FINAL MITIGATED NEGATIVE DECLARATION
and
INITIAL STUDY

Dunsmuir Wastewater Treatment Plant (WWTP) Improvement Project



Prepared for:

City of Dunsmuir

December 2018

Adopted by the City Council of the City of Dunsmuir on January 17, 2019 (Resolution 2019-03)

32-43

ENPLAN
3179 Bechelli Lane Suite 100
Redding, CA 96002

MITIGATED NEGATIVE DECLARATION

LEAD AGENCY:	City of Dunsmuir
PROJECT PROPONENT:	City of Dunsmuir
PROJECT NAME:	**Dunsmuir Wastewater Treatment Plant (WWTP) Improvement Project**
PROJECT SUMMARY:	The proposed Project entails improvements to the City's existing Wastewater Treatment Plant (WWTP) and I-5 Lift Station. Proposed improvements are detailed in Section 3.3 (Project Components/Physical Improvements) of the Initial Study.
LOCATION:	The majority of the WWTP property is located in an unincorporated area of Shasta County; the northernmost area is located in unincorporated Siskiyou County. The I-5 Lift Station is located within the incorporated City of Dunsmuir (refer to **Figure 1** in the Initial Study). **WWTP.** The WWTP is located on the east side of I-5, generally east of Jesse James Road and south of S. 1st Street in Section 1, Township 38 North, Range 4 West, of the Dunsmuir 7.5-minute quadrangle; Latitude: 41° 10' 58.67" N, Longitude: 122° 16' 55.73" W. Assessor's Parcel Numbers 030-380-070 (Siskiyou County) and 014-060-003 (Shasta County). **I-5 Lift Station.** The I-5 Lift Station is located immediately east of I-5, generally south of River Avenue and north of the Sacramento River in Section 24, Township 39 North, Range 4 West, of the Dunsmuir 7.5-minute quadrangle; Latitude: 41° 13' 14.63" N, Longitude: 122° 16' 28.97" W. Assessor's Parcel Number 059-070-340 (Siskiyou County).

Findings / Determination

As documented in the Initial Study, project implementation could result in possible effects to special-status wildlife species, the introduction and spread of noxious weeds during construction, disturbance of nesting migratory birds (if present), impacts to cultural resources and tribal cultural resources (if present), temporarily increased risk of wildfires, temporarily increased air emissions, and temporarily increased noise and vibration levels.

Design features incorporated into the 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 Section 1.9 of the Initial Study. Because the City of Dunsmuir will adopt mitigation measures as conditions of project approval and will be responsible for ensuring their implementation, it has been determined that the project will not have a significant adverse impact on the environment.

Mitigated Negative Declaration Adopted by the City Council of the City of Dunsmuir on January 17, 2019 (Resolution 2019-03).

FINAL INITIAL STUDY

CITY OF DUNSMUIR

WASTEWATER TREATMENT PLANT AND

I-5 LIFT STATION IMPROVEMENT PROJECT

SISKIYOU COUNTY, CALIFORNIA
SHASTA COUNTY, CALIFORNIA

LEAD AGENCY:

City of Dunsmuir
5915 Dunsmuir Avenue
Dunsmuir, CA 96025

PREPARED BY:

ENPLAN
3179 Bechelli Lane, Suite 100
Redding, CA 96002
530.221.0440

December 2018

The Mitigated Negative Declaration was Adopted by the City Council of the City of Dunsmuir on January 17, 2019.

Revisions to the IS/MND were made based on comments submitted by the California Department of Fish and Wildlife. Deleted language is shown with strikethrough. New language is shown as <u>bold and underlined.</u>

Table of Contents

MITIGATED NEGATIVE DECLARATION
INITIAL STUDY **Page**

SECTION 1.0 INTRODUCTION 1

1.1 Purpose of Study **1**
1.2 Evaluation Terminology **1**
1.3 Organization of the Initial Study **1**
1.4 Project Summary **2**
1.5 Project Location **2**
1.6 Environmental Setting **4**
1.7 Tribal Cultural Resources Consultation **5**
1.8 Environmental Factors Potentially Affected **5**
1.9 Summary of Mitigation Measures **5**

SECTION 2.0 CEQA DETERMINATION 9

SECTION 3.0 PROJECT DESCRIPTION 10

3.1 Introduction 10
3.2 Project Background, Need, and Objectives 10
3.3 Project Components / Physical Improvements 13
3.4 Regulatory Requirements 17

SECTION 4.0 ENVIRONMENTAL IMPACT ANALYSIS (CHECKLIST) 18

4.1 Aesthetics 18
4.2 Agriculture and Forest Resources 21
4.3 Air Quality 24
4.4 Biological Resources 35
4.5 Cultural Resources 47
4.6 Geology and Soils 53
4.7 Greenhouse Gas Emissions 57
4.8 Hazards and Hazardous Materials 67
4.9 Hydrology and Water Quality 73
4.10 Land Use and Planning 81
4.11 Mineral Resources 83
4.12 Noise 84
4.13 Population and Housing 89
4.14 Public Services 90
4.15 Recreation 90
4.16 Transportation/Traffic 91
4.17 Tribal Cultural Resources 93
4.18 Utilities and Service Systems 95
4.19 Mandatory Findings of Significance 98

SECTION 5.0 LIST OF PREPARERS 99

SECTION 6.0 ABBREVIATIONS AND ACRONYMS 100

FIGURES

Figure 1	Project Vicinity	3
Figure 2	Wastewater Treatment Plant Improvements	15
Figure 3	Wastewater Treatment Plant Alternatives	16
Figure 4.4-1	Potential Waters of the U.S.	42
Figure 4.9-1	FEMA-Designated Flood Hazard Areas	80
Figure 4.12-1	Noise Levels of Common Activities	86

TABLES

Table 4.2-1	Project Site Soils – Prime Farmland Classifications	23
Table 4.3-1	Shasta County Thresholds of Significance for Criteria Pollutants of Concern	26
Table 4.3-2	Federal and State Ambient Air Quality Standards	28
Table 4.3-3	Projected Construction Emissions	30
Table 4.6-1	Soil Type and Characteristics	55
Table 4.7-1	Greenhouse Gases	59
Table 4.7-2	Greenhouse Gases: Global Warming Potential and Atmospheric Lifetime	61
Table 4.7-3	Greenhouse Gas Emissions Thresholds	61
Table 4.7-4	Construction-Related Greenhouse Gas Emissions	62
Table 4.7-5	U.S. Electric Power Sector Carbon Dioxide (CO_2) Emissions	63
Table 4.7-6	Estimated Energy Demand for Ultraviolet Disinfection System	63
Table 4.7-7	Operational Greenhouse Gas Emissions Associated with Electricity Use for the UV Disinfection System	64
Table 4.12-1	Examples of Construction Equipment Noise Emission Levels	87

APPENDICES

Appendix A	CalEEMod.2016.3.1 Emissions Reports
Appendix B	Biological Study Report for the City of Dunsmuir Wastewater Treatment Plant (WWTP) Improvement Project; prepared by ENPLAN, November 2018.

SECTION 1.0 INTRODUCTION

1.1 Purpose of Study

The City of Dunsmuir, 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 Wastewater Treatment Plant (WWTP) and I-5 Lift Station Improvement 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 (California 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.

The City intends to apply for funding through the State Water Resources Control Board (SWRCB) Clean Water State Revolving Fund (CWSRF) Program, partially funded by the U.S. Environmental Protection Agency (USEPA). In accordance with the Operating Agreement between the SWRCB and USEPA, and the State Environmental Review Process, this Initial Study has been prepared to address certain federal environmental regulations (federal cross-cutters), 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). These requirements are addressed in Section 4.4 (Air Quality), Section 4.5 (Biological Resources), and Section 4.6 (Cultural Resources) of this Initial Study.

1.2 Evaluation Terminology

The environmental analysis in Section 4.0 is patterned after the Initial Study Checklist recommended in the State CEQA Guidelines. 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 determine if it is feasible to adopt mitigation measures or project alternatives to 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**

Section 6.0: **Abbreviations and Acronyms**

Appendices: Contains information to supplement Section 4.0.

1.4 Project Summary

Project Title:	**Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvement Project**
Lead Agency Name and Address:	**City of Dunsmuir** 5915 Dunsmuir Avenue Dunsmuir, CA 96025
Contact Person and Phone Number:	**Mark Brannigan** 530.235.4822
City's Environmental Consultant:	**ENPLAN** 3179 Bechelli Lane Redding, CA 96002 530.221.0440

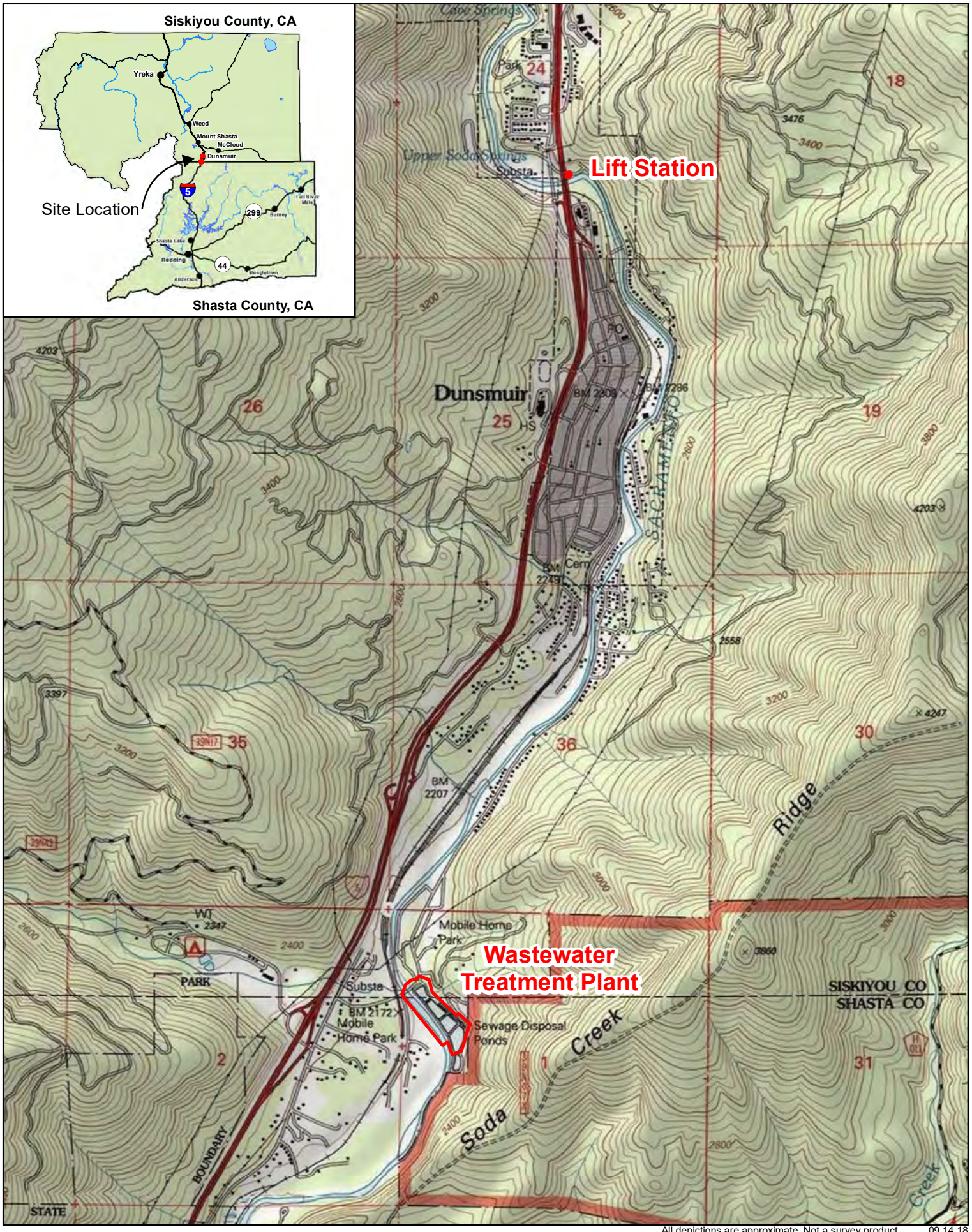
1.5 Project Location

Figure 1 shows the general locations of the WWTP and I-5 Lift Station sites.

WWTP Site: The majority of the WWTP site is located in an unincorporated area of Shasta County; the northernmost portion is located in unincorporated Siskiyou County. The WWTP is located on the east side of I-5, generally east of Jesse James Road and south of S. 1st Street in Section 1, Township 38 North, Range 4 West, of the Dunsmuir 7.5-minute quadrangle; Latitude: 41° 10' 58.67" N, Longitude: 122° 16' 55.73" W. Assessor's Parcel Numbers 030-380-070 (Siskiyou County) and 014-060-003 (Shasta County).

I-5 Lift Station Site: The I-5 Lift Station site is located within the Dunsmuir City limits in Siskiyou County immediately east of I-5, generally south of River Avenue and north of the Sacramento River in Section 24, Township 39 North, Range 4 West, of the Dunsmuir 7.5-minute quadrangle; Latitude: 41° 13' 14.63" N, Longitude: 122° 16' 28.97" W. Assessor's Parcel Number 059-070-340 (Siskiyou County).

Staging Areas: Temporary staging of construction materials and equipment during construction of the proposed Project would occur within the boundaries of the WWTP site in paved and graveled areas. No physical improvements are needed to establish the staging areas.



Path: N:\companyfiles\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\SIFig_1_Project_Vicinity_091418.mxd

All depictions are approximate. Not a survey product. 09.14.18

0 Feet 2,000

Figure 1

Project Vicinity

ENPLAN

1.6 Environmental Setting

General Plan Designation:	**WWTP:** **Siskiyou County:** The Siskiyou County General Plan does not include specific land use designations; rather, the County uses overlay maps to identify development constraint areas. Potential development constraints are further discussed in Section 4.0 (Environmental Analysis). **Shasta County:** Public Facilities (PF) **I-5 Lift Station:** Public Agency (PA)
Zoning:	**WWTP:** **Siskiyou County:** Multiple-Family Residential (R-4) **Shasta County:** Public Facilities (PF) **I-5 Lift Station:** Public Facilities (PF)
Surrounding Land Uses:	**WWTP:** Properties east and southeast of the WWTP include undeveloped public lands. Properties to the northeast include very-low density single-family residences. The River Wood Mobile Home Park is located approximately 550 feet north of the northerly boundary of the WWTP. Single-family residences are located west and southwest of the WWTP. **I-5 Lift Station:** The I-5 Lift Station is located in Tauhindauli Park and is bound by I-5 to the west and the Sacramento River to the south. The closest residence is approximately 200 feet northeast of the lift station.
Topography:	**WWTP:** The WWTP site ranges in elevation from 2,150 to 2,175 feet above sea level. Topography in the area slopes gently to the southeast toward the Sacramento River. **I-5 Lift Station:** The I-5 Lift Station is at an elevation of about 2,325 feet above sea level. Topography in the area slopes gently to the southwest toward the Sacramento River.
Soils:	According to the U.S. Department of Agriculture, Natural Resources Conservation Service (2018), the following soil units have been mapped in the Project sites: **WWTP:** Neer gravelly sandy loam, 50 to 75 percent slopes (257), and Stoner gravelly sandy loam, 2 to 15 percent slopes (315). **I-5 Lift Station:** Stoner gravelly sandy loam, 2 to 15 percent slopes.
Vegetation:	A riparian woodland community occurs along the banks of the Sacramento River and is represented by: black cottonwood, Oregon ash, big-leaved maple, sandbar willow, white alder, Himalayan blackberry, and streambank lotus. In the immediate project vicinity at the WWTP site, riparian vegetation along the eastern bank of the Sacramento River has been removed and the bank has been lined with gunite. The developed portion of the WWTP and the I-5 Lift Station site support a ruderal plant community with species such as pineapple weed, red-stemmed filaree, rough cat's-ear, bulbous bluegrass, dandelion, foxtail fescue, English plantain, and miner's lettuce.
Water Features:	**WWTP:** Sacramento River, Little Castle Creek, and the WWTP percolation ponds. **I-5 Lift Station:** Sacramento River

1.7 Tribal Cultural Resources Consultation

Public Resources Code (PRC) §21084.2 (AB 52, 2014) 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 the tribe requested to the lead agency, in writing, to be informed of proposed projects in the area, and the tribe responds, in writing, within 30 days of receipt of the formal notification and requests consultation. As of November 1, 2018, the City has not received any requests from any Native American tribe asking to be notified of projects in the area.

1.8 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	☒ Mandatory Findings of Significance
☐ Geology and Soils	☐ Population and Housing	
☐ Greenhouse Gas Emissions	☐ Public Services	

1.9 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 City of Dunsmuir shall ensure through contractual obligations that the following measures are implemented throughout construction:

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, and 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).

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 California Vehicle Code §23114. This provision is enforced by local law enforcement agencies.

g. During grading and earth disturbance in undeveloped areas, the contractor shall provide 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.

i. All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept onsite and made available upon request by the County of Shasta.

j. Off-road construction equipment shall not be left idling for periods longer than five minutes when not in use.

BIOLOGICAL RESOURCES

MM 4.4.1 Avoid/Minimize Effects on Foothill Yellow-Legged Frogs and Pacific Tailed Frogs. Prior to the start of in-water work each day that in-water work would occur, a qualified biologist shall conduct a pre-construction survey for foothill yellow-legged frogs and Pacific trailed frogs. If ~~foothill yellow-legged frogs or~~ Pacific tailed frogs (including their egg masses and tadpoles) are found during the pre-construction survey, they shall be relocated by a qualified biologist to a safe location upstream or downstream of the work area. **If foothill yellow-legged frogs (including their egg masses and tadpoles) are found during the pre-construction survey, the following actions shall be taken:**

a. Work in the immediate area shall be halted, and the City shall immediately contact the California Department of Fish and Wildlife and provide a short description of observations, including a count of individuals by life stage, conditions at the site, and other aquatic species observed in the area; and

b. The City shall propose site-specific measures to fully avoid take of foothill yellow-legged frog (including their egg masses and tadpoles). If full avoidance is not feasible, the City shall obtain an Incidental Take Permit (ITP) prior to relocating foothill yellow-legged frog (including their egg masses and tadpoles). Instream work shall not commence until CDFW has provided written approval of the proposed avoidance measures or has issued an ITP.

MM 4.4.2 Avoid/Minimize Effects on Foothill Yellow-Legged Frogs and Pacific Tailed Frogs. Prior to commencement of any earth disturbance, all construction personnel shall receive training from a qualified biologist on identification of foothill yellow-legged frog and Pacific tailed frog and procedures to be implemented in the event that these species are encountered during construction activities. If new personnel are added to the project, the City shall ensure that they receive the mandatory training before starting work.

MM 4.4.3 Avoid/Minimize the Potential for Introduction and Spread of Noxious Weeds.
The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

a. Using only certified weed-free erosion control materials, mulch, and seed.

b. Limiting any import or export of fill material to material that is known to be weed free.

c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the **job site**. ~~County. If the equipment has most recently been used within the County, cleaning is not required.~~

MM 4.4.4 Avoid Disturbing Nesting Birds
In order to avoid impacts to nesting migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or

b. If vegetation removal or ground disturbance activities 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.

Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds.

At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. The results of the survey shall be submitted to the California Department of Fish and Wildlife upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

If active nests are found, the City of Dunsmuir shall consult with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service regarding appropriate action to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

CULTURAL RESOURCES

MM 4.5.1 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, historical 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 City 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 City prior to resuming construction.

MM 4.5.2 In the event that human remains are encountered during construction activities, the City 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, 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.

NOISE

MM 4.12.1 Construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Exceptions to these limitations may be approved by the City's Public Works Director or his/her designee for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards.

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 City of Dunsmuir General Plan Noise Element shall be implemented.

TRIBAL CULTURAL RESOURCES

Implementation of **Mitigation Measures MM 4.5.1 and 4.5.2.**

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.

Mark Brannigan **Date**
City Manager

SECTION 3.0 PROJECT DESCRIPTION

3.1 Introduction

The City of Dunsmuir is proposing improvements to the City's Wastewater Treatment Plant (WWTP) and I-5 Lift Station that are required in order to repair and replace aging infrastructure, improve system efficiency, and comply with Central Valley Regional Water Quality Control Board (CVRWQCB) requirements. Improvements analyzed in this Initial Study include replacement of the existing selector/headworks, improvements to the oxidation ditch, control building, and sludge lagoon number 1, installation of four groundwater monitoring wells, installation of a new outfall to the Sacramento River, and construction of a new building for ultraviolet (UV) disinfection equipment in preparation of converting the plant from a chlorine disinfection process to a (UV) disinfection process. A detailed description of the improvements is provided in Section 3.3 (Project Components/Physical Improvements).

For purposes of this Initial Study, "study area" and "Project area" shall mean:

WWTP:
The WWTP study area encompasses approximately 13.1 acres and includes the access roads, areas in which improvements are proposed, and staging areas. The study area for the WWTP is expansive to allow flexibility for engineering design and for environmental considerations.

I-5 Lift Station Site:
The building footprint and some of the surrounding area, which encompasses approximately 480 square feet.

Work is scheduled to commence in July 2021 and would be completed in approximately one year.

3.2 Project Background, Need, and Objectives

The City's original wastewater system was constructed in the early 1900s and included the collection system sewers in the downtown area and a primary treatment lagoon system at the current WWTP site. In 1975, the WWTP was upgraded from a primary treatment and lagoon system to a secondary treatment plant. In 1992, the City added effluent filtration to the WWTP, which increased the time during the year that treated wastewater can be discharged to the Sacramento River. In 1993, the City added sludge drying beds to better dry its sludge, reduce transportation costs and allow disposal at local landfills.

The City's sewer system includes four lift stations to convey raw sewage into a gravity collection sewer. The primary lift station is the North Dunsmuir (I-5) lift station that accepts all raw sewage from the North Dunsmuir area and discharges it into the downtown area collection system. Wastewater is conveyed to the WWTP headworks through a 15-inch gravity interceptor located in S. 1st Street.

The WWTP headworks consists of an anoxic selector/grit chamber, dimminutor, standby manual bar screen, and Parshall flume for flow measurements. From the headworks, raw sewage enters the oxidation ditch. Aeration in the oxidation ditch is accomplished with two 15-foot long rotating brush aerators. Return activated sludge (RAS) is pumped into the south end of the oxidation ditch just upstream of the south aerator or directly into the anoxic selector. The mixed liquor from the oxidation ditch flows to the circular secondary clarifier for settling.

The waste activated sludge (WAS) is pumped to the aerobic digester via the RAS pump station. The effluent from the secondary clarifier flows by gravity to the traveling bridge filters and is then pumped into the chlorine contact chamber for disinfection. The treatment system includes the

use of gas (Cl_2) chlorination, and gas (SO_2) de-chlorination. Final effluent can be discharged to the percolation ponds or to the Sacramento River depending on the time of year.

Digested sludge from the aerobic digester is sent to the sludge storage basins and is then pumped to the sludge drying beds in the summer before hauling to a landfill.

Between September 16 and June 14, treated wastewater is discharged to the Sacramento River through a multiport diffuser from Discharge Point D-001. Between June 15 and September 15, treated wastewater is discharged to a series of percolation ponds adjacent to the River from Discharge Point D-002.

On November 8, 2013, the CVRWQCB issued Administrative Civil Liability Complaint No. R5-2013-0584 for mandatory minimum penalties in the amount of $39,000 for effluent violations that occurred between September 1 and December 31, 2012. In response to the violations and aging infrastructure, the City commenced improvements to the WWTP in mid-2013; improvements included the addition of an anoxic selector for denitrification and filamentous algae control, conversion of the existing 35-foot diameter secondary clarifier into an aerobic digester, and construction of a new 60-foot diameter secondary clarifier to improve solids capture rates throughout the year and handle peak wet-weather flows.

Although the 2013 improvements assisted in resolving effluent violations, the following additional deficiencies need to be addressed in order to comply with the WWTP National Pollutant Discharge Elimination System (NPDES) permit:

- Excessive rag accumulation in the oxidation ditch and pumps creates an ongoing operation and maintenance problem throughout the WWTP.
- The oxidation ditch aerators have several brushes missing and have met their useful service lives.
- The existing aerators are fixed speed and can only adjust the air supplied to the ditch by adjusting the submergence depth of the aerators or cycling the number of hours in operation, which is not optimal for consistent ammonia removal.
- The existing grit removal system was installed with the original plant in 1974 and consists of a roots blower, buckets and an auger system. It has since lost several components and is no longer effective at removing grit.
- The existing grit chamber was modified in 2013 to create an anoxic selector; however, the selector needed to be larger to provide a higher food to microorganism ratio to improve sludge settling, reduce nitrates, and recycle alkalinity to increase pH buffering capacity, which in turn would reduce effluent ammonia and nitrate concentrations.
- Influent to the WWTP starts to backup when RAS and mixed liquor recycle are returned to the selector.
- Ammonia in the sludge lagoons has been recorded in excess of 1,000 milligrams per liter, which can overload the WWTP if not fed back at a very slow rate. The addition of fine bubble diffusers in sludge lagoon number 1 will improve the nitrification process in the lagoon prior to sending supernatant back to the headworks.
- An automatic butterfly valve is used to stop discharge to the river when a chlorine residual is measured. When this valve shuts, flows back up in the channel, and a false reading to the chlorine dosing equipment occurs. This, in turn, results in an overdose of chlorine. Improvements to the controls and/or installation of additional butterfly valves for pond diversion are required to resolve this problem.

- The aluminum grates at the effluent wet well need to be replaced to allow plant operators to safely conduct sampling activities.

- Castle Creek enters the Sacramento River approximately 400 feet north of the existing diffuser. This section of the Sacramento River is narrow and is prone to flooding. In the past 20 years the City has had to alter the Sacramento River alignment twice after flood events deposited large quantities of rock along the stream bed. The process to repair damage caused by a storm event is very expensive and requires permits from the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB).

  Most recently, in February 2017, a large amount of gravel was deposited to the east side of the river bed following a storm event. This created a new channel on the west side of the river and diverted the majority of the flow along the west bank, which exposed the existing WWTP diffusers that are in the river during low flows, thereby preventing sufficient dilution of treated wastewater that is discharged into the river. When not properly diluted, the treated wastewater has a greater potential to be harmful to both aquatic life and human health. Relocating the outfall to the south would ensure adequate dilution of treated wastewater.

- The RWQCB issued three Administrative Civil Liability Complaints against the City for chlorine violations that occurred in 2011. The City has since installed a chlorine residual analyzer to direct effluent flow to the percolation ponds if residual chlorine is detected in the effluent. To completely eliminate risks associated with chlorine, the City proposes converting the treatment process from chlorine gas disinfection to ultraviolet (UV) disinfection, which will have the following benefits:

  - Unlike chlorine disinfection, UV disinfection needs only power to operate. Once the UV system is installed, no hazardous chemicals (i.e., chlorine and sulfur dioxide) would be delivered or stored on-site, thereby eliminating risks to employees, the general public, and the environment.
  - There would be a slight decrease in carbon dioxide emissions because trucking chemicals from the supplier to the WWTP would be eliminated.
  - Total dissolved solids in the final effluent would be reduced by not using chlorine and sulfur dioxide. This is consistent with the City's Salinity Evaluation and Minimization Plan goal as required by the WWTP NPDES Permit.
  - Regulated disinfection byproducts (e.g., total trihalomethanes) that could adversely affect water quality, aquatic species, and environmentally sensitive habitats, are not created as a result of the UV disinfection process.
  - Equipment is easy to operate and maintain, although maintenance must be performed on a regular basis to prevent fouling of UV glass.

- There are presently eight groundwater monitoring wells on the WWTP property. The City is concerned that the protective seals on the existing wells have been compromised, which may be contributing to erroneous monitoring data. Four additional monitoring wells are needed to provide a more accurate representation of the upgradient and downgradient groundwater quality.

- Outdated electrical components, controls, and alarms need to be replaced to improve operational efficiency.

- Outdated laboratory equipment at the WWTP needs to be replaced to provide quality assurance.

- The I-5 Lift Station is the City's primary lift station and accepts all raw sewage from the North Dunsmuir area and discharges it into the downtown area collection system. In order to improve efficiency, the existing dimminutor at the WWTP headworks would be relocated to the I-5 Lift Station.

3.3 Project Components / Physical Improvements

This section describes the proposed improvements that are the subject of this Initial Study. As shown in **Figure 2**, proposed improvements at the WWTP site include construction of a new outfall to the Sacramento River and completion of UV disinfection improvements. However, the City may not be able to secure funding to complete all of the improvements; therefore, this Initial Study addresses three alternatives for the WWTP improvements as described below.

Wastewater Treatment Plant

Alternative 1: Complete improvements to the WWTP, including both the new outfall and the UV disinfection improvements.

As shown in **Figure 2**, Alternative 1 includes the following improvements:

- **New selector and screen.** The existing selector would be demolished and a new larger biological selector/headworks would be installed northwest of the existing selector. The new selector basin would measure approximately 30 feet by 30 feet (900 square feet) and would be approximately 11 feet in depth. The existing dimminutor would be removed and relocated to the I-5 Lift Station. A new influent screening unit would be installed.
- **Influent line improvements.** Approximately 300 feet of influent line would be replaced using open-cut trenching. The maximum depth of excavation would be five feet.
- **Oxidation ditch improvements.** The oxidation ditch aerators would be replaced. Dissolved oxygen and ammonia monitoring and reporting instruments would be installed in the oxidation ditch to assist operators with diurnal adjustments to the aerator speed and depth.
- **Control building improvements.** Improvements to the disinfection controls would be completed to provide consistent chlorine dosing. A chlorine residual analyzer would be added to the channel post-contact chamber. Additional butterfly valves may also be installed for pond diversion. Outdated laboratory equipment, electrical components, and alarms would be replaced.
- **Sludge lagoon aeration improvements.** Fine bubble diffusers would be installed in sludge lagoon number 1.
- **Effluent wet well.** The existing aluminum grates at the effluent wet well would be replaced.
- **Groundwater monitoring wells.** Four groundwater monitoring wells would be installed within the areas shown in Figure 2. Each well would be about 12 feet in depth.
- **New outfall.** A new outfall and multiport diffuser would be installed approximately 600 feet southeast of the existing outfall. A splitter box with a flanged valve would be installed in the graveled access road on the west side of the WWTP property. A new 15-inch effluent discharge line would be constructed from the splitter box to the existing outfall to allow effluent to be discharged into Pond 1 from the splitter box.

  For the new outfall, a 15-inch pipe would extend from the splitter box toward the centerline of the Sacramento River. The diffuser would consist of a 15-inch pipe header with approximately 10 to 15 ports aligned at 90 degrees with the river channel flow in order to divert the discharge away from the channel bottom.

  The work area would likely be limited to 10 feet on either side of the outfall pipeline and diffuser. The maximum depth of excavation for the pipe would be five feet. The river bank at the new outfall location is lined with gunite and only a minor amount of riparian vegetation would be removed to accommodate the proposed improvements. An excavator would enter the riverbed from the WWTP property near the new outfall, using the gunite-lined bank to access the work site. Alternatively, access would occur on the east side of the river through

an existing public easement adjacent to the S. 1st Street Bridge. An excavator would enter the riverbed and drive down the river channel to access the work site. This access route was established for a previous City project, and no additional improvements to this route would be required.

Adequate control of surface water during construction is expected to be achieved by temporarily diverting river flows around the work area. This would be accomplished by installing a cofferdam, water-filled bladder dam, curtain, or other suitable dewatering structure. Design of the dewatering system is the responsibility of the contractor. The dewatering structure would be removed at the end of construction.

- **UV disinfection improvements.** A new concrete masonry building would be constructed for UV equipment. The building would measure approximately 20 feet by 50 feet (1,000 square feet). The bank of Percolation Pond 4 would be expanded to accommodate the UV building.

  An effluent discharge line would be constructed from the effluent pump station to the UV building. Disinfected effluent from the UV building would discharge into a new effluent discharge line that would be constructed in the dike between Ponds 3 and 4. The discharge line would be connected to the new outfall splitter box. The effluent discharge line would be installed using open-cut trenching. The maximum depth of excavation would be five feet.

Alternative 2: Complete improvements to the WWTP and construct only the UV disinfection improvements

As shown in **Figure 3**, Alternative 2 includes construction of the influent line replacement, a new selector and screen, oxidation ditch improvements, control building improvements, sludge lagoon aeration improvements, effluent wet well improvements, and installation of new groundwater monitoring wells as described under Alternative 1 above.

In addition, a new UV equipment building and associated UV disinfection improvements would be constructed as described under Alternative 1 above. Alternative 2 does not include construction of a new outfall; therefore, an effluent discharge line would be extended from the UV building to the existing chlorine contact chamber using open-cut trenching, and would then be installed inside the 42-inch chlorine contact chamber. The maximum depth of excavation for the pipe would be five feet.

Alternative 3: Complete improvements to the WWTP and construct only the new outfall

As shown in **Figure 3**, Alternative 3 includes construction of the influent line replacement, a new selector and screen, oxidation ditch improvements, control building improvements, sludge lagoon aeration improvements, effluent wet well improvements, and installation of new groundwater monitoring wells as described under Alternative 1 above.

In addition, a new outfall would be constructed as described under Alternative 1 above. A 15-inch effluent discharge line from the dechlorination facilities to the new outfall would be constructed in the graveled access road that parallels the Sacramento River. The pipe would be installed using open-cut trenching. The maximum depth of excavation for the pipe would be five feet.

I-5 Lift Station:

At the I-5 Lift Station, the dimminutor from the WWTP would be installed and miscellaneous electrical improvements would be completed. All work would be internal to the building.

Staging Areas:

Staging of construction materials and equipment would occur within the boundaries of the WWTP site. No physical improvements would need to be completed to establish the staging areas. Therefore, the staging areas are not further discussed in this IS/MND.

South 1st Street

Demo Existing Selector

Relocate Dimminutor to I-5 Lift Station

(N) Selector & Screen

Remove/Replace Mechanical Aerators

Control Building Misc. Improvements

Sludge Lagoon No. 1 Aeration Improvements

(N) 2" Monitoring Well within this area

Replace Approx. 300 feet of Influent Line

(N) 2" Monitoring Well within this area

Potential Contractor Access to River from South 1st Street

Effluent Wet Well Improvements

(N) UV Building

Percolation Pond 1

(N) Filtered Effluent Discharge Line to Connect Effluent Pump Station to (N) UV Building

(N) Effluent Discharge Line

(N) 2" Monitoring Well within this area

(E) Outfall

Discharge Line to (E) Outfall

Percolation Pond 3

Percolation Pond 4

Sacramento River

(N) Splitter Box

(N) Outfall

(N) 2" Monitoring Well within this area

Study Area
Sacramento River
Site Design (Alternative 1)

Path: N:\companyfiles\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\ISFig 2 Proposed WWTP Imps 112018.mxd

0 100 Feet

Figure 2

Proposed Wastewater Treatment Plant Improvements

Feature and boundary locations depicted are approximate only.
This is not a survey product.

