total	**0.0374**	**0.0262**	**0.3172**	**7.1000e-004**	**0.0639**	**4.5000e-004**	**0.0643**	**0.0169**	**4.2000e-004**	**0.0174**		**70.8183**	**70.8183**	**2.7800e-003**		**70.8878**

3.3 Grading - 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	lb/day										lb/day					
Fugitive Dust					0.7970	0.0000	0.7970	0.4196	0.0000	0.4196			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7970**	**0.5371**	**1.3341**	**0.4196**	**0.5125**	**0.9321**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

3.3 Grading - 2019

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	lb/day										lb/day					
Hauling	0.1864	6.2417	0.8609	0.0173	0.3678	0.0307	0.3985	0.1009	0.0294	0.1302		1,813.3452	1,813.3452	0.1011		1,815.8728
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
Worker	0.0748	0.0525	0.6345	1.4200e-003	0.1277	9.0000e-004	0.1286	0.0339	8.3000e-004	0.0347		141.6366	141.6366	5.5600e-003		141.7756
Total	**0.2612**	**6.2942**	**1.4954**	**0.0187**	**0.4955**	**0.0316**	**0.5271**	**0.1347**	**0.0302**	**0.1650**		**1,954.9818**	**1,954.9818**	**0.1067**		**1,957.6484**

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	lb/day										lb/day					
Fugitive Dust					0.3108	0.0000	0.3108	0.1637	0.0000	0.1637			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.3108**	**0.5371**	**0.8479**	**0.1637**	**0.5125**	**0.6761**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

3.3 Grading - 2019

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	lb/day										lb/day					
Hauling	0.1864	6.2417	0.8609	0.0173	0.3678	0.0307	0.3985	0.1009	0.0294	0.1302		1,813.3452	1,813.3452	0.1011		1,815.8728
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
Worker	0.0748	0.0525	0.6345	1.4200e-003	0.1277	9.0000e-004	0.1286	0.0339	8.3000e-004	0.0347		141.6366	141.6366	5.5600e-003		141.7756
Total	**0.2612**	**6.2942**	**1.4954**	**0.0187**	**0.4955**	**0.0316**	**0.5271**	**0.1347**	**0.0302**	**0.1650**		**1,954.9818**	**1,954.9818**	**0.1067**		**1,957.6484**

3.4 Building Construction - 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	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

3.4 Building Construction - 2019

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	lb/day										lb/day					
Hauling	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
Vendor	0.0350	0.8834	0.1944	1.9300e-003	0.0429	6.7000e-003	0.0496	0.0124	6.4100e-003	0.0188		201.1833	201.1833	0.0177		201.6269
Worker	0.1346	0.0945	1.1421	2.5600e-003	0.2299	1.6300e-003	0.2315	0.0610	1.5000e-003	0.0625		254.9460	254.9460	0.0100		255.1961
Total	**0.1696**	**0.9778**	**1.3365**	**4.4900e-003**	**0.2728**	**8.3300e-003**	**0.2812**	**0.0733**	**7.9100e-003**	**0.0812**		**456.1293**	**456.1293**	**0.0278**		**456.8230**

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	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

3.4 Building Construction - 2019

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	lb/day										lb/day					
Hauling	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
Vendor	0.0350	0.8834	0.1944	1.9300e-003	0.0429	6.7000e-003	0.0496	0.0124	6.4100e-003	0.0188		201.1833	201.1833	0.0177		201.6269
Worker	0.1346	0.0945	1.1421	2.5600e-003	0.2299	1.6300e-003	0.2315	0.0610	1.5000e-003	0.0625		254.9460	254.9460	0.0100		255.1961
Total	**0.1696**	**0.9778**	**1.3365**	**4.4900e-003**	**0.2728**	**8.3300e-003**	**0.2812**	**0.0733**	**7.9100e-003**	**0.0812**		**456.1293**	**456.1293**	**0.0278**		**456.8230**

3.4 Building Construction - 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	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Hauling	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
Vendor	0.0284	0.8087	0.1683	1.9100e-003	0.0429	4.2900e-003	0.0472	0.0124	4.1000e-003	0.0165		199.8767	199.8767	0.0162		200.2816
Worker	0.1206	0.0825	1.0049	2.4800e-003	0.2299	1.5700e-003	0.2315	0.0610	1.4500e-003	0.0624		246.9076	246.9076	8.5400e-003		247.1210
Total	**0.1489**	**0.8912**	**1.1733**	**4.3900e-003**	**0.2728**	**5.8600e-003**	**0.2787**	**0.0733**	**5.5500e-003**	**0.0789**		**446.7842**	**446.7842**	**0.0247**		**447.4026**

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	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Hauling	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
Vendor	0.0284	0.8087	0.1683	1.9100e-003	0.0429	4.2900e-003	0.0472	0.0124	4.1000e-003	0.0165		199.8767	199.8767	0.0162		200.2816
Worker	0.1206	0.0825	1.0049	2.4800e-003	0.2299	1.5700e-003	0.2315	0.0610	1.4500e-003	0.0624		246.9076	246.9076	8.5400e-003		247.1210
Total	**0.1489**	**0.8912**	**1.1733**	**4.3900e-003**	**0.2728**	**5.8600e-003**	**0.2787**	**0.0733**	**5.5500e-003**	**0.0789**		**446.7842**	**446.7842**	**0.0247**		**447.4026**

3.5 Paving - 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	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8072**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

3.5 Paving - 2020

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	lb/day										lb/day					
Hauling	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
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
Worker	0.1206	0.0825	1.0049	2.4800e-003	0.2299	1.5700e-003	0.2315	0.0610	1.4500e-003	0.0624		246.9076	246.9076	8.5400e-003		247.1210
Total	**0.1206**	**0.0825**	**1.0049**	**2.4800e-003**	**0.2299**	**1.5700e-003**	**0.2315**	**0.0610**	**1.4500e-003**	**0.0624**		**246.9076**	**246.9076**	**8.5400e-003**		**247.1210**

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	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8072**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

3.5 Paving - 2020

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	lb/day										lb/day					
Hauling	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
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
Worker	0.1206	0.0825	1.0049	2.4800e-003	0.2299	1.5700e-003	0.2315	0.0610	1.4500e-003	0.0624		246.9076	246.9076	8.5400e-003		247.1210
Total	**0.1206**	**0.0825**	**1.0049**	**2.4800e-003**	**0.2299**	**1.5700e-003**	**0.2315**	**0.0610**	**1.4500e-003**	**0.0624**		**246.9076**	**246.9076**	**8.5400e-003**		**247.1210**