11.20.18

ENPLAN

South 1st Street

Demo Existing Selector

(N) Selector & Screen

Relocate Dimminutor to I-5 Lift Station

Remove/Replace Mechanical Aerators

Control Building Misc. Improvements

Sludge Lagoon No. 1 Aeration Improvements

(N) 2" Monitoring Well within this area

Replace Approx. 300 feet of Influent Line

(N) 2" Monitoring Well within this area

Potential Contractor Access to River from South 1st Street

Effluent Wet Well Improvements

(N) Effluent Discharge Line to Connect to Chlorine Contact Chamber

(N) UV Building

Percolation Pond 1

(N) 2" Monitoring Well within this area

(N) Filtered Effluent Discharge Line to Connect Effluent Pump Station to (N) UV Building

(E) Outfall

Discharge Line from (E) Outfall to (N) Outfall

Percolation Pond 3

Percolation Pond 4

Sacramento River

(N) Outfall

(N) 2" Monitoring Well within this area

Study Area
Sacramento River
Site Design (Proposed Across Both Alternatives)
Site Design - Alternative 2
Site Design - Alternative 3

Path: N:\company\files\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\ISI Fig 3 Alternatives Map 11202018.mxd

Feet
0 100

Figure 3
Wastewater Treatment Plant Alternatives

Feature and boundary locations depicted are approximate only.
This is not a survey product.

11.20.18

ENPLAN

3.4 Regulatory Requirements

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

City of Dunsmuir:

- Adoption of a Mitigated Negative Declaration pursuant to CEQA.
- Adoption of a Mitigation Monitoring Plan for the Project that incorporates the mitigation measures identified in this Initial Study.

Other Agencies and Entities:

- U.S. Army Corps of Engineers Section 404 permit under the Federal Clean Water Act.
- State Water Resources Control Board (SWRCB) Section 401 Water Quality Certification (or waiver).
- SWRCB NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* (currently Order No. 2009-009-DWQ) under the State Clean Water Act; requires submittal of a Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to reduce pollutants and any additional controls necessary to meet water quality standards.
- California Department of Fish and Game Section 1600 Lake and Streambed Alteration Agreement.
- State Historic Preservation Officer (SHPO) consultation and approval pursuant to Section 106 of the National Historic Preservation Act (NHPA) regarding potential impacts to cultural resources. Pursuant to CWSRF Guidelines, the SWRCB is responsible for conducting the Section 106 consultation with SHPO.

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

City of Dunsmuir

The City's General Plan includes the following Policy and Implementation Measure that apply to the proposed Project:

Chapter 4.0. Circulation

Policy	C-4.1	Maintain the attractiveness of Dunsmuir by protecting and, when practicable, enhancing the scenic qualities of the community along primary transportation routes, especially Interstate 5, Dunsmuir Avenue, and designated bikeways.
Implementation Measure	C-4.1.2	In reviewing project proposals, the City will consider potential project impacts on scenic qualities and will determine if conditions of approval or mitigation measures are needed to protect and enhance scenic resources.

California Scenic Highway Program

The California Scenic Highway Program, administered by the California Department of Transportation (Caltrans), was established 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 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. Scenic resources in the Project area include mature trees and other vegetation, the Sacramento River, Castle Crags, and the forested canyon walls that surround the community. **Photo 4.1-1** is representative of views from the WWTP property.



Photo 4.1-1. *WWTP, facing west toward Jesse James Rd. and Castle Crags.*

The WWTP is on the east side of I-5, generally south of S. 1st Street and adjacent to the Sacramento River. The WWTP is not visible from I-5 or Jesse James Road due to existing vegetation surrounding the WWTP. Although some areas of the WWTP are visible to the traveling public on S. 1st Street and recreational users on the Sacramento River, with the exception of construction of a larger biological selector/headworks and a new UV building, the improvements would be subsurface or would consist of replacing existing mechanical equipment.

As shown in **Figure 2,** the existing selector would be demolished and a new larger biological selector/ headworks would be installed northwest of the existing selector in the northeastern portion of the property.

The new headworks would be placed south of the existing building shown in **Photo 4.1-2** that would partially screen views of the headworks from the travelling public on S. 1st Street. In addition, as shown in **Photo 4.1-3**, the new headworks would not be visible from the Sacramento River due to trees and other vegetation that line the bank of the River west of the new headworks location.



Photo 4.1-2. *View from S. 1st Street, facing south.*



Photo 4.1-3. *View from new headworks location, facing west toward the Sacramento River.*

As shown in **Figure 2**, the ±600-square-foot UV building would be constructed on the southern portion of the property, approximately 900 feet southeast of S. 1st Street and 250 feet northeast of the Sacramento River. The bank of the river west of the proposed UV building is approximately 10 feet in height and would partially screen views of the building from recreational users in the river. Considering the river, heavily treed hillsides surrounding the WWTP, and the extent of existing improvements on the WWTP property, the UV building would not be a visually prominent feature.

The I-5 Lift Station (**Photo 4.1-4**) is visible to the traveling public on River Avenue, users of the Tauhindauli Trail east, west, and south of the lift station, and from the Tauhindauli Park picnic area west of the lift station. However, all work at the I-5 Lift Station site would be internal to the existing building, and no new structures are proposed that would block the view of a scenic resource.



Photo 4.1-4. *I-5 Lift Station, facing east from under the I-5 overpass.*

The proposed Project would have short-term visual impacts during construction due to excavation and staging activities associated with the improvements. However, construction practices will minimize visual impacts. Soil stockpiles would be located away from viewers as feasible, and erosion control measures would be implemented.

Therefore, because improvements at the I-5 Lift Station would be internal to the building; views of proposed above-ground structures at the WWTP would be partially screened and would not be visually prominent features in the viewshed; and impacts during construction would be temporary and cease at completion of the Project, aesthetic impacts would be less than significant.

Question B

According to the California Scenic Highway Mapping System, there are no officially designated State Scenic Highways in the Project area. The officially designated state scenic highway closest to the Project site is a portion of Highway 151 in the City of Shasta Lake, approximately 35 miles southwest of the WWTP. Therefore, there would be no impact.

Question D

The proposed Project does not include the installation of any new permanent exterior lighting. Improvements at the I-5 Lift Station are internal to the building and would not require temporary lighting during construction. It is anticipated that work at the WWTP would occur during daytime hours. In the event temporary lighting is required, it would be confined to the WWTP property and would not constitute a hazard to vehicular traffic. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Potential cumulative projects in the area include growth according to the build-out projections in the City of Dunsmuir, Shasta County, and Siskiyou County General Plans. The proposed Project does not include any features that would permanently 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

California Department of Transportation. 2015. California State Scenic Highway Mapping System. Siskiyou County. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed August 2018.

ENPLAN. Field survey. June 11, 2018.

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 §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

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 four categories of farmland, which include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, are considered valuable. Any conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland 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 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, B, and D

According to the DOC, the Dunsmuir area was not surveyed for inclusion in the FMMP. §21060.1(b) of the California Environmental Quality Act states *"[i]n those areas of the state where lands have not been surveyed… 'agricultural land' means land that meets the requirements of "prime agricultural land" as defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code."* The classifications are as follows:

(c) "Prime agricultural land" means any of the following:

(1) All land that qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications.

(2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.

(3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.

(4) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.

1. The Land Capability Classification (LCC) Rating.

The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops, and the risk of damage to soils when they

are used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). The LCC also includes capability subclasses, which are soil groups that identify soil limitations that interfere with plant growth or cultivation. The subclasses are designated by the letters e (erosion), w (water), s (rooting zone issues), or c (very cold or very dry climate).

2. **The Storie Index Rating.**

   The Storie Index provides a numeric rating (based upon a 100-point scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon the character of the soil profile, surface texture, steepness of the slope, drainage, alkalinity, fertility, wind and water erosion, acidity, and microrelief.

Soils on the Project site are summarized in **Table 4.2-1.** As indicated, neither of the soil types have an LCC rating or Storie index that categorize them as Prime Farmland. Although Stoner gravelly sandy loam is identified as Farmland of Statewide Importance, areas in which improvements are proposed are not currently used or zoned for agricultural production. In addition, although an orchard is located on the west side of the Sacramento River, adjacent to the WWTP, the proposed Project does not include any components that would directly or indirectly impact the orchard.

Therefore, the proposed Project would not directly or indirectly convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses, and there would be no impact.

TABLE 4.2-1
Project Site Soils – Prime Farmland Classifications

Map Unit Symbol	Soil Name	NRCS Designation	LCC Class and Subclass	Storie Index
WWTP				
257im	*Neer gravelly sandy loam, 50 to 75 percent slopes*	Not Prime Farmland	VIIe	Very Poor (11-20)
WWTP and I-5 Lift Station				
315	*Stoner gravelly sandy loam, 2 to 15 percent slopes*	Farmland of Statewide Importance	IIIe	Fair (41-60)

Source: Natural Resources Conservation Service (NRCS), 2018.

Question C

According to the City of Dunsmuir, Shasta County, and Siskiyou County General Plans, the Project sites are not designated as forest land or timberland and are not zoned for timberland production. In addition, the proposed Project does not propose a zone change or other activity that would convert existing forest or timberland zoning. Therefore, there would be no impact.

CUMULATIVE IMPACTS

As stated above, the proposed Project would not result in the conversion of agricultural or forest land. In addition, the proposed Project would not interfere with current agricultural uses in the area. Therefore, no cumulative impacts would occur.

MITIGATION

None necessary

DOCUMENTATION

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

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 August 2018.

State of California, Department of Conservation. 2016. Farmland Mapping and Monitoring Program. Shasta County Important Farmland. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/sha16.pdf. Accessed August 2018

_____. 2016. Farmland Mapping and Monitoring Program. Siskiyou County Important Farmland ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/sis16.pdf. Accessed August 2018.

_____. 2013. Shasta County Williamson Act, FY 2006/2007. ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Shasta_w_06_07_WA.pdf. Accessed August 2018.

_____. 2016. Siskiyou County Williamson Act, FY 2015/2016 ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Siskiyou_15_16_WA.pdf. Accessed August 2018.

Siskiyou County. 1980. Siskiyou County General Plan. https://www.co.siskiyou.ca.us/sites/default/files/docs/GP_LandUse-CirculationElement.pdf. Accessed August 2018.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2018. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed August 2018.

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

The Project area 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. Siskiyou County is located in the Northeast Plateau Air Basin (NPAB). Shasta County is located in the Sacramento Valley Air Basin (SVAB).

The I-5 Lift Station is under the jurisdiction of the Siskiyou County Air Pollution Control District (SCAPCD). The WWTP is under the jurisdiction of the Shasta County Air Quality Management District (SCAQMD).

REGULATORY CONTEXT

Local

Siskiyou County Air Pollution Control District

The SCAPCD has the responsibility of enforcing federal and state air quality regulations in Siskiyou County. It also issues rules and regulations setting specific standards of operation, defining permit requirements, and setting emission limits. Siskiyou County has defined 250 pounds (lbs)/day as the threshold of significance for NO_X, $PM_{2.5}$, PM_{10}, and SO_2 emissions, and 2,500 lbs/day as the threshold of significance for CO emissions (Rule 6.1).

Siskiyou County is currently designated in attainment or unclassified status for all federal and state criteria pollutants; therefore, the County is not required to have a local air quality attainment plan.

Shasta County Air Quality Management District

The SCAQMD has the responsibility of enforcing federal and state air quality regulations in Shasta County. The SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. 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.

Shasta County is currently designated a non-attainment area for State ozone standards; the County is designated as an attainment or unclassified area for all other federal and State ambient air quality standards. In the past, Shasta County has been designated non-attainment for State PM_{10} standards; however, in February 2018, CARB adopted modifications to attainment/non-attainment designations for several areas in the State. The modifications included changing Shasta County's designation for PM_{10} from non-attainment to attainment. CARB submitted the final rulemaking package to the state Office of

Administrative Law (OAL) on August 10, 2018. OAL granted final approval of the revised designations, effective September 24, 2018.

The SCAQMD, along with other air districts in the Northern Sacramento Valley Air Basin (NSVAB), jointly prepared an Air Quality Attainment Plan (AQAP) for the purpose of achieving and maintaining healthful air quality throughout the air basin. The Northern Sacramento Valley Planning Area (NSVPA) 2015 Triennial AQAP constitutes the region's State Implementation Plan (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.

Shasta County General Plan (Chapter 6.5, Air Quality)

As shown in **Table 4.3-1**, Shasta County has adopted air quality thresholds for emissions of Reactive Organic Gases (ROG), Oxides of Nitrogen (NOx) and Particulate Matter, 10 microns in size (PM_{10}) to determine the level of significance for projects subject to CEQA review (Shasta County Rule 2:1, New Source Review, Part 300).

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).

Federal

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 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 Siskiyou County and Shasta County are designated as attainment or unclassified areas for all federal air quality standards, federal conformity requirements do not apply to the proposed Project.

Federal Ambient Air Quality Standards

The USEPA, under the CAA establishes maximum ambient concentrations for criteria air pollutants (CAP), known as the National Ambient Air Quality Standards (NAAQSs) (See Table 4.3-2). 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 SVAB and NPAB. 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

State Ambient Air Quality Standards

For areas within the State that have not attained air quality standards, the California Air Resources Board (CARB) works with local air districts to develop and implement attainment plans to obtain compliance with air quality standards established under both the federal and California Clean Air Acts.

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 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 Federal and State ambient air quality standards:

TABLE 4.3-2
Federal and State 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
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

California Regional Haze Plan

The USEPA 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. 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 on emission sources.

METHODS

Project emissions were estimated using Version 2016.3.2 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 site preparation, grading, use of construction equipment, material hauling, trenching, and architectural coatings.
- Construction would commence in July 2021 and occur over a period of about one year.
- Total land disturbance would be approximately 1.1 acres; approximately 1,300 cubic yards (CY) of dirt would be imported; no dirt would be exported.
- Concrete to be removed from the site as part of demolition of the existing selector, plus pavement to be removed from the site to accommodate the pipeline improvements, would be approximately 54 tons.
- Total area to be re-paved following completion of the Project is approximately 0.25 acres.
- The Project would implement SCAQMD standard mitigation measures and would comply will applicable SCAPCD and SCAQMD rules as discussed under Regulatory Context above.

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 and Section 4.7 (Greenhouse Gas Emissions).

As noted under Regulatory Context above, the I-5 Lift Station is under the jurisdiction of the SCAPCD, and the WWTP is under the jurisdiction of SCAQMD; therefore, this analysis references thresholds adopted by both the SCAPCD and SCAQMD.

As shown in **Table 4.3-1** above, Shasta County has adopted air quality thresholds of significance for projects subject to CEQA review. In addition, Siskiyou County has defined 250 pounds (lbs)/day as the threshold of significance for NO_X, $PM_{2.5}$, PM_{10}, and SO_2 emissions, and 2,500 lbs/day as the threshold of significance for CO emissions.

Construction

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

To allow a direct comparison with Siskiyou County's and Shasta County's standards, emissions for each phase of construction (e.g., site preparation, excavation, demolition, installation of Project components, etc.) were averaged over the anticipated construction period for that specific phase of work. The values reflect Siskiyou County's and Shasta County's rules and regulations, including implementation of Shasta County's standard mitigation measures (Siskiyou County has not adopted standard mitigation measures). In addition, the proposed Project is subject to the In-Use Off-Road Diesel Vehicle Regulation adopted by CARB. The off-road regulation:

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

Table 4.3-3 shows the highest daily levels regardless of construction phase. Because the City of Dunsmuir is applying for funding for the proposed Project through the CWSRF Program, which is partially funded by the USEPA, **Table 4.3-3** also shows estimated emissions in tons per year in accordance with CWSRF requirements.

TABLE 4.3-3
Projected Construction Emissions

Year	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
2021	2.05	0.12	24.53	0.97	3.68	0.06	2.05	0.05	14.95	0.85	0.05	0
2022	1.68	0.08	12.53	0.64	0.65	0.03	0.59	0.03	12.98	0.67	0.02	0

As shown in **Table 4.3-3,** construction of the proposed Project would not exceed Siskiyou County's thresholds or Shasta County's Level A or Level B thresholds. In addition, the Federal General Conformity Rule does not apply to the proposed Project because both Siskiyou County and Shasta County are designated as attainment or unclassified areas for all federal ambient air quality standards. Therefore, impacts during construction would be less than significant.

Operational

The purpose of the proposed Project is to replace aging infrastructure and address existing deficiencies at the WWTP and I-5 Lift Station that need to be resolved in order to ensure reliable wastewater service for the community. The proposed Project would not increase the amount of wastewater treated beyond the existing permitted treatment and disposal capacity. In addition, 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. As discussed under Section 3.2 above, the proposed Project includes converting the WWTP from a chlorine disinfection process to the UV disinfection process. There would be a slight decrease in emissions from truck trips because chemicals would no longer need to be delivered to the WWTP.

As indicated in **Appendix A**, the proposed Project would generate only trace amounts of criteria pollutants and would not exceed the Siskiyou County's thresholds or Shasta County's Level A or Level B thresholds. Therefore, operational impacts would be less than significant.

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.

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 an increase in hydrogen sulfide emissions is less than significant.

Vinyl chloride. Vinyl chloride is used to manufacture 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.

Because the proposed Project would be in conformance with the applicable SIP; would not exceed Siskiyou County's or Shasta County's thresholds during construction; does not have any components that would significantly increase long-term operational emissions; and would not result in significant impacts associated with O_3, Pb, H_2S, vinyl chloride, or visibility reducing particles, impacts would be less than significant.

Question C

See discussion under Regulatory Context and Questions A and B above, and *Cumulative Impacts* below. Siskiyou County is in attainment or unclassified status for all federal and state criteria pollutants. Shasta County is designated a non-attainment area for State ozone standards.

As discussed under Questions A and B above and shown in Table 4.3-3, the Project's construction emissions would not exceed adopted thresholds for ROG or NO_X (ozone precursors). In addition, the proposed Project does not include any components that would result in an increase in long-term operational ROG or NO_X emissions.

Combined with future development within the Project area, the proposed Project would contribute to a cumulative increase in ROG and NO_X emissions; however, pursuant to the Air Quality Element of Shasta County's General Plan, Standard Mitigation Measures (SMMs) apply to all discretionary projects in order to reduce cumulative air quality impacts. Implementation of **Mitigation Measure MM 4.3.1,** which includes SMMs to reduce PM_{10}, ROG and NO_X emissions, would reduce cumulative impacts to a less than significant level.

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-related activities adjacent to residences at both the WWTP site and the I-5 Lift Station site. In addition, the Tauhindauli park and trail are adjacent to the I-5 Lift Station site.

All work at the I-5 Lift Station would be internal to the building, and potential impacts adjacent to the Lift Station would be limited to construction personnel coming to the site; no long-term operational emissions would occur. As discussed under Questions A and B above, the proposed Project does not have any components that would significantly increase long-term operational emissions at the WWTP over existing operations.

The proposed Project would generate PM_{10} and other pollutants during construction. Although these emissions would cease with completion of construction work, sensitive uses adjacent to the construction area could be exposed to elevated dust levels and other pollutants.

Compliance with federal, state, and local regulations, and implementation of **Mitigation Measure MM 4.3.1** would reduce impacts to a less than significant level.

Question E

During construction, odors would be emitted from diesel equipment, paints, solvents, fugitive dust, asphalt, and adhesives. Odors from construction would be intermittent and temporary, and generally would not extend beyond the construction area. Due to the temporary and intermittent nature of construction odors, impacts during construction would be less than significant. Operational activities have the potential to emit odors from the WWTP process. Existing potential odor-emitting facilities at the WWTP include the headworks, an oxidation ditch, a secondary clarifier, and sludge lagoons.

As noted under Questions A and B above, the purpose of the proposed Project is to replace aging infrastructure and address existing deficiencies at the WWTP and I-5 Lift Station that need to be

resolved in order to ensure reliable wastewater service for the community. The proposed Project would not result in an increase in the amount of wastewater treated and does not include any components that would increase odors at the WWTP or I-5 Lift Station.

Therefore, because odors during construction are a temporary impact that would cease at completion of the improvements, and the Project does not include any components that would increase odors over current operations, impacts would be 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, local air districts 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, pursuant to the Air Quality Element of Shasta County's General Plan, SMMs apply to all discretionary projects in order to reduce cumulative impacts (refer to **Mitigation Measure MM 4.3.1**).

In addition, as discussed above, emissions resulting from the proposed Project would not exceed Siskiyou County or Shasta County thresholds, and construction would be in conformance with CARB 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 with implementation of **Mitigation Measure MM 4.3.1**.

MITIGATION

MM 4.3.1 The City of Dunsmuir shall ensure through contractual obligations that the following measures are implemented throughout construction:

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).

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 California Vehicle Code §23114. This provision is enforced by local law enforcement agencies.

g. During grading and earth disturbance in undeveloped areas, the contractor shall provide 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.

i. All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept onsite and made available upon request by the County of Shasta.

j. Off-road construction equipment shall not be left idling for periods longer than five minutes when not in use.

DOCUMENTATION

California Air Resources Control Board. 2017. Area Designations Maps—State and National. http://www.arb.ca.gov/desig/adm/adm.htm. Accessed August 2018.

_____. 2018. Final Regulation Order: Area Designations for State Ambient Air Quality Standards. https://www.arb.ca.gov/regact/2018/area18/areadesfro.pdf. Accessed October 2018.

_____. 2009. California Regional Haze Plan. July 22. http://www.arb.ca.gov/planning/reghaze/final/rhplan_final.pdf. Accessed April 2018.

_____. 2008. In-Use Off-Road Diesel Vehicle Regulation. http://www.arb.ca.gov/msprog/ordiesel/knowcenter.htm. Accessed August 2018.

Sacramento Valley Air Quality Engineering and Enforcement Professionals. Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan. August 7, 2015. http://www.co.shasta.ca.us/docs/Resource_Management/aq-docs/2015_Triennial_Air_Quality_Attainment_Plan.pdf?sfvrsn=0. Accessed August 2018.

Shasta County. 2004. Shasta County General Plan, Chapter 6.5 (Air Quality). http://www.co.shasta.ca.us/docs/libraries/resource-management-docs/docs/65airq.pdf?sfvrsn=0. Accessed August 2018.

Shasta County Air Quality Management District. 2009. List of Current Rules. https://www.arb.ca.gov/drdb/sha/cur.htm. Accessed August 2018.

Siskiyou County Air Pollution Control District. List of Current Rules. https://www.arb.ca.gov/drdb/sis/. Accessed August 2018.

U.S. Department of Health and Human Services. 2006. Toxicological Profile for Vinyl Chloride. http://www.atsdr.cdc.gov/toxprofiles/tp20.pdf. Accessed August 2018.

U.S. Environmental Protection Agency. n.d. Lead Emissions. cfpub.epa.gov/roe/indicator_pdf.cfm?i=13. Accessed August 2018.

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

City of Dunsmuir

The City's General Plan includes the following Goal, Objective, and Implementation Measure that apply to the proposed Project:

Chapter 3. Open Space and Conservation

Goal	OC-3	Protection of the City's water resources.
Objective		The City's water supply and the Sacramento River running through the City are vital to the community. The City must protect the watershed in order to maintain the quality and quantity of the municipal water supply, as well as sustain fishing, recreation and scenic benefits related to water resources.
Implementation Measure	OC-3.1.3	The City shall help protect the quality of water in the Sacramento River and tributary streams by applying "best management practices" on all projects in and around water bodies in the City, such as storm drainage maintenance, thereby reducing erosion and sediment into the river.

Wetlands and Waters

The 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 prior to 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, a project requiring a USACE Section 404 permit is also required to obtain a State Water Quality Certification (or waiver) to ensure that the project will not violate established State water quality standards. The 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. Under FESA, threatened and endangered species on the federal list and their habitats are protected from "take" 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. Under FESA, habitat loss is considered to be an impact to the species. 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 federally listed species or result in the destruction or adverse modification of 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.

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

California Fish and Game Code §1600 *et seq.*, requires that a project proponent notify CDFW prior to any work that would divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; and/or deposit or dispose of material into any river, stream, or lake. The project proponent and the CDFW must enter into a Streambed Alteration Agreement (SAA) prior to an action that would result in such an impact. The SAA will include conditions that minimize/avoid potentially significant adverse impacts to riparian habitat and waters of the state.

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. 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 a determination of whether the project may result in the conversion of oak woodlands that will have a significant effect on the environment and implementation of oak woodland mitigation measures, if necessary.

DISCUSSION OF IMPACTS

Question A

The following evaluation of potential impacts on special-status species is based on records searches and field studies conducted by ENPLAN and documented in the Biological Study Report (BSR) prepared for the proposed Project (see **Appendix B**).

The BSR includes the following:

- ENPLAN Summary Report: *Potential for Special-Status Species to Occur on the Project Site.*
- ENPLAN Summary Report: *Potential for Migratory Birds of Conservation Concern to Occur on the Project Site.*
- California Natural Diversity Database RareFind Query Summary, August 2018.
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants Query Summary, August 2018.
- U.S. Fish and Wildlife Service List of Threatened and Endangered Species, August 22, 2018.
- List of Vascular Plant Species Observed.
- List of Wildlife Species Observed.

To determine the presence/absence of special-status plant and animal species, an ENPLAN biologist conducted a botanical and wildlife survey on May 5 and June 11, 2018. Many of the special-status species potentially occurring in the study area would not have been evident at the time the fieldwork

was conducted. However, determination of their potential presence could readily be made based on observed habitat characteristics.

The records searches included a review of California Natural Diversity Data Base (CNDDB) records for special-status plants, animals, and natural communities; California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants; USFWS records for federally listed, proposed, or Candidate plant and animal species under jurisdiction of the USFWS; USFWS records for migratory birds of conservation concern; and essential fish habitat (EFH) data maintained by the NMFS. NMFS does not maintain a species list for the project quadrangle because Shasta and Keswick Dams block upstream passage to spawning areas in the upper Sacramento River.

Special-Status Plant Species

Review of the USFWS species list for the Project area identified three federally listed plant species, Gentner's fritillary, Hoover's spurge and 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.

A review of CNDDB records showed that one special-status plant, Oregon fireweed, was reported in the Project area one time in 1914 and has been broadly mapped to include the I-5 Lift Station site. No special-status plants have been reported at the WWTP site. Twelve special-status plants have been reported within a five-mile radius of the Project sites: Cascade grass-of-Parnassus, Castle Crags harebell, Castle Crags ivesia, Jepson's dodder, Klamath fawn lily, Northern clarkia, rattlesnake fern, seaside bittercress, Shasta chaenactis, thread-leaved beardtongue, Waldo daisy, and woolly balsamroot. One non-status plant, Pacific fuzzwort, has been reported within the five-mile search radius.

The CNPS Inventory identified three additional special status plants: cylindrical trichodon, horned butterwort, and pallid bird's-beak; and seven additional non-status plants within the study area: California lady's slipper, California pitcherplant, marsh claytonia, mountain lady's-slipper, redwood lily, Shasta County arnica, and slender false lupine. The potential for each special-status plant species to occur on the Project sites is evaluated in Table 3 of the BSR. As documented in Table 3, none of these special-status plant species were observed during the botanical survey, nor are any expected to be present. Therefore, the proposed Project would have no impact on special-status plant species.

Special-Status Wildlife Species

Review of the USFWS species list for the Project area identified the following federally listed animal species as potentially being affected by the proposed Project: gray wolf, northern spotted owl, yellow-billed cuckoo, California red-legged frog, Oregon spotted frog, delta smelt, longfin smelt, valley elderberry longhorn beetle, conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The USFWS species list does not identify designated critical habitat in the study area for any federally listed animal species.

Review of CNDDB records showed that one special-status animal species, American peregrine falcon, has been reported in the vicinity of the WWTP site. American peregrine falcon is also broadly mapped to include the I-5 Lift Station site. Ten special-status animals have been reported within a five-mile radius of the Project sites: bank swallow, black swift, California wolverine, Cascades frog, fisher-west coast Distinct Population Segment, foothill yellow-legged frog, Northern goshawk, Pacific tailed frog, spotted bat, and western mastiff bat.

The following non-status animals have been reported within the five-mile search radius: bilobed rhyacophilan caddisfly, Castle Crags rhyacophilan caddisfly, confusion caddisfly, long-eared myotis, Natural Bridge megomphix, North American porcupine, obscure bumblebee, osprey, Pacific marten, and western bumblebee.

The potential for each special-status animal species to occur on the Project sites is evaluated in Table 3 of the BSR. As documented in Table 3, none of these special-status animal species were observed during the field survey; however, the Sacramento River provides suitable habitat for the foothill yellow-legged frog and Pacific tailed frog. Potential direct effects on foothill yellow-legged frogs and Pacific tailed frogs (including their tadpoles and egg masses), could occur if present during in-water work periods in the Sacramento River. If present, foothill yellow-legged frogs and Pacific tailed frogs could be injured/killed as a result of being crushed by construction equipment or by placement of construction-related materials into the in-water work area. Potential indirect effects include habitat degradation if sediment-laden water or pollutants are discharged into aquatic habitats.

In order to avoid direct effects, **Mitigation Measure 4.4.1** requires that a qualified biologist conduct a pre-construction survey for foothill yellow-legged frogs and Pacific tailed frogs immediately prior to the start of in-water work each day that in-water work would occur. If found, a qualified biologist would be required to relocate frogs, eggs masses, and tadpoles to a safe location upstream or downstream of the work area. **Mitigation Measure 4.4.2** requires that all construction personnel receive training from a qualified biologist on identification of foothill yellow-legged frogs and Pacific tailed frogs and procedures to be implemented in the event that these species are encountered during construction activities.

In addition, the City is required to obtain coverage under the SWRCB's NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* (currently Order No. 2009-009-DWQ) by submitting a Notice of Intent to the SWRCB. The permitting process requires the development and implementation of an effective SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. BMPs may 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 to the river; and revegetating temporarily disturbed sites upon completion of construction. Compliance with the SWPPP will ensure that foothill yellow-legged frog, Pacific tailed frog, and other aquatic species are not indirectly adversely affected by project implementation.

Therefore, implementation of **Mitigation Measures MM 4.4.1** and **MM 4.4.2**, as well as implementation of BMPs for spill prevention and erosion control ensures that direct and indirect impacts to special-status wildlife species would be less than significant.

Question B

The USFWS does not identify any critical habitats within the Project area. No sensitive natural communities are identified by CNDDB within a five-mile radius of the Project sites. In addition, NMFS does not identify EFH in the study area. As described below, the principal natural communities in the study area are riverine habitat (the Sacramento River), riparian woodland, and open-water habitat (wastewater percolation ponds and sludge lagoons). Both riverine and riparian habitats are considered sensitive natural communities.

Riverine (Sacramento River)

The river reach in the study area supports various fish, waterfowl, and invertebrates, and provides suitable foraging/dispersal habitat for frogs, toads, garter snakes, and other species. Direct effects could occur during installation of the outfall pipeline and diffuser in the river. Indirect effects could potentially occur if sediments or other pollutants enter the river and degrade habitat in the study area and/or downstream. However, as discussed under Question A above, the City is required to develop and implement an effective SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat.

The City is also required to obtain a Streambed Alteration Agreement (SAA) from the CDFW prior to work in the river. The SAA would include avoidance and minimization measures to protect fish and wildlife resources (e.g., limiting in-water work to certain times of the year, restricting the removal of riparian vegetation, etc.).

In addition, in accordance with Section 401 Water Quality Certification requirements of the RWQCB, continuous visual surface water monitoring must be conducted during active construction periods to detect accidental discharge or construction-related pollutants (e.g., oil and grease, turbidity plume, uncured concrete, etc.). Surface water sampling must be conducted when performing any in-water work, in the event that project activities result in any materials reaching surface waters, or when any activities result in the creation of a visible plume in surface waters. The project is also subject to conditions of a Clean Water Act Section 404 Permit as required by the U.S. Army Corps of Engineers (USACE). Standard conditions of the USACE permit further ensure protection of watercourses and related resources.

Therefore, direct and indirect temporary impacts to aquatic habitats during construction would be less than significant with implementation of standard regulatory agency permit conditions and BMPs for erosion and sediment control. No permanent adverse impacts to riverine habitat would occur.

Riparian

As shown in **Photo 4.4-1**, riparian habitat at the new outfall location is sparse because the river bank at this location is lined with gunite. The work area would likely be limited to 10 feet on either side of the outfall pipe. Although a minor amount of vegetation, including riparian species, may be removed to facilitate the proposed improvements, this impact would be negligible given the small amount of vegetation in the work area. In addition, the loss of riparian habitat would be avoided/minimized in accordance with conditions of the SAA.



Photo 4.4-1. *Sacramento River at new outfall location, facing north.*

Open-Water Habitat

Although not subject to state or federal jurisdiction as wetlands or "Other Waters," the percolation ponds and sludge lagoons in the WWTP site provide open-water habitat for waterfowl and possibly other wildlife species (see **Photo 4.4-2)**.



Photo 4.4-2. *Percolation Pond 1.*

The bank of Percolation Pond 4 would need to be expanded to accommodate the new UV building. This would be accomplished by placing approximately 550 cubic yards of engineered fill along the bank of the pond to a depth of approximately 10 feet. As shown in **Photo 4.4-3**, the percolation ponds do not always contain water. Filling a very small portion of the pond would be considered a minor conversion of open-water habitat, and the pond would continue to support waterfowl and other wildlife species following completion of the Project.



Photo 4.4-3. *Bank between Percolation Pond 3 and 4 (Pond 4 on the right)*

The introduction and spread of noxious weeds during construction activities has the potential to impact sensitive natural communities. In California, the California Department of Food and Agriculture (CDFA) maintains a list of plants that are considered threats to the well-being of the state. Each noxious weed identified by the CDFA receives a rating that reflects the importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest within the state.

Four weeds that are categorized as noxious by the CDFA were observed during the botanical survey: Klamath weed, puncture vine, Scotch broom, and yellow star-thistle. These weeds are of widespread distribution in the County, and further spread of these weeds is not anticipated. However, other noxious weeds could be introduced into the Project area if unwashed construction vehicles are used from outside of the County. **Mitigation Measure MM 4.4.3** reduces potential impacts related to the introduction and spread of noxious weeds to a less than significant level.