4.0 Operational Detail - Mobile

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	lb/day										lb/day					
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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.514295	0.033300	0.182894	0.110648	0.035005	0.006975	0.013104	0.092427	0.001351	0.001296	0.005878	0.001311	0.001516
Parking Lot	0.514295	0.033300	0.182894	0.110648	0.035005	0.006975	0.013104	0.092427	0.001351	0.001296	0.005878	0.001311	0.001516

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	lb/day										lb/day					
NaturalGas Mitigated	0.0173	0.1569	0.1318	9.4000e-004		0.0119	0.0119		0.0119	0.0119		188.2495	188.2495	3.6100e-003	3.4500e-003	189.3682
NaturalGas Unmitigated	0.0173	0.1569	0.1318	9.4000e-004		0.0119	0.0119		0.0119	0.0119		188.2495	188.2495	3.6100e-003	3.4500e-003	189.3682

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	lb/day										lb/day					
General Light Industry	1600.12	0.0173	0.1569	0.1318	9.4000e-004		0.0119	0.0119		0.0119	0.0119		188.2495	188.2495	3.6100e-003	3.4500e-003	189.3682
Parking Lot	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
Total		**0.0173**	**0.1569**	**0.1318**	**9.4000e-004**		**0.0119**	**0.0119**		**0.0119**	**0.0119**		**188.2495**	**188.2495**	**3.6100e-003**	**3.4500e-003**	**189.3682**

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	lb/day										lb/day					
General Light Industry	1.60012	0.0173	0.1569	0.1318	9.4000e-004		0.0119	0.0119		0.0119	0.0119		188.2495	188.2495	3.6100e-003	3.4500e-003	189.3682
Parking Lot	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
Total		**0.0173**	**0.1569**	**0.1318**	**9.4000e-004**		**0.0119**	**0.0119**		**0.0119**	**0.0119**		**188.2495**	**188.2495**	**3.6100e-003**	**3.4500e-003**	**189.3682**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.7817	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.7817	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

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	lb/day										lb/day					
Architectural Coating	0.1798					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6018					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	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	**0.7817**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	lb/day										lb/day					
Architectural Coating	0.1798					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6018					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	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	**0.7817**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	0	0.00	0	0	0.74	Diesel
Generator Sets	0	0.00	0	0	0.74	Diesel

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	12	15	0.73	Diesel
Emergency Generator	1	1	12	25	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (11 - 25 HP)	0.0246	0.1284	0.1189	1.2000e-004		0.0144	0.0144		0.0144	0.0144		12.5927	12.5927	1.7700e-003		12.6369
Emergency Generator - Diesel (25 - 50 HP)	0.0410	0.2139	0.1651	2.0000e-004		0.0180	0.0180		0.0180	0.0180		20.9879	20.9879	2.9400e-003		21.0614
Total	**0.0657**	**0.3423**	**0.2840**	**3.2000e-004**		**0.0324**	**0.0324**		**0.0324**	**0.0324**		**33.5806**	**33.5806**	**4.7100e-003**		**33.6983**

11.0 Vegetation

Appendix B .....

- ENPLAN Summary Report: *Potential for Special-Status State and Federal Species to Occur in the Project Area.*
- California Natural Diversity Database RareFind Query Summary, September 2016.
- U.S. Fish and Wildlife Service IPaC Trust Resource Report, September 20, 2016.
- National Marine Fisheries Service (NMFS) Species List.
- List of Vascular Plant Species Observed, December 1, 2016.
- List of Wildlife Species Observed, October 6, 2016.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
PLANTS							
Pink creamsacs	*Castilleja rubicundula* ssp. *rubicundula*	1B.2	Pink creamsacs is an annual herb that occurs on serpentine soils in openings in chaparral or valley and foothill grasslands. The species is reported from sea level to 3,000 feet in elevation. The flowering period is April through June.	No	No	No	No serpentine soils are present in the project site. Pink creamsacs was not observed during the botanical survey and is not expected to be present.
Silky cryptantha	*Cryptantha crinita*	1B.2	Silky cryptantha is an annual herb that occurs along low-gradient seasonal streams with broad floodplains, usually on the valley floor, where it is found on gravelly or cobbly substrates. The species also occurs in vernally moist uplands. Less frequently, it occurs along perennial streams, including the Sacramento River. The species is found between 200 and 4,000 feet in elevation. The flowering period is April and May.	No	No	No	No suitable habitat for silky cryptantha is present in the project site. Silky cryptantha was not observed during the botanical survey and is not expected to be present.
Slender Orcutt grass	*Orcuttia tenuis*	FT, SE, 1B.1	Slender Orcutt grass is an annual herb that occurs in vernal pools and similar habitats, occasionally on reservoir edges or stream floodplains, on clay soils with seasonal inundation in valley grassland to coniferous forest or sagebrush scrub. The species is found between 100 and 5,800 feet in elevation. The flowering period is May through September.	No	No	No	No vernal pools or other potentially suitable habitats for slender Orcutt grass occur in the project site. Slender Orcutt grass was not observed during the botanical survey, and is not expected to be present.
MAMMALS							
Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	SC, SSSC	Townsend's big-eared bat is found throughout California except in subalpine and alpine habitats, and may be found at any season throughout its range. The species is most abundant in mesic habitats. The bat requires caves, mines, tunnels, buildings, or other human-made structures for roosting.	Potentially Present	No	Yes	Buildings at the wastewater treatment facility provide potentially suitable roosting habitat for Townsend's big-eared bats. However, given high level of human disturbance around these structures, the species has a low potential to be present.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
Western red bat	*Lasiurus blossevellii*	SSSC	In California, western red bats occur primarily below 200 meters in elevation, although individuals have been detected up to nearly 2500 meters. The bats both forage and roost in riparian habitats and are strongly associated with riparian habitats that are over 50 meters wide. Breeding females are concentrated in the Central Valley. Roosting is expected to occur primarily in the largest riparian trees. Roosting has been observed in orchards, such as walnut orchards flanking the Sacramento River, perhaps due to the loss of gallery riparian forest habitat.	No	No	No	No riparian woodlands are not present in the project site. The western red bat would thus not be present.
BIRDS							
Bald eagle	*Haliaeetus leucocephalus*	FD, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No	No suitable nesting habitat for bald eagles is present in the project site, nor were bald eagles or eagle nests observed during the wildlife survey.
Bank swallow	*Riparia riparia*	ST	Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	No	No	No	No vertical cliffs with fine-textured or sandy soils are present in the project site. The bank swallow would thus not nest in the project site.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
Least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Least Bell's vireos occur in a variety of riparian habitat types, including cottonwood-willow woodlands, oak woodlands, and mule fat scrub. Early successional riparian habitats are preferred for nesting. Two features essential for nesting site selection: 1) the presence of dense cover within 3 to 6 feet of the ground for nest concealment and 2) a dense, stratified canopy for foraging.	No	No	No	No potentially suitable riparian habitats are present in the project site. The least Bell's vireo would thus not be present.
Tricolored blackbird	*Agelaius tricolor*	SSSC	Tricolored blackbirds are colonial nesters and generally nest near open water. Nesting areas must be large enough to support a minimum colony of about 50 pairs. Tricolored blackbirds generally construct nests in dense cattails or tules, although they can also nest in thickets of willow, blackberry, wild rose and tall herbs.	No	No	No	No suitable nesting habitat for tricolored blackbirds is present in the project site. No tricolored blackbirds or evidence of past nesting by tricolored blackbirds were observed in or adjacent to the project site during the wildlife survey. The tricolored blackbird is thus not expected to nest in or adjacent to the project site.
AMPHIBIANS							
California red-legged frog	*Rana draytonii*	FT, SSSC	Suitable aquatic habitat for the California red-legged frog (CRLF) consists of permanent water bodies of virtually still or slow-moving fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. The CRLF is not characteristically found in deep lacustrine habitats (e.g., deep lakes and reservoirs). Dense, shrubby riparian vegetation, e.g., willow (*Salix*) and bulrush (*Scirpus*) species, and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No	No	No	No suitable breeding habitat for the CRLF occurs in the project site. The CRLF would thus not be present.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
Western spadefoot	*Spea hammondi*	SSSC	Western spadefoots breed from January through May in shallow, temporary pools that persist for at least three weeks. Breeding pools are generally absent of bullfrogs, fish, and crayfish. After breeding, adults seek shelter underground either by excavating a subterranean burrow or retreating into a small mammal burrow nearby. Tadpoles transform within three weeks. Following transformation, juveniles leave breeding pools and seek shelter underground. Western spadefoots remain underground until breeding pools form the following spring.	No	No	No	No vernal pools or other potentially suitable breeding habitats for western spadefoots are present in the project site. The western spadefoot would thus not be present.
Reptiles							
Western pond turtle	*Emys marmorata*	SSSC	The western pond turtle associates with permanent or nearly permanent water in a variety of habitats. This turtle is typically found in quiet water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. Nesting and courtship occur during spring. Nests are generally constructed within 500 feet of a waterbody, but some nests have been found up to 1,200 feet away. Pond turtles leave aquatic sites in the fall and overwinter in uplands nearby. Pond turtles return to aquatic sites in spring.	No	No	No	No western pond turtles were observed during the wildlife survey. Specifically, no turtles were observed in the onsite storage basins and none would be expected to occur due to the presence of sludge, concrete lining, and depth of the water. In addition the entire treatment plant is fenced which would keep turtles and other wildlife out of the facility.
FISH							
Delta smelt	*Hypomesus transpacificus*	FT, SE	Delta smelt primarily inhabit the brackish waters of Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edgewaters.	No	No	No	The Delta smelt would not be present because the project site is well outside the range of the species.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
Steelhead - Northern California DPS	*Oncorhynchus mykiss*	FT	Northern California steelhead inhabit coastal streams from Redwood Creek in Humboldt County to the Gualala River in Mendocino County.	No	No	No	Northern California steelhead would not be present because the project site is well outside the range of the species.
Steelhead - Central Valley DPS	*Oncorhynchus mykiss*	FT	Central Valley steelhead inhabit cold-water tributaries of the Sacramento and San Joaquin rivers. Adults begin their upstream spawning migration between August and March. Spawning occurs between December and April. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing, shallow water.	No	No	No	No suitable habitat for Central Valley steelhead is present in the project site; steelhead would thus not be present.
Sacramento River winter-run Chinook salmon	*Oncorhynchus tshawytscha*	FE, SE	Sacramento River winter-run Chinook salmon spawn almost exclusively in the Sacramento River, and not in tributary streams. Spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs where there is an abundance of loose gravel. Juveniles may rear in tributaries of the Sacramento River.	No	No	No	No suitable habitat for Sacramento River winter-run Chinook salmon is present in the project site; the winter-run would thus not be present.
Central Valley spring-run Chinook salmon	*Oncorhynchus tshawytscha*	FT, ST	Central Valley spring-run Chinook salmon enter the Sacramento-San Joaquin Delta in early January, and enter natal streams between mid-March and mid-October. Upon entering fresh water, spring-run are sexually immature and must hold in cold water habitats through summer to mature. Typically, spring-run utilize mid- to high-elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between August and mid-October.	No	No	No	No suitable habitat for Central Valley spring-run Chinook salmon is present in the project site; the spring-run would thus not be present.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
Green sturgeon	*Acipenser medirostris*	FT, FSC, SSSC	The green sturgeon is an anadromous fish that spawns in large rivers. In California, green sturgeon spawn primarily in the Klamath and Trinity rivers, but a small number is known to spawn in the Sacramento River. Most spawning in the Sacramento River occurs above Hamilton City, and may range as far north as Keswick Dam. Spawning in the Sacramento River occurs between March and July, when water temperatures are 8° to 14°C. Spawning occurs in deep (greater than three meters) water with a swift current. Preferred spawning substrate is large cobble, but may include clean sand to bedrock.	No	No	No	No suitable habitat for green sturgeon is present in the project site; green sturgeon would thus not be present.
INVERTEBRATES							
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water.	No	No	No	No vernal pools or other potentially suitable habitats for Conservancy fairy shrimp are present in the project site. Conservancy fairy shrimp would thus not be present.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool fairy shrimp are present in the project site. Vernal pool fairy shrimp would thus not be present.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool tadpole shrimp are present in the project site. Vernal pool tadpole shrimp would thus not be present.

ENPLAN Summary Report
Potential for Special-Status State and Federal Species to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Species Present (Y/N/POT.)	Critical Habitat Present (Y/N)	Habitat Present (Y/N)	Rationale/Comments
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	The valley elderberry longhorn beetle is found only in association with elderberry shrubs (*Sambucus* spp.). The species' elevational range extends from sea level to 3,000 feet. The species is known to occur in the Central Valley and foothills.	Potentially present	No	Yes	One elderberry shrub, the host plant of the larval stage of the VELB, occurs approximately 150 feet southwest of the project site, between Main Street and Trade Way. Although no VELB or VELB exit holes were observed on the shrub, the USFWS may still consider the shrub to be potential habitat for the beetle. Depending on final design of the sewer alignment, the elderberry shrub could be affected by project activities.