Question C

ENPLAN conducted field investigations on July 11, 2017, and June 11, 2018, to identify potential USACE jurisdictional wetlands and other waters of the U.S. Because no earth disturbance would occur at the I-5 Lift Station site, the lift station was not included in the analysis. The field investigation was conducted in accordance with technical methods outlined in the *USACE Wetlands Delineation Manual* (1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Valleys, Mountains, and Coast Region* (2008), and the *Field Guide for the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*. All waters of the U.S. identified during the field investigations are shown in **Figure 4.4-1.**

As indicated, outfall improvements would temporarily impact the Sacramento River. It is anticipated that the proposed Project qualifies for a USACE Nationwide Permit (NWP) 7 (Outfall Structures and Associated Intake Structures). General conditions of the NWP require that temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated as appropriate. Compliance with the general conditions of the NWP ensures that no permanent impacts to jurisdictional waters occur. In addition, under CWA Section 401, an activity requiring a USACE permit is also subject to a State Water Quality Certification (or waiver) to ensure that the activity will not violate established State water quality standards.

These permits will be obtained prior to commencement of construction. The City's bid specifications and contract documents will specify that the contractor must comply with the terms and conditions outlined in the permits. Compliance with regulatory agency permits ensures that impacts to wetlands and other waters are less than significant.

-122° 17' 0.53"W
41° 11' 5.222"N

1:PS

-122° 16' 55.503" W
41° 10' 54.005" N

Project:	Dunsmuir WWTP Improvement Project
Delineator:	John Luper
Date:	July 11, 2017
Date Revised:	
Map Preparer:	John Luper

Potential Waters by Map ID

Map ID	Type	Average Width (feet)	Length (feet)	Area	
				sq. ft.	acres
1:PS	Perennial Stream	115.0	1,142	131,695	3.02
			Total Waters	131,695	3.02

Study Area Boundary (±13.1 acres)
Perennial Stream (±3.02 acres)
2-foot Contours

1 inch = 100 feet
Feet
0 100

Figure 4.4-1
Waters of the U.S. and State

Boundaries are preliminary until verified by the Army Corps of Engineers.

Feature and boundary locations depicted are approximate only. This is not a survey product.

11.30.18

ENPLAN

Path: N:\company\files\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\IS\Fig 4.4-1 Waters of US 113018.mxd

Question D

Wildlife movement patterns can be disrupted by barriers (e.g., dams, reservoirs, highways, altered stream flows, urban development, habitat conversion, etc.) that impede the movement of migratory fish, birds, deer, and other wildlife species. In addition, during construction, increased human activity in the Project area may impede the movement of wildlife.

Aquatic Species

As discussed under Question B above, the river reach in the Project area supports various fish, turtles, and waterfowl, and may provide suitable foraging/dispersal habitat for frogs, toads, garter snakes, and other aquatic species. Temporary effects on the movement of aquatic species could potentially occur during in-water work. However, no additional structures that could permanently impede the movement of any aquatic species would be constructed.

Terrestrial Wildlife Species

The Shasta County General Plan identifies areas surrounding the WWTP site as critical deer winter ranges that support migratory deer herds. No fall holding areas or fawning grounds are identified in the Project area in either the City of Dunsmuir, Shasta County, or Siskiyou County General Plans. Although daytime wildlife movement may be temporarily affected during the construction period, this impact would be of short duration, and most animals can adapt by moving around the work area or moving during non-working hours. Potential permanent and temporary effects of construction on terrestrial wildlife movement would be less than significant.

Migratory Birds

The Project area is located within the Pacific Flyway, and migratory birds are known to nest in and adjacent to the Project area. Nesting migratory birds, if present, could be directly or indirectly affected by construction activities. Direct effects could include mortality resulting from removal of a tree/shrub containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults.

In the local area, most birds nest between February 1 and August 31. As required by **Mitigation Measure MM 4.4.4**, 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 construction occurs during the bird nesting season, 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 in the Project area, the City would consult with the CDFW and USFWS to determine what actions are required to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

Therefore, because construction activities that may impede the movement of wildlife are a temporary impact that would cease at completion of the Project, and **Mitigation Measure MM 4.4.4** would reduce the potential for adversely affecting nesting birds, the proposed Project would have a less than significant impact on the movement of any migratory fish or wildlife species and would not impact migratory wildlife corridors or impede the use of native wildlife nursery sites.

Question E

As discussed under Regulatory Context above, the City of Dunsmuir, Shasta County, and Siskiyou County General Plans address the need to preserve unique and important plant communities as well as aquatic, fish, and wildlife habitats, for their biological resource and ecological values, as well as for their direct and indirect benefits to citizens. **Mitigation Measures MM 4.4.1 through 4.4.4** are included to ensure consistency with local policies and objectives; therefore, impacts are less than significant.

Question F

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the 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 that apply to the proposed Project. 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 City of Dunsmuir, Shasta County, and Siskiyou County General Plans, are anticipated to permanently remove plant and wildlife resources.

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

Although mobile species may have some 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. The conversion of plant and wildlife habitat on a regional level as a result of cumulative development would potentially result in a regionally 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 4.4.4** 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 Avoid/Minimize Effects on Foothill Yellow-Legged Frogs and Pacific Tailed Frogs.
A qualified biologist shall conduct a pre-construction survey for foothill yellow-legged frogs and Pacific trailed frogs immediately prior to the start of in-water work each day that in-water work would occur

If ~~foothill yellow-legged frogs or~~ Pacific tailed frogs (including their egg masses and tadpoles) are found during the pre-construction survey, they shall be relocated by a qualified biologist to a safe location upstream or downstream of the work area.

If foothill yellow-legged frogs (including their egg masses and tadpoles) are found during the pre-construction survey, the following actions shall be taken:

a. Work in the immediate area shall be halted, and the City shall immediately contact the California Department of Fish and Wildlife and provide a short description of observations, including a count of individuals by life stage, conditions at the site, and other aquatic species observed in the area; and

b. The City shall propose site-specific measures to fully avoid take of foothill yellow-legged frog (including their egg masses and tadpoles). If full avoidance is not feasible, the City shall obtain an Incidental Take Permit (ITP) prior to relocating foothill yellow-legged frog (including their egg masses and tadpoles). Instream work shall not commence until CDFW has provided written approval of the proposed avoidance measures or has issued an ITP.

MM 4.4.2 Avoid/Minimize Effects on Foothill Yellow-Legged Frogs and Pacific Tailed Frogs.
Prior to commencement of any earth disturbance, all construction personnel shall receive training from a qualified biologist on identification of foothill yellow-legged frogs and Pacific tailed frogs and procedures to be implemented in the event that these species are encountered during construction activities. If new personnel are added to the project, the City shall ensure that they receive the mandatory training before starting work.

MM 4.4.3 Avoid/Minimize the Potential for Introduction and Spread of Noxious Weeds.
The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

a. Using only certified weed-free erosion control materials, mulch, and seed.

b. Limiting any import or export of fill material to material that is known to be weed free.

c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the **job site**. ~~County. If the equipment has most recently been used within the County, cleaning is not required.~~

MM 4.4.4 Avoid Disturbing Nesting Birds
In order to avoid impacts to nesting migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or

b. If vegetation removal or ground disturbance activities 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.

Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds.

At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. The results of the survey shall be submitted to the California Department of Fish and Wildlife upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

If active nests are found, the City of Dunsmuir shall consult with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service regarding appropriate action to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

DOCUMENTATION

California Department of Fish and Wildlife. 2015. California Regional Conservation Plans. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline. Accessed September 2018.

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

ENPLAN. Field surveys. May 5, June 11, and July 11, 2018.

_____. 2018. Biological Study Report for the Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvement Project.

National Marine Fisheries Service. 2018. Endangered Species Act Critical Habitat Maps. http://www.westcoast.fisheries.noaa.gov/maps_data/endangered_species_act_critical_habitat.html. Accessed September 2018.

_____. 2018. Essential Fish Habitat Mapper. http://www.habitat.noaa.gov/protection/efh/efhmapper/index.html. Accessed September 2018.

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 September 2018.

Siskiyou County. 1980**.** Siskiyou County General Plan. https://www.co.siskiyou.ca.us/sites/default/files/docs/GP_LandUse-CirculationElement.pdf. Accessed September 2018.

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 §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐
d. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

REGULATORY CONTEXT

City of Dunsmuir

The City's General Plan includes the following Goal, Objective, and Policies that apply to the proposed Project:

Chapter 7.0. Historic Preservation

Goal	HP-1	A city rich with historic character and charm.
Objective		It is the City's desire to preserve and enhance the historic character of Dunsmuir.
Policies	HP-1.1	The City shall designate, protect, and enhance those historic structures, districts, neighborhoods, and features that contribute most to the cultural heritage and architectural charm of Dunsmuir.
	HP-1.2	In order to protect the historic character of the community, the City shall encourage the design of new structures in the vicinity of historic structures to have architectural features that complement those of historic structures.

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. The City of Dunsmuir 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:

a. Physical destruction or damage to all or part of the property;

b. Alteration of a property;

c. Removal of the property from its historic location;

d. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

e. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; and/or

f. 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:

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

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

c. 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

d. 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] §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 §5020.1). §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 §5020.1(k) of the PRC, or is identified as significant in a historical resources survey that meets the requirements of

§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 §5020.1(j), 5024.1, or significant as supported by substantial evidence in light of the whole record. §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 §5024.1(d)(1)).

PRC §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 (CRI) 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 Directory of Properties in the Historic Property Data Files for Shasta and Siskiyou Counties; and a review of historic maps, the *National Register of Historic Places, California Register of Historic Resources*, *California Historical Landmarks*, *California Inventory of Historic Resources,* and *California Points of Historic Interest.*

Archaeological fieldwork took place on June 11, 2018, at the WWTP site, and on June 27, 2018, at the I-5 Lift Station site. The entire Area of Potential Effects (APE) was surveyed to identify cultural or historical resources that would be potentially affected by the proposed Project.

Area of Potential Effects

The APE boundaries were devised in consultation with PACE Engineering, based on the proposed project design. The horizontal APE for the WWTP site encompasses approximately 13.1 acres and includes staging areas for storage of materials and construction equipment and sufficient area for construction. The horizontal APE for the WWTP improvements is expansive to allow flexibility for

engineering design and for environmental considerations. The horizontal APE for the I-5 Lift Station encompasses approximately 480 square feet and includes the existing building and some of the surrounding area.

The vertical APE (i.e., associated with the potential for buried cultural resources) is based on the existing topography, geological history, site development history, and the engineering design of the Project. The vertical APE of a Project is related to the proposed excavations associated with the Project. At the WWTP, the maximum excavation depth would be 12 feet for the groundwater monitoring wells, 11 feet for the selector basin, and five feet for the pipeline improvements. No excavation work would be conducted at the I-5 Lift Station.

Records Search

Research at the NEIC/CHRIS was conducted on February 9, 2018, and covered an approximate half-mile radius around the APEs for previously recorded archaeological sites and for previously conducted surveys. The size and scope of the search area was determined to be sufficient based on the results.

The records search revealed that 15 archaeological surveys have previously been conducted within a half-mile radius of the APEs, one of which covered the I-5 Lift Station APE. There are seven previously recorded historical sites within a half-mile radius of the APE. No cultural resources have been previously recorded within the APEs.

Review of the National Register of Historic Places, the California Register of Historical Resources, the California Inventory of Historic Resources, and the California Historical Landmarks identified one historic resource within a one-mile radius of the Project area: the Dunsmuir Historic Commercial District, which is listed in the NRHP, is located approximately 0.65 miles south of the I-5 Lift Station APE.

Native American Consultation

In response to ENPLAN's request for information, on February 23, 2018, the Native American Heritage Commission (NAHC) conducted a search of the Sacred Lands File; the search did not reveal any known Native American sacred sites or cultural resources 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.

On behalf of the Wintu Tribe of Northern California, Kelli Hayward responded on March 6, 2018, and stated she is not sure if the Project sites are located in the Wintu's ancestral territory. Follow-up correspondence was conducted on April 18, 2018, and the original Request for Comment letters were sent by email to all tribal members identified by the NAHC. In addition, phone calls were placed. No other comments or concerns were reported by any Native American representative or organization.

Conclusions

Based on ENPLAN's evaluation, it was determined that the I-5 Lift Station was built during the 1970s, is less than 50 years old, and has no demonstrable importance as a historic structure. Therefore, no recordation or evaluation of the lift station is necessary.

The City's WWTP was identified as an historic-era property because it is over 50 years in age; however, the CRI Report concluded that the WWTP is not eligible for inclusion in the CRHR or the NRHP for the following reasons:

- It is not associated with events that have made a significant contribution to the broad patterns of our history and cultural heritage;

- It is not associated with the lives of persons important in our past;
- It has no distinctive characteristics of a type, period, region, or method of construction; does not represent the work of a master or important creative individual; does not possesses high artistic values; and does not represent a significant and distinguishable entity whose components may lack individual distinction; and
- It has not yielded, and is unlikely to yield, information important in history or pre-history.

No other cultural resources were identified within the Project area as a result of this cultural resources inventory survey.

Based on the geomorphological and topographic characteristics of the Project area, the results of the records and literature search, the age of the soils mapped in the area, and the level of contemporary disturbance, the Project area is considered to have a moderate to high potential for buried historic and prehistoric cultural resources. **Mitigation Measures MM 4.5.1 and MM 4.5.2** address the inadvertent discovery of cultural resources and human remains.

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 CRI 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 potential historical resources in the area. 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.

Question C

According to the California Geological Survey, there are formations in the Project area that 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 Measure MM 4.5.1** 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 4.5.2** 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 §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 CEQA Guidelines §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 historical resources would be impacted by the proposed Project with implementation of **Mitigation Measures MM 4.5.1 and MM 4.5.2**, and the proposed Project's cumulative impact to cultural resources is less than significant.

MITIGATION

MM 4.5.1 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 City 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 City prior to resuming construction.

MM 4.5.2 In the event that human remains are encountered during construction activities, the City 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

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

ENPLAN. 2018. Cultural Resources Inventory Report, Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvement Project. On file at NEIC/CHRIS.

State of California, Department of Conservation. 2018. Geologic Map of California. https://maps.conservation.ca.gov/cgs/DataViewer/index.html. Accessed September 2018.

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

City of Dunsmuir

The City's General Plan includes the following Goal, Objective, and Policy that apply to the proposed Project:

Chapter 5. Safety

Goal	S-3	A community protected from landslides.
Objective		Due to steep hillsides and soil types in the Dunsmuir area, the potential for landslides exists. It is the City's objective to protect its citizens from the potential impacts of landslides
Policy	S-3.1	Areas known to have slopes or soils that are prone to sliding should only be developed when all necessary steps are taken to protect life and property.

Federal Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the National Earthquake Hazards Reduction (NEHR) Act to reduce the risks to life and property from future earthquakes in the United States. 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 the 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)

Under the NPDES, the SWRCB administers regulations and permitting for the USEPA for pollution generated from stormwater. 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 SWPPP must include BMPs to reduce pollutants and any more stringent controls necessary to meet water quality standards.

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 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 and ii)

According to the California Geological Survey (CGS), there are no Alquist-Priolo Study Zones in the study area. The closest Special Study Zone is the West Cedar Mountain Zone, approximately 30 miles northeast of the study area. CGS records identify two potentially active unnamed faults northeast of the Project area. One is a north-south trending fault running through the top of Mount Shasta approximately 9.5 miles northeast of the WWTP site; the other is an east-west trending fault that runs from the top of Mount Shasta to a point north of Black Butte,

approximately 15 miles north of the WWTP site. According to the CGS, there is a fault that runs through the WWTP site; however, this is a pre-quaternary fault and is considered inactive.

The most recent local earthquake was a 3.1 magnitude quake that occurred about three miles southeast of Dunsmuir in November 2005. However, earthquakes in the area have been rare, and no deaths or significant structural damage have occurred as a result of an earthquake. Also, neither Shasta County nor Siskiyou County have proclaimed a state of emergency due to earthquakes events.

In addition, a site-specific geotechnical study will be completed prior to commencement of construction. The geotechnical report will include findings and recommendations to ensure that any potential impacts are addressed through proper engineering design. Therefore, impacts would be less than significant.

iii)

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.

As shown in **Table 4.6-1,** soils in the Project area include alluvium or stream channel deposits, and the potential for liquefaction exists; however, the site-specific geotechnical study will include recommendations for engineering design and construction methods to ensure impacts related to liquefaction are less than significant.

TABLE 4.6-1
Soil Type and Characteristics

Soil Name	Landform and Parent Material	Erosion Potential	Drainage	Surface Runoff	Permeability	Shrink-Swell Potential
Neer gravelly sandy loam, 50 to 75 percent slopes (257im) *Riverbed and Bank of the Sacramento River*	Mountains; glaciofluvial deposits derived from igneous rock.	High to Very High	Well-drained	Very Rapid	Rapid	Low
Stoner gravelly sandy loam, 2 to 15 percent slopes (315) *WWTP and I-5 Lift Station Sites*	Alluvial fans; alluvium derived from igneous and sedimentary rock.	Low to Moderate	Well-drained	Medium	Moderate	Low

Sources: U.S. Department of Agriculture, Natural Resources Conservation Service, 2018; U.S. Department of Agriculture, Soil Survey of Intermountain Area, California, 2000.

iv)

According to the City's General Plan, there are a few steep, denuded slopes in various locations around the City where small landslides have occurred during heavy rainfall events. Earthwork that alters the shape of a slope or imposes new loads on an existing slope could increase the potential for landslides.

The WWTP property is relatively flat with little risk of landslides. Although the proposed Project includes trenching on the bank of the Sacramento River to install the outfall, as noted above, the bank of the Sacramento River at this location is lined with gunite, and the potential for landslides is low; therefore, impacts would be less than significant.

Question B

Construction of the proposed Project would involve excavation, trenching, 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.

As shown in **Table 4.6-1**, soils in the Project site are susceptible to erosion; however, as discussed in Section 4.4 under Question A, BMPs would be implemented to control erosion and sedimentation and prevent damage to streams, watercourses, and aquatic habitats. BMPs may 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 to waterways; 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. Unstable soils consist of loose or soft deposits of sands, silts, and clays. In the Project area, unstable soils can occur near streams and creeks. However, the site-specific geotechnical report will include recommendations to ensure that any potential impacts are addressed through proper engineering design. With implementation of BMPs and recommendations in the geotechnical report, geologic and soils hazards associated with the proposed Project would be 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. As shown in **Table 4.6-1**, soils on the Project site have a low shrink-swell potential. In addition, the site-specific geotechnical study will include findings and recommendations to ensure that any potential impacts related to expansive soils are addressed through proper engineering design. 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 City of Dunsmuir, Shasta County, and Siskiyou County General Plans, 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 and engineering design measures; therefore, cumulative impacts are less than significant.

MITIGATION

None necessary.

DOCUMENTATION

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

PACE Engineering, Inc. Personal communications with ENPLAN. March – September 2018.

Shasta County. 2004. Shasta County General Plan, Chapter 5.1 (Seismic and Geologic Hazards). http://www.co.shasta.ca.us/docs/Resource_Management/docs/51seismic.pdf?sfvrsn=0. Accessed September 2018.

State of California, Department of Conservation. 2018. California Geological Survey: Earthquake Zones of Required Investigation. https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed September 2018.

_____. 2010. Fault Activity Map of California. http://maps.conservation.ca.gov/cgs/fam/. Accessed September 2018.

_____. 2007. Special Publication 42, Interim Revision 2007. Fault-Rupture Hazard Zones in California. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf. Accessed September 2018.

U.S. Department of Agriculture, Natural Resource Conservation Service. 2015. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed September 2018.

_____. 2000. Soil Survey of Intermountain Area, California, Parts of Lassen, Modoc, Shasta, and Siskiyou Counties. https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/intermountainCA2000/IntermountainArea_CA.pdf. Accessed September 2018.

U.S. Geological Survey. 2018. Quaternary Fault Map. http://earthquake.usgs.gov/hazards/qfaults/map/. Accessed September 2018.

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

California Executive Order (EO) S-3-05

EO S-03-05 was signed by the Governor on June 1, 2005, and established the goal of reducing statewide GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32 (Global Warming Solutions Act of 2006)

The California Global Warming Solutions Act of 2006 (AB 32) established a statewide GHG emissions cap for 2020 based on 1990 emissions levels as set forth in EO S-3-05. As required by AB 32, CARB adopted the initial Climate Change Scoping Plan in 2008 that identified the State's strategy to achieve the 2020 GHG emissions limit via regulations, market-based mechanisms, and other actions. AB 32 requires that the Scoping Plan be updated every five years.

CARB's first update to the Climate Change Scoping Plan (2014) addressed post-2020 goals and identified the need for a 2030 mid-term target to establish a continuum of actions to maintain and continue reductions, rather than only focusing on targets for 2020 or 2050. In December 2017, CARB adopted the second update to the Scoping Plan that includes strategies to achieve the 2030 mid-term target established by EO B-30-15 (discussed below).

California Executive Order B-30-15

EO B-30-15 was signed by the Governor on April 29, 2015. It sets interim GHG targets of 40 percent below 1990 levels by 2030, to ensure California will meet its 2050 target set by EO S-3-05. It also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Senate Bill 32/Assembly Bill 197

These two bills were signed into legislation on September 8, 2016. As set forth in EO B-30-15, SB 32 requires CARB to reduce GHG emissions to 40 percent below the 1990 levels by 2030. AB 197 requires that GHG emissions reductions be achieved in a manner that benefits the state's most disadvantaged communities. AB 197 requires CARB to prioritize direct GHG emission reductions in a manner that benefits the state's most disadvantaged communities and to consider social costs when adopting regulations to reduce GHG emissions. AB 197 also provides more legislative oversight of CARB by adding two new legislatively appointed non-voting members to the CARB Board and limiting the term length of Board members to six years.

Renewables Portfolio Standard

In 2002, SB 1078 was passed to establish the State's Renewables Portfolio Standard (RPS) Program, with the goal of increasing the amount of electricity generated and sold to retail customers from eligible renewable energy resources. The initial goal was to increase the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The Renewables Portfolio Standard has been subsequently amended by the following actions:

Date	Legislation/Plan	Action
May 3, 2003	Energy Action Plan I	Accelerated the 20 percent renewable energy target to 2010.
September 21, 2005	Energy Action Plan II	Recommended a goal of 33 percent renewable energy by 2020.
September 26, 2006	SB 107	Codified the 20 percent renewable energy by 2010 target set forth in the Energy Action Plan I.
November 17, 2008	EO S-14-08 (Schwarzenegger)	Required 33 percent renewable energy by 2020 as recommended in the Energy Action Plan II.
September 15, 2009	EO S-21-09 (Schwarzenegger)	Directed the CARB to adopt regulations by July 31, 2010, consistent with the 33 percent renewable energy by 2020 target set forth in EO S-14-08.
April 12, 2011	Senate Bill X1-2	Codified the 33 percent renewable energy by 2020 target set forth in EO S-14-08; this new target applied to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators.

October 7, 2015	SB 350	Codified a target of 50 percent renewable energy by 2030. Also requires California utilities to develop integrated resource plans that incorporate a GHG emission reduction planning component beginning January 1, 2019.
September 10, 2018	SB 100	Codified targets of 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045.

California Executive Order B-55-18

EO B-55-18 was issued by the Governor on September 10, 2018. It sets a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets.

Senate Bill 375 (Sustainable Communities and Climate Protection Act of 2008)

Under SB 375, the CARB sets regional targets for the reduction of GHG emissions from passenger vehicles and light duty trucks. Each Metropolitan Planning Organization (MPO) in the State, or Regional Transportation Planning Agency for regions without a MPO, must include a Sustainable Communities Strategy in the applicable Regional Transportation Plan that demonstrates how the region will meet the GHG emissions reduction targets.

CEQA Guidelines

§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 standard. 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.

Greenhouse Gases Defined

Table 4.7-1 provides descriptions of the GHGs identified in California Health and Safety Code §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.

Greenhouse Gas	Description
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.

DISCUSSION OF IMPACTS

Question A

Gases that trap heat in the atmosphere create a greenhouse effect that results in global warming and climate change. These gases are referred to as greenhouse gases (GHGs). As described in Table 4.7-1, some GHGs occur both naturally and as a result of human activities, and some GHGs are exclusively the result of human activities.

The atmospheric lifetime of each GHG determines reflects how long the gas stays in the atmosphere before natural processes (e.g., chemical reactions) remove it. A gas with a long lifetime can exert more warming influence than a gas with a short lifetime. In addition, different GHGs have different effects on the atmosphere. For this reason, each GHG is assigned a global warming potential (GWP) which is a measure of the heat-trapping potential of each gas over a specified period of time. Gases with a higher GWP absorb more heat that gases with a lower GWP, and thus have a greater effect on global warming and climate change. 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.

The GWPs and atmospheric lifetimes for each GHG are shown in **Table 4.7-2**.

Table 4.7-2
Greenhouse Gases: Global Warming Potential and Atmospheric Lifetime

GHG	GWP (100-year time horizon)	Atmospheric Lifetime (years)
CO_2	1	50 -200
CH_4	25	12
N_2O	298	114
HFCs	Up to 14,800	Up to 270
PFCs:	7,390-12,200	2,600 – 50,000
SF_6	22,800	3,200
NF_3	17,200	740

Sources: *U.S. Environmental Protection Agency, 2018;*

Neither Shasta County nor Siskiyou County have adopted thresholds of significance for GHG emissions. 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 4.7-3**, which are widely adopted GHG emissions thresholds. These thresholds are tied directly to AB 32 and state-wide emissions reduction goals.

TABLE 4.7-3
Greenhouse Gas Emissions Thresholds

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

The City has determined the commonly adopted numeric thresholds for land development projects of 1,100 metric tons of CO_2e per year for construction emissions, and 1,100 metric tons of CO_2e per year for operational emissions are appropriate for the proposed Project. If construction or operational emissions exceed 1,100 metric tons of CO_2e, then the impact is considered significant.

Project GHG Emissions

GHG emissions for the proposed Project were estimated using the CalEEMod.2016.3.2 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 also includes the intensity factors for CO_2, CH_4, and N_2O for the utility company that will serve the proposed project. Therefore, CalEEMod uses PacifiCorp's mix of renewable and non-renewable energy sources to estimate indirect GHG emissions associated with electricity use.

[1] *Stationary sources are typically associated with industrial processes (e.g., boilers, heaters, flares, cement plants, and other types of combustion equipment.*

CalEEMod does not directly calculate ozone (O_3) emissions. Instead, emissions of ozone precursors are calculated. Ozone precursors are quantified as ROG and NO_X which, when released, interact in the atmosphere and produce ozone.

Construction-Related GHG Emissions

Construction of the proposed Project would emit GHG emissions as shown in **Table 4.7-4**, 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 4.7-4
Construction-Related Greenhouse Gas Emissions

	Maximum Emissions (Total Metric Tons per Year)			
Year	**Carbon Dioxide (CO_2)**	**Methane (CH_4)**	**Nitrous Oxide (N_2O)**	**Carbon Dioxide Equivalent (CO_2e)**
2021	129.79	0.02	0	130.38
2022	97.17	0.02	0	97.60

Operational GHG Emissions

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 CH_4 emissions. CO_2 emissions are generated from both aerobic and anaerobic processes. N_2O is produced by nitrification and denitrification processes, and when treated wastewater is discharged to water bodies as effluent. Sudden shifts of pH, as well as high ammonia and nitrite concentrations, result in increased N_2O emissions (Campos, 2016).

As discussed in Section 3.0 (Project Description), the proposed project includes construction of a larger selector to provide a higher food-to-microorganism ratio; this will improve sludge settling and recycle alkalinity to increase pH buffering capacity, which in turn would reduce effluent ammonia and nitrate concentrations. Ammonia in the sludge lagoons has been recorded in excess of 1,000 milligrams per liter, which can overload the WWTP if not fed back at a very slow rate.

The addition of fine bubble diffusers in sludge lagoon number 1 will improve the nitrification process in the lagoon prior to sending supernatant back to the headworks. These proposed improvements would result in a slight decrease in GHG emissions over existing levels. In addition, a slight decrease in GHG emissions would occur by converting the WWTP from a chlorine disinfection process to a UV disinfection process due to a reduction in truck trips related to delivery of chemicals to the WWTP.

Converting the WWTP from chlorine disinfection to UV disinfection would result in indirect impacts associated with the amount of electricity required to operate the UV lamps. The generation of electricity through combustion of fossil fuels (e.g., coal, natural gas, and petroleum) produces GHG emissions. Renewable energy sources (e.g., hydroelectric, wind, solar, and geothermal) generally produce little to no GHG emissions.

As shown in **Table 4.7.5**, according to the U.S. Energy Information Administration, in 2017, emissions of CO_2 by the U.S. electric power sector were 1,744 million metric tons (MT), or about 34 percent of the total U.S. energy-related CO_2 emissions of 5,140 million MT. The majority of CO_2 emissions was from coal-fueled facilities.

TABLE 4.7.5
U.S. Electric Power Sector Carbon Dioxide (CO_2) Emissions

Source	Million Metric Tons	Total Share of Electric Power Sector
Coal	1,207	69%
Natural Gas	506	29%
Petroleum	19	1%
Other *	12	Less than 1%
Total	**1,744**	

Source: U.S. Energy Information Administration (2018)

** Combustion of miscellaneous waste materials made from fossil fuels and by some types of geothermal power generation.*

Electricity for the proposed Project would be provided by PacifiCorp, a company based in Portland, Oregon, that provides electric service to certain areas in California, Oregon, Washington, Utah, Wyoming, and Idaho. PacifiCorp's company-owned net generation capacity is 10,887 megawatts. PacifiCorp obtains power from contracted solar- and wind-powered generation facilities and also has 72 generating plants as follows:

Coal-fueled facilities (10)
Hydroelectric facilities (41)
Natural gas facilities (7)
Wind facilities (13)
Geothermal facilities (1)

Renewable and non-carbon resources currently make up 25 percent of PacifiCorp's owned and contract generation capacity. PacifiCorp's 2017 Integrated Resource Plan (IRP) (updated in May 2018), presents steps to transition to cleaner energy sources with near-term investments in both existing and new renewable resources, new transmission infrastructure, and energy efficiency programs. The IRP calls for adding more than 1,100 megawatts of incremental solar and wind capacity through long-term power purchase agreements.

In addition, PacifiCorp is in the process of reducing reliance on coal by closing and/or converting coal-fired generation facilities. The IRP calls for reduced reliance on coal by 2,800 megawatts by 2034 and projects that CO_2 emissions will decrease by 22 percent by 2036.

According to the CVRWQCB's NPDES permit for the WWTP (Order No. R5-2012-0085, approved October 4, 2012), the average dry weather flow (ADWF) is currently limited to 0.30 MGD. According to PACE Engineering, the current ADWF is approximately 0.23 MGD and the current AWWF is approximately 0.37 MGD; the average flow is thus about 0.30 MGD.

The City's Master Sewer Plan projects that the City's ultimate ADWF at build-out of the General Plan will be about 0.36 MGD. Although the Master Sewer Plan does not project AWWF, based on the current AWWF, ultimate AWWFs are conservatively estimated to be 0.5 MGD. The ultimate average flow is thus estimated at about 0.43 MGD at build-out of the General Plan.

For purposes of this analysis, current and projected anticipated electric demands for the UV disinfection system were calculated based on the current average annual flow of 0.30 MGD, and a projected average annual flow of 0.43 MGD at build-out of the General Plan.

According to a 2012 report published by Washington State University and the Bonneville Power Administration entitled *Ultraviolet Disinfection of Water and Wastewater*, energy use associated with UV disinfection systems depends on system design and the type of UV lamps used in the disinfection process. WWTPs using low-pressure UV lamps consume an average of 100 to 250 kilowatt hours (kWh) per million gallons (MG) of wastewater treated. Medium-pressure systems require 460 to 560 kWh/MG.

For comparison, according to a report published by the CPUC in 2015, *Comparative Analysis of Utility Services and Rates in California*, electric use for a single-family residence in California averages 557 kWh per month (6,684 kWh per year). Estimated current and ultimate electric demands for the UV disinfection system are shown in **Table 4.7-6.** Also shown are the number of single-family equivalents (SFEs) for each scenario.

TABLE 4.7-6
Estimated Energy Demand for Ultraviolet Disinfection System

Type of UV Lamp	Current Annual Demand (kWh) Based on 0.30 MGD	Number of SFEs (Current Flows)	Ultimate Annual Demand (kWh) Based on 0.43 MGD	Number of SFEs (Ultimate Flows)
Low Pressure	10,950 – 27,375	2 - 4	15,695 – 39,238	2 - 6
Medium Pressure	50,370 – 61,320	8 - 9	72,197 – 87,892	11 - 13

As indicated in **Table 4.7-6**, based on an average flow of 0.30 MGD, estimated energy demand for the UV disinfection system would be equivalent to between 2 and 9 single-family residences, depending on whether low or medium-pressure UV lamps are used. Based on an average annual flow of 0.43 MGD at build-out of the General Plan, estimated energy demand would be equivalent to between 2 and 13 single-family residences, depending on whether low or medium-pressure UV lamps are used.

According to the 2012 Washington State University and the Bonneville Power Administration report, energy use for chlorine disinfection systems ranges from 60 to 250 kWh/MG, depending on the chlorine dose delivered. This is comparable to a UV system using low pressure lamps, but electric use for a UV system using medium pressure lamps could be significantly greater than the amount of electricity used for a chlorine disinfection system. However, California has adopted numerous laws intended to reduce state-wide GHG emissions, including indirect emissions from use of electricity produced by fossil fuels.

As discussed under Regulatory Context above, SB 100, enacted on September 10, 2018, requires that the annual amount of electricity generated and sold to retail customers from eligible renewable energy resources be increased to 50 percent by December 31, 2026, and 60 percent by December 31, 2030. SB 100 also sets a goal of completely phasing out electricity produced by fossil fuels by 2045; 100 percent of electricity would come from renewable energy sources. As the use of renewable energy sources for electricity generation increases, GHG emissions will continue to decrease.

Table 4.7-6 shows the projected worst-case operational GHG emissions associated with electricity use for the UV disinfection system. The table is based on the worst-case projected annual electrical demand for medium pressure UV lamps (87,892 kWh), excluding the minimum projected electrical demand of a chlorine disinfection system (60 kWh/MG). As indicated, operational GHG emissions associated with operation of the UV disinfection system would be well below the numerical threshold of 1,100 metric tons/year of CO_2e (refer to Table 4.7-2).