Rarefind (CNDDB) Report Summary (September 2016 Data) CSA 17 Wastewater Collection and Treatment Improvement Project							
Listed Element	Quadrangle[1]						Status[2]
	OL	CO	BF	MG	HO	BE	
Animals							
Bald eagle		●	●			●	FD, SE, SFP
Bank swallow			●			●	ST
Chinook salmon – Sacramento River winter-run ESU		●	●			●	FE, SE
Hoary bat		●					None
Least Bell's vireo						●	FE, SE
Osprey		●	●			●	None
Nugget's pebblesnail			●			●	None
Silver-haired bat		●					None
Steelhead – Central Valley DPS	●	●	●	●	●	●	FT
Townsend's big-eared bat						●	SC, SSSC
Tricolored blackbird		●	●		●	●	SSSC
Valley elderberry longhorn beetle		●	●		●	●	FT
Western pond turtle						●	SSSC
Western red bat		●					SSSC
Western spadefoot					●		SSSC
Yuma Myotis		●					None
Plants							
Pink creamsacs	●						1B.2
Silky cryptantha		●	●		●	●	1B.2
Slender Orcutt Grass						●	1B.1
Natural Communities							
Great Valley Cottonwood Riparian Forest		●	●			●	G2, S2
Great Valley Mixed Riparian Forest			●			●	G2, S2
Great Valley Valley Oak Riparian Forest		●	●				G1, S1
Tehama chaparral			●				G1, S1

Highlighting denotes the quadrangle in which the project site is located. No occurrences of special-status species have been mapped to encompass the study area.

[1]Quadrangle Code

OL = Olinda Mills
CO = Cottonwood
HO = Hooker
BF = Balls Ferry
MG = Mitchel Gulch
BE = Bend

[2]Status Codes

Federal
FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FC = Federal Candidate Species
FP = Federal Proposed Species
FD = Federally Delisted
FSC = Federal Species of Concern

State
SFP = State Fully Protected
SR = State Rare
SE = State Listed – Endangered
ST = State Listed – Threatened
SC = State Candidate Species
SD = State Delisted
SSSC = State Species of Special Concern

Rare Plant Rank
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 We Need More Information – A Review List
(generally not considered special-status, unless unusual circumstances warrant)
List 4 = Plants of Limited Distribution – A Watch List
(generally not considered special-status, unless unusual circumstances warrant)

Threat Ranks

0.1 = Seriously Threatened in California
0.2 = Fairly Threatened in California
0.3 = Not Very Threatened in California

Natural Community Rank
Global Ranking

G1 = Critically Imperiled	Critically imperiled in the state because of extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.
G2 = Imperiled	Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation.
G3 = Vulnerable	Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
G4 = Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 = Secure	Common, widespread, and abundant in the state.

State Ranking

S1 = Critically Imperiled	Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled	Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable	Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = Apparently Secure	Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
S5 = Secure	Common, widespread, and abundant in the state.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2016-SLI-2250 September 20, 2016
Event Code: 08ESMF00-2016-E-05032
Project Name: Cottonwood Sewer and Wastewater Treatment Plant Improvement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

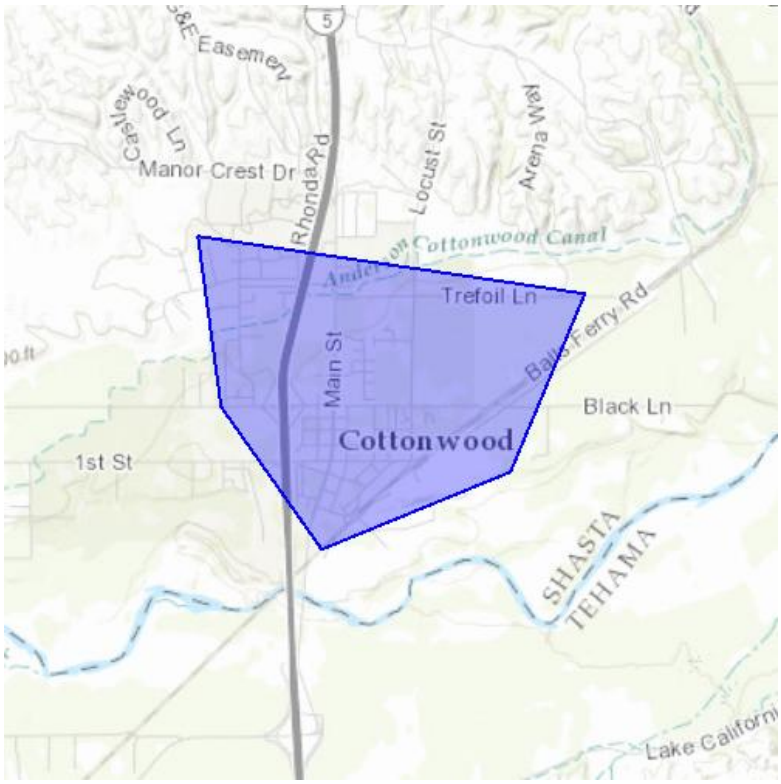
Consultation Code: 08ESMF00-2016-SLI-2250
Event Code: 08ESMF00-2016-E-05032

Project Type: WASTEWATER PIPELINE

Project Name: Cottonwood Sewer and Wastewater Treatment Plant Improvement Project
Project Description: Shasta County is proposing to replace aging sewer pipelines and appurtenant infrastructure in Cottonwood, California. The proposed project will include improvements to the existing wastewater treatment plant, Black Lane Lift Station, Quail Lane Lift Station, and Main Lift Station; repair of approximately eight manholes; installation of parallel or replacement collection lines in approximately seven locations; and spot repairs of the collection lines at approximately 16 locations. The project area shown in the location map below encompasses all of these locations where improvements are proposed.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-122.25914614222813 40.39672996844894, -122.26556025866795 40.38499509273425, -122.28192107327233 40.37989898571696, -122.29071205963547 40.38929927420874, -122.29270569899188 40.400582508400994, -122.25914614222813 40.39672996844894)))

Project Counties: Shasta, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Cottonwood Sewer and Wastewater Treatment Plant Improvement Project

Endangered Species Act Species List

There are a total of 8 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California red-legged frog *(Rana draytonii)* Population: Wherever found	Threatened	Final designated	
Crustaceans			
Conservancy fairy shrimp *(Branchinecta conservatio)* Population: Wherever found	Endangered	Final designated	
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Wherever found	Threatened	Final designated	
Vernal Pool tadpole shrimp *(Lepidurus packardi)* Population: Wherever found	Endangered	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Wherever found	Threatened	Final designated	
steelhead *(Oncorhynchus (=salmo)*	Threatened		

mykiss) Population: Northern California DPS			
Flowering Plants			
Slender Orcutt grass *(Orcuttia tenuis)* Population: Wherever found	Threatened	Final designated	
Insects			
Valley Elderberry Longhorn beetle *(Desmocerus californicus dimorphus)* Population: Wherever found	Threatened	Final designated	

Critical habitats that lie within your project area

There are no critical habitats within your project area.

National Marine Fisheries (NMFS) Species List

Quad Name **Cottonwood**
Quad Number **40122-D3**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat - **X**
SRWR Chinook Salmon Critical Habitat - **X**
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat - **X**
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat –

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

Marine Mammal Protection Act (MMPA)Species N/A

ESA and MMPA Cetaceans/Pinnipeds N/A

VASCULAR PLANT SPECIES OBSERVED

December 1, 2016

Adoxaceae	**Muskroot Family**
Sambucus nigra subsp. *caerulea (S. mexicana)*	Blue elderberry
Amaranthaceae	**Amaranth Family**
Amaranthus albus	Tumbleweed
Anacardiaceae	**Sumac Family**
Toxicodendron diversilobum	Poison-oak
Apiaceae	**Carrot Family**
Daucus carota	Queen Anne's lace
Torilis arvensis	Field hedge-parsley
Apocynaceae	**Dogbane Family**
Vinca major	Greater periwinkle
Asteraceae	**Sunflower Family**
Centaurea solstitialis	Yellow star thistle
Cichorium intybus	Chicory
Cirsium vulgare	Bull thistle
Erigeron canadensis	Canadian horseweed
Lactuca serriola	Prickly lettuce
Senecio vulgaris	Old-man-in-the-Spring
Silybum marianum	Milk thistle
Symphyotrichum sp.	American aster
Tragopogon dubius	Goat's beard
Xanthium strumarium	Cocklebur
Boraginaceae	**Borage Family**
Heliotropium europaeum	European pulsey
Caryophyllaceae	**Pink Family**
Stellaria media	Common chickweed
Convolvulaceae	**Morning Glory Family**
Convolvulus arvensis	Bindweed
Cyperaceae	**Sedge Family**
Carex sp.	Sedge
Cyperus eragrostis	Nutsedge
Euphorbiaceae	
Triadica sebifera	Chinese tallow
Fabaceae	**Legume Family**
Albizia julibrissin	Silk tree
Trifolium hirtum	Rose clover
Vicia villosa	Winter vetch

VASCULAR PLANT SPECIES OBSERVED

December 1, 2016

Fagaceae	**Oak Family**
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Quercus wislizeni	Interior live oak
Geraniaceae	**Geranium Family**
Erodium botrys	Long-beaked filaree
Erodium moschatum	White-stemmed filaree
Geranium molle	Dove's-foot geranium
Juglandaceae	**Walnut Family**
Juglans hindsii	Northern California black walnut
Juglans regia	English walnut
Lamiaceae	**Mint Family**
Marrubium vulgare	Horehound
Trichostema lanceolatum	Vinegar weed
Moraceae	**Mulberry Family**
Ficus carica	Common fig
Morus sp.	Mulberry
Onagraceae	**Evening-Primrose Family**
Epilobium sp.	Willowherb
Papaveraceae	**Poppy Family**
Eschscholzia californica	California poppy
Phytolaccaceae	**Pokeweed Family**
Phytolacca americana	Pokeweed
Plantaginaceae	**Plantain Family**
Plantago lanceolata	English plantain
Platanaceae	**Sycamore Family**
Platanus sp.	Sycamore
Poaceae	**Grass Family**
Cynodon dactylon	Bermuda grass
Paspalum dilatatum	Dallis grass
Phalaris arundinacea	Reed canary grass
Setaria sp.	Bristlegrass
Sorghum halepense	Johnson grass
Polygonaceae	**Buckwheat Family**
Rumex sp.	Dock
Rumex crispus	Curly dock
Rosaceae	**Rose Family**
Prunus cerasifera	Cherry plum
Prunus dulcis	Almond
Pyracantha sp.	Pyracantha

VASCULAR PLANT SPECIES OBSERVED

December 1, 2016

Rosa multiflora	Multiflora rose
Rubus armeniacus	Himalayan blackberry
Rubiaceae	**Madder Family**
Galium sp.	Bedstraw
Salicaceae	**Willow Family**
Populus fremontii subsp. *fremontii*	Fremont cottonwood
Salix sp.	Willow
Salix gooddingii	Goodding's black willow
Scrophulariaceae	**Snapdragon Family**
Verbascum blattaria	Moth mullein
Verbascum thapsus	Woolly mullein
Simaroubaceae	**Quassia Family**
Ailanthus altissima	Tree of heaven
Typhaceae	**Cattail Family**
Typha sp.	Cattail

Wildlife Species Observed
October 6, 2016

Common Name	Scientific Name	Status
BIRDS		
American crow	*Corvus brachyrhynchos*	None
Acorn woodpecker	*Melanerpes formicivorus*	None
Black phoebe	*Sayornis nigricans*	None
Brewer's blackbird	*Euphagus cyanocephalus*	None
Coyote	*Canis latrans*	None
Eurasian collared dove	*Streptopelia decaocto*	None
European starling	*Sturnus vulgaris*	None
Killdeer	*Charadrius vociferus*	None
Northern flicker	*Colaptes auratus*	None
Northern mockingbird	*Mimus polyglottos*	None
Rock dove	*Columba livia*	None
Turkey vulture	*Cathartes aura*	None
Western scrub-jay	*Aphelocoma californica*	None
White-breasted nuthatch	*Sitta carolinensis*	None
Yellow-billed magpie	*Pica nuttalli*	None
MAMMALS		
Black-tailed deer	*Odocoileus hemionus*	None
Raccoon	*Procyon lotor*	None
Western gray squirrel	*Sciurus griseus*	None
FISH		
Unidentified		None
REPTILES		
Western fence lizard	*Sceloperus occidentalis*	None

CSA 17 Wastewater Collection and Treatment Improvement Project
Mitigation Monitoring and Reporting Program