TABLE 4.7-7
Operational Greenhouse Gas Emissions Associated with Electricity Use for the UV Disinfection System

Total Metric Tons per Year			
Carbon Dioxide (CO_2)	**Methane (CH_4)**	**Nitrous Oxide (N_2O)**	**Carbon Dioxide Equivalent (CO_2e)**
76.46	Trace	Trace	76.57

As documented herein, the proposed Project would improve biological treatment processes of the WWTP, which would result in a slight decrease in GHG emissions for this activity. In addition, the proposed Project would slightly decrease GHG emissions due to a reduction in truck trips related to delivery of chemicals to the WWTP. Although electrical demand would substantially increase if medium power UV lamps are used, the worst-case projection of GHG emissions would remain well below established significance thresholds.

Further, indirect GHG emissions from the production of electricity will continue to decrease through implementation of state regulations that require electricity to be generated from renewable energy sources. Therefore, the proposed Project would not generate GHG emissions that could have a significant impact on the environment and no mitigation is necessary.

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, and 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 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. Unlike criteria pollutants, which are pollutants of regional and local concern, GHGs are global pollutants and are not limited to the area in which they are generated. As discussed under Regulatory Context above, the State legislature has adopted numerous programs and regulations to reduce statewide GHG emissions, including indirect emissions that are produced when electricity is generated from fossil fuels.

As documented above, construction-related GHG emissions would not exceed the numerical threshold of 1,100 metric tons/year CO_2e. Although electrical demand would substantially increase if medium power UV lamps are used, the worst-case projection of GHG emissions would remain well below established significance thresholds. Further, as the use of renewable energy sources for electricity generation increases in accordance with existing State regulations, GHG emissions associated with the use of electricity will continue to decrease.

In addition, proposed improvements to the biological treatment system would result in a slight decrease in GHG emissions for this activity. The proposed Project would also slightly decrease GHG emissions due to a reduction in truck trips related to delivery of chemicals to the WWTP. Therefore, the Project's contribution to cumulative impacts is less than significant.

MITIGATION

None necessary.

DOCUMENTATION

California Air Pollution Control Officers Association. 2008. CEQA & Climate Change. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf. Accessed August 2018.

_____. 2018. Quantifying Greenhouse Gas Mitigation Measures. http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf. Accessed August 2018.

California Air Resources Board. 2018. Cool California, Greenhouse Gas Emissions Tools. https://coolcalifornia.arb.ca.gov/. Accessed August 2018.

California Climate Change Portal. 2018. California Climate Change Legislation. http://www.climatechange.ca.gov/state/legislation.html. Accessed August 2018.

California Environmental Protection Agency, Air Resources Board. 2018. California Global Warming Solutions Act of 2006 (AB 32) Scoping Plan Website. https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm. Accessed August 2018.

California Natural Resources Agency. 2018. Safeguarding California Plan: 2018 Update. http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf. Accessed August 2018.

California Office of Planning and Research. 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. http://opr.ca.gov/docs/june08-ceqa.pdf. Accessed August 2018.

Campos, J.L., Valenzuela-Heredia, D., Pedrouso, A., Val del Rio, A., Belmonte, M., Mosquera-Corral, A. 2016. Greenhouse Gases Emissions from Wastewater Treatment Plants: Minimization, Treatment, and Prevention. https://www.hindawi.com/journals/jchem/2016/3796352/. Accessed October 2018.

PacifiCorp. 2017 Integrated Resource Plan. http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/2017_IRP_VolumeI_IRP_Final.pdf. Accessed September 2018.

_____. 2018. Update to the 2017 Integrated Resource Plan. http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017%20IRP%20Update/2017_IRP_Update.pdf. Accessed September 2018.

Shasta County. 2012. Draft Shasta Regional Climate Action Plan. http://www.co.shasta.ca.us/index/drm_index/aq_index/programs/RCAP/Draft_RCAP.aspx. Accessed August 2018.

United States Energy Information Administration. 2018. Carbon Dioxide Emissions Associated with Electricity Generation. https://www.eia.gov/tools/faqs/faq.php?id=77&t=11. Accessed September 2018.

United States Environmental Protection Agency. 2018. Overview of Greenhouse Gases. https://www.epa.gov/ghgemissions/overview-greenhouse-gases#f-gases. Accessed August 2018.

_____. 2018. Understanding Global Warming Potentials. https://www.epa.gov/ghgemissions/understanding-global-warming-potentials. Accessed October 2018.

Washington State University and Bonneville Power Administration. 2012. Ultraviolet Disinfection of Water and Wastewater, Water Disinfectant: Ultraviolet vs. Chemical or Ozone. http://e3tnw.org/ItemDetail.aspx?id=13. Accessed September 2018.

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

City of Dunsmuir

The City's General Plan includes the following Goal, Objective, and Policy that apply to the proposed Project:

Chapter 5.0. Safety

Goal	S-4	A community protected from the hazards of wildfire.
Objective		Areas within and adjacent to Dunsmuir are identified as wildfire hazard areas and are subject to potentially devastating fires. It is the City's objective to reduce both the likelihood of wildfires and the impact of fires on the community should they occur.
Policy	S-4.1	The City shall support programs to prevent and prepare for wildfires and will consider fire-related hazards in review of all project proposals.

City of Dunsmuir Community Wildfire Protection Plan

The City's Wildfire Protection Plan was completed in May 2016 and identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect the community of Dunsmuir. The plan also recommends measures to reduce the ignitability of structures throughout the area addressed by the plan.

Siskiyou County Natural Hazards Mitigation Plan (NHMP)

The Siskiyou County Natural Hazards Mitigation Plan identifies natural hazards, including wildland fires, earthquakes, dam failure, severe storms, and floods that may impact residents and properties in the County. The NHMP describes the County's plan to reduce impacts from future disaster events and hasten the recovery from disasters.

Shasta County Hazardous Materials Area Plan

The Area Plan describes the County's pre-incident planning and preparedness to protect the public, environment and property from an accidental release involving chemicals. The Plan clarifies the roles and responsibilities of federal, state, and local agencies during a hazardous materials incident and describes the County's hazardous materials incident response program, training, communications and post-incident recovery procedures.

California Code of Regulations (CCR), 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, §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. §112(r) of the federal Clean Air Act (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).

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

The United States Department of Transportation 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 and Safety Code 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. A Business Plan is also required if federal thresholds for extremely hazardous substances are exceeded. 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 (CalARP), Risk Management Plan (RMP)

The California Accidental Release Prevention Program requires the preparation of a RMP in compliance with CCR Title 19, Division 2, Chapter 4.5, and OSHA Process Safety Management standards (§5189 of Title 8 of CCR, or CFR, Title 29, §1910.119). A RMP is required if the amounts of chlorine or 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, limited quantities of hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc., may temporarily be brought into areas where

improvements are proposed. There is a possibility of accidental release of hazardous substances into the environment, such as spilling petroleum-based fuels used for construction equipment. 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

Conversion of the WWTP from a chlorine disinfection process to a UV disinfection process would result in a reduction in the transport of hazardous materials because chlorine gas (Cl_2) would no longer be used in the disinfection process, and sulfur dioxide gas (SO_2) would no longer be required for dechlorination. The proposed Project does not include any improvements that would substantially increase the use of any other chemicals or hazardous substances; therefore, there would be no long-term operational impacts.

Question C

According to the Siskiyou County Office of Education, the school closest to the WWTP site is Dunsmuir High School on High School Way, approximately 1.75 miles to the northwest. The school closest to the I-5 Lift Station is Dunsmuir Elementary on Siskiyou Avenue, approximately 0.35 miles to the northeast. Because no work would occur within 0.25 miles of a school, there would be no impact.

Question D

The Cortese list is prepared in accordance with California Government Code §65962.5. The following databases were reviewed to locate Cortese list sites.

- List of Hazardous Waste and Substances sites from the Department of Toxic Substances Control (DTSC) EnviroStor database.
- SWRCB GeoTracker Database.
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit.
- List of active Cease and Desist Orders and Clean-Up and Abatement Orders from the SWRCB.

The Envirostor database identified one active clean-up site in the Project area as follows:

Union Pacific Railroad (UPRR), North Dunsmuir Railyard

The North Dunsmuir Railyard is located about 0.5 miles southeast of the I-5 Lift Station and about 2 miles northeast of the WWTP. The North Dunsmuir Railyard has been in operation since the early 1900s. Historical operations at the site have resulted in the release of unknown quantities of Bunker C fuel oil and diesel fuel that have migrated to shallow groundwater. Since 1971, two Groundwater Extraction and Treatment systems have operated at the site to remove fuel oil contamination from the groundwater.

According to a December 11, 2017, letter from the CVRWQCB to the UPRR, at least two primary types of contamination still exist at the site: the Bunker oil in the northern and central portion of the site; and dissolved diesel and heavy oil throughout the site. It appears that non-aqueous phase liquid (NAPL) sourced from the Bunker Oil release and dissolved phase diesel and oil organics are discharging to the Sacramento River. The letter directed UPRR to prepare feasibility studies for the NAPL and Dissolved diesel/oil-related organics at the site. UPRR is in the process of completing the studies.

Neither the DTSC nor SWRCB identify any other active clean-up sites within a three-mile radius of the Project sites. Due to the distance between the Project sites and the active clean-up site, there would be no impact.

Questions E and F

The closest airport to the Project sites is the Dunsmuir Municipal-Mott Airport, approximately 2.6 miles northeast of the I-5 Lift Station and about six miles north of the WWTP site. According to the City's General Plan, the Project sites are not located in a Runway Protection Zone or Airport Approach/Departure Zone. In addition, the Project sites are not located within the Siskiyou County Airport Land Use Compatibility Plan area. According to the Federal Aviation Administration (FAA), there are no private airstrips in proximity to the Project sites. 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, the proposed Project does not include work in the public road ROW that would impede traffic. Therefore, there would be no impact.

Question H

The California Department of Forestry and Fire Protection (CAL FIRE) adopted Fire Hazard Severity Zone (FHSZ) Maps for State Responsibility Areas in November 2007 (Updated May 2008). Pursuant to California Government Code §51175-51189, CAL FIRE also recommended FHSZs for Local Responsibility Areas. According to CAL FIRE, the Project area is within a Very High FHSZ.

As noted in the Dunsmuir Community Wildfire Protection Plan (May 2016) the City is surrounded by wildland fuel that consists of dense wildland forest and shrub vegetation on very steep terrain with limited access, including areas east and southeast of the WWTP. There are also many areas within the City limits where wildland fuels, urban fuels, and structures intermix on private lands, along riparian corridors, in open spaces and on vacant lots.

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 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. Converting the WWTP from a chlorine disinfection system to a UV disinfection system would eliminate the transport, storage, and use of chlorine gas and sulfur dioxide gas. In addition, the proposed Project does not include any improvements that require the use of chemicals or hazardous substances; therefore, the proposed Project would 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

California Environmental Protection Agency. 2018. Cortese List Data Resources. http://www.calepa.ca.gov/sitecleanup/corteselist/. Accessed August 2018.

CAL FIRE. 2008. Shasta County, Very High Fire Hazard Severity Zones in LRA. http://frap.fire.ca.gov/webdata/maps/shasta/fhszl_map.45.pdf. Accessed August 2018.

_____. 2009. Siskiyou County, Very High Fire Hazard Severity Zones in LRA. http://frap.fire.ca.gov/webdata/maps/siskiyou/fhszl_map.47.pdf. Accessed August 2018.

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

_____. 2016. Dunsmuir Community Wildfire Protection Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/5a559c430d92974f913bc5f3/1515560025354/Dunsmuir_CWPP_Signed-Final.pdf. Accessed September 2018.

Department of Toxic Substances Control. 2018. EnviroStor. Hazardous Waste and Substances Site List (DTSC's Component of Cortese List). http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed August 2018.

Federal Aviation Administration. 2016. Airport Facilities Data. https://www.faa.gov/airports/. Accessed August 2018.

Shasta County. January 2018. Hazardous Materials Area Plan. http://www.co.shasta.ca.us/docs/Resource_Management/ehd-docs/areaplan.pdf?sfvrsn=0. Accessed August 2018.

Siskiyou County. 2007. Siskiyou County Natural Hazards Mitigation Plan (Draft). November 2007.

Siskiyou County Office of Education. 2018. Siskiyou County Schools. https://www.siskiyoucoe.net/schools. Accessed October 2018.

State Water Resources Control Board. 2018. GeoTracker. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=dunsmuir%2C+ca. Accessed August 2018.

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

City of Dunsmuir

The City's General Plan includes the following Goal, Objective, Policy, and Implementation Measures that apply to the proposed Project:

Chapter 5.0. Safety

Goal S-2 A city that has minimized, to the maximum extent feasible, potential impacts to structures as a result of flooding.

Objective		Flooding occurs on a fairly regular basis on the Sacramento River and local tributary streams. It is the City's objective to ensure that all development in flood prone areas is done in a manner that minimizes the potential for damage as a result of flooding.
Policy	S-2.1	Development within identified floodplains shall be controlled to reduce potential damage from floods.
Implementation Measures	S-2.1.1	When relevant, the City shall deny proposed development that would have unacceptable exposure to flood hazards.
	S-2.1.2	The City will continue to apply the City's Floodplain Management Ordinance to development of properties within the FEMA identified flood plain.

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 are not attained. Total Maximum Daily Loads 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 would authorize 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 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 (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 or secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially.

National Pollution Discharge Elimination System Permits

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 Order No. R5-2012-0085, NPDES No. CA0078441 titled *City of Dunsmuir Wastewater Treatment Plant, Shasta and Siskiyou Counties,* which was adopted by the State Regional Water Quality Control Board on October 4, 2012. Although this permit expired on November 1, 2017, it remains in effect until the CVRWQCB adopts a new permit. In September 2018, the CVRWQCB published a Tentative Order for the new permit that would become effective on February 1, 2019. The Order is scheduled for adoption at the CVRWQCB Board meeting on December 6/7 2018.

NPDES General Permit

On May 2, 2006, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems General Order 2006-0003DWQ (the General Order). The Monitoring and Reporting Program component of the General Order was amended by the Water Board in 2008 (Order 2008-002-EXEC) and 2013 (Order 2013-058-EXEC). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the Order. Because the City's collection system exceeds one mile in length, the City is enrolled under the General Order for operation of its wastewater collection system.

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.

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). 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.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code §13000 *et seq.*) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of waters of the State. The Porter-Cologne Act applies to surface waters,

wetlands, and ground water, and to both point and non-point sources of pollution. 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 enforces waste discharge requirements identified in the Report.

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. Waste discharge requirements (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.

DISCUSSION OF IMPACTS

Questions A and F

The proposed Project has the potential to temporarily degrade water quality due to increased erosion during Project construction; however, as discussed in Section 4.6 under Questions B, BMPs would be implemented to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat.

As noted under Regulatory Context above, the discharge of wastewater from the WWTP is regulated by the SWRCB under Order No. R5-2012-0085 (NPDES No. CA0078441). The NPDES Permit incorporates the 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 Permit includes receiving water limitations based on the Basin Plan to protect water quality in the Sacramento River.

As discussed in Section 3.2 (Project Background, Need, and Objectives), the RWQCB issued three Administrative Civil Liability Complaints against the City for chlorine violations that occurred in 2011. The City has since installed a chlorine residual analyzer to direct effluent flow to the percolation ponds if residual chlorine is detected in the effluent. Converting the WWTP from a chlorine disinfection process to a UV disinfection process would completely eliminate risks associated with chlorine. Total dissolved solids in the final effluent would be reduced by not using chlorine and sulfur dioxide. Regulated disinfection byproducts (e.g., total trihalomethanes) that could adversely affect water quality, aquatic species, and environmentally sensitive habitats, would not be created in the UV disinfection process. In addition, treated wastewater is routinely monitored in accordance with the WWTP NPDES Permit to ensure that acceptable thresholds for water quality are not exceeded. In order to improve the monitoring process, the proposed Project includes installation of four additional groundwater monitoring wells.

Therefore, because the proposed WWTP improvements would have a beneficial impact by reducing the potential to adversely affect the beneficial uses of the Sacramento River, additional groundwater monitoring wells would ensure compliance with the WWTP NPDES permit, and BMPs would be implemented throughout construction, impacts would be less than significant.

Question B

The proposed Project would not require new groundwater supplies for construction or operation and would not increase the amount of impervious surfaces in a manner that would prevent the infiltration of water into the soil. The closest well to the WWTP site is approximately 0.8 miles to the west.

None of the proposed improvements would result in an impact to this well. Therefore, there would be no impact on groundwater supplies and recharge.

Questions C and D

See discussion in Section 4.6 under Question B. The proposed Project includes work within the channel of the Sacramento River. In order to provide adequate control of surface water during construction, a cofferdam, water-filled bladder dam, curtain, or other suitable dewatering structure would be installed upstream as necessary to prevent river flows from entering the work area. This would allow for flow around the bladder system and would keep the channel partially open. The dewatering structure would be removed at the end of construction.

In addition, improvement plans will ensure positive surface drainage at all locations where improvements would occur to keep surface water from ponding and infiltrating subgrade soils. Drainage would also be directed away from slopes to prevent erosion of near-surface soils. In addition, BMPs for erosion and sediment control would be implemented in accordance with existing requirements. Therefore, the potential for soil erosion, loss of top soil, or a substantial increase in the rate or amount of surface runoff would be less than significant.

Question E

See discussion in Section 4.6 under Questions B, C, and D. 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 construction. Runoff would not exceed the capacity of stormwater drainage systems, and no long-term impacts to stormwater drainage systems would occur. Therefore, impacts would be less than significant.

Question G

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

Question H

According to the FEMA Flood Insurance Rate Map (FIRM) for Siskiyou County (Panel 06093C3432D, effective January 19, 2011, the I-5 Lift Station is located in a regulatory floodway. However, proposed improvements to the I-5 Lift Station are internal to the existing building, and no impact to the floodway would occur.

As shown in **Figure 4.9-1**, the northern portion of the WWTP site is located within a 100-year flood hazard zone (Siskiyou County FEMA FIRM Panel 06093C3441D, effective January 1, 2011). Improvements in this area of the flood hazard zone include installation of a new selector/headworks northwest of the existing selector (the existing selector is not within a flood hazard zone); replacement of about 300 feet of influent line; and installation of a groundwater monitoring well.

Shasta County FEMA FIRM Panel 06089C0050G, effective March 17, 2011, shows that the western and southwestern portions of the WWTP site are located within a 100-year flood hazard zone. Improvements in this area of the flood hazard zone include installation of two groundwater monitoring wells; installation of a discharge line to the existing outfall; and installation of the new outfall. Siskiyou County Code Chapter 10 (Flood Damage Prevention) and Shasta County Code Chapter 17.70, Restrictive Flood (F-2) District include standards to minimize or avoid hazards to life and property from flooding. Because both the Shasta County and Siskiyou County Codes are based on the California Department of Water Resources *Model Floodplain Management Ordinance for Non-Coastal Communities* (December 2006), both counties have similar site development standards for development in a floodplain.

These standards require that every structure in a floodplain be designed and anchored to prevent flotation, collapse, or lateral movement of the structure due to flooding. In addition, all construction materials must be resistant to flood damage, and all public utilities must be located and constructed to minimize flood damage.

Although some of the proposed improvements would occur within a 100-year floodplain, improvement plans for the proposed Project would be prepared by a licensed engineer to ensure compliance with adopted standards for development in the floodplain. In addition, although the proposed Project includes work in the channel of the Sacramento River, the Project would not result in a permanent alteration or relocation of the river that would diminish the flood-carrying capacity of the river.

Compliance with adopted floodplain regulations would ensure that the proposed Project would not result in hazards to life and property from flooding; would not adversely affect the natural function of the floodplain; and that proposed improvements would not be significantly damaged during a flood event. Therefore, impacts would be less than significant.

Question I

According to FEMA records, there are no levees in the Project area. According to the City of Dunsmuir General Plan, the closest jurisdictional dam to the Project area is Box Canyon Dam, approximately six miles northwest (upstream) of the City of Dunsmuir. Box Canyon Dam is a concrete gravity dam across the Sacramento River that impounds Lake Siskiyou. The dam was constructed in 1969 to provide flood control. The General Plan identifies the City of Dunsmuir as being within a dam inundation area. According to a 2018 report by the California Natural Resources Agency, if the dam were to fail, the downstream hazard is considered extremely high; however, the report also states that Box Canyon Dam has no existing or potential safety deficiencies, and acceptable performance is expected under all loading conditions (static, hydrologic, and seismic).

The proposed Project does not include any components that would increase the likelihood of a dam failure. As discussed under Question H above, compliance with adopted regulations for development in the floodplain would ensure that the proposed improvements are adequately protected from flood damage. 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. As discussed under Question I, the Project area is located approximately six miles southeast of Box Canyon Dam at Lake Siskiyou. Although fault lines in the vicinity of the dam could produce low to moderate ground shaking, it is not likely that such ground shaking would cause a seiche large enough to overtop the dam. 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 approximately 100 miles east of the Pacific Ocean and is not at risk for inundation by tsunami. 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 the City's General Plan, mudflows can form when lava flows, pyroclastic flows, or hot lateral blasts melt snow on the side of a volcano. Although an eruption of Mt. Shasta could result in mudflows that could potentially reach the City of Dunsmuir, it is expected that an impending eruption would be detected in ample time to notify and evacuate people. In addition, the expectation that such an event may not occur for hundreds of years leads local agencies to conclude that the potential is not a constraint to development projects in areas that may be geographically vulnerable. Therefore, impacts related to inundation by seiche, tsunami, or mudflow are less than significant.

CUMULATIVE IMPACTS

All projects in Siskiyou and Shasta County are required to comply with the State Water Board General Construction NPDES permit and/or local 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. In addition, all projects in Siskiyou and Shasta County are subject to regulations for development in flood hazard areas to ensure that impacts related to flooding are minimized or avoided. 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. 2018. Tentative Order, Waste Discharge Requirements for the City of Dunsmuir Wastewater Treatment Plant, Shasta and Siskiyou Counties. https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/dunsmuir/dunsmuir_wwtp_tent_npdes.pdf. Accessed September 2018.

_____. 2012. Order R5-2012-0085. City of Dunsmuir Wastewater Treatment Plant, Shasta and Siskiyou Counties. https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/shasta/r5-2012-0085_npdes.pdf. Accessed August 2018.

_____. 2016. Water Quality Control Plan for the Sacramento and San Joaquin River Basins. http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/2016july_1994_sacsjr_bpas.pdf. Accessed August 2018.

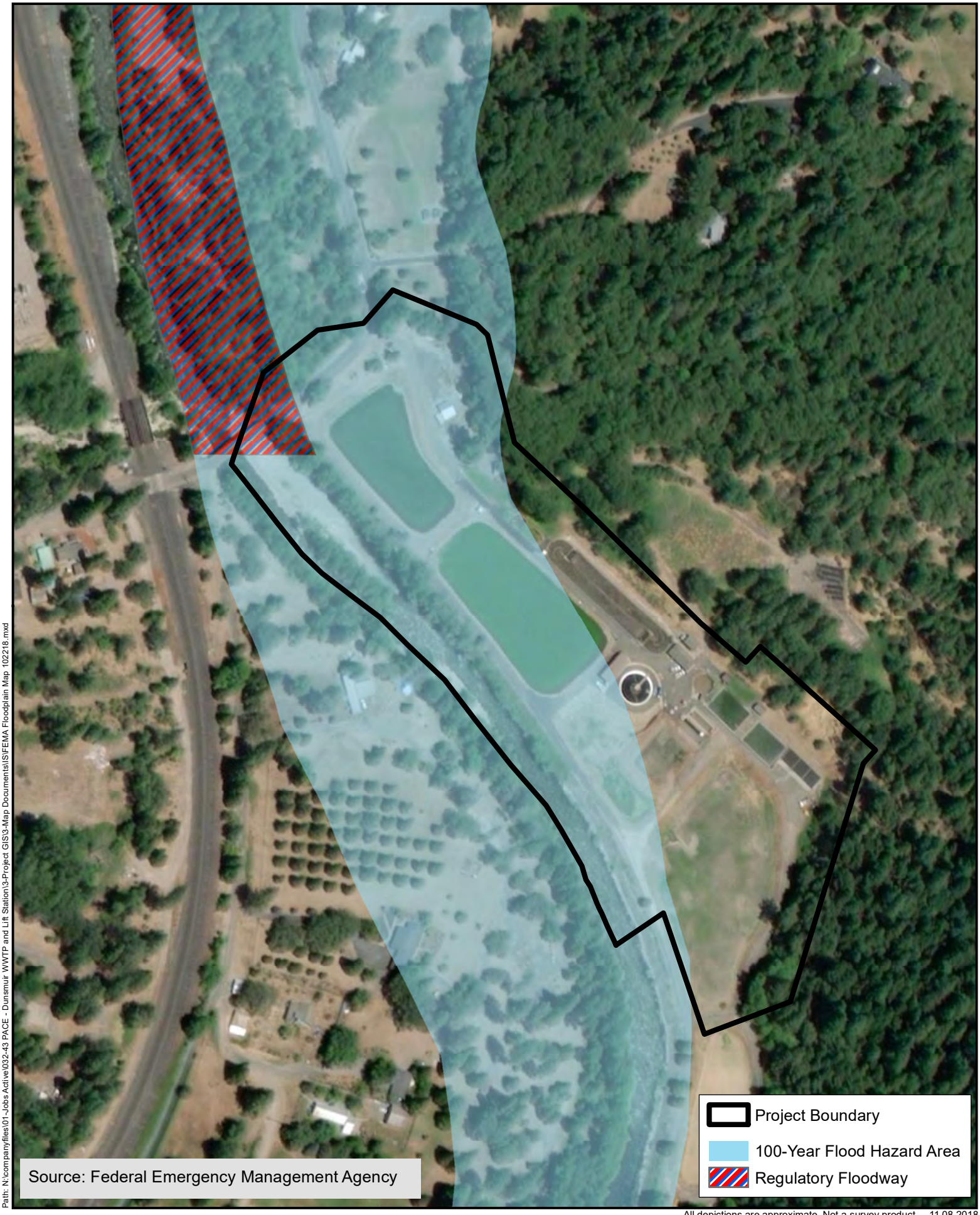
City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed August 2018.

Federal Emergency Management Agency. National Flood Hazard Map (Panels 06089C0050G and 06089C3441D, effective March 17, 2011; and Panel 06093C3432D, effective January 19, 2011). https://msc.fema.gov/portal/search?AddressQuery=dunsmuir%2C%20ca#searchresultsanchor. Accessed August 2018.

Shasta County. 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 April 2018.

_____. 2004. Shasta County General Plan, Chapter 5.1, Seismic and Geologic Hazards. http://www.co.shasta.ca.us/docs/Resource_Management/docs/51seismic.pdf?sfvrsn=0. Accessed April 2018.

California Natural Resources Agency. 2018. Dams within Jurisdiction of the State of California. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Division-of-safety-of-dams/Files/Publications/Dams-Within-Jurisdiction-of-the-State-of-California-2018-Alphabetically-by-Dam-Name.pdf. Accessed September 2018.



Path: N:\companyfiles\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\IS\FEMA Floodplain Map 102218.mxd

All depictions are approximate. Not a survey product. 11.08.2018

Figure 4.9-1

FEMA-Designated Flood Hazard Areas

ENPLAN

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

City of Dunsmuir, Siskiyou County, and Shasta County Codes

The Dunsmuir Municipal Code implements the City's General Plan; the Siskiyou County and Shasta County Code of Ordinances implement the County General Plans. The purpose of the land use and planning provisions of the Codes 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 Dunsmuir General Plan, Shasta County General Plan, Siskiyou County General Plan, and regulations of the regulatory agencies identified in Section 3.4 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 the Project area. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area, including build-out of the City of Dunsmuir, Shasta County, and Siskiyou County General Plans, would be developed in accordance with local and regional planning documents. Thus, cumulative impacts associated with land use compatibility are expected to be less than significant. In addition, with implementation of the recommended mitigation measures, the proposed Project would be consistent with applicable 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. 2017. California Regional Conservation Plans Map. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline. Accessed August 2018.

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed August 2018.

_____. 2016. City of Dunsmuir Municipal Code. https://library.municode.com/ca/dunsmuir/codes/code_of_ordinances. Accessed August 2018.

Shasta County. 2004. Shasta County General Plan: Chapter 6.7, Fish and Wildlife Habitat; Chapter 6.9, Open Space and Recreation; and Chapter 7.1, Community Organization and Development Pattern. https://www.co.shasta.ca.us/index/drm_index/planning_index/plng_general_plan.aspx. Accessed August 2018.

_____. 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 August 2018.

Siskiyou County. 1980**.** Siskiyou County General Plan. https://www.co.siskiyou.ca.us/sites/default/files/docs/GP_LandUse-CirculationElement.pdf. Accessed August 2018.

_____. 2018. Siskiyou County Code of Ordinances. https://library.municode.com/ca/siskiyou_county/codes/code_of_ordinances. Accessed August 2018.

U.S. Fish and Wildlife Service. 2017. Environmental Conservation Online System. Habitat Conservation Plans. https://ecos.fws.gov/ecp0/conservationPlan/region/summary?region=8&type=HCP. Accessed August 2018.

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

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA), Chapter 9, Division 2 of the Public Resources Code (PRC), provide a comprehensive surface mining and reclamation policy to ensure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. Mineral Resource Zones (MRZs) are applied to sites determined by the California Geological Survey (CGS) as being a resource of regional significance, and are intended to help maintain any mining operations and protect them from encroachment of incompatible uses. The Zones 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: Lands that 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 are presently sub-economic.

MRZ-3a: Areas containing known mineral occurrences of undetermined significance.

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.

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

According to the City's General Plan, there are no identified mineral resources within the City, but there may be some gravel resources along the river. Mining of these resources, however, would be impractical due to the narrowness of the channel and the density of development along the river. According to the CGS, Shasta County is included in an aggregate study area; according to a report completed for Shasta County in 1997, there are areas in the northwestern portion of Shasta County that contain alluvial aggregate of undetermined mineral resource significance that are classified MRZ-3. According to CGS, there are no known active mines in the Project area. The closest mine to the Project area is the M1 South Pit Quarry, approximately 6.75 miles east of the City of Dunsmuir. Therefore, because mining of gravel resources along the river in the Project area is not feasible, and the closest mine to the Project area is 6.75 to the east, the proposed Project would not result in the loss of availability of a known mineral resource or mineral resource recovery site, and there would be no impact.

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 cumulative impacts to mineral resources.

MITIGATION

None necessary

DOCUMENTATION

California Department of Conservation, Division of Mines and Geology. 1997. Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite within Shasta County, California. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_97-03/OFR_97-03_Text.pdf. Accessed September 2018.

_____. 2018. Division of Mine Reclamation. Interactive Map of Mines in California. http://maps.conservation.ca.gov/mol/index.html. Accessed September 2018.

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

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

City of Dunsmuir

The City's General Plan includes the following Goals, Objectives, and Policies that apply to the proposed Project:

Chapter 6.0. Noise

GOAL	N-1	Citizens protected from unhealthy noise levels.
Objective		Based on available data, most of Dunsmuir is affected by noise levels that exceed 65 dB. Noise at this level is considered to be unhealthy. It is the City's desire to limit noise within existing developed areas as well as in areas that may accommodate future development.
Policy	N-1.1	The City shall take measures within its authority to protect residents and noise-sensitive land uses from high noise levels that would be detrimental to public health and comfort.
Implementation Measures	N-1.1.5	During project review of non-vehicular noise generating uses, the City shall require a reduction of noise to standards noted in the Table below at the property line when adjacent uses may be sensitive receptors:

Noise Level Descriptor	Daytime 7:00 AM – 7:00 PM	Evening 7:00 PM – 10:00 PM	Night 10:00 PM – 7:00 AM
Hourly Leq [2], dB	55	50	45
Maximum Level dB	70	60	55

DISCUSSION OF IMPACTS

Questions A, C, and D

Some land uses are considered more sensitive to noise than others. Residential areas, parks, schools, churches, hospitals, and long-term care facilities are examples of 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 closest sensitive receptor to the I-5 Lift Station site is a single-family residence approximately 200 feet to the northeast. In addition, the Tauhindauli park and trail are adjacent to the I-5 Lift Station site. The closest sensitive receptors to the WWTP work areas are a single-family residence approximately 300 feet southwest of the proposed outfall improvements in the Sacramento River; a single-family residence approximately 200 feet west of discharge line improvements on the WWTP property; and residences in the River Wood Mobile Estates, approximately 500 feet north of the new selector/headworks improvements.

Operational

Improvements at the WWTP with the potential to increase operational noise levels above existing levels include a new selector/headworks that would be approximately 100 feet northwest of the existing selector; the existing selector would be demolished following installation of the new selector. Noise levels from the new selector are not expected to be higher than the existing selector. In addition, the new selector would not be closer to a sensitive receptor than the existing selector.

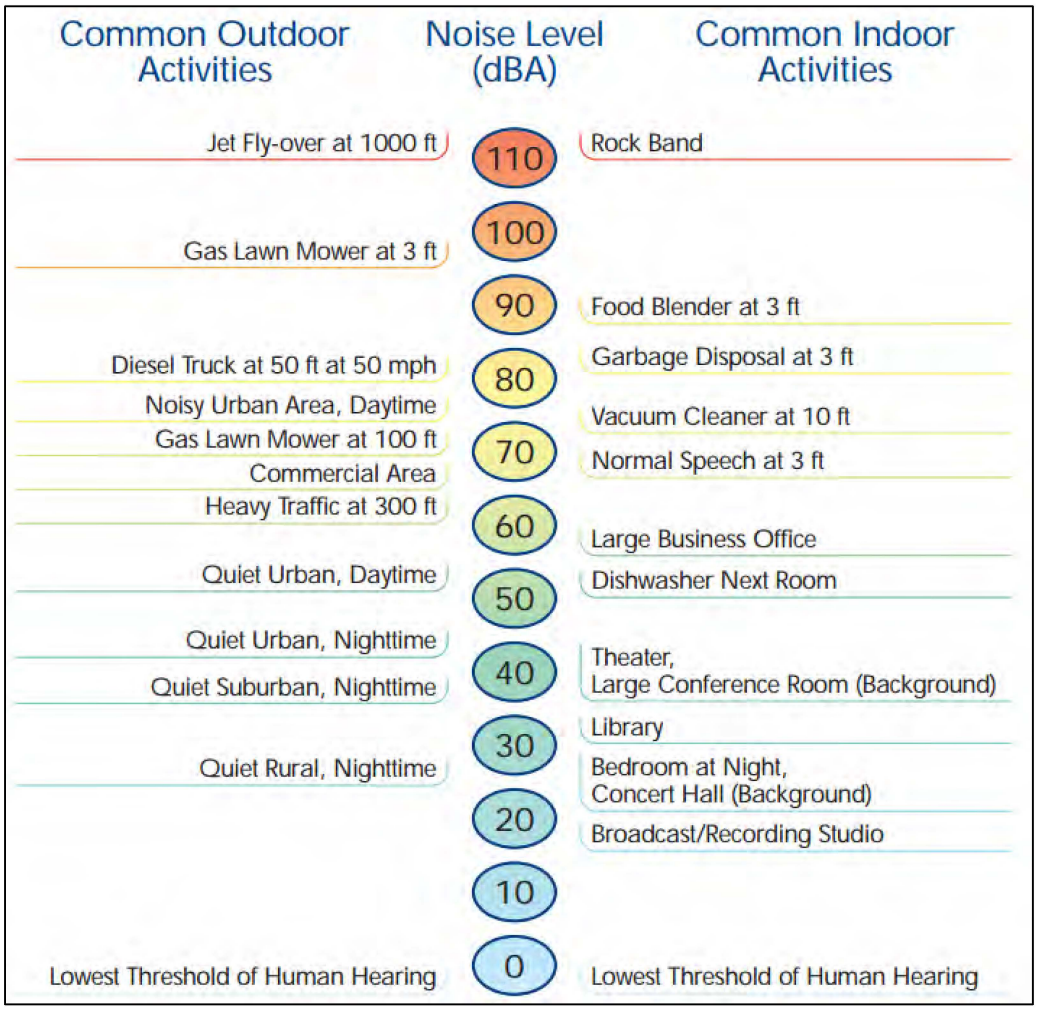
[2] *Leq is the average noise level over a specified period of time, typically computed over 1-, 8-, and 24-hour sample periods, reported as a single numerical value.*

As discussed in Section 3.2 (Project Background, Need, and Objectives), due to aging mechanical equipment at the WWTP and system deficiencies, there is an ongoing operation and maintenance problem throughout the WWTP. The new mechanical equipment would run more efficiently and generate less noise than the existing equipment. In addition, converting the WWTP to UV disinfection would result in a decrease in noise from truck traffic related to the delivery of chlorine and other chemicals associated with the current treatment system. Therefore, operational impacts would be less than significant.