Revised April 12, 2017, based on State Water Resources Control Board Comments

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
Air Quality				
MM 4.3.1 The County shall ensure through contractual obligations that the following SCAQMD Standard Mitigation Measures are implemented • All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day. • Unpaved areas with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions. • All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads. • All land clearing, grading, earth moving or excavation activities on the project site shall be suspended when winds are expected to exceed 20 miles per hour. • The contractor shall be responsible for applying non-toxic stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours), in accordance with the Shasta County Grading Ordinance.	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure implementation.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
• All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of CVC §23114. This provision is enforced by local law enforcement agencies. • During grading and earth disturbance in undeveloped areas, the project shall be required to construct a paved (or dust palliative treated apron, at least 100 feet in length, onto the project site from the adjacent paved road(s). • Paved streets adjacent to construction areas shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud which may have accumulated as a result of activities on the development site. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works				
Biological				
MM 4.4.1 A botanical field survey shall be conducted by a qualified biologist in the spring when special-status plants known to occur in the region would be identifiable. In the unlikely event that special-status plant species are present, a suitable buffer zone(s) shall be determined by a qualified biologist in consultation with the California Department of Fish and Wildlife (CDFW) and exclusionary fencing shall be placed prior to commencement of construction.	BC • Complete pre-construction botanical field survey. • Confirm whether additional mitigation is required by CDFW and prepare mitigation plan if necessary. • If necessary, confirm construction contract includes applicable CDFW mitigation measures.	BC • One-time review of botanical survey report. • One-time review of mitigation plan if necessary. • One-time check of construction contract if necessary.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
If avoidance is not possible, the project proponent shall consult with the CDFW to determine a satisfactory method of mitigation. Typical mitigation includes collecting and propagating seeds, and replanting the seedlings in a protected area, or transplanting the individual plants to a protected area. A detailed mitigation plan shall be submitted to CDFW for review and approval. The plan shall identify the mitigation site, methods to be employed to create offsetting special-status plant habitat, success criteria, monitoring requirements, remedial measures, and/or other pertinent data to ensure successful replacement of the affected plant populations. Mitigation shall be undertaken concurrently with or in advance of the start of project construction. **Applicability:** *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	DC • If exclusionary fencing is required, inspect project area to verify applicable buffers are maintained throughout construction. • Ensure implementation of additional mitigation, if required by CDFW, in accordance with approved mitigation plan. AC • Ensure implementation of any post-construction measures in accordance with approved mitigation plan.	DC • Field check, if needed, to ensure placement of exclusionary fencing and/or implementation of monitoring requirements pursuant to the mitigation plan. AC • Field check, if needed, to ensure completion of any post-construction measures included in the mitigation plan.		
MM 4.4.2 Potential impacts to the Valley Elderberry Longhorn Beetle (VELB) shall be mitigated as follows: 1. Exclusionary fencing shall be placed at least 100 feet from the dripline of the elderberry shrubs prior to commencement of construction. 2. Signs shall be placed every 50 feet along the avoidance area which state the following: "*This area is habitat of the valley elderberry longhorn beetle, a threatened species, and shall not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment."* The signs	BC • Determine need for consultation with USFWS based on final improvement plans. If required, confirm consultation is completed prior to start of construction. • Determine whether additional mitigation is required by USFWS. • If necessary, confirm that applicable mitigation measures are included in construction contract.	BC • One-time review to confirm consultation with USFWS occurred, if required. • One-time check of construction contract. • One-time review of training sign-in sheet at outset of construction. DC • Field check as needed to ensure placement of exclusionary fencing and/or implementation of additional		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
shall be readily visible from a distance of 20 feet and shall be maintained for the duration of construction. 3. Prior to commencement of construction, construction workers shall be instructed about the status of the VELB and the need to protect its elderberry host plant. 4. The USFWS shall be consulted before any disturbances within the buffer area occur. Any necessary mitigation measures prescribed by the USFWS shall be implemented. **Applicability:** *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	• Review training sign-in sheet prior to or concurrent with start of construction. DC • Confirm that additional mitigation, if required by USFWS, is implemented in accordance with established timeframes.	mitigation required by USFWS. AC • Field check, if needed, to ensure completion of any post-construction measures required by USFWS.		
MM 4.4.3 Final improvement plans for the following locations shall be modified to the maximum extent feasible to avoid impacts to healthy oak trees 12-inch diameter at breast height (DBH) or larger (e.g., tunneling under roots, placing improvements outside of the drip line, etc.). a. Trade Way site west of the Southern Pacific Railroad (SPRR); and the Main (Cottonwood) Lift Station east of the SPRR. b. Rhonda Road site north of the Anderson-Cottonwood Irrigation Canal. **Applicability:** *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Review final Improvement Plans.	BC • One-time review of plans prior to start of construction.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
MM 4.4.4 The following measures shall be implemented to ensure retention of the oak trees that are designated for preservation. The County shall ensure compliance through the enforcement of contractual obligations: a. Fencing shall be provided at least 6 feet outside of the dripline of all trees to be preserved. The fencing is to remain throughout construction. b. No storage of materials shall occur within the fenced area. c. No construction activities (grading, cutting or trenching), including vehicle parking or materials stockpiling, shall occur within the fenced area. **Applicability:** *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure implementation		
MM 4.4.5 Prior to commencement of construction, the County shall verify the Project is eligible for coverage under a USACE Nationwide Permit. If necessary, the wetland delineation report shall be submitted to and verified by the USACE, and pre-construction notification shall be submitted to the USACE. Following completion of the improvements, all jurisdictional areas shall be restored to pre-construction contours. **Applicability:** *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm requirements; submit delineation to USACE if necessary. • Confirm construction contract requires restoring jurisdictional areas to pre-construction contours. AC • Confirm that jurisdictional areas have been restored to pre-construction contours.	BC • One-time confirmation of requirements. • One-time check of construction contract. AC • Field check to ensure completion.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
MM 4.4.6 For fill requiring a USACE permit, water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the CDFW; and, if required, a streambed alteration agreement shall be obtained. **Applicability:** *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm requirements; if necessary, obtain water quality certification and/or streambed alteration agreement. • Confirm construction contract includes regulatory agency requirements as necessary.	BC • One-time confirmation of requirements. • If necessary, apply for water quality certification and/or streambed alteration agreement. • One-time check of construction contract. DC • Field check as needed to ensure implementation of permit conditions.		
MM 4.4.7 To ensure that active nests of migratory birds are not disturbed, vegetation removal and construction activities shall occur between August 31 and February 1, if feasible. If vegetation removal or construction shall occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area. The survey shall be conducted no more than one week prior to the initiation of vegetation removal or facility construction. If vegetation removal or other construction activities are delayed or suspended for more than two weeks after the pre-construction survey, the site shall be resurveyed. If nesting birds are found, the nest sites shall not be disturbed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no vegetation removal or construction activities shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the CDFW and the	BC • Confirm mitigation measure is included in construction contract. • If vegetation removal or construction occurs between February 1 and August 31, check pre-construction survey report provided by biologist regarding the presence/absence of active nests. DC • If active nests are present, inspect project area to verify applicable buffers are maintained until after the young birds have fledged.	BC • One-time check of construction contract. • One-time check of biologist's documentation. DC • Field check on a weekly basis until the birds have fledged to confirm that buffers are maintained.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
USFWS (the size of the construction buffer zone may vary depending on the species of nesting birds present). A qualified biologist shall delineate the buffer zone with construction tape or pin flags that shall remain in place until the young have fledged. The biologist shall monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. Guidance from CDFW will be requested if the nestlings within the active nest appear disturbed. The monitoring biologist shall have the authority to stop any work determined to be adversely affecting the nesting activity. The monitoring biologist shall report any "take" of active nests to CDFW. **Applicability:** *Phase 1 (WWTP Improvements) and* *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works				
Cultural Resources				
MM 4.5.1 In order to comply with California Clean Water State Revolving Fund Program requirements, prior to commencement of construction, the State Water Board Cultural Resources Officer and Environmental Review Unit shall evaluate the Section 106 Report and provide a summary to SHPO in a letter seeking concurrence with the appropriate finding. Any necessary mitigation measures would be identified through the Section 106 consultation process pursuant to the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and/or the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.	BC • Confirm SHPO determination. • Confirm construction contract includes all required mitigation as necessary.	BC • One-time confirmation of SHPO determination. • One-time check of construction contract. DC • Field check if necessary to confirm implementation.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
Applicability: *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works				
MM 4.5.2 In the event of any inadvertent discovery of archaeological or paleontological resources (i.e., burnt animal bone, midden soils, projectile points or other humanly-modified lithics, historic artifacts, fossils, etc.), all such finds shall be subject to PRC §21083.2 and CEQA Guidelines §15064.5. Procedures for inadvertent discovery include the following: a. If the find is an archaeological resource, all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with NRHP and CRHR criteria. b. If the find is a paleontological resource, all work within 50 feet of the find shall be halted until a professional paleontologist can evaluate the significance of the resource. c. If any find is determined to be significant by the archaeologist, or paleontologist as appropriate, then representatives of the County shall meet with the archaeologist, or paleontologist, to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archaeologist (or paleontologist), outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the County prior to resuming construction.	BC • Confirm mitigation measure is included in construction contract. DC • If any archaeological or paleontological resources are encountered, confirm all construction activities stop within the affected area and a qualified archaeologist and/or paleontologist is contacted.	BC • One-time check of construction contract. DC • Field check as needed to confirm temporary construction stoppage within the buffer zone. • The archaeologist and/or paleontologist shall specify the timing/ frequency of additional monitoring, as appropriate.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
d. All significant cultural or paleontological materials recovered shall be subject to scientific analysis, professional curation, and a report prepared by the professional archaeologist, or paleontologist, according to current professional standards. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works				
MM 4.5.3 In the event that human remains are encountered during construction activities, the County shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the county coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm mitigation measure is included in construction contract. DC • If any human remains are encountered, confirm all construction activities stop within the affected area and that a qualified archaeologist and the county coroner are contacted. • If human remains are recognized as Native American, additional monitoring requirements may be specified by the archaeologist in consultation with representatives of the people of most likely descent.	BC • One-time check of construction contract. DC • Field check as needed to confirm temporary construction stoppage within buffer zone. • The archaeologist shall specify the timing/frequency of additional monitoring, as appropriate.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
Hazards / Hazardous Materials				
MM 4.8.1 During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a fire break. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure implementation.		
Noise				
MM 4.12.1 Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7:00 A.M. and 7:00 P.M., Monday through Friday, and 8:00 A.M. and 5:00 P.M., on Saturdays. Construction activities shall be prohibited on Sundays and federal/state recognized holidays. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure compliance.		

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
MM 4.12.2 Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure compliance.		
MM 4.12.3 When not in use, motorized construction equipment shall not be left idling for more than five minutes. **Applicability:** *Phase 1 (WWTP Improvements) and Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure compliance.		
MM 4.12.4 Stationary equipment (generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses. If necessary, noise attenuation measures sufficient to achieve compliance with the Shasta County General Plan Noise Element shall be implemented.	BC • Confirm mitigation measure is included in construction contract.	BC • One-time check of construction contract. DC • Field check as needed to ensure compliance.		

APPENDIX C

Mitigation Measure	Monitoring Action	Monitoring Timing/Frequency	Completion	
			Date	Initials
Applicability: *Phase 1 (WWTP Improvements) and* *Phase 2 (Collection System Improvements)* **Responsibility:** Shasta County Public Works				

BC = Before Construction DC = During Construction AC = After Construction

ENPLAN

020-73

April 10, 2017

MEMORANDUM

TO: **Charleen Beard**
Shasta County Department of Public Works
1855 Placer Street
Redding, CA 96001-1759

FROM: Carla L. Thompson, AICP

SUBJECT: **Response to Comments: Shasta County Service Area (CSA) 17 Wastewater Collection and Treatment Improvement Project**

In accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 *et seq.)*, and CEQA Guidelines (California Code of Regulations Section 15000 *et seq.)* an Initial Study/Mitigated Negative Declaration (IS/MND) for the CSA 17 Wastewater Collection and Treatment Improvement Project was prepared and made available to the general public and interested agencies for a 30-day public review period. The agency review period managed by the State Clearinghouse ended April 5, 2017; the general public review period ended April 6, 2017.

Response to Comments

Pursuant to CEQA Guidelines Section 15204(b), in reviewing negative declarations, persons and public agencies should focus on the proposed finding that the project will not have a significant effect on the environment. This can be accomplished by identifying the specific effect, explaining why the commenter believes the effect would occur, and explaining why the commenter believes the effect would be significant.

In preparing a response to each comment, the written response must address the significant environmental issue raised and must be detailed, especially when specific comments or suggestions (e.g., additional mitigation measures) are not accepted by the lead agency.

The only comment letter submitted on the IS/MND was from the Central Valley Regional Water Quality Control Board, which is reproduced in its entirety and is followed by the responses to the letter.

Please feel free to contact me at **530.221.0440, ext. 7112,** or cthompson@enplan.com if you have any questions or require additional information.