Construction

Improvements at the I-5 Lift Station would be internal to the existing building; therefore, noise impacts would be negligible at the Lift Station site. Construction of the WWTP improvements would temporarily increase noise levels and may create vibration at nearby sensitive land uses. 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. **Figure 4.12-1** shows noise levels of common activities to enable the reader to compare construction-noise with common activities.

FIGURE 4.12-1
Noise Levels of Common Activities



Source: Caltrans, 2016

Noise levels from construction-related activities would fluctuate, depending on the number and type of construction equipment operating at any given time. As shown in **Table 4.12-1**, construction equipment anticipated to be used for Project construction typically generates maximum noise levels ranging from 76 to 89 decibels (dBA) at a distance of 50 feet.

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 2018

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, 76 to 89 dBA, noise levels would drop to 70 to 83 dBA at a distance of 100 feet, and would drop to 64 to 77 dBA at a distance of 200 feet.

Noise levels at the closest sensitive receptor, a single-family residence approximately 200 feet west of discharge line improvements on the WWTP property, could reach 77 dBA during construction; however, given the dense trees and other vegetation between the residence and the proposed improvements, noise levels are anticipated to be less than 77 dBA.

Although the Dunsmuir General Plan does not include noise standards for construction activities, **Mitigation Measure MM 4.12.1** limits construction to between the hours of 7:00 a.m. and 7:00 p.m. to minimize impacts to noise-sensitive land uses. Implementation of **Mitigation Measures MM 4.12.2, 4.12.3, and 4.12.4** would also reduce the potential for noise impacts during construction.

Because construction noise is a temporary impact that would cease at completion of the improvements, and **Mitigation Measures 4.12.1 through MM 4.12.4** would be implemented to reduce noise during construction, impacts during construction 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 cease at completion of the improvements. Long-term operation of the proposed Project would not create groundborne vibration. Therefore, impacts would be less than significant.

Questions E and F

See discussion in Section 4.8 under Questions E and F. The proposed Project is not located within an airport land use plan area and is not located within two miles of a public airport or in the vicinity of a private airstrip. There would be no impact.

CUMULATIVE IMPACTS

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.

The proposed Project does not include any components that would result in a significant increase in ambient noise levels. Although operation of the proposed Project would require maintenance work at the WWTP and I-5 Lift Station, this would be conducted in the same manner as current system maintenance. In addition, **Mitigation Measures MM 4.12.1 through MM 4.12.4** are included to ensure compliance with General Plan Noise Element policies related to construction noise. Therefore, cumulative noise impacts would be less than significant.

MITIGATION

MM 4.12.1 Construction activities shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Exceptions to these limitations may be approved by the City's Public Works Director or his/her designee for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards.

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 construction 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 City of Dunsmuir General Plan Noise Element shall be implemented.

DOCUMENTATION

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

Federal Aviation Administration. 2016. Airport Facilities Data. https://www.faa.gov/airports/airport_safety/airportdata_5010/menu/. Accessed September 2018.

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

The purpose of the proposed Project is to replace aging infrastructure and improve the wastewater treatment process to ensure compliance with CVRWQCB requirements. No expansion of the WWTP is proposed that would increase its existing design capacity. 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 housing units 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 City of Dunsmuir, Shasta County, and Siskiyou County General Plans. Because the purpose of the proposed Project is to repair and replace aging infrastructure, improve system efficiency, and comply with CVRWQCB regulations, it would not increase growth beyond that projected in the General Plans; therefore, no cumulative impacts would occur.

MITIGATION

None necessary

DOCUMENTATION

City of Dunsmuir. 2007. City of Dunsmuir Master Sewer Plan.

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 through E

As discussed in Section 4.13 under Questions A and C, the proposed Project would not induce substantial population growth in the area, either directly or indirectly, and would not result in the need for additional fire protection, police protection, schools, parks, or other public facilities. There would be no impact.

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.

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

As discussed in Section 4.13 under Questions A and C, the proposed Project would not induce substantial population growth in the area, either directly or indirectly, and 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 and would not require construction or expansion of such facilities. Therefore, the Project would not contribute toward cumulative impacts to recreational facilities.

MITIGATION

None necessary.

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

City of Dunsmuir

The City's General Plan includes the following Goals that apply to the proposed Project:

Chapter 4.0. Circulation

Goals C-1 Safe and easy access to and from all land uses, existing or projected, in the Land Use Element.

C-2 Streets that facilitate evacuation and emergency response in the event of an emergency.

DISCUSSION OF IMPACTS

Questions A, B, D, and E

The proposed Project 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 affect the surrounding transportation network in the long term, and would not conflict with existing plans, ordinances, policies, or programs.

As discussed in Section 4.8 under Question G, although a temporary increase in traffic could occur during construction, 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, the proposed Project does not include work in the public road ROW that would impede traffic or result in hazards due to incompatible uses. Emergency access to the work areas would be maintained throughout construction. Therefore, there would be no impact.

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.

Question F

The proposed Project consists of improvements to the WWTP and the Lift Station 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. Therefore, there would be no impact.

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

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

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) §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 §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 be a tribal cultural resource if it conforms with the criteria of subdivision (a).

DISCUSSION OF IMPACTS

Questions A and B

Although no California Native American tribe submitted a written request to the City for formal consultation pursuant to PRC §21080.3.1, ENPLAN contacted the NAHC and several Native American representatives and organizations 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, the City, as lead agency, has not identified any resources in the Project area that would be significant to a California Native American tribe.

As discussed in Section 4.5 under Question A, the Project area is considered to have a moderate to high potential for buried cultural resources. **Mitigation Measures MM 4.5.1 and MM 4.5.2** address

the inadvertent discovery of cultural resources and human remains during construction; therefore, 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. In addition, **Mitigation Measures MM 4.5.1 and 4.5.2** address the inadvertent discovery of cultural resources; therefore, the proposed Project would have less than significant cumulative impacts to tribal cultural resources.

MITIGATION

Implementation of **Mitigation Measures MM 4.5.1 and 4.5.2.**

DOCUMENTATION

City of Dunsmuir. 2006. City of Dunsmuir General Plan. https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/54c9d944e4b052377d6f6c5a/1422514500245/general_plan_2006.pdf. Accessed September 2018.

ENPLAN. 2018. Cultural Resources Inventory Report, Dunsmuir Wastewater Treatment Plant (WWTP) Improvement Project. On file at NEIC/CHRIS.

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

NPDES Permit – WWTP

The discharge of wastewater from the WWTP is regulated under Order No. R5-2012-0085, NPDES No. CA0078441 titled *City of Dunsmuir Wastewater Treatment Plant, Shasta and Siskiyou Counties,* which was adopted by the State Regional Water Quality Control Board on October 4, 2012. Although this permit expired on November 1, 2017, it remains in effect until the CVRWQCB adopts a new permit. In September 2018, the CVRWQCB published a Tentative Order for the new permit that would become effective on February 1, 2019. The Order is scheduled for adoption at the CVRWQCB Board meeting on December 6/7, 2018.

DISCUSSION OF IMPACTS

Question A

As stated under Regulatory Context above, wastewater treatment requirements for the WWTP are regulated by the CVWQCB under the NPDES permit for the WWTP. The Order includes discharge prohibitions and effluent limitations that are necessary to achieve water quality standards. On November 8, 2013, the CVRWQCB issued an Administrative Civil Liability Complaint for effluent violations that occurred between September 1 and December 31, 2012. In response to the violations, the City commenced improvements to the WWTP in mid-2013. Although the 2013 improvements assisted in resolving effluent violations, the proposed Project would address additional deficiencies that need to be completed in order to comply with the WWTP NPDES permit.

Converting the WWTP from a chlorine disinfection process to a UV disinfection process would completely eliminate risks associated with chlorine. Total dissolved solids in the final effluent would be reduced by not using chlorine and sulfur dioxide. Regulated disinfection byproducts (e.g., total trihalomethanes) that could adversely affect water quality, aquatic species, and environmentally sensitive habitats, would not be created in the UV disinfection process. Therefore, the proposed Project ensures compliance with wastewater treatment requirements of the CVRWQCB, and there would be no impact.

Question B

As stated in Section 4.13 under Questions A and C, the purpose of the proposed project is to replace aging infrastructure and improve system efficiency to ensure compliance with CVRWQCB requirements. The proposed Project would not induce substantial population growth in the area, either directly or indirectly; therefore, the proposed Project would not result in the need for new water or wastewater treatment facilities, or the expansion of such facilities; therefore, there would be no impact.

Question C

A project may require new or expanded storm water drainage facilities if it increases the amount of impervious surface on the project site and results in increased surface runoff. Proposed improvements that would increase the amount of impervious surface on the WWTP site include the ±100 square-foot selector basin and ±1,000 square-foot building for UV disinfection equipment. This relatively small area does not represent a significant increase in impervious surface and would not result in the need for new or expanded storm drain or detention systems. Improvement plans for the proposed Project would be prepared by a licensed engineer to ensure compliance with adopted standards to ensure that impacts on existing storm water drainage facilities are less than significant.

Areas disturbed during installation of pipeline improvements would be restored to pre-construction conditions; therefore, completion of the pipeline improvements would have no impact on existing drainage patterns. Therefore, because the proposed Project would not result in a significant increase in impervious surfaces that would require the construction or expansion of stormwater drainage facilities, impacts would be less than significant.

Questions D and E

Relatively small amounts of water would be used during Project construction, but this is a temporary impact. As discussed in Section 4.13 under Question 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.

Questions F and G

The proposed Project would generate only a minimal amount of waste from construction-related activities. Construction contractors would be required to comply with federal, State, and local statutes and regulations relating to the disposal of solid waste. There would be no increase in solid waste generation above existing levels in the long term. In addition, the proposed improvements would not result in an increase in the amount of wastewater treated that could result in an increased demand for disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. Therefore, because the City will ensure through contractual obligations that the contractor complies with applicable federal, state, and local regulation pertaining to solid waste, there would be no impact.

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

Central Valley Regional Water Quality Control Board. 2018. Tentative Order, Waste Discharge Requirements for the City of Dunsmuir Wastewater Treatment Plant, Shasta and Siskiyou Counties. https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/dunsmuir/dunsmuir_wwtp_tent_npdes.pdf. Accessed September 2018.

_____. 2012. Order R5-2012-0085, NPDES No. CA0078441, *City of Dunsmuir Wastewater Treatment Plant, Shasta and Siskiyou Counties.* https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/shasta/r5-2012-0085_npdes.pdf. Accessed September 2018.

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 the applicable environmental resource sections above, the proposed Project could result in possible effects to special-status wildlife species, the introduction and spread of noxious weeds during construction, disturbance of nesting migratory birds, impacts to cultural resources and tribal cultural resources (if present), temporarily increased risk of wildfires, temporarily increased air emissions, and temporarily increased noise and vibration 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 section above. As documented, the proposed Project's cumulative impacts would be less than significant.

Question C

As discussed in the applicable environmental resource sections above, the proposed Project could result in adverse effects on human beings due to temporarily increased risk of wildfires, temporarily increased air emissions, and temporarily increased noise and vibration levels. However, 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

Sabrina Hofkin..... Wildlife Biologist

John Luper ..... Environmental Scientist

Jacques Peltier ..... Archaeologist

Dimitra Zalarvis-Chase ..... Archaeologist

Teresa Baarts ..... Production Coordinator

City of Dunsmuir

Mark Brannigan, City Manager

Ron LaRue, Utilities Supervisor

PACE Engineering

Paul Reuter, P.E.

Jessica Chandler, P.E.

Nicole Humphreys, EIT

SECTION 6.0 ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ADWF	Average Dry Weather Flows
APCD	Air Pollution Control District
APE	Area of Potential Effects
AQAP	Air Quality Attainment Plan
AQMD	Air Quality Management District
AWWF	Average Wet Weather Flows
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Criteria Air Pollutants
CARB	California Air Resources Board
CBSC	California Building Standards Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
Cl_2	Chlorine
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRHR	California Register of Historical Resources
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Fund
CY	Cubic Yards
dBA	Decibels, A-Weighted
DOC	Department of Conservation
DTSC	California Department of Toxic Substances Control

EO	Executive Order
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Act
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FMMP	California Farmland Mapping and Monitoring Program
GHG	Greenhouse Gas Emissions
GWP	Global Warming Potential
H_2S	Hydrogen Sulfide
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbons
I-5	Interstate 5
IS	Initial Study
LCC	Land Capability Classification
MCL	Maximum Contaminant Level
mg/m^3	Milligrams per Cubic Meter
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MT	Metric Tons
N_2	Nitrogen
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAPL	Non-aqueous phase liquid
NCCP	Natural Community Conservation Plan
NEIC/CHRIS	Northeast Information Center of the California Historical Resources Information System
NF_3	Nitrogen Trifluoride
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_X	Oxides of Nitrogen
NPAB	Northeast Plateau Air Basin
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NSVPA	Northern Sacramento Valley Planning Area
NWP	Nationwide Permit
O_2	Oxygen
O_3	Ozone

OHWM	Ordinary High Water Mark
OSHA	Occupational Safety and Health Act
Pb	Lead
PF	Public Facilities
PFC	Perfluorocarbons
$PM_{2.5}$	Particulate Matter, 2.5 microns in size
PM_{10}	Particulate Matter, 10 microns in size
PPB	Parts per Billion
PPM	Parts per Million
PRC	Public Resources Code
Project	Dunsmuir Wastewater Treatment Plant (WWTP) Improvement Project
PVC	Polyvinyl Chloride
RAS	Return Activated Sludge
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAPCD	Siskiyou County Air Pollution Control District
SCAQMD	Shasta County Air Quality Management District
SF_6	Sulfur Hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMARA	The Surface Mining and Reclamation Act
SMM	Standard Mitigation Measures
SO_2	Sulfur Dioxide
SO_4	Sulfates
SO_X	Sulfur Oxides
SVAB	Sacramento Valley Air Basin
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
VOC	Volatile Organic Compounds
WDRs	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant
$\mu g/m^3$	Micrograms per Cubic Meter

Appendix A .....

CalEEMod.2016.3.2

Emissions Report

Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

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	1.00	1000sqft	0.00	1,000.00	0
Other Non-Asphalt Surfaces	0.00		1.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	14			**Operational Year**	2022
Utility Company	PacifiCorp				
CO2 Intensity (lb/MWhr)	1656.39	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - New UV disinfection system; miscellaneous pipeline improvements at Wastewater Treatment Plant.

Construction Phase - CalEEMod default for construction schedule.

Grading - Includes trenching for pipeline improvements; building pad for new UV disinfection building; site preparation for new selector; and associated improvements.

Demolition -

Energy Use - Lighting energy intensity associated with medium pressure UV lamps.

Water And Wastewater - No increase in water use or wastewater treatment.

Solid Waste - No increase in solid waste.

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Trips and VMT - Construction worker trips; materials delivery.

Architectural Coating - No architectural coatings required.

Road Dust - WWTP

Area Coating - No architectural coatings.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	500.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,500.00	0.00
tblAreaCoating	Area_Nonresidential_Exterior	500	0
tblAreaCoating	Area_Nonresidential_Interior	1500	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblEnergyUse	LightingElect	1.81	87.89
tblGrading	MaterialImported	0.00	1,300.00
tblLandUse	LotAcreage	0.02	0.00
tblRoadDust	MeanVehicleSpeed	40	15
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	163.00	162.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

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					
2021	2.0551	24.5342	14.9471	0.0474	5.8653	1.0419	6.6311	2.9711	0.9724	3.6757	0.0000	4,853.8963	4,853.8963	0.6191	0.0000	4,869.3741
2022	1.6830	12.5227	12.9759	0.0227	0.0657	0.5893	0.6550	0.0174	0.5693	0.5867	0.0000	2,067.8079	2,067.8079	0.4133	0.0000	2,076.5723
Maximum	**2.0551**	**24.5342**	**14.9471**	**0.0474**	**5.8653**	**1.0419**	**6.6311**	**2.9711**	**0.9724**	**3.6757**	**0.0000**	**4,853.8963**	**4,853.8963**	**0.6191**	**0.0000**	**4,869.3741**

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					
2021	2.0551	24.5342	14.9471	0.0474	3.0081	1.0419	3.6842	1.3518	0.9724	2.0512	0.0000	4,853.8963	4,853.8963	0.6191	0.0000	4,869.3741
2022	1.6830	12.5227	12.9759	0.0227	0.0657	0.5893	0.6550	0.0174	0.5693	0.5867	0.0000	2,067.8079	2,067.8079	0.4133	0.0000	2,076.5723
Maximum	**2.0551**	**24.5342**	**14.9471**	**0.0474**	**3.0081**	**1.0419**	**3.6842**	**1.3518**	**0.9724**	**2.0512**	**0.0000**	**4,853.8963**	**4,853.8963**	**0.6191**	**0.0000**	**4,869.3741**

	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**	**48.17**	**0.00**	**40.45**	**54.19**	**0.00**	**38.11**	**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	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.1314	1.1314	2.0000e-005	2.0000e-005	1.1381
Mobile	0.0199	0.1368	0.1829	7.0000e-004	0.0436	6.9000e-004	0.0443	0.0117	6.5000e-004	0.0124		71.7177	71.7177	4.2700e-003		71.8243
Total	**0.0415**	**0.1377**	**0.1838**	**7.1000e-004**	**0.0436**	**7.6000e-004**	**0.0444**	**0.0117**	**7.2000e-004**	**0.0124**		**72.8492**	**72.8492**	**4.2900e-003**	**2.0000e-005**	**72.9626**

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	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.1314	1.1314	2.0000e-005	2.0000e-005	1.1381
Mobile	0.0199	0.1368	0.1829	7.0000e-004	0.0436	6.9000e-004	0.0443	0.0117	6.5000e-004	0.0124		71.7177	71.7177	4.2700e-003		71.8243
Total	**0.0415**	**0.1377**	**0.1838**	**7.1000e-004**	**0.0436**	**7.6000e-004**	**0.0444**	**0.0117**	**7.2000e-004**	**0.0124**		**72.8492**	**72.8492**	**4.2900e-003**	**2.0000e-005**	**72.9626**

	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	Demolition	Demolition	7/5/2021	7/30/2021	5	20	
2	Site Preparation	Site Preparation	7/31/2021	8/3/2021	5	2	
3	Grading	Grading	8/4/2021	8/9/2021	5	4	
4	Building Construction	Building Construction	8/10/2021	5/16/2022	5	200	
5	Paving	Paving	5/17/2022	5/30/2022	5	10	
6	Architectural Coating	Architectural Coating	5/31/2022	6/13/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.1

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

OffRoad Equipment

Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements - Shasta County AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	5.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	162.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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					0.0587	0.0000	0.0587	8.8900e-003	0.0000	8.8900e-003			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.0587**	**1.0409**	**1.0996**	**8.8900e-003**	**0.9715**	**0.9804**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

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	1.8400e-003	0.0629	8.9500e-003	2.0000e-004	4.3800e-003	2.3000e-004	4.6100e-003	1.2000e-003	2.2000e-004	1.4200e-003		21.1116	21.1116	1.0800e-003		21.1386
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	0.0602	0.0359	0.4456	1.1200e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		111.7287	111.7287	3.6200e-003		111.8192
Total	**0.0621**	**0.0987**	**0.4546**	**1.3200e-003**	**0.1112**	**9.7000e-004**	**0.1121**	**0.0295**	**9.0000e-004**	**0.0304**		**132.8403**	**132.8403**	**4.7000e-003**		**132.9578**

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					0.0264	0.0000	0.0264	4.0000e-003	0.0000	4.0000e-003			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.0264**	**1.0409**	**1.0673**	**4.0000e-003**	**0.9715**	**0.9755**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

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	1.8400e-003	0.0629	8.9500e-003	2.0000e-004	4.3800e-003	2.3000e-004	4.6100e-003	1.2000e-003	2.2000e-004	1.4200e-003		21.1116	21.1116	1.0800e-003		21.1386
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	0.0602	0.0359	0.4456	1.1200e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		111.7287	111.7287	3.6200e-003		111.8192
Total	**0.0621**	**0.0987**	**0.4546**	**1.3200e-003**	**0.1112**	**9.7000e-004**	**0.1121**	**0.0295**	**9.0000e-004**	**0.0304**		**132.8403**	**132.8403**	**4.7000e-003**		**132.9578**

3.3 Site Preparation - 2021

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					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**5.7996**	**0.7654**	**6.5650**	**2.9537**	**0.7041**	**3.6578**		**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

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	0.0371	0.0221	0.2742	6.9000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		68.7561	68.7561	2.2300e-003		68.8118
Total	**0.0371**	**0.0221**	**0.2742**	**6.9000e-004**	**0.0657**	**4.5000e-004**	**0.0662**	**0.0174**	**4.2000e-004**	**0.0179**		**68.7561**	**68.7561**	**2.2300e-003**		**68.8118**

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					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**2.6098**	**0.7654**	**3.3752**	**1.3292**	**0.7041**	**2.0333**	**0.0000**	**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

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	0.0371	0.0221	0.2742	6.9000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		68.7561	68.7561	2.2300e-003		68.8118
Total	**0.0371**	**0.0221**	**0.2742**	**6.9000e-004**	**0.0657**	**4.5000e-004**	**0.0662**	**0.0174**	**4.2000e-004**	**0.0179**		**68.7561**	**68.7561**	**2.2300e-003**		**68.8118**

3.4 Grading - 2021

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					4.9622	0.0000	4.9622	2.5329	0.0000	2.5329			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.9622**	**0.6379**	**5.6001**	**2.5329**	**0.5869**	**3.1198**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

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	0.2974	10.1814	1.4502	0.0326	0.7094	0.0377	0.7471	0.1945	0.0361	0.2306		3,420.0754	3,420.0754	0.1754		3,424.4603
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	0.0371	0.0221	0.2742	6.9000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		68.7561	68.7561	2.2300e-003		68.8118
Total	**0.3345**	**10.2035**	**1.7244**	**0.0333**	**0.7751**	**0.0382**	**0.8132**	**0.2120**	**0.0365**	**0.2485**		**3,488.8315**	**3,488.8315**	**0.1776**		**3,493.2720**

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					2.2330	0.0000	2.2330	1.1398	0.0000	1.1398			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**2.2330**	**0.6379**	**2.8709**	**1.1398**	**0.5869**	**1.7267**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

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	0.2974	10.1814	1.4502	0.0326	0.7094	0.0377	0.7471	0.1945	0.0361	0.2306		3,420.0754	3,420.0754	0.1754		3,424.4603
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	0.0371	0.0221	0.2742	6.9000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		68.7561	68.7561	2.2300e-003		68.8118
Total	**0.3345**	**10.2035**	**1.7244**	**0.0333**	**0.7751**	**0.0382**	**0.8132**	**0.2120**	**0.0365**	**0.2485**		**3,488.8315**	**3,488.8315**	**0.1776**		**3,493.2720**

3.5 Building Construction - 2021

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	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

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	0.0371	0.0221	0.2742	6.9000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		68.7561	68.7561	2.2300e-003		68.8118
Total	**0.0371**	**0.0221**	**0.2742**	**6.9000e-004**	**0.0657**	**4.5000e-004**	**0.0662**	**0.0174**	**4.2000e-004**	**0.0179**		**68.7561**	**68.7561**	**2.2300e-003**		**68.8118**

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	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

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	0.0371	0.0221	0.2742	6.9000e-004	0.0657	4.5000e-004	0.0662	0.0174	4.2000e-004	0.0179		68.7561	68.7561	2.2300e-003		68.8118
Total	**0.0371**	**0.0221**	**0.2742**	**6.9000e-004**	**0.0657**	**4.5000e-004**	**0.0662**	**0.0174**	**4.2000e-004**	**0.0179**		**68.7561**	**68.7561**	**2.2300e-003**		**68.8118**

3.5 Building Construction - 2022

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	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

3.5 Building Construction - 2022

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	0.0343	0.0197	0.2495	6.7000e-004	0.0657	4.4000e-004	0.0662	0.0174	4.1000e-004	0.0178		66.2650	66.2650	1.9700e-003		66.3142
Total	**0.0343**	**0.0197**	**0.2495**	**6.7000e-004**	**0.0657**	**4.4000e-004**	**0.0662**	**0.0174**	**4.1000e-004**	**0.0178**		**66.2650**	**66.2650**	**1.9700e-003**		**66.3142**

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	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

3.5 Building Construction - 2022

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	0.0343	0.0197	0.2495	6.7000e-004	0.0657	4.4000e-004	0.0662	0.0174	4.1000e-004	0.0178		66.2650	66.2650	1.9700e-003		66.3142
Total	**0.0343**	**0.0197**	**0.2495**	**6.7000e-004**	**0.0657**	**4.4000e-004**	**0.0662**	**0.0174**	**4.1000e-004**	**0.0178**		**66.2650**	**66.2650**	**1.9700e-003**		**66.3142**

3.6 Paving - 2022

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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.6 Paving - 2022

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	0.0343	0.0197	0.2495	6.7000e-004	0.0657	4.4000e-004	0.0662	0.0174	4.1000e-004	0.0178		66.2650	66.2650	1.9700e-003		66.3142
Total	**0.0343**	**0.0197**	**0.2495**	**6.7000e-004**	**0.0657**	**4.4000e-004**	**0.0662**	**0.0174**	**4.1000e-004**	**0.0178**		**66.2650**	**66.2650**	**1.9700e-003**		**66.3142**

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	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.6 Paving - 2022

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	0.0343	0.0197	0.2495	6.7000e-004	0.0657	4.4000e-004	0.0662	0.0174	4.1000e-004	0.0178		66.2650	66.2650	1.9700e-003		66.3142
Total	**0.0343**	**0.0197**	**0.2495**	**6.7000e-004**	**0.0657**	**4.4000e-004**	**0.0662**	**0.0174**	**4.1000e-004**	**0.0178**		**66.2650**	**66.2650**	**1.9700e-003**		**66.3142**

3.7 Architectural Coating - 2022

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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**0.2045**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**0.2045**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0199	0.1368	0.1829	7.0000e-004	0.0436	6.9000e-004	0.0443	0.0117	6.5000e-004	0.0124		71.7177	71.7177	4.2700e-003		71.8243
Unmitigated	0.0199	0.1368	0.1829	7.0000e-004	0.0436	6.9000e-004	0.0443	0.0117	6.5000e-004	0.0124		71.7177	71.7177	4.2700e-003		71.8243

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Total	6.97	1.32	0.68	15,369	15,369

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	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.523272	0.032530	0.181768	0.106196	0.031705	0.006508	0.012974	0.094129	0.001340	0.001253	0.005657	0.001294	0.001375
Other Non-Asphalt Surfaces	0.523272	0.032530	0.181768	0.106196	0.031705	0.006508	0.012974	0.094129	0.001340	0.001253	0.005657	0.001294	0.001375

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	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.1314	1.1314	2.0000e-005	2.0000e-005	1.1381
NaturalGas Unmitigated	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.1314	1.1314	2.0000e-005	2.0000e-005	1.1381

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	9.61644	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.1314	1.1314	2.0000e-005	2.0000e-005	1.1381
Other Non-Asphalt Surfaces	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		**1.0000e-004**	**9.4000e-004**	**7.9000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**1.1314**	**1.1314**	**2.0000e-005**	**2.0000e-005**	**1.1381**

5.2 Energy by Land Use - NaturalGas

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	0.00961644	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		1.1314	1.1314	2.0000e-005	2.0000e-005	1.1381
Other Non-Asphalt Surfaces	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		**1.0000e-004**	**9.4000e-004**	**7.9000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**1.1314**	**1.1314**	**2.0000e-005**	**2.0000e-005**	**1.1381**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

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	1.00	1000sqft	0.00	1,000.00	0
Other Non-Asphalt Surfaces	0.00		1.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	14			**Operational Year**	2022
Utility Company	PacifiCorp				
CO2 Intensity (lb/MWhr)	1656.39	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - New UV disinfection system; miscellaneous pipeline improvements at Wastewater Treatment Plant.

Construction Phase - CalEEMod default for construction schedule.

Grading - Includes trenching for pipeline improvements; building pad for new UV disinfection building; site preparation for new selector; and associated improvements.

Demolition -

Energy Use - Lighting energy intensity associated with medium pressure UV lamps.

Water And Wastewater - No increase in water use or wastewater treatment.

Solid Waste - No increase in solid waste.

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Trips and VMT - Construction worker trips; materials delivery.

Architectural Coating - No architectural coatings required.

Road Dust - WWTP

Area Coating - No architectural coatings.

Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements - Shasta County AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	500.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,500.00	0.00
tblAreaCoating	Area_Nonresidential_Exterior	500	0
tblAreaCoating	Area_Nonresidential_Interior	1500	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblEnergyUse	LightingElect	1.81	87.89
tblGrading	MaterialImported	0.00	1,300.00
tblLandUse	LotAcreage	0.02	0.00
tblRoadDust	MeanVehicleSpeed	40	15
tblSolidWaste	SolidWasteGenerationRate	1.24	0.00
tblTripsAndVMT	HaulingTripNumber	163.00	162.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

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					
2021	0.1211	0.9753	0.8554	1.5400e-003	0.0222	0.0482	0.0703	9.6800e-003	0.0461	0.0557	0.0000	129.7805	129.7805	0.0240	0.0000	130.3806
2022	0.0851	0.6422	0.6750	1.1700e-003	3.3100e-003	0.0304	0.0338	8.8000e-004	0.0293	0.0302	0.0000	97.1731	97.1731	0.0172	0.0000	97.6034
Maximum	**0.1211**	**0.9753**	**0.8554**	**1.5400e-003**	**0.0222**	**0.0482**	**0.0703**	**9.6800e-003**	**0.0461**	**0.0557**	**0.0000**	**129.7805**	**129.7805**	**0.0240**	**0.0000**	**130.3806**

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					
2021	0.1211	0.9753	0.8554	1.5400e-003	0.0132	0.0482	0.0613	5.2200e-003	0.0461	0.0513	0.0000	129.7803	129.7803	0.0240	0.0000	130.3804
2022	0.0851	0.6422	0.6750	1.1700e-003	3.3100e-003	0.0304	0.0338	8.8000e-004	0.0293	0.0302	0.0000	97.1730	97.1730	0.0172	0.0000	97.6033
Maximum	**0.1211**	**0.9753**	**0.8554**	**1.5400e-003**	**0.0132**	**0.0482**	**0.0613**	**5.2200e-003**	**0.0461**	**0.0513**	**0.0000**	**129.7803**	**129.7803**	**0.0240**	**0.0000**	**130.3804**

	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**	**35.24**	**0.00**	**8.62**	**42.23**	**0.00**	**5.19**	**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	7-5-2021	10-4-2021	0.5963	0.5963
2	10-5-2021	1-4-2022	0.5077	0.5077
3	1-5-2022	4-4-2022	0.4566	0.4566
4	4-5-2022	7-4-2022	0.2587	0.2587
		Highest	0.5963	0.5963

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	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	68.0771	68.0771	1.1900e-003	2.5000e-004	68.1812
Mobile	2.1700e-003	0.0192	0.0224	9.0000e-005	5.7100e-003	1.0000e-004	5.8100e-003	1.5400e-003	9.0000e-005	1.6300e-003	0.0000	8.3796	8.3796	5.4000e-004	0.0000	8.3930
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	**6.1000e-003**	**0.0194**	**0.0225**	**9.0000e-005**	**5.7100e-003**	**1.1000e-004**	**5.8200e-003**	**1.5400e-003**	**1.0000e-004**	**1.6400e-003**	**0.0000**	**76.4567**	**76.4567**	**1.7300e-003**	**2.5000e-004**	**76.5742**

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	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	68.0771	68.0771	1.1900e-003	2.5000e-004	68.1812
Mobile	2.1700e-003	0.0192	0.0224	9.0000e-005	5.7100e-003	1.0000e-004	5.8100e-003	1.5400e-003	9.0000e-005	1.6300e-003	0.0000	8.3796	8.3796	5.4000e-004	0.0000	8.3930
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	**6.1000e-003**	**0.0194**	**0.0225**	**9.0000e-005**	**5.7100e-003**	**1.1000e-004**	**5.8200e-003**	**1.5400e-003**	**1.0000e-004**	**1.6400e-003**	**0.0000**	**76.4567**	**76.4567**	**1.7300e-003**	**2.5000e-004**	**76.5742**

	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

Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements - Shasta County AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/5/2021	7/30/2021	5	20	
2	Site Preparation	Site Preparation	7/31/2021	8/3/2021	5	2	
3	Grading	Grading	8/4/2021	8/9/2021	5	4	
4	Building Construction	Building Construction	8/10/2021	5/16/2022	5	200	
5	Paving	Paving	5/17/2022	5/30/2022	5	10	
6	Architectural Coating	Architectural Coating	5/31/2022	6/13/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.1

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

OffRoad Equipment

Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements - Shasta County AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	5.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	162.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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					5.9000e-004	0.0000	5.9000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1970	0.1449	2.4000e-004		0.0104	0.0104		9.7100e-003	9.7100e-003	0.0000	21.0713	21.0713	5.3900e-003	0.0000	21.2060
Total	**0.0199**	**0.1970**	**0.1449**	**2.4000e-004**	**5.9000e-004**	**0.0104**	**0.0110**	**9.0000e-005**	**9.7100e-003**	**9.8000e-003**	**0.0000**	**21.0713**	**21.0713**	**5.3900e-003**	**0.0000**	**21.2060**

3.2 Demolition - 2021

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	2.0000e-005	6.4000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1896	0.1896	1.0000e-005	0.0000	0.1899
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	5.0000e-004	3.8000e-004	3.7200e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9081	0.9081	3.0000e-005	0.0000	0.9089
Total	**5.2000e-004**	**1.0200e-003**	**3.8100e-003**	**1.0000e-005**	**1.0600e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.0978**	**1.0978**	**4.0000e-005**	**0.0000**	**1.0988**

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					2.6000e-004	0.0000	2.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1970	0.1449	2.4000e-004		0.0104	0.0104		9.7100e-003	9.7100e-003	0.0000	21.0713	21.0713	5.3900e-003	0.0000	21.2060
Total	**0.0199**	**0.1970**	**0.1449**	**2.4000e-004**	**2.6000e-004**	**0.0104**	**0.0107**	**4.0000e-005**	**9.7100e-003**	**9.7500e-003**	**0.0000**	**21.0713**	**21.0713**	**5.3900e-003**	**0.0000**	**21.2060**

3.2 Demolition - 2021

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	2.0000e-005	6.4000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1896	0.1896	1.0000e-005	0.0000	0.1899
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	5.0000e-004	3.8000e-004	3.7200e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9081	0.9081	3.0000e-005	0.0000	0.9089
Total	**5.2000e-004**	**1.0200e-003**	**3.8100e-003**	**1.0000e-005**	**1.0600e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.0978**	**1.0978**	**4.0000e-005**	**0.0000**	**1.0988**

3.3 Site Preparation - 2021

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	**1.5600e-003**	**0.0174**	**7.5600e-003**	**2.0000e-005**	**5.8000e-003**	**7.7000e-004**	**6.5700e-003**	**2.9500e-003**	**7.0000e-004**	**3.6500e-003**	**0.0000**	**1.5118**	**1.5118**	**4.9000e-004**	**0.0000**	**1.5241**

3.3 Site Preparation - 2021

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	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0559	0.0559	0.0000	0.0000	0.0559
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0559**	**0.0559**	**0.0000**	**0.0000**	**0.0559**

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					2.6100e-003	0.0000	2.6100e-003	1.3300e-003	0.0000	1.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	**1.5600e-003**	**0.0174**	**7.5600e-003**	**2.0000e-005**	**2.6100e-003**	**7.7000e-004**	**3.3800e-003**	**1.3300e-003**	**7.0000e-004**	**2.0300e-003**	**0.0000**	**1.5118**	**1.5118**	**4.9000e-004**	**0.0000**	**1.5241**

3.3 Site Preparation - 2021

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	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0559	0.0559	0.0000	0.0000	0.0559
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0559**	**0.0559**	**0.0000**	**0.0000**	**0.0559**

3.4 Grading - 2021

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					9.9200e-003	0.0000	9.9200e-003	5.0700e-003	0.0000	5.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	**2.5800e-003**	**0.0287**	**0.0127**	**3.0000e-005**	**9.9200e-003**	**1.2800e-003**	**0.0112**	**5.0700e-003**	**1.1700e-003**	**6.2400e-003**	**0.0000**	**2.4767**	**2.4767**	**8.0000e-004**	**0.0000**	**2.4968**

3.4 Grading - 2021

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	6.0000e-004	0.0209	3.0700e-003	6.0000e-005	1.3600e-003	8.0000e-005	1.4300e-003	3.7000e-004	7.0000e-005	4.5000e-004	0.0000	6.1443	6.1443	3.4000e-004	0.0000	6.1527
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	6.0000e-005	5.0000e-005	4.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1118	0.1118	0.0000	0.0000	0.1119
Total	**6.6000e-004**	**0.0209**	**3.5300e-003**	**6.0000e-005**	**1.4900e-003**	**8.0000e-005**	**1.5600e-003**	**4.0000e-004**	**7.0000e-005**	**4.8000e-004**	**0.0000**	**6.2561**	**6.2561**	**3.4000e-004**	**0.0000**	**6.2646**

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					4.4700e-003	0.0000	4.4700e-003	2.2800e-003	0.0000	2.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	**2.5800e-003**	**0.0287**	**0.0127**	**3.0000e-005**	**4.4700e-003**	**1.2800e-003**	**5.7500e-003**	**2.2800e-003**	**1.1700e-003**	**3.4500e-003**	**0.0000**	**2.4767**	**2.4767**	**8.0000e-004**	**0.0000**	**2.4968**

3.4 Grading - 2021

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	6.0000e-004	0.0209	3.0700e-003	6.0000e-005	1.3600e-003	8.0000e-005	1.4300e-003	3.7000e-004	7.0000e-005	4.5000e-004	0.0000	6.1443	6.1443	3.4000e-004	0.0000	6.1527
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	6.0000e-005	5.0000e-005	4.6000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1118	0.1118	0.0000	0.0000	0.1119
Total	**6.6000e-004**	**0.0209**	**3.5300e-003**	**6.0000e-005**	**1.4900e-003**	**8.0000e-005**	**1.5600e-003**	**4.0000e-004**	**7.0000e-005**	**4.8000e-004**	**0.0000**	**6.2561**	**6.2561**	**3.4000e-004**	**0.0000**	**6.2646**

3.5 Building Construction - 2021

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	0.0943	0.7091	0.6708	1.1500e-003		0.0356	0.0356		0.0344	0.0344	0.0000	94.4048	94.4048	0.0169	0.0000	94.8261
Total	**0.0943**	**0.7091**	**0.6708**	**1.1500e-003**		**0.0356**	**0.0356**		**0.0344**	**0.0344**	**0.0000**	**94.4048**	**94.4048**	**0.0169**	**0.0000**	**94.8261**

3.5 Building Construction - 2021

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	1.6000e-003	1.2300e-003	0.0119	3.0000e-005	3.2500e-003	2.0000e-005	3.2700e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.9061	2.9061	9.0000e-005	0.0000	2.9084
Total	**1.6000e-003**	**1.2300e-003**	**0.0119**	**3.0000e-005**	**3.2500e-003**	**2.0000e-005**	**3.2700e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.9061**	**2.9061**	**9.0000e-005**	**0.0000**	**2.9084**

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	0.0943	0.7091	0.6708	1.1500e-003		0.0356	0.0356		0.0344	0.0344	0.0000	94.4047	94.4047	0.0169	0.0000	94.8260
Total	**0.0943**	**0.7091**	**0.6708**	**1.1500e-003**		**0.0356**	**0.0356**		**0.0344**	**0.0344**	**0.0000**	**94.4047**	**94.4047**	**0.0169**	**0.0000**	**94.8260**

3.5 Building Construction - 2021

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	1.6000e-003	1.2300e-003	0.0119	3.0000e-005	3.2500e-003	2.0000e-005	3.2700e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.9061	2.9061	9.0000e-005	0.0000	2.9084
Total	**1.6000e-003**	**1.2300e-003**	**0.0119**	**3.0000e-005**	**3.2500e-003**	**2.0000e-005**	**3.2700e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.9061**	**2.9061**	**9.0000e-005**	**0.0000**	**2.9084**

3.5 Building Construction - 2022

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	0.0791	0.6002	0.6109	1.0600e-003		0.0283	0.0283		0.0273	0.0273	0.0000	87.1569	87.1569	0.0152	0.0000	87.5364
Total	**0.0791**	**0.6002**	**0.6109**	**1.0600e-003**		**0.0283**	**0.0283**		**0.0273**	**0.0273**	**0.0000**	**87.1569**	**87.1569**	**0.0152**	**0.0000**	**87.5364**

3.5 Building Construction - 2022

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	1.3700e-003	1.0100e-003	9.9700e-003	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.5854	2.5854	8.0000e-005	0.0000	2.5873
Total	**1.3700e-003**	**1.0100e-003**	**9.9700e-003**	**3.0000e-005**	**3.0000e-003**	**2.0000e-005**	**3.0200e-003**	**8.0000e-004**	**2.0000e-005**	**8.2000e-004**	**0.0000**	**2.5854**	**2.5854**	**8.0000e-005**	**0.0000**	**2.5873**

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	0.0791	0.6002	0.6109	1.0600e-003		0.0283	0.0283		0.0273	0.0273	0.0000	87.1568	87.1568	0.0152	0.0000	87.5363
Total	**0.0791**	**0.6002**	**0.6109**	**1.0600e-003**		**0.0283**	**0.0283**		**0.0273**	**0.0273**	**0.0000**	**87.1568**	**87.1568**	**0.0152**	**0.0000**	**87.5363**

3.5 Building Construction - 2022

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	1.3700e-003	1.0100e-003	9.9700e-003	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.5854	2.5854	8.0000e-005	0.0000	2.5873
Total	**1.3700e-003**	**1.0100e-003**	**9.9700e-003**	**3.0000e-005**	**3.0000e-003**	**2.0000e-005**	**3.0200e-003**	**8.0000e-004**	**2.0000e-005**	**8.2000e-004**	**0.0000**	**2.5854**	**2.5854**	**8.0000e-005**	**0.0000**	**2.5873**

3.6 Paving - 2022

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	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

3.6 Paving - 2022

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	1.4000e-004	1.1000e-004	1.0400e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2693	0.2693	1.0000e-005	0.0000	0.2695
Total	**1.4000e-004**	**1.1000e-004**	**1.0400e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2693**	**0.2693**	**1.0000e-005**	**0.0000**	**0.2695**

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	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9314
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9314**

3.6 Paving - 2022

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	1.4000e-004	1.1000e-004	1.0400e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2693	0.2693	1.0000e-005	0.0000	0.2695
Total	**1.4000e-004**	**1.1000e-004**	**1.0400e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2693**	**0.2693**	**1.0000e-005**	**0.0000**	**0.2695**

3.7 Architectural Coating - 2022

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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**1.0200e-003**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3.7 Architectural Coating - 2022

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	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
Total	**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**

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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**1.0200e-003**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3.7 Architectural Coating - 2022

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	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
Total	**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**

4.0 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	2.1700e-003	0.0192	0.0224	9.0000e-005	5.7100e-003	1.0000e-004	5.8100e-003	1.5400e-003	9.0000e-005	1.6300e-003	0.0000	8.3796	8.3796	5.4000e-004	0.0000	8.3930
Unmitigated	2.1700e-003	0.0192	0.0224	9.0000e-005	5.7100e-003	1.0000e-004	5.8100e-003	1.5400e-003	9.0000e-005	1.6300e-003	0.0000	8.3796	8.3796	5.4000e-004	0.0000	8.3930

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Total	6.97	1.32	0.68	15,369	15,369

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	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.523272	0.032530	0.181768	0.106196	0.031705	0.006508	0.012974	0.094129	0.001340	0.001253	0.005657	0.001294	0.001375
Other Non-Asphalt Surfaces	0.523272	0.032530	0.181768	0.106196	0.031705	0.006508	0.012974	0.094129	0.001340	0.001253	0.005657	0.001294	0.001375

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	67.8898	67.8898	1.1900e-003	2.5000e-004	67.9928
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.8898	67.8898	1.1900e-003	2.5000e-004	67.9928
NaturalGas Mitigated	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1873	0.1873	0.0000	0.0000	0.1884
NaturalGas Unmitigated	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1873	0.1873	0.0000	0.0000	0.1884

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	3510	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1873	0.1873	0.0000	0.0000	0.1884
Other Non-Asphalt Surfaces	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		**2.0000e-005**	**1.7000e-004**	**1.4000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.1873**	**0.1873**	**0.0000**	**0.0000**	**0.1884**

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	3510	2.0000e-005	1.7000e-004	1.4000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1873	0.1873	0.0000	0.0000	0.1884
Other Non-Asphalt Surfaces	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		**2.0000e-005**	**1.7000e-004**	**1.4000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.1873**	**0.1873**	**0.0000**	**0.0000**	**0.1884**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	90360	67.8898	1.1900e-003	2.5000e-004	67.9928
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**67.8898**	**1.1900e-003**	**2.5000e-004**	**67.9928**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	90360	67.8898	1.1900e-003	2.5000e-004	67.9928
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**67.8898**	**1.1900e-003**	**2.5000e-004**	**67.9928**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**3.9100e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**3.9100e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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
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
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
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
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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

BIOLOGICAL STUDY REPORT

Dunsmuir Wastewater Treatment Plant (WWTP) Improvement Project



Prepared for:

City of Dunsmuir

Prepared by:

John Luper, Qualified Biologist

November 2018

Revised July 2019

032-43

ENPLAN
3179 Bechelli Lane, Suite 100, Redding, CA 96002
(530) 221-0440
www.enplan.com

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 PROJECT LOCATION 1

Figure 1. Vicinity Map 2

3.0 PROJECT DESCRIPTION 3

Figure 2. Proposed Wastewater Treatment Plant Improvements 4

Figure 3. Wastewater Treatment Plant Alternatives 8

4.0 RECORDS REVIEW AND FIELD RECONNAISSANCE 10

4.1 Records Review 10

4.2 Field Reconnaissance 10

5.0 PLANT COMMUNITIES/WILDLIFE HABITATS 11

6.0 SPECIAL-STATUS SPECIES 14

6.1 Special-Status Plant Species 14

6.2 Special-Status Wildlife Species 15

7.0 NESTING MIGRATORY BIRDS 16

8.0 NOXIOUS WEEDS 17

9.0 CONCLUSIONS AND RECOMMENDATIONS 18

TABLES

Table 1. California Natural Diversity Data Base (CNDDB) Report Summary

Table 2. California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants

Table 3. Potential for Special-Status Species to Occur on the Project Sites

Table 4. Potential for Migratory Birds of Conservation Concern to Occur on the Project Sites

APPENDICES

Appendix A. U.S. Fish and Wildlife Service List of Threatened and Endangered Species

Appendix B. List of Vascular Plants Observed

Appendix C. Resumes

1.0 INTRODUCTION

The purpose of this biological study report (BSR) is to identify and characterize sensitive biological resources likely to occur on the Project sites. This BSR is intended to serve as a baseline study to assist in the preparation of subsequent environmental documentation.

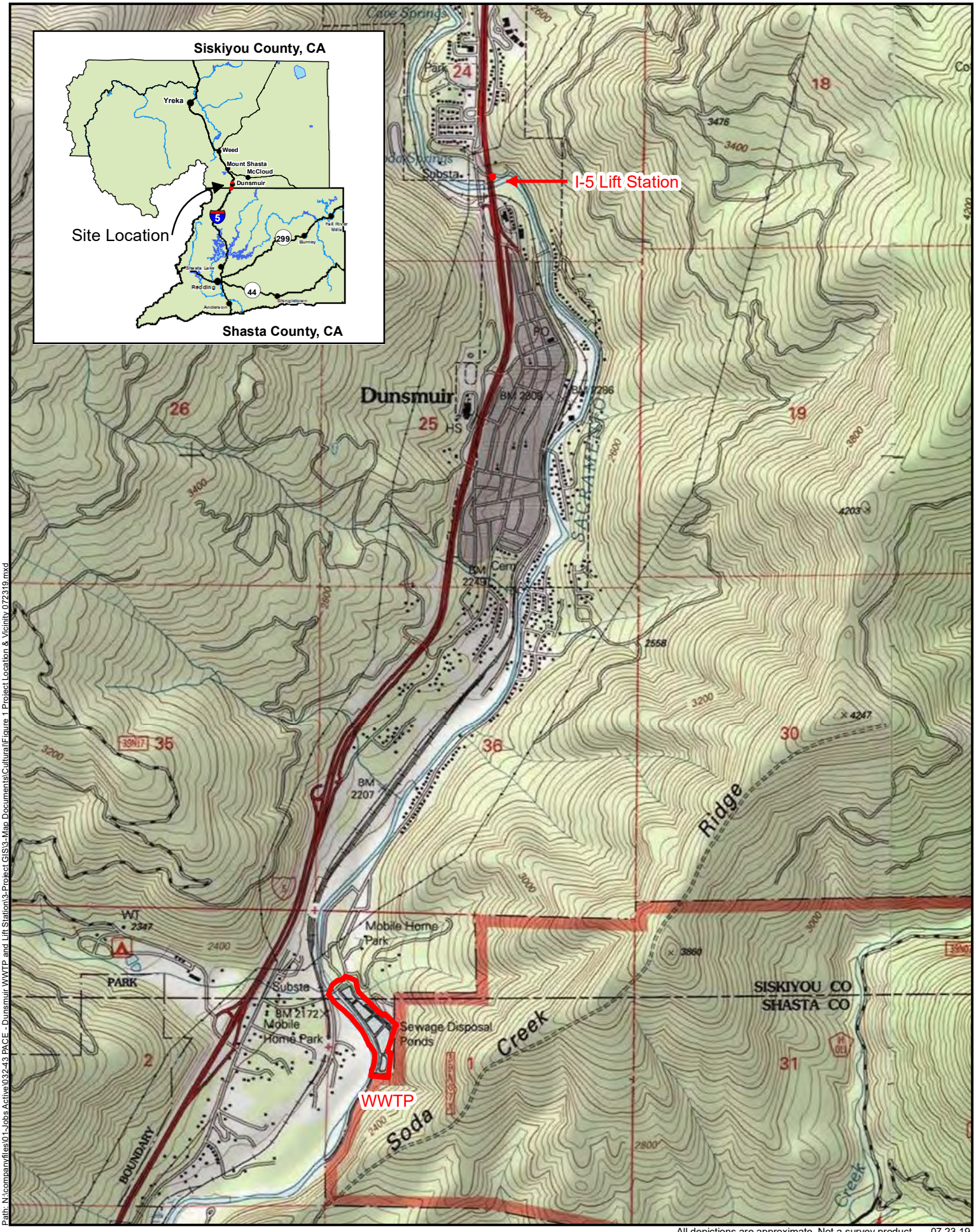
ENPLAN is an environmental consulting firm with over 35 years of experience with projects throughout northern California. All work associated with this project was performed by John Luper, Environmental Scientist with ENPLAN, and Donald Burk, Environmental Services Manager with ENPLAN.

Mr. Luper received his Bachelor of Science degree in Botany and Biology (Environmental) from California State University, Humboldt. He has over fourteen years of experience working as a biologist and regulatory specialist throughout northern California. His experience includes preparation of CEQA/NEPA environmental compliance documents, wetland delineations, biological studies, open space preserve development, environmental monitoring for construction activities, and preparation/implementation of storm water management plans. Mr. Luper was responsible for the wetland evaluation, project mapping, and drafting the current report.

Mr. Burk received his Master of Science degree in Botany, and Bachelor of Arts degree in Chemistry and Biological Sciences from California State University, Chico. Having worked in the environmental consulting field since 1981, he has an in-depth background in a broad spectrum of environmental studies. His experience includes managing the preparation of CEQA/NEPA environmental compliance documents, environmental site assessments, wildlife and botanical studies, wetland delineations, reclamation plans, and stream restoration projects. Mr. Burk was responsible for the wildlife and botanical surveys and final report review.

2.0 PROJECT LOCATION

As shown in Figure 1 (Vicinity Map), improvements are proposed at two locations: the Wastewater Treatment Plant (WWTP) and the I-5 Lift Station.



Path: N:\companyfiles\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\Cultural\Figure 1 Project Location & Vicinity 072319.mxd

All depictions are approximate. Not a survey product. 07.23.19

0 2,000 Feet

Figure 1

Project Location and Vicinity

ENPLAN

The majority of the WWTP site is located in an unincorporated area of Shasta County; the northernmost portion is located in unincorporated Siskiyou County. The WWTP is located on the east side of I-5, generally east of Jesse James Road and south of S. First Street in Section 1, Township 38 North, Range 4 West, of the Dunsmuir 7.5-minute quadrangle; Latitude: 41° 10' 58.67" N, Longitude: 122° 16' 55.73" W. The study area for the WWTP improvements is expansive to allow flexibility for engineering design and for environmental considerations.

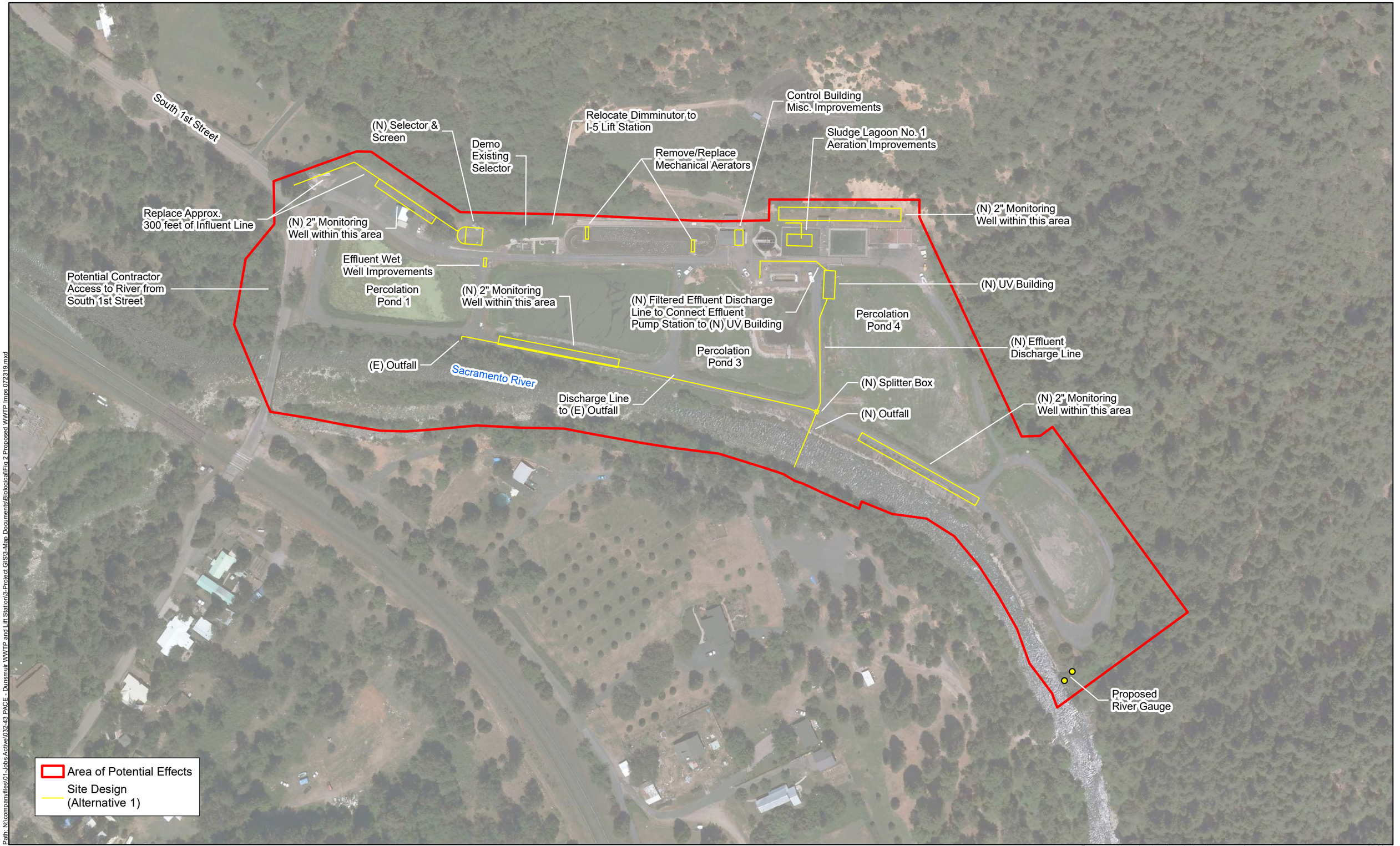
The I-5 Lift Station is located within the Dunsmuir City limits in Siskiyou County immediately east of I-5, generally south of River Avenue and north of the Sacramento River in Section 24, Township 39 North, Range 4 West, of the Dunsmuir 7.5-minute quadrangle; Latitude: 41° 13' 14.63" N, Longitude: 122° 16' 28.97" W.

Temporary staging of construction materials and equipment during construction of the proposed project would occur within the boundaries of the WWTP property. No physical improvements are needed to establish the staging areas.

Biological field observations generally extended approximately 100 feet beyond the study site boundaries; these off-site areas were inspected where accessible to evaluate potential indirect impacts to special-status species and/or their habitats.

3.0 PROJECT DESCRIPTION

The City of Dunsmuir is proposing improvements to the City's wastewater treatment and collection system that are required in order to repair and replace aging infrastructure, improve system efficiency, and comply with Central Valley Regional Water Quality Control Board (CVRWQCB) requirements. This section describes the proposed improvements and alternatives that are the subject of this BSR. As shown in Figure 2, proposed improvements at the WWTP site include construction of a new outfall to the Sacramento River and completion of UV disinfection improvements. However, the City may not be able to secure funding to complete all of the improvements; therefore, this BSR addresses three alternatives for the WWTP improvements as described below.



Path: N:\company files\01-Jobs Active\032-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\BiologicalFig 2 Proposed WWTP Imps 072319.mxd

Figure 2

Proposed Wastewater Treatment Plant Improvements

Feature and boundary locations depicted are approximate only.
This is not a survey product.

07.23.19

ENPLAN

Wastewater Treatment Plant

Alternative 1: Complete improvements to the WWTP, including both the new outfall and the UV disinfection improvements.

As shown in **Figure 2**, Alternative 1 includes the following improvements:

- **New selector and screen.** The existing selector would be demolished and a new larger biological selector/headworks would be installed northwest of the existing selector. The new selector basin would measure approximately 30 feet by 30 feet (900 square feet) and would be approximately 11 feet in depth. The existing dimminutor would be removed and relocated to the I-5 Lift Station. A new influent screening unit would be installed.
- **Influent line improvements.** Approximately 300 feet of influent line would be replaced using open-cut trenching. The maximum depth of excavation would be five feet.
- **Oxidation ditch improvements.** The oxidation ditch aerators would be replaced. Dissolved oxygen and ammonia monitoring and reporting instruments would be installed in the oxidation ditch to assist operators with diurnal adjustments to the aerator speed and depth.
- **Control building improvements.** Improvements to the disinfection controls would be completed to provide consistent chlorine dosing. A chlorine residual analyzer would be added to the channel post-contact chamber. Additional butterfly valves may also be installed for pond diversion. Outdated laboratory equipment, electrical components, and alarms would be replaced.
- **Sludge lagoon aeration improvements.** Fine bubble diffusers would be installed in sludge lagoon number 1.
- **Effluent wet well.** The existing aluminum grates at the effluent wet well would be replaced.
- **Groundwater monitoring wells.** Four groundwater monitoring wells would be installed within the areas shown in Figure 2. Each well would be about 12 feet in depth.

- **Flow gauge.** A staff gauge would be installed near the southern boundary of the WWTP site and would consist of two ±2" poles driven into the river substrate by City staff. One pole would be installed on the edge of the low-flow channel; the other pole would be installed in the high-flow zone. Work is expected to be completed entirely by hand. Following pole installation, USGS staff would conduct supplemental site visist to measure the river profile and install the staff gauge face plates.

- **New outfall.** A new outfall and multiport diffuser would be installed approximately 600 feet southeast of the existing outfall. A splitter box with a flanged valve would be installed in the graveled access road on the west side of the WWTP property. A new 15-inch effluent discharge line would be constructed from the splitter box to the existing outfall to allow effluent to be discharged into Pond 1 from the splitter box.

  For the new outfall, a 15-inch pipe would extend from the splitter box, toward the centerline of the Sacramento River. The diffuser would consist of a 15-inch pipe header with approximately 10 to 15 ports aligned at 90 degrees with the river channel flow in order to divert the discharge away from the channel bottom. The work area would likely be limited to 10 feet on either side of the outfall pipeline and diffuser. The maximum depth of excavation for the pipe would be four to five feet. The river bank at the new outfall location is lined with gunite and only a minor amount of riparian vegetation would be removed to accommodate the proposed improvements. An excavator would enter the riverbed from the WWTP property near the new outfall, using the gunite-lined bank to access the work site. Alternatively, access would occur on the east side of the river through an existing public easement adjacent to the S. 1st Street Bridge. An excavator would enter the riverbed and drive down the river channel to access the work site. This access route was established for a previous City project, and no additional improvements to this route would be required.

Adequate control of surface water during construction is expected to be achieved by temporarily diverting river flows around the work area. This would be accomplished by installing a cofferdam, water-filled bladder dam, curtain, or other suitable dewatering structure. Design of the dewatering system is the responsibility of the contractor. The dewatering structure would be removed at the end of construction.

- **UV disinfection improvements.** A new concrete masonry building would be constructed for UV equipment. The building would measure approximately 20 feet by 50 feet (1,000 square feet). The bank of Percolation Pond 4 would be expanded to accommodate the UV building. An effluent discharge line would be constructed from the effluent pump station to the UV building. Disinfected effluent from the UV building would discharge into a new effluent discharge line that would be constructed in the dike between Ponds 3 and 4. The discharge line would be connected to the new outfall splitter box. The effluent discharge line would be installed using open-cut trenching. The maximum depth of excavation would be five feet.

<u>Alternative 2</u>: Complete improvements to the WWTP and construct only the UV disinfection improvements

As shown in **Figure 3**, Alternative 2 includes construction of the replacement influent line, a new selector and screen, oxidation ditch improvements, control building improvements, sludge lagoon aeration improvements, effluent wet well improvements, and installation of new groundwater monitoring wells and the staff gauge as described under Alternative 1 above. In addition, a new UV equipment building and associated UV disinfection improvements would be constructed as described under Alternative 1 above.

Alternative 2 does not include construction of a new outfall; therefore, an effluent discharge line would be extended from the UV building to the existing chlorine contact chamber using open-cut trenching, and would then be installed inside the 42-inch chlorine contact chamber. The maximum depth of excavation for the pipe would be five feet.

South 1st Street

(N) Selector & Screen

Demo Existing Selector

Relocate Dimminutor to I-5 Lift Station

Remove/Replace Mechanical Aerators

Control Building Misc. Improvements

(N) 2" Monitoring Well within this area

Replace Approx. 300 feet of Influent Line

(N) 2" Monitoring Well within this area

Sludge Lagoon No. 1 Aeration Improvements

Percolation Pond 1

Potential Contractor Access to River from South 1st Street

(N) Effluent Discharge Line to Connect to Chlorine Contact Chamber

(N) Filtered Effluent Discharge Line to Connect Effluent Pump Station to (N) UV Building

(N) UV Building

Effluent Wet Well Improvements

(E) Outfall

Percolation Pond 4

Percolation Pond 3

(N) 2" Monitoring Well within this area

Sacramento River

Discharge Line from (E) Outfall to (N) Outfall

(N) Outfall

(N) 2" Monitoring Well within this area

Proposed River Gauge

Area of Potential Effects

Site Design (Proposed Across Both Alternatives)

Site Design - Alternative 2

Site Design - Alternative 3

Path: N:\company files\01-Jobs Active\092-43 PACE - Dunsmuir WWTP and Lift Station\3-Project GIS\3-Map Documents\Biological\Fig 3 Alternatives Map 072319.mxd

Feet

0 150

Figure 3

Wastewater Treatment Plant Alternatives

Feature and boundary locations depicted are approximate only.
This is not a survey product.

07.23.19

ENPLAN

Alternative 3: Complete improvements to the WWTP and construct only the new outfall

As shown in **Figure 3**, Alternative 3 includes construction of the replacement influent line, a new selector and screen, oxidation ditch improvements, control building improvements, sludge lagoon aeration improvements, effluent wet well improvements, and installation of new groundwater monitoring wells and the staff gauge as described under Alternative 1.

In addition, a new outfall would be constructed as described under Alternative 1 above. A 15-inch effluent discharge line from the dechlorination facilities to the new outfall would be constructed in the graveled access road that parallels the Sacramento River. The pipe would be installed using open-cut trenching. The maximum depth of excavation for the pipe would be five feet.

I-5 Lift Station:

At the I-5 Lift Station, the dimminutor from the WWTP would be installed and miscellaneous electrical improvements would be completed. All work would be internal to the building.

3.1 Area Characteristics

The elevation of the I-5 Lift Station is approximately 2,325 feet above mean sea level. The I-5 Lift Station is located in Tauhindauli Park and is bound by I-5 to the west and the Sacramento River to the south. The closest residence to the lift station is approximately 200 feet to the northeast.

The elevation of the WWTP site ranges from 2,150 to 2,175 feet above mean sea level. Properties east and southeast of the WWTP include undeveloped public lands. Properties to the northeast include very-low density single-family residences. The River Wood Mobile Home Park is located approximately 550 feet north of the northerly boundary of the WWTP. Single-family residences are located west and southwest of the WWTP.

The confluence of Little Castle Creek and the Sacramento River is located approximately 400 feet north of the existing outfall. A riparian woodland community occurs along the banks of the Sacramento River and is represented by: black cottonwood (*Populus balsamifera* subsp. *trichocarpa*), Oregon ash (*Fraxinus latifolia*), big-leaved maple (*Acer macrophyllum*), sandbar willow (*Salix exigua*), white alder (*Alnus rhombifolia*), Himalayan blackberry (*Rubus armeniacus*), and streambank lotus (*Hosackia oblongifolia* var. *oblongifolia*). In the immediate vicinity of the proposed new outfall and diffuser, riparian vegetation along the eastern bank of the Sacramento River has been removed and the bank has been lined with gunite.

4.0 RECORDS REVIEW AND FIELD RECONNAISSANCE

4.1 Records Review

Records reviewed for this evaluation consisted of California Natural Diversity Data Base (CNDDB) records for special-status plants, animals, and natural communities (see **Table 1**); California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (see **Table 2**); U.S. Fish and Wildlife Service (USFWS) records for federally listed, proposed, or Candidate plant and animal species under jurisdiction of the USFWS (see Appendix A); USFWS records for migratory birds of conservation concern; essential fish habitat (EFH) data maintained by the National Marine Fisheries Service (NMFS); soils records maintained by the U.S. Department of Agriculture's Natural Resources Conservation Service, and National Wetlands Inventory (NWI) maps (USFWS, 2018). NMFS does not maintain a species list for the project quadrangle because Shasta and Keswick Dams block upstream passage to spawning areas in the upper Sacramento River. The CNDDB records search covered a 5-mile radius around the Project sites. This entailed review of records for portions of the Dunsmuir, City of Mount Shasta, Girard Ridge, McCloud, Seven Lakes Basin, and Tombstone Mountain quadrangles.

4.2 Field Reconnaissance

To determine the presence/absence of special-status plant and animal species, ENPLAN biologists conducted botanical and wildlife surveys on May 5 and June 11,

2018, as well as July 9, 2019. Many of the special-status species potentially occurring in the study area would not have been evident at the time the fieldwork was conducted. However, determination of their potential presence could readily be made based on observed habitat characteristics. A list of plants observed in the study area is included in Appendix B. Wildlife observations were limited, but included Canada geese, various ducks, killdeer, rock pigeons, turkey vultures, and western fence lizards.

5.0 PLANT COMMUNITIES/WILDLIFE HABITATS

The USFWS does not identify any critical habitats within the study area. Review of CNDDB records did not identify any sensitive natural communities within five miles of the study area. In addition, NMFS does not identify Essential Fish Habitat (EFH) in the study area.

The preponderance of the study area consists of urban habitat (a lift station and wastewater treatment plant) with negligible potential to support sensitive plant communities or wildlife habitats. However, as described below, natural or semi-natural communities in the study area are riverine habitat (the Sacramento River), riparian woodland, and open-water habitat (percolation ponds).

Riverine (Sacramento River)

The river reach in the study area supports various fish, waterfowl, and invertebrates, and provides suitable foraging/dispersal habitat for frogs, toads, garter snakes, and other species. Direct effects could occur during installation of the discharge line and diffusers in the river. Indirect effects could potentially occur if sediments or other pollutants enter the river and degrade habitat in the study area and/or downstream.

However, the City is required to obtain coverage under the State Water Resources Control Board's (SWRCB) National Pollutant Discharge Elimination System (NPDES) permit for *Discharges of Storm Water Runoff Associated with Construction Activity* (currently Order No. 2009-009-DWQ) by submitting a Notice of Intent to the SWRCB. The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) that includes Best

Management Practices (BMPs) to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. BMPs may include, but are not limited to, limiting construction to the dry season; pruning plants at ground level to encourage resprouting (where appropriate); use of straw wattles, silt fences, and/or gravel berms to prevent sediment from discharging to the river; and revegetating temporarily disturbed sites upon completion of construction.

In addition, the CVRWQCB regulates dewatering discharges to surface waters, and the City may be required to obtain coverage under CVRWQCB General Order R5-2016-0076 (NPDES NO. CAG995002) *Waste Discharge Requirements - Limited Threat Discharges to Surface Water*. This Order includes specific requirements for monitoring, reporting, and implementing BMPs for construction dewatering activities.

Further, in accordance with Section 401 Water Quality Certification requirements of the RWQCB, continuous visual surface water monitoring must be conducted during active construction periods to detect accidental discharge or construction-related pollutants (e.g., oil and grease, turbidity plume, uncured concrete, etc.). Surface water sampling must be conducted when performing any in-water work, in the event that project activities result in any materials reaching surface waters, or when any activities result in the creation of a visible plume in surface waters. Monitoring would be conducted immediately upstream, out of the influence of the Project, and 300 feet downstream of the active work area.

The City is also required to obtain a Streambed Alteration Agreement (SAA) from the California Department of Fish and Wildlife (CDFW) prior to installing the new effluent diffuser in the Sacramento River. The SAA would include avoidance and minimization measures to protect fish and wildlife resources (e.g., limiting in-water work to certain times of the year, restricting the removal of riparian vegetation, etc.).

The project is also subject to conditions of a Clean Water Act Section 404 Permit as required by the U.S. Army Corps of Engineers (USACE). Standard conditions of the USACE permit further ensure protection of watercourses and related resources.

Therefore, temporary impacts to aquatic habitats during construction would be less than significant with implementation of standard regulatory agency permit

conditions and BMPs for erosion and sediment control. No permanent adverse impacts to riverine habitat would occur.

Riparian

As shown in Photo 1, riparian habitat at the new outfall location is sparse because the river bank at this location is lined with gunite. The work area would likely be limited to 10 feet on either side of the diffuser pipe. Although a minor amount of vegetation, including riparian species, may be removed to facilitate the proposed improvements, this impact would be negligible given the small amount of vegetation in the work area. In addition, the loss of riparian habitat would be avoided/minimized in accordance with conditions of the SAA.



Photo 1. *Sacramento River at new outfall location, facing north.*

Open-Water Habitat

Although not subject to state or federal jurisdiction as wetlands or "Other Waters," the percolation ponds at the WWTP site provide open-water habitat for waterfowl and possibly other wildlife species.



Photo 2. *Percolation Pond 1.*



Photo 3. *Bank between Percolation Pond 3 and 4 (Pond 4 on the right).*

The bank of Percolation Pond 4 would need be expanded to accommodate the new UV building. This would be accomplished by placing approximately 550 cubic yards of engineered fill along the bank of the pond to a depth of approximately ten feet. As shown in Photo 3, the percolation ponds do not always contain water. Filling a very small portion of the pond would be considered a minor conversion of open-water habitat, and the pond would continue to support waterfowl and other wildlife species following completion of the project.

6.0 SPECIAL-STATUS SPECIES

6.1 Special-Status Plant Species

Review of the U.S. Fish and Wildlife Service species lists (see Appendix A) for the study area identified three federally listed plant species, Gentner's fritillary, Hoover's spurge, and slender Orcutt grass, as potentially being affected by the proposed Project. The study area does not contain designated critical habitat for federally listed plant species.

A review of CNDDB records showed one special-status plant, Oregon fireweed, was reported in the study area one time in 1914 and has been broadly mapped to include the I-5 Lift Station site. No special-status plants have been reported at the WWTP site.

The following 12 special-status plants have been reported within a five-mile radius of the project sites: Cascade grass-of-Parnassus, Castle Crags harebell, Castle Crags ivesia, Jepson's dodder, Klamath fawn lily, northern clarkia, rattlesnake fern, seaside bittercress, Shasta chaenactis, thread-leaved beardtongue, Waldo daisy, and woolly balsamroot. One non-status plant, Pacific fuzzwort, has been reported within the five-mile search radius.

The CNPS Inventory (**Table 2**) identifies three additional special status plants: cylindrical trichodon, horned butterwort, and pallid bird's-beak; and seven additional non-status plants within the study area: California lady's slipper, California pitcherplant, marsh claytonia, mountain lady's-slipper, redwood lily, Shasta County arnica, and slender false lupine.

The potential for each special-status plant species to occur on the Project sites is evaluated in Table 3. As documented in Table 3, none of these special-status plant species were observed during the botanical survey, nor are any expected to be present.

6.2 Special-Status Wildlife Species

Review of the USFWS species list for the study area (see Appendix A) identified the following federally listed animal species as potentially being affected by the proposed Project: gray wolf, northern spotted owl, yellow-billed cuckoo, California red-legged frog, Oregon spotted frog, delta smelt, longfin smelt, valley elderberry longhorn beetle (VELB), conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The USFWS species list does not identify designated critical habitat in the study area for any federally listed animal species.

Review of CNDDB records showed that one special-status animal species, American peregrine falcon, has been reported in the vicinity of the WWTP site. American peregrine falcon is also broadly mapped to include the I-5 Lift Station site. Ten special-status animals have been reported within a five-mile radius of the project sites: bank swallow, black swift, California wolverine, Cascades frog, fisher-west coast DPS, foothill yellow-legged frog, northern goshawk, Pacific tailed frog, spotted bat, and western mastiff bat.

The following non-status animals have been mapped within the five-mile search radius: bilobed rhyacophilan caddisfly, Castle Crags rhyacophilan caddisfly, confusion

caddisfly, long-eared myotis, Natural Bridge megomphix, North American porcupine, obscure bumblebee, osprey, Pacific marten, and western bumblebee.

The potential for each special-status animal species to occur on the project sites is evaluated in Table 3. As documented in Table 3, none of these special-status animal species were observed during the field survey; however, the Sacramento River provides suitable habitat for the foothill yellow-legged frog and Pacific tailed frog.

Potential direct effects on foothill yellow-legged frog and Pacific tailed frog (including their tadpoles and egg masses) could occur if present during in-water work periods in the Sacramento River. If present, foothill yellow-legged frog and Pacific tailed frog could be injured/killed as a result of being crushed by construction equipment or by placement of construction-related materials into the in-water work area. Potential indirect effects include habitat degradation if sediment-laden water or pollutants are discharged into aquatic habitats.

Potential direct effects can be minimized by conducting pre-construction surveys for these species immediately prior to the start of in-water work each day that in-water work would occur, and relocating frogs, eggs masses, and tadpoles to a safe location outside of the work area. In addition, as discussed above, the City is required to comply with the SWRCB NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* that requires implementation of BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat.

7.0 NESTING MIGRATORY BIRDS

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. In addition, California Fish and Game Code §3503 and §3503.5 provide regulatory protection to resident and migratory birds and all birds of prey within the State.

The USFWS identified the following migratory *Birds of Conservation Concern* as potentially affected by the proposed Project: Allen's hummingbird, bald eagle, California thrasher, Clark's grebe, golden eagle, lesser yellowlegs, long-billed curlew, marbled godwit, olive-sided flycatcher, red-throated loon, rufous hummingbird, semipalmated

sandpiper, short-billed dowitcher, whimbrel, and willet. The potential for each of these species to utilize the project sites is evaluated in Table 4.

Although no nests were observed during the wildlife survey, during construction, nesting migratory birds, if present, could be directly or indirectly affected by construction activities. Direct affects could include mortality resulting from construction equipment operating in an area containing an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults.

In the local area, most birds nest between February 1 and August 31, and the potential for adversely affecting nesting birds can be greatly minimized by conducting demolition and construction activities either before February 1 or after August 31. If this is not possible, a nesting survey should be conducted prior to commencement of demolition or construction. If active nests are found, demolition and construction activities would need to be postponed until after the young birds have fledged.

8.0 NOXIOUS WEEDS

The introduction and spread of noxious weeds during construction activities has the potential to impact natural habitats. A noxious weed is a plant that has been defined as a pest by federal or state law. In California, the California Department of Food and Agriculture (CDFA) maintains a list of plants that are considered threats to the well-being of the state. Each noxious weed identified by the CDFA receives a rating that reflects the importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest within the state. Below is a description of ratings categories that apply to the study area[1]:

> **Category A.** A pest of known economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment.

[1] https://www.cdfa.ca.gov/plant/IPC/encycloweedia/winfo_weedratings.html

A-rated pests are prohibited from entering the state because they have been determined to be detrimental to agriculture.

Category B. A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them.

Category C. A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments.

Four Category C noxious weeds were observed in the study area during the botanical survey: Klamath weed, puncture vine, Scotch broom, and yellow star-thistle. These weeds are of widespread distribution in the County, and further spread of these weeds is not anticipated. However, other noxious weeds could be introduced into the study area if unwashed construction vehicles are used from outside of the County.

The potential for introduction and spread of noxious weeds can be avoided/minimized by using only certified weed-free erosion control materials, mulch, and seed; limiting any import or export of fill material to material that is known to be weed free; and requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the work site.

9.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the records search results, field observations, and the above analyses, we make the following findings:

1. Relocating the existing outfall and diffuser would provide improved dilution of treated wastewater that is discharged into the river, thereby reducing impacts to aquatic species.

2. No special-status plant species would be directly or indirectly affected by project implementation because no special-status plants are present in the study area.

3. Special-status animal species that could potentially be affected by project implementation are foothill yellow-legged frog and Pacific tailed frog. Implementation of the following measures will ensure that these species and their habitats are not directly affected by project implementation.

   Avoid/Minimize Effects on Foothill Yellow-Legged Frogs and Pacific Tailed Frogs. Prior to the start of in-water work each day that in-water work would occur, a qualified biologist shall conduct a pre-construction survey for foothill yellow-legged frogs and Pacific trailed frogs. If Pacific tailed frogs (including their egg masses and tadpoles) are found during the pre-construction survey, they shall be relocated by a qualified biologist to a safe location upstream or downstream of the work area. If foothill yellow-legged frogs (including their egg masses and tadpoles) are found during the pre-construction survey, the following actions shall be taken:

   a. *Work in the immediate area shall be halted, and the City shall immediately contact the California Department of Fish and Wildlife and provide a short description of observations, including a count of individuals by life stage, conditions at the site, and other aquatic species observed in the area; and*

   b. *The City shall propose site-specific measures to fully avoid take of foothill yellow-legged frog (including their egg masses and tadpoles). If full avoidance is not feasible, the City shall obtain an Incidental Take Permit (ITP) prior to relocating foothill yellow-legged frog (including their egg masses and tadpoles). Instream work shall not commence until CDFW has provided written approval of the proposed avoidance measures or has issued an ITP.*

   Worker Environmental Awareness Training. Prior to commencement of any earth disturbance, all construction personnel shall receive training from a qualified biologist on identification of foothill yellow-legged frog and Pacific tailed frog and procedures to be implemented in the event that these species are encountered during construction activities. If new personnel are added to the project, the City shall ensure that they receive the mandatory training before starting work.

4. Indirect impacts to special-status animal species and sensitive habitats will be avoided and/or minimized because, in accordance with existing regulatory

agency requirements, BMPs for erosion and sediment control will be implemented throughout construction, in-water work will be limited, and water quality monitoring will be conducted when performing any in-water work.

5. Implementation of the following measures will avoid the potential for adverse effects to nesting migratory birds:

   Avoid Disturbing Nesting Birds. In order to avoid impacts to nesting migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

   a. *Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or*

   b. *If vegetation removal or ground disturbance activities 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.*

      Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds.

      At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

      The results of the survey shall be submitted to the California Department of Fish and Wildlife upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

      If active nests are found, the City of Dunsmuir shall consult with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service regarding appropriate action to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance

measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

6. Implementation of the following measures will adequately minimize the potential for the introduction and spread of noxious weeds in the study area:

   Avoid/Minimize the Potential for Introduction and Spread of Noxious Weeds. The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

   a. *Using only certified weed-free erosion control materials, mulch, and seed,*

   b. *Limiting any import or export of fill material to material that is known to be weed free, and*

   c. *Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the job site.*

TABLES

Table 1. CNDDB (Rarefind) Report Summary

Table 2. California Native Plant Society Inventory of Rare and Endangered Plants

Table 3. Potential for Special-Status Species to Occur on the Project Site

Table 4. Potential for Migratory Birds of Conservation Concern to Occur on the Study Site

TABLE 1
Rarefind (CNDDB) Report Summary
Dunsmuir WWTP Improvement Project; Five-Mile Radius of Project Area
November 2018

Listed Element	Quadrangle [1]						Status [2]
	DU	CMS	GR	MC	SLB	TM	
ANIMALS							
American peregrine falcon*	●						SFP
Bank swallow		●					ST
Bilobed rhyacophilan caddisfly	●						None
Black swift	●						SSSC
California wolverine	●						FPT, ST, SFP
Cascades frog	●	●					SCE, SSSC
Castle Crags rhyacophilan caddisfly	●						None
Confusion caddisfly	●						None
Fisher – west coast DPS	●	●			●	●	ST, SSSC
Foothill yellow-legged frog	●	●					SCT, SSSC
Long-eared myotis	●						None
Natural Bridge megomphix	●						None
North American porcupine				●			None
Northern goshawk	●						SSSC
Obscure bumblebee	●						None
Osprey	●	●					WL
Pacific marten				●			None
Pacific tailed frog	●		●				SSSC
Spotted bat		●			●		SSSC
Western bumble bee		●					None
Western mastiff bat	●	●					SSSC
PLANTS							
Cascade grass-of-Parnassus	●						2B.2
Castle Crags harebell	●						1B.3
Castle Crags ivesia	●						1B.3
Jepson's dodder				●			1B.2
Klamath fawn lily	●				●		2B.2
Northern clarkia	●						1B.3
Oregon fireweed*	●						1B.2
Pacific fuzzwort	●						4.3
Rattlesnake fern	●	●	●				2B.2
Seaside bittercress	●						2B.1
Shasta chaenactis		●			●		1B.3
Thread-leaved beardtongue	●						1B.3
Waldo daisy	●						2B.3
Woolly balsamroot		●					1B.2

Highlighting denotes the quadrangle in which the project site is located
**Denotes species reported on Project Site*

[1]QUADRANGLE CODE

DU	Dunsmuir	MC	McCloud
CMS	City of Mt. Shasta	SLB	Seven Lakes Basin
GR	Girard Ridge	TM	Tombstone Mountain

[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
WL	Watch List

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3	Plants About Which We Need More Information *(A Review List)* (generally not considered special-status, unless unusual circumstances warrant)
4	Plants of Limited Distribution *(A Watch List)* (generally not considered special-status, unless unusual circumstances warrant)

Rare Plant Threat Ranks

0.1 Seriously Threatened in California

0.2 Fairly Threatened in California

0.3 Not Very Threatened in California

TABLE 2

California Native Plant Society

Inventory of Rare and Endangered Plants

U.S. Geological Survey's Dunsmuir 7.5-minute Quadrangle

Dunsmuir WWTP Improvement Project

November 2018

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
California lady's-slipper	Cypripedium californicum	4.2	Apr-Aug(Sep)		
California pitcherplant	Darlingtonia californica	4.2	Apr-Aug		
Cascade grass-of-Parnassus	Parnassia cirrata var. intermedia	2B.2	(Jul)Aug-Sep		
Castle Crags harebell	Campanula shetleri	1B.3	Jun-Sep		
Castle Crags ivesia	Ivesia longibracteata	1B.3	Jun		
cylindrical trichodon	Trichodon cylindricus	2B.2			
horned butterwort	Pinguicula macroceras	2B.2	Apr-Jun		
Klamath fawn lily	Erythronium klamathense	2B.2	Apr-Jul		
marsh claytonia	Claytonia palustris	4.3	May-Oct		
mountain lady's-slipper	Cypripedium montanum	4.2	Mar-Aug		
northern clarkia	Clarkia borealis ssp. borealis	1B.3	Jun-Sep		
Oregon fireweed	Epilobium oreganum	1B.2	Jun-Sep		
Pacific fuzz wort	Ptilidium californicum	4.3	May-Aug		
pallid bird's-beak	Cordylanthus tenuis ssp. pallescens	1B.2	Jul-Sep		
rattlesnake fern	Botrypus virginianus	2B.2	Jun,Aug,Sep		
redwood lily	Lilium rubescens	4.2	Apr-Aug(Sep)		
seaside bittercress	Cardamine angulata	2B.2	(Jan)Mar-Jul		
Shasta chaenactis	Chaenactis suffrutescens	1B.3	May-Sep		
Shasta County arnica	Arnica venosa	4.2	May-Jul(Sep)		
slender false lupine	Thermopsis gracilis	4.3	Mar-Jul		
thread-leaved beardtongue	Penstemon filiformis	1B.3	May-Aug(Sep)		
Waldo daisy	Erigeron bloomeri var. nudatus	2B.3	Jun-Jul		

Rare Plant Rank	
1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3	Plants About Which We Need More Information – A Review List (generally not considered special-status, unless unusual circumstances warrant)
4	Plants of Limited Distribution – A Watch List (generally not considered special-status, unless unusual circumstances warrant)
Rare Plant Threat Rank	
0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

Source: *California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). http://www.rareplants.cnps.org. Accessed November 2018.*

TABLE 3

Potential for Special-Status Species Identified by the USFWS, CNDDB, and CNPS to Occur on the Project Site

November 2018

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
PLANTS							
Cascade grass-of-Parnassus	*Parnassa cirrata* var. *intermedia*	2B.2	Cascade grass-of-Parnassus occurs on rocky serpentine soils in lower and upper montane coniferous forests, meadows, seeps, bogs, or fens. The species is reported between 2,500 and 6,500 feet in elevation. The flowering period is August through September.	No	No	No	No potentially suitable habitat for Cascade grass-of-Parnassus is present in the project site. Cascade grass-of-Parnassus would not be present in the study area.
Castle Crags harebell	*Campanula shelteri*	1B.3	Castle Crags harebell occurs on granite and diorite cliffs near Castle Crags. The species is reported between 4,000 and 5,000 feet in elevation. The flowering period is June through September.	No	No	No	No potentially suitable habitat for Castle Crags harebell is present in the project site. Further, the project site is well below the known elevational range of Castle Crags harebell. Thus, the species would not be present.
Castle Crags ivesia	*Ivesia longibracteata*	1B.3	Castle Crags ivesia occurs on granite and diorite outcrops near and above the timberline in the vicinity of Castle Crags. The species is reported between 3,900 and 4,600 feet in elevation. The flowering period is June.	No	No	No	No potentially suitable habitat for Castle Crags ivesia is present in the project site. Further, the project site is well below the known elevational range of Castle Crags ivesia. Thus, the species would not be present.
Gentner's fritillary	*Fritillaria gentneri*	FE, 1B.1	Gentner's fritillary is a perennial bulbiferous herb that occurs in chaparral and cismontane woodland habitats, sometimes in serpentine soils. The species is found between 3,200 and 3,700 feet in elevation. The flowering period is April through May.	No	No	No	Gentner's fritillary is known from only two locations in California, both near the Oregon border. The closest population is ±50 miles northwest of the project area. The species was not observed during the field survey and is not expected to occur on-site.
Cylindrical trichodon	*Trichodon cylindricus*	2B.2	Cylindrical trichodon is a moss that occurs in broadleaved upland forest and upper montane coniferous forest on sandy exposed soils on road sides, stream banks, trails, or in fields. The species is found between 150 and 4,900 feet in elevation.	No	No	No	CNDDB records show that cylindrical trichodon has been reported once in Siskiyou County, in 2000, near Castle Lake ±6 miles northwest of the WWTP site. No potentially suitable habitat for cylindrical trichodon is present in the project site. The species is not expected to be present.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Hoover's spurge	*Chamaesyce hooveri*	FT, 1B.2	Hoover's spurge is an annual herb that occurs in vernal pools. The species is found between sea level and 900 feet in elevation. The flowering period is July through October.	No	No	No	No vernal pools are present in the project site. Further, the project site is well above the known elevational range of Hoover's spurge. Thus, Hoover's spurge would not be present.
Horned butterwort	*Pinguicula macroceras*	2B.2	Horned butterwort is a perennial herb that occurs in bogs and fens in serpentine soils. The species is found between sea level and 6,000 feet in elevation. The flowering period is April through June.	No	No	No	No bogs, fens, or serpentine soils are present in the study area. Thus, horned butterwort would not be present.
Jepson's dodder	*Cuscuta jepsonii*	1B.2	Jepson's dodder is an annual vine (parasitic) that occurs on streambanks in North Coast coniferous forest and other mountainous areas. The species is reported between 3,900 and 7,500 feet in elevation. The flowering period is July through September.	No	No	No	CNDDB records indicate that Jepson's dodder has been reported once in Siskiyou County, in 1954, around the southern slopes of Mount Shasta. The project site is well below the known elevational range of Jepson's dodder. Thus, the species would not be present.
Klamath fawn lily	*Erythronium klamathense*	2B.2	Klamath fawn lily occurs in or near meadows and seeps in upper montane coniferous forests in Shasta and Siskiyou counties. The species is reported between 3,900 and 6,100 feet in elevation. The flowering period is April through July.	No	No	No	No potentially suitable habitat for Klamath fawn lily is present in the project site. Further, the project site is well below the known elevational range of Klamath fawn lily. Thus, the species would not be present.
Northern clarkia	*Clarkia borealis* ssp. *borealis*	1B.3	Northern clarkia is an annual herb that inhabits chaparral, cismontane woodland, and coniferous forests between 1,200 and 2,400 feet in elevation. The species often occurs in dry, rocky substrates along roads. The flowering period is June through September.	Yes	No	No	Marginally suitable habitat for northern clarkia is present in the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Oregon fireweed	*Epilobium oreganum*	1B.2	Oregon fireweed is associated with springs, bogs, fens, and meadows in montane coniferous forest. The species sometimes occurs on serpentine soils. The species is reported between 1,600 and 7,400 feet in elevation. The flowering period is June through September.	No	No	No	CNDDB records indicate that Oregon fireweed was reported in the general project area in 1914. However, no potentially suitable habitat for Oregon fireweed is present in the project sites. The species was not observed during the botanical survey and is not expected to be present.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Pallid bird's-beak	*Cordylanthus tenuis* ssp. *pallescens*	1B.2	Pallid bird's-beak occurs on open volcanic alluvium within lower montane coniferous forest. The species is found between 2,200 and 5,400 feet in elevation. The flowering period is July through September.	No	No	No	No suitable habitat for pallid bird's-beak is present on the project sites. Pallid bird's-beak was not observed during the botanical survey and is not expected to be present.
Rattlesnake fern	*Botrychium virginianum*	2B.2	Rattlesnake fern occurs in bogs and fens. The species is reported between 2,400 and 4,300 feet in elevation. Spores are released between June and September.	No	No	No	No potentially suitable habitat for rattlesnake fern is present in the project site. Rattlesnake fern was not observed during the botanical survey and is not expected to be present.
Seaside bittercress	*Cardamine angulata*	2B.1	Seaside bittercress, a perennial herb, occurs in wet areas and along streams in lower montane coniferous forests and North Coast coniferous forests. The species is reported between 200 and 2,900 feet in elevation. The flowering period is March through July.	No	No	No	CNDDB records indicate that seaside bittercress was reported once in Siskiyou County, in 1923, near Shasta Springs, over one mile north of the I-5 Lift Station site. The species was not observed during the botanical survey and is not expected to be present.
Shasta chaenactis	*Chaenactis suffrutescens*	1B.3	Shasta chaenactis occurs on rocky open slopes, cobbly river terraces, and along roadcuts. The species is found between 2,400 and 8,800 feet in elevation. The flowering period is May through September.	No	No	No	CNDDB records indicate that Shasta chaenactis has been reported twice within five miles of the project sites. In 1922, the species was observed near Cantara Loop Road ±3.5 miles northwest of the I-5 Lift Station; in 1928, the species was observed near Castle Lake, ±5 miles east of the I-5 Lift Station. Shasta chaenactis was not observed during the botanical survey and is not expected to be present.
Slender Orcutt grass	*Orcuttia tenuis*	FT, 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 suitable habitats for slender Orcutt grass occur in the project vicinity. The species was not observed during the botanical survey and is not expected to be present.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Thread-leaved beardtongue	*Penstemon filiformis*	1B.3	Thread-leaved beardtongue occurs on dry stony sites, grassy openings, and meadows in cismontane woodland and lower montane coniferous forest. The species is reported between 1,400 and 6,000 feet in elevation, often on serpentine soils. The flowering period is May through July.	No	No	No	No potentially suitable habitat for thread-leaved beardtongue is present in the project site. Thread-leaved beardtongue was not observed during the botanical survey and is not expected to be present.
Waldo daisy	*Erigeron bloomeri* var. *nudatus*	2B.3	Waldo daisy occurs in open areas on dry, rocky serpentine outcrops, generally in lower and upper montane coniferous forests. The species is found between 2,000 and 7,600 feet in elevation. The flowering period is June and July.	No	No	No	No potentially suitable habitat for Waldo daisy is present in the project site. Waldo daisy was not observed during the botanical survey and is not expected to be present.
Woolly balsamroot	*Balsamorhiza lanata*	1B.2	Woolly balsamroot, a perennial herb, occurs in open areas and grassy slopes in cismontane woodland in Siskiyou County. The species is reported between 2,600 and 6,300 feet. The flowering period is April through June.	Yes	No	No	Marginally suitable habitat for woolly balsamroot is present in the project site. However, woolly balsamroot was not observed during the botanical survey and is not expected to be present.
INVERTEBRATES							
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water. The species is not known to occur in marine waters, flowing freshwaters, or permanent bodies of 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. The species is not known to occur in marine waters, flowing freshwaters, or permanent bodies of water.	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. The species is not known to occur in marine waters, flowing freshwaters, or permanent bodies of water.	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.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	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 is known to occur in the Central Valley and foothills, generally below 500 feet in elevation.	No	No	No	No elderberries occur on the project site. Therefore, the valley elderberry longhorn beetle would not be present.
BIRDS							
American peregrine falcon	*Falco peregrinus anatum*	SFP	American peregrine falcon nesting sites are typically on ledges of large cliff faces near water. The species may also nest on tall manmade structures such as utility poles, skyscraper ledges, and bridges.	No	No	No	Although American peregrine falcon is known to occur in the general Dunsmuir area, no suitable nesting habitat is present in the project sites. The species was not observed during the wildlife survey and is not expected to nest on-site.
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	According to CNDDB records, the closest reported occurrence of bank swallow is at Siskiyou Lake, ±5 miles northwest of the I-5 Lift Station site. No vertical banks or cliffs are present in the project sites. Thus, the species would not nest on-site.
Black swift	*Cypseloides niger*	SSSC	Black swifts breed in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea bluffs.	No	No	No	No suitable nesting habitat for the black swift is present on the project sites or vicinity. Thus, the black swift would not nest on the project site.
Northern goshawk	*Accipiter gentilis*	SSSC	Northern goshawks generally nest on north-facing slopes near water in old-growth coniferous and deciduous forests. Goshawks re-use old nests and maintain alternate nest sites.	No	No	No	No old-growth forest is present on the project site or vicinity. Thus, northern goshawks are not expected to nest in the project sites.
Northern spotted owl	*Strix occidentalis caurina*	FT, SC, SSSC	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to ±7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snags.	No	No	No	No old-growth forest is present in the project sites. Thus, the spotted owl would not nest on-site.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Yellow-billed cuckoo	*Coccyzus americanus occidentalis* & *Coccyzus americanus*	FT, SE	Western yellow-billed cuckoos inhabit and nest in large, contiguous patches of multi-layered riparian habitat. They may also nest in forests with dense, low-level or understory foliage that abut slow-moving watercourses, backwaters, or seeps. Cottonwood and willows are almost always dominant components of the vegetation.	No	No	No	Western yellow-billed cuckoo has been reported twice in Siskiyou County: once in 1920 near the Shasta River, ±20 miles northwest of the I-5 Lift Station; and once in 1951 near the City of Mt Shasta, ±6 miles northwest of the I-5 Lift Station. No potentially suitable nesting habitat for the species is present in the project sites. Thus, the species is not expected to nest in the area.
AMPHIBIANS							
California red-legged frog	*Rana draytonii*	FT	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, marshes, lagoons, and dune ponds. The CRLF is typically not found in deep lakes or 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. The California red-legged frog is found along the Coast Ranges from Mendocino County south, and in portions of the Sierra Nevada and Cascades Range. The elevational range is from sea level, usually below 3,900 feet in elevation.	No	No	No	Historically, inland populations of CRLF ranged as far north as Redding, in southern Shasta County. The project site is well outside the current and historic range for the California red-legged frog, and the species would not be present.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Cascades frog	*Rana cascadae*	SCE, SSSC	The Cascades frog is found in mid- to high-elevations in the Klamath Mountains and southern Cascades, typically above 5,000 feet in elevation. Cascades frogs inhabit alpine lakes, inlet and outlet streams to mountain lakes, ponds, and meadows. They are typically found in open, sunny areas along shorelines that provide basking and foraging opportunities; they can occasionally move between basins by crossing over mountain ridges.	No	No	No	CNDDB records indicate that a Cascades frog was reported in 1996, ±1.3 miles southwest of the WWTP site near the confluence of Root Creek and the Sacramento River. No Cascades frogs were observed during the wildlife survey. Given that the project site is well below the typical elevation range for the species, and the frog has not been reported in the area in over 20 years, the species is not expected to be present.
Foothill yellow-legged frog	*Rana boylii*	SCT, SSSC	Foothill yellow-legged frogs are typically found in shallow, partly shaded, perennial streams in areas with riffles and rocky substrates. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	Yes	No	Pot.	CNDDB records report the presence of foothill yellow-legged frog in Little Castle Creek, ±0.5 miles west of the WWTP site, and in Soda Creek, ±1 mile southwest of the WWTP site. The confluence of Little Castle Creek with the Sacramento River is ±1,000 feet north of proposed diffuser in the Sacramento River. Although no foothill yellow-legged frogs were observed during the wildlife survey, the species has a low potential to utilize the onsite reach of the river.
Oregon spotted frog	*Rana pretiosa*	FT, SSSC	Oregon spotted frog is typically found in or near a perennial water body that includes zones of shallow water and abundant emergent or floating aquatic plants, which the frogs use as basking sites and for escape cover. The frog prefers large, warm marshes (minimum size of ±9 acres), and is thought to be extirpated from California.	No	No	No	Review of CNDDB records found that the Oregon spotted frog has been reported from two locations in California, the nearest being ±50 miles northeast of the project site. The species has not been observed in California since 1918 and no suitable habitat is present. Thus, the Oregon spotted frog is not expected to be present.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Pacific tailed frog	*Ascaphus truei*	SSSC	In California, the Pacific tailed frog occurs in permanent streams of low temperatures in conifer-dominated habitats, including coast redwood, Douglas-fir, Klamath mixed-conifer, and ponderosa pine habitats. This frog also occurs in montane hardwood-conifer habitats. Pacific tailed frogs occur more often in mature or late-successional stands than in younger stands. During the day, adults seek cover under submerged rocks and logs in the stream or occasionally under similar surface objects close to the stream.	Yes	No	Pot.	CNDDB records report Pacific tailed frog in Soda Creek, ±3 miles east of the I-5 Lift Station site, and in Little Castle Creek, ±3 miles west of the I-5 Lift Station site. The confluence of Little Castle Creek and the Sacramento River is ±1,000 feet north of proposed diffuser in the Sacramento River. Although Pacific tailed frog was not observed during the wildlife survey, the species has a very low potential to utilize the onsite reach of the river.
FISH							
Delta smelt	*Hypomesus transpacificus*	FT	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 project site is well outside the range of Delta smelt. Delta smelt would thus not be present.
Longfin smelt	*Spirinchus thaleichthys*	FC	The longfin smelt is a pelagic fish that ranges from Alaska southward to the San Francisco Bay-Delta in California. The range includes at least 20 scattered populations found in estuaries, rivers, and lakes stretching from California to Alaska. The USFWS found that listing of the longfin smelt is warranted only for the Bay-Delta population, not range-wide.	No	No	No	The project site is well outside the range of longfin smelt. Longfin smelt would thus not be present.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
MAMMALS							
California wolverine	*Gulo gulo*	FPT, ST, SFP	Wolverines are dependent on areas in high mountains, near the tree-line, where conditions are cold year-round and snow cover persists well into May. Female wolverines use birthing dens excavated in snow. Stable snow over 1.5 meters deep appears to be a requirement for birthing dens. Birthing dens may occur on rocky sites, such as north-facing boulder talus or subalpine cirques. Wolverines are very sensitive to human activities and often abandon den sites in response to human disturbance.	No	No	No	No suitable habitat occurs on the project site for the California wolverine. The California wolverine would thus not be present.
Fisher - West Coast DPS	*Martes pennanti*	ST, SSSC	Fishers inhabit mixed conifer forests dominated by Douglas-fir, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities. Den sites are most often found in areas with no human disturbance.	No	No	No	No forested habitat suitable for fishers is present on the project sites; however, potentially suitable habitat is present east of the WWTP. Although fishers could potentially forage or stray onto the project site, the species would not den on or near the sites due to the level of human activity nearby.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Gray wolf	*Canis lupus*	FE, SE	Gray wolves are habitat generalists; populations can be found in any type of habitat in the Northern Hemisphere from about 20° latitude to the polar ice pack. Key components of preferred wolf habitat include a year-round abundance of natural prey, secluded denning and rendezvous sites, and sufficient space with minimal human disturbance. Dens may be a hollow log or a tunnel excavated in loose soil. Den sites are often near water, and are usually elevated. Wolf packs establish and defend territories that may range from 20 to 400 square miles. Wolves travel over large areas to hunt, and may cover as much as 30 miles in a day. Young wolves may disperse several hundred miles to seek out a mate or to establish their own pack.	No	No	No	A gray wolf pack, known as the "Shasta Pack" became established in southeastern Siskiyou County in the spring of 2015, but is not currently thought to be present in the area. Although gray wolves could potentially stray near the project site, they would not routinely utilize or den in the area given the extent of human activity and urbanization in and adjacent to the project sites.
Spotted bat	*Euderma maculatum*	SSSC	Spotted bats inhabit grasslands, mixed coniferous forests, and deserts. Spotted bats typically roost in rock crevices in cliffs or caves. Roosts usually occur near suitable foraging areas (i.e., open water, meadows, riparian habitat, and forest openings).	No	No	No	CNDDB records indicate that spotted bats have been reported in Siskiyou County three times. The last reported occurrence was in 1993, ±5 miles east of the project area. No potentially suitable roosting habitat for spotted bat is present in the project sites. Spotted bats are not expected to roost in or adjacent to the project sites.

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Western mastiff bat	*Eumops perotis californicus*	SSSC	The western mastiff bat is the largest native bat in the continental United States. This bat occurs in a variety of open, semi-arid to arid habitats, including coniferous forests, deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. The western mastiff bat typically roosts in crevices in vertical or nearly vertical rocky canyons and cliffs. The species may also roost in tall trees, tunnels, buildings, or other manmade structures. Suitable roost sites feature an unobstructed drop-off of at least 6.5 feet to provide takeoff or launching area for flight, with no obstructions.	No	No	No	CNDDB records indicate that the western mastiff bat has been reported in Siskiyou County four times. The last reported occurrence was in 1993, ±0.75 miles southeast of the I-5 Lift Station and ±1.6 miles northeast of the WWTP site. Although the I-5 bridge adjacent to the I-5 Lift Station may provide suitable habitat for western mastiff bats, all work at the lift station would be internal to the building, and no impacts to bats would occur. No suitable habitat for western mastiff bats is present at the WWTP site. Western mastiff bats are not expected to roost in the WWTP site.

[1] Status Codes

Federal:

FE	Federally Listed – Endangered
FT	Federally Listed – Threatened
FC	Federal Candidate Species
FP	Federal Proposed Species
FD	Federal Delisted

State:

SFP	State Fully Protected
SR	State Rare
SE	State Listed - Endangered
ST	State Listed - Threatened
SC	State Candidate Species
SSSC	State Species of Special Concern

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2A	Presumed extirpated in California, but more common elsewhere
2B	Rare or Endangered in California, but more common elsewhere

Rare Plant Threat Rank

0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

TABLE 4

Potential for Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service to Occur on the Study Site

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Allen's Hummingbird	*Selasphorus sasin*	Allen's hummingbirds breed in moist coastal scrub, chaparral, and forests within a narrow strip along the Oregon and California coasts, at elevations below 1,000 feet. Nests are generally constructed near shady streams in blackberry, bracken fern, eucalyptus, cypress, or Douglas-fir at heights of 2 to 50 feet above the ground. The species generally breeds between February 1 and July 15. The summer range of Allen's hummingbird extends into western Siskiyou County.	No	No	According to the Mt. Shasta Audubon Society *Birds of Siskiyou County* checklist, Allen's hummingbird has been observed primarily in western Siskiyou County during the summer months. No suitable nesting habitat for Allen's hummingbird is present in the project sites. Thus, the species would not nest in the project area.
Bald eagle	*Haliaeetus leucocephalus*	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 January through September.	No	No	According to the *Birds of Siskiyou County* checklist, bald eagles are common residents in Siskiyou County during the summer months. CNDDB records show that the bald eagle nesting area nearest the project site is approximately 8.25 miles northwest of the WWTP near Lake Siskiyou. No suitable nesting habitat for bald eagles is present on the project sites. No bald eagles or their nests were observed during the wildlife survey, and the species is not expected to nest in the project area.
California thrasher	*Toxostoma redivivum*	California thrashers breed in dense chaparral habitats and, less commonly, in extensive thickets of young or open valley foothill riparian habitat. Nests are built inside a large shrub or scrubby tree, usually 2 to 5 feet above the ground. The species breeds between January 1 and July 31.	No	No	According to the *Birds of Siskiyou County* checklist California thrasher is an uncommon resident in the Shasta Valley area of Siskiyou County, which is north of the project sites. No suitable habitat for California thrasher is present in the project sites. Thus, the species would not nest in the project area.

TABLE 4

Potential for Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service to Occur on the Study Site

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Clark's grebe	*Aechmophorus clarkii*	Clark's grebes inhabit lakes, marshes and bays. During the winter, they also occur along seacoasts. Clark's grebes nest on large inland lakes over shallow water on floating platforms of vegetation. The breeding season for Clark's grebe is January 1 to December 31.	No	No	According to the *Birds of Siskiyou County* checklist, Clark's grebes are rare migrants in Siskiyou County. No Clark's grebes were observed during the wildlife survey. Although Clark's grebes may migrate through the area, they would not nest in the project area.
Golden eagle	*Aquila chrysaetos*	Golden eagles inhabit oak woodlands, coniferous forests, and deserts. Nesting habitat consists of large trees in open areas or cliff-walled canyons. The species breeds January 1 to August 31.	No	No	According to the *Birds of Siskiyou County* checklist, golden eagles are fairly common residents in Siskiyou County. eBird records show that golden eagles have been observed many times to the north of the study area, but no sightings are reported for the immediate Dunsmuir area. CNDDB records identify two golden eagle nest sites in Siskiyou County. The closest reported occurrence is approximately 32 miles north of the City of Dunsmuir in the Shasta Valley. No suitable nesting habitat for golden eagles is present on the project sites or vicinity. Thus, the golden eagle is not expected to nest in the project area.
Lesser yellowlegs	*Tringa flavipes*	Lesser yellowlegs breed in Alaska and northern Canada in open woodland clearings or burned-over areas, usually close to grassy wetlands. During migration, the species travels to the outer California coast and adjacent coastal lowlands, the Central Valley, Great Basin, and Salton Sea. The species forages along shallow lacustrine, wet meadow, and estuarine mudflat habitats.	No	No	According to the *Birds of Siskiyou County* checklist, lesser yellowlegs are known only as uncommon migrants in Siskiyou County. The project area is well outside the breeding range for lesser yellowlegs. Thus, the species would not nest in the project area.

TABLE 4

Potential for Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service to Occur on the Study Site

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Long-billed curlew	*Numenius americanus*	In California, long-billed curlews breed in interior grasslands and wet meadows, usually adjacent to lakes or marshes, with breeding occurring primarily in northeastern California (portions of Siskiyou, Modoc, and Lassen Counties). Long-billed curlews breed on grazed, mixed-grass, and shortgrass prairies. Nests are usually located in relatively flat areas with 4-8 inches of grass cover.	No	No	According to the *Birds of Siskiyou County* checklist, in Siskiyou County, long-billed curlews are found primarily in the Klamath Basin and/or Butte Valley. No suitable habitat for long-billed curlew occurs in the project sites. Thus, the species would not nest in the project area.
Marbled godwit	*Limosa fedoa*	Marbled godwits nest on the grassy prairies of central Canada, and on the northern coterminous U.S. prairies from Montana to Minnesota, generally close to water. Seasonal migration occurs on the central coast of California.	No	No	According to the *Birds of Siskiyou County* checklist, in Siskiyou County, marbled godwits are uncommon migrants found primarily in the Klamath Basin and/or Butte Valley. The project area is well outside the breeding range for marbled godwit. Thus, the species would not nest in the project area.
Olive-sided flycatcher	*Contopus cooperi*	Olive-sided flycatchers breed in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds. They require large, tall trees for nesting and roosting. The nest is an open cup of twigs, rootlets, and lichens, placed out near the tip of a horizontal branch of a tree. The species breeds May 20 to August 31.	Yes	Pot.	According to the *Birds of Siskiyou County* checklist, olive-sided flycatcher is a fairly common resident in Siskiyou County during the summer months. Potentially suitable nesting habitat for olive-sided flycatcher is present on or adjacent to the project sites. Although no flycatchers were observed during the wildlife survey, olive-sided flycatchers could be present in the project area. Potential impacts would be avoided by requiring pre-construction surveys for nesting birds, as required by the adopted Mitigation Measures.
Red-throated loon	*Gavia stellata*	In the winter, red-throated loons generally inhabit coastal waters, bays, and estuaries. In the summer, they can be found on tundra lakes. Breeding habitat includes small ponds as well as larger lakes, mostly on tundra, but sometimes within the edges of northern forests.	No	No	According to the *Birds of Siskiyou County* checklist, the red-throated loon has been documented only two times in Siskiyou County. No suitable nesting habitat for red-throated loon is present in the project sites. Thus, the species would not nest in the project area.

TABLE 4

Potential for Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service to Occur on the Study Site

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Rufous hummingbird	*Selasphorus rufus*	Rufous hummingbirds typically breed in open or shrubby areas, forest openings, yards, and parks, and occasionally in forests, thickets, swamps, and meadows from sea level to about 6,000 feet in elevation. They put their nests up to 30 feet high in coniferous or deciduous trees, hidden in drooping branches. The species breeds April 15 to July 15.	No	No	According to the *Birds of Siskiyou County* checklist, rufous hummingbirds normally occur only as migrants in Siskiyou County. No suitable habitat for rufous hummingbird is present in the project sites. Thus, the species would not nest in the project area.
Semipalmated sandpiper	*Calidris pusilla*	Semipalmated sandpipers are shorebirds that breed near water in low and sub-arctic tundra and winter along the northern and central coasts of South America.	No	No	According to the *Birds of Siskiyou County* checklist, semipalmated sandpipers are known only as rare migrants in Siskiyou County. The only reported sighting in the County was at Lake Shastina in 2000. No suitable habitat for semipalmated sandpiper is present in the project sites. Thus, the species would not nest in the project area.
Short-billed dowitcher	*Limnodromus griseus*	Short-billed dowitchers breed in boggy muskeg of Alaska and central Canada. Migration occurs along the coast of California. The species is generally rare to uncommon in the Central Valley, mountain, Great Basin, and southeastern desert regions during migration.	No	No	According to the *Birds of Siskiyou County* checklist, short-billed dowitchers are uncommon migrants in Siskiyou County. The project area is well outside the breeding range for short-billed dowitcher. Thus, the species would not nest in the project area.
Whimbrel	*Numenius phaeopus*	Whimbrels nest in arctic regions in open areas on moist hummocky tundra amid grasses, cotton-grass, and low heath. During migration, the species travels along the coast and adjacent coastal lowlands, and through the central part of the state. They inhabit intertidal habitats, flooded fields, pastures, croplands, and lakeshores in the nonbreeding season.	No	No	According to the *Birds of Siskiyou County* checklist, whimbrels are known only as rare migrants in Siskiyou County, and are found primarily in the Klamath Basin and/or Butte Valley. The project area is well outside the breeding range for whimbrel. Thus, the species would not nest in the project area.

TABLE 4

Potential for Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service to Occur on the Study Site

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Willet	*Tringa semipalmata*	Habitats for the willet include marshes, wet meadows, mudflats, and beaches along the coast. The willet nests inland on the ground along pond edges and other seasonal wetlands, or on raised sites near water, often in native grasslands.	No	No	According to the *Birds of Siskiyou County* checklist, willets are known only as rare migrants in Siskiyou County. No suitable nesting habitat for willet is present in the project sites. Thus, the species would not nest in the project area.

Sources:

Audubon and The Cornell Lab of Ornithology, eBird Species Maps. 2018. http://ebird.org/ebird/map/

California Department of Fish and Wildlife. n.d. California Wildlife Habitat Relationships. https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range

_____. 2018. California Natural Diversity Database (CNDDB). https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

Cornell Lab of Ornithology. 2018. *All About Birds*. https://www.allaboutbirds.org/guide/search/

Mt. Shasta Area Audubon Society. 2014. Birds of Siskiyou County. http://mtshastaaudubon.com/wp-content/uploads/2013/08/Bird-Check-List.pdf

U.S. Fish and Wildlife Service. 2018. Environmental Conservation Online System (ECOS). https://ecos.fws.gov/ecp/

APPENDIX A

U.S. Fish and Wildlife Service List of Threatened and Endangered Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Yreka Fish And Wildlife Office
1829 South Oregon Street
Yreka, CA 96097-3446
Phone: (530) 842-5763 Fax: (530) 842-4517

In Reply Refer To: November 20, 2018
Consultation Code: 08EYRE00-2019-SLI-0030
Event Code: 08EYRE00-2019-E-00071
Project Name: Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

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 federally threatened, endangered, and proposed species, designated critical habitat, and candidate species 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that this list does not reflect State listed species or fulfill requirements related to any California Department of Fish and Wildlife consultation. Additionally, this list does not include species covered by the National Marine Fisheries Service (NMFS). For NMFS species please see the related website at the following link:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

If your project does not involve Federal funding or permits and does not occur on Federal land, we recommend you review this list and determine if any of these species or critical habitat may be affected. If you determine that there will be no effects to federally listed or proposed species or critical habitat, there is no need to coordinate with the Service. If you think or know that there will be effects, please contact our office for further guidance. We can assist you in incorporating measures to avoid or minimize impacts, and discuss whether permits are needed.

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 effects 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

If wetlands, springs, or streams are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit.

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.

The table below outlines lead Service field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project. Please send any documentation regarding your project to that office. Please note that the lead Service field office for your consultation may not be the office listed above in the letterhead. Please visit the following link to view a map of Service field office jurisdictional boundaries:

http://www.fws.gov/yreka/specieslist/JurisdictionalBoundaryES_R8_20150313.pdf

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of the letter you submit to our office along with any request for consultation or correspondence about your project.

Lead FWS offices by County and Ownership/Pr ogram

County	Ownership/Pr ogram	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO

Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO
Del Norte	All	All	AFWO
El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Humboldt	All except Shasta Trinity National Forest	All	AFWO
Humboldt	Shasta Trinity National Forest	All	YFWO
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)

Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Modoc	Modoc National Forest	All	KFWO
Modoc	BLM Alturas Resource Area	All	KFWO
Modoc	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Modoc	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Modoc	All other ownerships	All	By jurisdiction (See map)
Mono	Inyo National Forest	All	RFWO
Mono	Humboldt Toiyabe National Forest	All	RFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO

Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO
Shasta	Caltrans	By jurisdiction	SFWO/AFWO

Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	All	YFWO
Siskiyou	Six Rivers National Forest and Ukonom District	All	AFWO
Siskiyou	Shasta Trinity National Forest	All	YFWO
Siskiyou	Lassen National Forest	All	SFWO
Siskiyou	Modoc National Forest	All	KFWO
Siskiyou	Lava Beds National Volcanic Monument	All	KFWO
Siskiyou	BLM Alturas Resource Area	All	KFWO
Siskiyou	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Siskiyou	All other ownerships	All	By jurisdiction (see map)
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)

Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
Tehama	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Trinity	BLM	All	AFWO
Trinity	Six Rivers National Forest	All	AFWO
Trinity	Shasta Trinity National Forest	All	YFWO
Trinity	Mendocino National Forest	All	AFWO
Trinity	BIA (Tribal Trust Lands)	All	AFWO
Trinity	County Government	All	AFWO
Trinity	All other ownerships	All	By jurisdiction (See map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO

*Office Leads:

AFWO=Ar cata Fish and Wildlife Office

BDFWO=Bay Delta Fish and Wildlife Office

KFWO=Klamath Falls Fish and Wildlife Office

RFWO=Reno Fish and Wildlife Office

YFWO=Yr eka Fish and Wildlife Office

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Yreka Fish And Wildlife Office
1829 South Oregon Street
Yreka, CA 96097-3446
(530) 842-5763

Project Summary

Consultation Code: 08EYRE00-2019-SLI-0030

Event Code: 08EYRE00-2019-E-00071

Project Name: Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

Project Type: WASTEWATER FACILITY

Project Description: Wastewater Treatment Plant Improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.1829376855805N122.28214452400198W



Counties: Shasta, CA

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf Canis lupus Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo Coccyzus americanus Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Longfin Smelt Spirinchus thaleichthys Population: San Francisco Bay delta DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9011	Candidate

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Hoover's Spurge Chamaesyce hooveri	Threatened
There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3019	
Slender Orcutt Grass Orcuttia tenuis	Threatened
There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Yreka Fish And Wildlife Office
1829 South Oregon Street
Yreka, CA 96097-3446
Phone: (530) 842-5763 Fax: (530) 842-4517

In Reply Refer To: November 20, 2018
Consultation Code: 08EYRE00-2019-SLI-0031
Event Code: 08EYRE00-2019-E-00073
Project Name: Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

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 federally threatened, endangered, and proposed species, designated critical habitat, and candidate species 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that this list does not reflect State listed species or fulfill requirements related to any California Department of Fish and Wildlife consultation. Additionally, this list does not include species covered by the National Marine Fisheries Service (NMFS). For NMFS species please see the related website at the following link:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

If your project does not involve Federal funding or permits and does not occur on Federal land, we recommend you review this list and determine if any of these species or critical habitat may be affected. If you determine that there will be no effects to federally listed or proposed species or critical habitat, there is no need to coordinate with the Service. If you think or know that there will be effects, please contact our office for further guidance. We can assist you in incorporating measures to avoid or minimize impacts, and discuss whether permits are needed.

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 effects 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

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Yreka Fish And Wildlife Office
1829 South Oregon Street
Yreka, CA 96097-3446
Phone: (530) 842-5763 Fax: (530) 842-4517

In Reply Refer To: November 20, 2018
Consultation Code: 08EYRE00-2019-SLI-0031
Event Code: 08EYRE00-2019-E-00073
Project Name: Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

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 federally threatened, endangered, and proposed species, designated critical habitat, and candidate species 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that this list does not reflect State listed species or fulfill requirements related to any California Department of Fish and Wildlife consultation. Additionally, this list does not include species covered by the National Marine Fisheries Service (NMFS). For NMFS species please see the related website at the following link:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

If your project does not involve Federal funding or permits and does not occur on Federal land, we recommend you review this list and determine if any of these species or critical habitat may be affected. If you determine that there will be no effects to federally listed or proposed species or critical habitat, there is no need to coordinate with the Service. If you think or know that there will be effects, please contact our office for further guidance. We can assist you in incorporating measures to avoid or minimize impacts, and discuss whether permits are needed.

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 effects 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

If wetlands, springs, or streams are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit.

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.

The table below outlines lead Service field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project. Please send any documentation regarding your project to that office. Please note that the lead Service field office for your consultation may not be the office listed above in the letterhead. Please visit the following link to view a map of Service field office jurisdictional boundaries:

http://www.fws.gov/yreka/specieslist/JurisdictionalBoundaryES_R8_20150313.pdf

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of the letter you submit to our office along with any request for consultation or correspondence about your project.

Lead FWS offices by County and Ownership/Pr ogram

County	Ownership/Pr ogram	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO

Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO
Del Norte	All	All	AFWO
El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Humboldt	All except Shasta Trinity National Forest	All	AFWO
Humboldt	Shasta Trinity National Forest	All	YFWO
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)

Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Modoc	Modoc National Forest	All	KFWO
Modoc	BLM Alturas Resource Area	All	KFWO
Modoc	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Modoc	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Modoc	All other ownerships	All	By jurisdiction (See map)
Mono	Inyo National Forest	All	RFWO
Mono	Humboldt Toiyabe National Forest	All	RFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO

Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO
Shasta	Caltrans	By jurisdiction	SFWO/AFWO

Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	All	YFWO
Siskiyou	Six Rivers National Forest and Ukonom District	All	AFWO
Siskiyou	Shasta Trinity National Forest	All	YFWO
Siskiyou	Lassen National Forest	All	SFWO
Siskiyou	Modoc National Forest	All	KFWO
Siskiyou	Lava Beds National Volcanic Monument	All	KFWO
Siskiyou	BLM Alturas Resource Area	All	KFWO
Siskiyou	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Siskiyou	All other ownerships	All	By jurisdiction (see map)
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)

Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
Tehama	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Trinity	BLM	All	AFWO
Trinity	Six Rivers National Forest	All	AFWO
Trinity	Shasta Trinity National Forest	All	YFWO
Trinity	Mendocino National Forest	All	AFWO
Trinity	BIA (Tribal Trust Lands)	All	AFWO
Trinity	County Government	All	AFWO
Trinity	All other ownerships	All	By jurisdiction (See map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO

*Office Leads:

AFWO=Ar cata Fish and Wildlife Office

BDFWO=Bay Delta Fish and Wildlife Office

KFWO=Klamath Falls Fish and Wildlife Office

RFWO=Reno Fish and Wildlife Office

YFWO=Yr eka Fish and Wildlife Office

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Yreka Fish And Wildlife Office
1829 South Oregon Street
Yreka, CA 96097-3446
(530) 842-5763

Project Summary

Consultation Code: 08EYRE00-2019-SLI-0031

Event Code: 08EYRE00-2019-E-00073

Project Name: Dunsmuir Wastewater Treatment Plant and I-5 Lift Station Improvements

Project Type: WASTEWATER FACILITY

Project Description: I-5 Lift Station Improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.22068888604001N122.27498565298971W



Counties: Siskiyou, CA

Endangered Species Act Species

There is a total of 14 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf Canis lupus Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo Coccyzus americanus Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Oregon Spotted Frog Rana pretiosa There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6633	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Longfin Smelt Spirinchus thaleichthys Population: San Francisco Bay delta DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9011	Candidate

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Gentner's Fritillary Fritillaria gentneri No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8120	Endangered
Hoover's Spurge Chamaesyce hooveri There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3019	Threatened
Slender Orcutt Grass Orcuttia tenuis There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX B

List of Vascular Plants Observed

LIST OF VASCULAR PLANT SPECIES OBSERVED

Dunsmuir Wastewater Treatment Plant (WWTP)
Improvement Project
May 6 and June 11, 2018

Anacardiaceae	**Sumac Family**
Toxicodendron diversilobum	Poison-oak
Apiaceae	**Carrot Family**
Foeniculum vulgare	Fennel
Torilis arvensis	Field hedge-parsley
Araliaceae	**Ginsing Family**
Hedera helix	English ivy
Asteraceae	**Sunflower Family**
Centaurea solstitialis	Yellow star thistle
Hypochaeris radicata	Rough cat's ear
Lactuca serriola	Prickly lettuce
Matricaria discoidea	Pineapple weed
Taraxacum officinale	Dandelion
Betulaceae	**Birch Family**
Alnus rhombifolia	White alder
Corylus cornuta subsp. *californica*	California hazelnut
Boraginaceae	**Borage Family**
Nemophila pedunculata	Meadow nemophila
Phacelia sp.	Phacelia
Brassicaceae	**Mustard Family**
Barbarea verna	Early wintercress
Cardamine oligosperma	Few-seeded bittercress
Draba verna	Whitlow grass
Hirschfeldia incana	Shortpod mustard
Nasturtium officinale	Water cress
Caryophyllaceae	**Pink Family**
Cerastium glomeratum	Mouse-eared chickweed
Saponaria officinalis	Bouncing bet
Stellaria media	Common chickweed
Cornaceae	**Dogwood Family**
Cornus sericea subsp. *sericea*	American dogwood
Cupressaceae	**Cypress Family**
Calocedrus decurrens	Incense cedar
Cyperaceae	**Sedge Family**
Carex nudata	Torrent sedge
Equisetaceae	**Horsetail Family**
Equisetum arvense	Common horsetail

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Dunsmuir Wastewater Treatment Plant (WWTP)
Improvement Project

Euphorbiaceae	**Spurge Family**
Croton setigerus	Dove weed
Fabaceae	**Legume Family**
Acmispon americanus	Spanish lotus
Acmispon parviflorus	Miniature lotus
Cytisus scoparius	Scotch broom
Lathyrus latifolius	Perennial sweet pea
Lupinus bicolor	Bicolored lupine
Robinia pseudoacacia	Black locust
Trifolium dubium	Little hop clover
Trifolium glomeratum	Sessile-headed clover
Vicia sp.	Vetch
Vicia sativa	Garden vetch
Fagaceae	**Oak Family**
Quercus garryana var. *garryana*	Oregon oak
Quercus kelloggii	California black oak
Geraniaceae	**Geranium Family**
Erodium cicutarium	Red-stemmed filaree
Geranium dissectum	Cut-leaf geranium
Hypericaceae	**St. John's-wort Family**
Hypericum perforatum	Klamath weed
Lamiaceae	**Mint Family**
Lamium amplexicaule	Giraffe heads
Lamium purpureum	Red henbit
Montiaceae	**Miner's Lettuce Family**
Claytonia parviflora	Small-flowered miner's lettuce
Oleaceae	**Olive Family**
Fraxinus latifolia	Oregon ash
Oxalidaceae	**Oxalis Family**
Oxalis sp.	Wood-sorrel
Papaveraceae	**Poppy Family**
Eschscholzia californica	California poppy
Phrymaceae	**Lopseed Family**
Mimulus guttatus	Common monkey-flower
Pinaceae	**Pine Family**
Pinus ponderosa	Ponderosa pine
Plantaginaceae	**Plantain Family**
Plantago lanceolata	English plantain

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Dunsmuir Wastewater Treatment Plant (WWTP)
Improvement Project

Poaceae	**Grass Family**
Bromus diandrus	Ripgut grass
Bromus hordeaceus	Soft chess
Bromus tectorum	Downy brome
Cynodon dactylon	Bermuda grass
Festuca myuros	Foxtail fescue
Poa bulbosa	Bulbous bluegrass
Polygonaceae	**Buckwheat Family**
Polygonum aviculare subsp. *depressum*	Common knotweed
Rosaceae	**Rose Family**
Prunus cerasifera	Cherry plum
Rubus armeniacus	Himalayan blackberry
Rubiaceae	**Madder Family**
Galium aparine	Cleavers
Galium parisiense	Wall bedstraw
Salicaceae	**Willow Family**
Populus balsamifera subsp. *trichocarpa*	Black cottonwood
Salix lasiandra	Yellow willow
Salix melanopsis	Dusky willow
Saxifragaceae	**Saxifrage Family**
Darmera peltata	Indian rhubarb
Scrophulariaceae	**Snapdragon Family**
Verbascum thapsus	Woolly mullein
Smilacaceae	**Smilax Family**
Smilax californica	California greenbrier
Solanaceae	**Nightshade Family**
Solanum dulcamara	Climbing nightshade
Valerianaceae	**Valerian Family**
Valerianella locusta	Corn salad
Zygophyllaceae	**Caltrop Family**
Tribulus terrestris	Puncture vine

APPENDIX C

Resumes

Donald Burk, Environmental Services Manager

John Luper, Qualified Biologist

DONALD M. BURK

Environmental Services Manager

Education

M.S. Botany
California State University, Chico

B.A. Chemistry and Biological Sciences
California State University, Chico

Professional Affiliations and Certifications

Society of Wetland Scientists
California Botanical Society
California Native Plant Society
Association of Environmental Professionals

Donald Burk has an in-depth background in a broad spectrum of environmental studies. His academic background includes graduate studies in environmental analysis methodology, biological sciences, and community planning. He has continued his professional development through completion of specialized courses in wetland delineation; wetland impacts and mitigations; vernal pool restoration and creation; noise assessments; Surface Mining and Reclamation Act regulations; erosion control practices; and hazardous materials evaluation and remediation. As environmental services manager with ENPLAN, Mr. Burk is instrumental in the preparation of environmental documents such as site assessment reports, environmental impact reports, biological studies, and noise evaluations. His responsibilities include project team management, key decision-making, coordination with applicable agencies, and final review of environmental documents. Having worked in the environmental consulting field since 1981, Mr. Burk has the skills and experience to manage studies to achieve reliable data and concise, effective documentation in a timely and cost-efficient manner.

While attending CSU, Chico, Mr. Burk was recognized as “Outstanding Organic Chemist of the Year,” received an award of merit from the American Botanical Society, and delivered the valedictory address for the School of Natural Sciences. His Master’s thesis was granted the first annual “Outstanding Thesis Award” by CSU, Chico.

Representative Experience

- *CEQA/NEPA Compliance.* Prepared environmental impact reports, environmental impact statements, and other environmental compliance documentation for a multitude of projects, including 516- and 1,244-acre industrial parks; public facilities projects including several sewage treatment plants, a 90-foot-high earthen dam and 15-acre reservoir, a 6-mile-long, 8-lane roadway, other new road corridors, and water supply projects; shopping centers and highway commercial developments; a 10,000-seat church; a 475-acre recreation ranch; ski areas; a softball park; four new schools; a 1-million cubic yard reservoir dredging project; numerous residential developments and many other projects.

- *Environmental Site Assessments.* Managed preparation of Phase I, II and III site investigations for a number of commercial and industrial facilities. Investigations have addressed wood-products manufacturing facilities, a major clothing manufacturing operation, dry cleaners, a medical clinic, ranches, a regional transmission transformer site, automotive shops and service stations, abandoned sewage treatment ponds, office buildings, shopping centers, and other uses.
- *Biological Studies.* Managed preparation of technical field studies, including wildlife and botanical studies for a 1,016-acre site in Sacramento County; fisheries, aquatic macroinvertebrate, and riparian vegetation studies for a 38-mile reach of the North Fork Feather River; botanical surveys for 175-mile and 265-mile underground telephone cable corridors; botanical surveys for over 2,400 acres on Mount Shasta proposed for ski area development; biological surveys for a 200-acre park site; spotted owl surveys; vernal pool fairy/tadpole shrimp and valley elderberry longhorn beetle assessments; and numerous other projects.
- *Wetland Delineations.* Managed preparation of wetland delineations and/or U.S. Army Corps of Engineers permit applications for a 1,016-acre site east of Sacramento, a 200-acre site in north Redding, a 580-acre site in the City of Weed, a 100-acre site near the Redding Municipal Airport, a transmission corridor project in east Redding, a 78-acre industrial parcel in the City of Benicia, and many other parcels throughout northern California.
- *Noise Studies.* Prepared noise studies for a variety of projects, including numerous traffic corridors; large industrial facilities such as a co-generation plant, food processing plant, and a regional scrap metal recycling facility; recreation facilities such as a new ski area and a community sports complex; many new residential developments; schools; and other facilities. Testified as an expert witness in a court case involving noise generated by electric- and diesel-powered water well pumps.
- *Reclamation Plans/Stream Restoration Projects.* Prepared mine reclamation plans and/or technical studies for projects including an aggregate pit adjacent to Cow Creek in Shasta County, a pumice quarry in Napa County, and underground gold mines in Shasta and Trinity Counties. Managed preparation of a stream restoration project for a reach of the Susan River, which involved hydraulic analysis, preparation of an earth-work plan, supervision of all on-site construction activities, preparation of a revegetation/erosion control plan and supervision of its implementation, and preparation of a monitoring program. Developed a plan, and obtained all agency approvals, for creation of 10 acres of riparian forest habitat along the Sacramento River to mitigate losses on a nearby parcel.

Publications

Burk, Donald et al. (29 contributing authors). Technical Editors Gary Nakamura, UC Cooperative Extension Service and Julie Kierstead Nelson, USDA Forest Service, Shasta-Trinity National Forest. 2001. *Illustrated Field Guide to Selected Rare Plants of Northern California.* University of California, Agriculture and Natural Resources. Publication 3395.

Luper, J. and D. Burk. 2014. Noteworthy collections: *Froelichia gracilis* (Amaranthaceae). Madrono 61(4):413-413.

JOHN LUPER

Environmental Scientist

Education

B.S. Botany and Biology (Environmental)
California State University, Humboldt

Professional Affiliations and Certifications

GIS Certificate, Shasta College, Redding, CA
Qualified SWPPP Developer (QSD) #22990
Certified Professional in Erosion and Sediment Control (CPESC) #6936

John Luper has over fourteen years of experience working as a biologist and regulatory specialist throughout northern California. His experience includes preparation of CEQA/ NEPA environmental compliance documents, open space preserve development, wetland delineations, biological studies, environmental monitoring for construction activities, and preparation/implementation of storm water management plans.

Representative Experience

- *Regulatory Permitting*. Worked closely with developers, engineers, and resource agencies to manage the permitting process for a wide variety of projects. Prepared application packages for federal and state resource agency permits including: Individual Permits, Letters of Permission, and Nationwide Permits for the U.S. Army Corps of Engineers; Streambed Alteration Agreements for the California Department of Fish and Wildlife; and Water Quality Certifications and Waste Discharge Requirements for the Regional Water Quality Control Board.
- *CEQA/NEPA Compliance.* Prepared environmental compliance documentation for diverse projects, including public facility projects, residential development projects, vegetation management plans, and stream/wetland restoration projects.
- *Preserve Establishment/Management*. Prepared Operations and Management Plans, Conservation Easements, and Declarations of Restrictions allowing for establishment of open space preserves to ensure long-term protection of biological and wetland resources. Conducted field monitoring and prepared preserve monitoring reports for established preserves to evaluate long-term success.
- *Wetland Delineation*. Conducted wetland field delineations, wrote technical reports, prepared maps of jurisdictional waters, and verified boundaries with Corps staff.
- *Biological Studies*. Conducted botanical surveys and tree surveys, prepared habitat creation, restoration, and enhancement plans, wrote technical reports, and prepared biological resource maps.
- *Environmental Monitoring*. Conducted environmental monitoring on construction sites to ensure avoidance/protection of biological and wetland resources as well as long-term monitoring of mitigation and restoration areas.
- *Stormwater Management*. Prepared and supervised implementation of storm water plans, conducted site inspections, performed required sampling and water quality analysis, and prepared final documentation.