Enclosures:

- Public Comment Letter
- Responses

LETTER 1

California Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

Central Valley Regional Water Quality Control Board

16 March 2017

Ms. Charleen Beard
Shasta County
1855 Placer Street
Redding, CA 96001

COMMENTS ON THE NEGATIVE DECLARATION FOR PROPOSED CSA 17 WASTEWATER COLLECTION AND TREATMENT IMPROVEMENT PROJECT, COTTONWOOD, SHASTA COUNTY

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) is a responsible agency for this project, as defined by the California Environmental Quality Act (CEQA). On 9 March 2017, we received your request for comments on the Mitigated Negative Declaration for the CSA 17 Wastewater Collection and Treatment Improvement Project.

The proposed project entails sewer system improvements in the unincorporated community of Cottonwood, including improvements to the existing wastewater treatment plant, Black Lane Lift Station, Quail Lane Lift Station, and Cottonwood Lift Station; repair of approximately eight manholes; installation of parallel or replacement collection lines in approximately seven locations; and spot repairs of the collection lines at approximately 16 locations.

Based on our review of the information submitted for the proposed project, we have the following comments:

Clean Water Act (CWA) Section 401, Water Quality Certification

The Central Valley Water Board has regulatory authority over wetlands and waterways under both the Federal Clean Water Act (CWA) and the California Water Code, Division 7 (CWC). Discharge of dredged or fill material to waters of the United States requires a CWA Section 401 Water Quality Certification from the Central Valley Water Board. Typical activities include any modifications to these waters, such as stream crossings, stream bank modifications, filling of wetlands, etc. 401 Certifications are issued in combination with CWA Section 404 Permits issued by the Army Corps of Engineers. The proposed project must be evaluated for the presence of jurisdictional waters, including wetlands and other waters of the State. Steps must be taken to first avoid and minimize impacts to these waters, and then mitigate for unavoidable impacts. Both the Section 404 Permit and Section 401 Water Quality Certification must be obtained prior to site disturbance.

1-1

General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP)

Construction activity, including demolition, resulting in a land disturbance of one acre or more must obtain coverage under the CGP. The CSA 17 Wastewater Collection and Treatment Improvement Project must be conditioned to implement storm water pollution controls during construction and post-construction as required by the CGP. To apply for coverage under the

1-2

CGP the property owner must submit Permit Registration Documents electronically prior to construction. Detailed information on the CGP can be found on the State Water Board website: http://www.waterboards.ca.gov/water_issues/programs/stormwater/gen_const.shtml

If you have any questions or comments regarding this matter please contact me at (530) 224-4783 or dberchtold@waterboards.ca.gov.

Dannas J. Berchtold
Engineering Associate
Storm Water & Water Quality Certification Unit

DJB: ab

cc w/o
enclosures: Mr. Matt Kelley, U.S. Army Corp of Engineers, Redding
Ms. Donna Cobb, Department of Fish and Wildlife, Region 1, Redding

LETTER 1 CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

Comment 1-1: **The Commenter states the Central Valley Regional Water Quality Control Board has regulatory authority over wetlands and waterways under both the Federal Clean Water Act (CWA) and the California Water Code, Division 7 (CWC). Discharge of dredged or fill material to waters of the U.S. requires a CWA Section 404 permit from the U.S. Army Corps of Engineers (USACE) and Section 401 Water Quality Certification from the Central Valley Water Board.**

Response 1-1: All waters of the U.S. and waters of the State identified during field investigations completed by ENPLAN are shown in Figure 4.4-1 (page 49 of the Initial Study) and Figure 4.4-2 (page 52 of the Initial Study. As indicated in Figure 4.4-1, the Trade Way/Southern Pacific Railroad crossing site near the Main Lift Station includes approximately 0.18 acres of wet meadow and approximately 0.01 acres of intermittent stream, for a total of approximately 0.19 acres of jurisdictional waters. However, the proposed pipeline improvements avoid the wet meadow and intermittent stream, and there would be no impact to jurisdictional waters in this location.

The Rhonda Road/Anderson Cottonwood Irrigation Canal site includes approximately 0.11 acres of riparian scrub wetland and 0.07 acres of seasonal wetlands, for a total of approximately 0.18 acres of jurisdictional waters that would be impacted in this location.

As stated on page 54 of the Initial Study, the proposed Project qualifies for a USACE Nationwide Permit (NWP). NWP 12 applies to utility lines when less than ½ acre is impacted. For NWP 12, pre-construction notification is required only when the line exceeds 500 linear feet in waters of the U.S., or if the utility line runs parallel to a stream bed within the jurisdictional area. A delineation is not required when Pre-Construction Notification is not required. The area must be restored to pre-construction contours.

The following Mitigation Measures are included to ensure impacts are less than significant (pages 56-57 of the Initial Study):

MM 4.4.5 Prior to commencement of construction, the County shall verify the Project is eligible for coverage under a USACE Nationwide Permit. If necessary, the wetland delineation report shall be submitted to and verified by the USACE, and pre-construction notification shall be submitted to the USACE. Following completion of the improvements, all jurisdictional areas shall be restored to pre-construction contours.

MM 4.4.6 For fill requiring a USACE permit, water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the CDFW; and, if required, a streambed alteration agreement shall be obtained.

Comment 1-2: **The Commenter states construction activities that result in land disturbance of one acre or more must obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP).**

Response 1-2: Page 85 of the Initial Study states:

"Discharges from construction sites that disturb one acre or more of total land area are subject to the NPDES permit for Discharges of Storm Water Runoff associated with Construction Activity (currently Order No. 2009-009-DWQ). The permitting process requires the development and implementation of an effective SWPPP. The Project applicant must submit a Notice of Intent to the SWRCB to be covered by a NPDES permit and prepare the SWPPP prior to the beginning of construction. The SWPPP must include BMPs to reduce pollutants and any more stringent controls necessary to meet water quality standards. Dischargers must also comply with water quality objectives as defined in the Central Valley Basin Plan. If Basin Plan objectives are exceeded, corrective measures are required."

As stated on page 38 of the Initial Study, total land disturbance for the proposed Project would be approximately 0.64 acres (0.45 acres for pipeline installation, 0.1 acre at the WWTP, and 0.09 acres for staging areas).

The County will review final improvement plans to verify the total area of land disturbance. If land disturbance is over one acre, the County will obtain coverage under the CGP prior to commencement of any ground disturbance.

Even if coverage under the CGP is not required, Chapter 4 (Grading and Erosion Control) of the Shasta County Development Standards Manual requires effective erosion and sediment control measures to be employed throughout construction. This includes implementation of Best Management Practices (BMPs) to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat.