

# PROPOSED MITIGATED NEGATIVE DECLARATION and INITIAL STUDY

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## City of Mt. Shasta Sewer Interceptor Improvements



*Prepared for:*

**City of Mt. Shasta**

February 2019  
32-32

**ENPLAN**

3179 Bechelli Lane Suite 100  
Redding, CA 96002

# PROPOSED MITIGATED NEGATIVE DECLARATION

<b>LEAD AGENCY:</b>	City of Mt. Shasta
<b>PROJECT PROPONENT:</b>	City of Mt. Shasta
<b>PROJECT NAME:</b>	<b>Mt. Shasta Sewer Interceptor Improvements</b>
<b>PROJECT SUMMARY:</b>	The proposed Project entails improvements to the City's wastewater collection system, including replacing/upsizing existing sewer interceptors, installing new interceptors, replacing manholes, and constructing a maintenance road. (See Section 3.0, <i>Project Description</i> , in the Initial Study)
<b>LOCATION:</b>	The proposed Project is located within the City of Mt. Shasta and a portion of the unincorporated area of Siskiyou County, generally on the east side of Interstate 5 (I-5) along W. Jessie Street; and on the west side of I-5, south of the I-5/Central Mt. Shasta Interchange, to approximately 900 feet south of W. Ream Avenue. Township 40N, Range 4W, Sections 16 and 21, MDM. (See <b>Figure 1</b> in the Initial Study)

**FINDINGS / DETERMINATION**

As documented in the Initial Study, project implementation could result in possible effects to special-status plant and wildlife species, loss of riparian habitat, loss of wetlands, disturbance of nesting migratory birds (if present), impacts to cultural resources and tribal cultural resources (if present), the introduction and spread of noxious weeds during construction, potential encounters with unstable soils, 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 Mt. Shasta 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.

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Final Mitigated Negative Declaration approved by the City Council of the City of Mount Shasta on \_\_\_\_\_, 2019 by Resolution \_\_\_\_\_.

# INITIAL STUDY

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**CITY OF MT. SHASTA**

## **SEWER INTERCEPTOR IMPROVEMENTS**

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**LEAD AGENCY:**



**City of Mt. Shasta**  
305 N. Mt. Shasta Blvd.  
Mt. Shasta, CA 96067  
**530.926.7510**

**PREPARED BY:**

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

**February 2019**

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## SECTION 1.0 INTRODUCTION

### 1.1 PURPOSE OF STUDY

The City of Mt. Shasta (City), 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 its Sewer Interceptor Improvements Project (Project). Details about the proposed Project are included in Section 3.0 (Project Description) of this Initial Study.

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

The City intends to apply for funding through the United States Department of Agriculture Rural Development (USDA-RD) program; therefore, the proposed Project is also subject to National Environmental Policy Act (NEPA) review. A NEPA Categorical Exclusion and Environmental Report will be prepared by the City to satisfy NEPA requirements.

### 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 preliminary environmental assessment undertaken as part of this Initial Study, a determination that there is a potential for significant effects indicates the need to more fully analyze the proposed Project's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the proposed Project. To each question, there are four possible responses:

- **No Impact.** The proposed Project will not have any measurable environmental impact on the environment.
- **Less-Than-Significant Impact.** The proposed Project has the potential to impact the environment; however, this impact will be below established thresholds of significance.
- **Potentially Significant Impact Unless Mitigation Incorporated.** The proposed Project has the potential to generate impacts which may be considered a significant effect on the environment; however, mitigation measures or changes to the proposed Project's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact.** The proposed Project will have significant impacts on the environment, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

### 1.3 ORGANIZATION OF THE INITIAL STUDY

This document is organized into the following sections:

- Section 1.0: Introduction:** Describes the purpose, contents, and organization of the document and provides a summary of the proposed Project.
- Section 2.0: CEQA Determination:** Identifies the determination of whether impacts associated with development of the proposed Project are significant, and what, if any, additional environmental documentation may be required.
- Section 3.0: Project Description:** Includes a detailed description of the proposed Project.
- Section 4.0: Environmental Impact Analysis (Checklist):** Contains the Environmental Checklist from CEQA Guidelines Appendix G with a discussion of potential environmental effects associated with the proposed Project. Mitigation measures, if necessary, are noted following each impact discussion.
- Section 5.0: List of Preparers**
- Section 6.0: Abbreviations and Acronyms**
- Appendices:** Contain information to supplement Section 4.0.

### 1.4 PROJECT SUMMARY

<b>Project Title:</b>	<b>Mt. Shasta Sewer Interceptor Improvements</b>
<b>Lead Agency Name and Address:</b>	<b>City of Mt. Shasta</b> 305 N. Mt. Shasta Blvd. Mt. Shasta, CA 96067
<b>Contact Person and Phone Number:</b>	<b>Rod Bryan, Public Works Director</b> <b>530.926.7526</b>
<b>City's Environmental Consultant:</b>	<b>ENPLAN</b> 3179 Bechelli Lane Redding, CA 96002

#### **Project Location:**

The proposed Project is located both within the Mt. Shasta city limits (primarily east of I-5) and in a portion of the unincorporated area of Siskiyou County (west of I-5). See **Figure 1**, Project Vicinity Map, and **Figure 2**, Study Area Boundary.

Proposed improvements east of I-5 would occur in the W. Jessie Street right-of-way (ROW), southwest of the intersection of W. Jessie Street and Spring Street. The existing sewer main under I-5 at W. Jesse Street would be renovated in place, with no surface disturbance.

Path: N:\complan\files\01-Jobs\_Active\032-32 PACE - Mt. Shasta Sewer Interceptor\3.Project\_CIS\3-Map Documents\Cultural\Appendix A\Figure 1 Project Location and Vicinity Map 121117.mxd

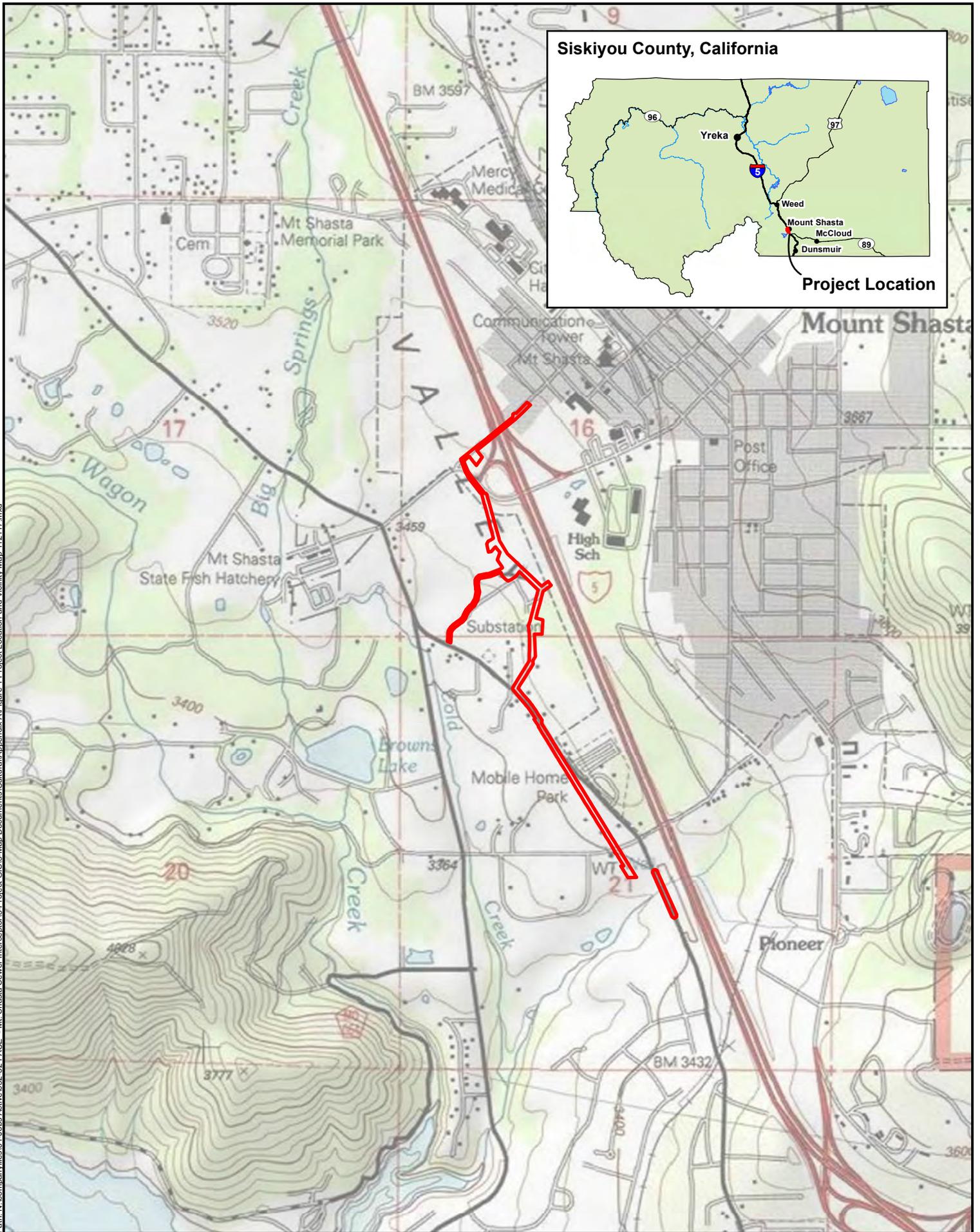


Figure 1

All depictions are approximate. Not a survey product. 11.01.18



# Project Location and Vicinity





All depictions are approximate. Not a survey product. 12.03.18



Figure 2  
**Study Area Boundary**

Proposed improvements on the west side of I-5 would occur within the road ROW of W. Jessie Street and W. Lake Street; on private property south of Hatchery Lane and west of S. Old Stage Road (on the Morgan-Merrill Preserve, a wildlife habitat and wetland mitigation area, and on PacifiCorp lands); on private property west of S. Old Stage Road; and in the public road ROW of S. Old Stage Road.

**Staging Areas:**

As shown in **Figure 1**, temporary staging of construction equipment and materials would occur on the west side of I-5 on an undeveloped parcel south of W. Jessie Street; in the center of the Morgan-Merrill Preserve directly south of Cold Creek; in the southeastern area of the Preserve; and in the southern Project area south of W. Ream Avenue. Project staging may also occur in the affected street ROW throughout the project area. Minor clearing of vegetation may be required to establish the off-street staging areas; however, no grading or tree removal would occur.

**Assessor’s Parcel Numbers:**

- East side of I-5: Located within City road ROW
- Under I-5: Located within Caltrans ROW
- West side of I-5: Located within City and County road ROW and APNs 057-241-150, 036-210-020, 030, -060, -070, -050; 036-220-170, -260, -370; 036-460-121, -151, -161; and 036-500-091

**1.5 ENVIRONMENTAL SETTING**

<b>General Plan Designation:</b>	<p><b>East of I-5:</b> High Density Residential along W. Jessie Street.</p> <p><b>West of I-5:</b> Properties in the City limits along W. Jessie Street are designated Commercial Center. The City’s General Plan also addresses lands within its Planning Area that are outside of the City limits. The City has assigned the following designations to properties within the Project study area: Resource Lands (Morgan-Merrill Preserve); Low Density Residential along S. Old Stage Road; and Commercial Center at the southern end of S. Old Stage Road, adjacent to I-5.</p> <p>The County’s 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).</p>
<b>Zoning:</b>	<p><b>East of I-5:</b> Low Density Residential (R-1) along W. Jessie Street</p> <p><b>West of I-5:</b> Properties in the City limits along W. Jessie Street are zoned Downtown Commercial (C-1). Properties in the County at the northern end of the interceptor improvements are zoned Neighborhood Commercial (C-U), Town Center (CC), and Rural Residential (R-R-B-1). Areas along S. Old Stage Road are designated R-R, with minimum parcel sizes ranging from one to five acres. The pasture on the west side of S. Old Stage Road is zoned Non-Prime Agricultural (AG-2). Areas south of W. Ream Avenue at the southern end of the interceptor improvements are zoned Planned Development (P-D) (residential).</p>

<p><b>Surrounding Land Uses:</b></p>	<p><b>East of I-5:</b> Adjacent properties are developed with low-density single-family residences. Mt. Shasta Elementary School is located southeast of the Project site.</p> <p><b>West of I-5:</b> The California Highway Patrol and single-family residences are located on W. Jessie Street. The Morgan-Merrill Preserve, a wildlife habitat and wetland mitigation area, is located immediately south of Hatchery Lane.</p> <p>Immediately south of the Preserve is the PacifiCorp Mt. Shasta electric substation. Two parcels northeast of the substation, immediately south of the Preserve, are developed with single-family residences. These residential properties are presently owned by PacifiCorp and are the proposed location for the future Lassen Substation.</p> <p>Properties along S. Old Stage Road are developed with low-density residences, a mobile-home park, and small farms. Properties at the southern end of the Project boundary are developed with single-family residences and Lake Siskiyou Mutual Water Company facilities.</p>
<p><b>Topography:</b></p>	<p>The study area slopes gently to the southwest and varies in elevation between 3,375 and 3,500 feet above mean sea level.</p>
<p><b>Soils:</b></p>	<p>According to the U.S. Department of Agriculture, Natural Resources Conservation Service, the following soil units have been mapped within the Project site:</p> <p>Deetz gravelly loamy sand (5 to 15 percent slopes); Diyou loam, peat substratum (0 to 2 percent slopes); and Ponto-Neer complex (2 to 15 percent slopes).</p>
<p><b>Plant Communities/Wildlife Habitats:</b></p>	<p>Eight communities are present in the study area: stream/riverine, mixed-conifer forest, wet meadow, freshwater emergent wetland, montane riparian scrub, perennial grassland, pasture, and urban.</p> <p>Stream/riverine habitat includes two irrigation ditches and three small streams that pass through the study area. The two smaller streams are in the southern portion of the study corridor and are culverted under existing road crossings. Cold Creek, the largest of the three streams, originates as springs in the City of Mt. Shasta; from the planned interceptor crossing location, the stream flows approximately 1.6 miles to Lake Siskiyou.</p> <p>The mixed-conifer forest community is located in the southern area of the Morgan-Merrill Preserve and on the parcel immediately to the south. This community is represented by ponderosa pine, incense-cedar, green-leaved manzanita, downy brome, big squirreltail, and medusa-head.</p> <p>The wet-meadow community occurs in the temporary access route off S. Old Stage Road, in the southeastern portion of the Morgan-Merrill Preserve, and within the pasture west of S. Old Stage Road. Wet-meadow vegetation is represented by wild teasel, Kentucky bluegrass, tall fescue, Baltic rush, blue-pod lupine, birdsfoot trefoil, and other species.</p> <p>The freshwater emergent wetland occurs as a large expanse between Cold Creek and Hatchery Lane in the Morgan-Merrill Preserve, and in the southeastern area of the Preserve property. The northernmost freshwater emergent wetland is saturated to shallowly ponded in the</p>

	<p>spring and dries out during the summer. This occurrence supports various sedges, poison hemlock, wild teasel, velvet grass, pockets of cattail, and a wide array of other wetland plants. South of Cold Creek, the freshwater emergent wetland is substantially wetter, typically being ponded year-round.</p> <p>The montane riparian scrub community occurs along streams and ditches throughout the study corridor. Most of the occurrences are within the Morgan-Merrill Preserve, including the Cold Creek corridor in the vicinity of the planned interceptor crossing. The montane riparian scrub community is characterized by dense linear stands of shrubs and vines up to roughly 20 feet in height. Common species include mountain alder, yellow willow, red willow, arroyo willow, Klamath hawthorn, Himalayan blackberry, and other woody plant species.</p> <p>The perennial grassland community occurs in the staging area south of W. Jessie Street, the staging area on the Morgan-Merrill Preserve south of Cold Creek, and the southern area of the Preserve north of the mixed-conifer forest community. The perennial grassland community occurs on dry, upland soils, where it forms open to moderately dense stands up to about three feet in height. The community is dominated by perennial grasses and forbs. Dominant plants include cereal rye, blue wild rye, meadow fescue, Kentucky bluegrass, Fuller’s teasel, and Canada thistle. A few scattered trees and shrubs occur within the perennial grassland community including Klamath hawthorn, willow, rose, and Himalayan blackberry.</p> <p>The pasture on the west side of S. Old Stage Road is a grazed and irrigated grassland landscape. The community is dominated by perennial grass species, including bulbous bluegrass, Kentucky bluegrass, orchard grass, cereal rye, fescue, timothy, creeping bentgrass, barley, clovers, and Baltic rush. Common forbs include spring draba, plantain, yarrow, buttercup, common dandelion, thistle, and common mullein.</p> <p>The urban community includes road rights-of-way and developed residential properties in the study area. Much of the urban community in the study area consists of paved roads. Urban vegetation is primarily located along the road margins and on residential parcels. Roadside vegetation includes English plantain, dandelion, bachelor buttons, red-stemmed filaree, puncture vine, and annual ragweed. The residential parcels support a wide variety of plants, including native species, introduced weeds, and horticultural species.</p>
<b>Water Features:</b>	<p>No water features are present in the Project site on the east side of I-5. On the west side of I-5, two irrigation ditches and three small streams pass through the Project study area. The irrigation ditches are located in the pasture on the west side of S. Old Stage Road. Cold Creek bisects the Morgan-Merrill Preserve in the center of the Preserve. Two unnamed streams are located in the southern boundary of the Project area.</p>
<b>Air Basin:</b>	<p>Northeast Plateau Air Basin (NPAB)</p>

## 1.6 REGULATORY REQUIREMENTS

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

### **City of Mt. Shasta:**

- Adoption of a Mitigated Negative Declaration for the Project pursuant to the California Environmental Quality Act (CEQA), as amended.
- Adoption of a Mitigation Monitoring Plan for the Project that incorporates the mitigation measures identified in this Initial Study.

### **Siskiyou County:**

- Approval of Encroachment Permit for work in the public right-of-way.

### **California Department of Transportation:**

- Approval of Encroachment Permit for work on state-owned property.

### **State Water Resources Control Board (SWRCB)/Central Valley Regional Water Quality Control Board (CVRWQCB):**

- Coverage under the National Pollutant Discharge Elimination System (NPDES) permit for *Discharges of Storm Water Runoff associated with Construction Activity* (currently Order No. 2009-009-DWQ). Permit coverage may be obtained 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 reduce pollutants and any additional controls necessary to meet water quality standards.
- Section 401 Water Quality Certification (or waiver).
- If construction dewatering activities result in the direct discharge of relatively pollutant-free wastewater to waters of the U.S., coverage under CVRWQCB General Order R5-2016-0076-01 (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.

### **U.S. Army Corps of Engineers:**

- Section 404 Permit under the Federal Clean Water Act.

### **California Department Fish and Wildlife:**

- Issuance of Section 1600 Lake or Streambed Alteration Agreement.

### **California Office of Historic Preservation, State Historic Preservation Officer (SHPO):**

- Due to federal funding and federal permits for the proposed Project, consultation regarding potential impacts to cultural resources is required pursuant to Section 106 of the National Historic Preservation Act (NHPA).

## 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.”

Pursuant to PRC §21080.3.1, 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.

In response to ENPLAN’s request for comments on the proposed Project that was mailed to Native American tribes in the area, the Winnemem Wintu Tribe responded to ENPLAN and expressed interest in formal consultation. The Winnemem Wintu Tribe had not previously provided a written request to the City to be notified of proposed projects in the area.

On December 8, 2017, the City sent a letter to Caleen Sisk, Tribal Chief and Spiritual Leader of the Winnemem Wintu Tribe providing detailed information on the proposed Project and describing the AB 52 consultation process. The letter stated that if the Tribe would like to engage in formal consultation with the City regarding possible significant effects that the Project may have on tribal cultural resources, the Tribe must respond to the City in writing within 30 days of the Tribe’s receipt of the letter. No response was received from the Winnemem Wintu Tribe. No other California Native American tribes have requested that the City provide formal notification of proposed projects in the geographical area. Therefore, the requirements of PRC §21080.3.1 have been satisfied.

## 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.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics                                     | <input checked="" type="checkbox"/> Hazards/Hazardous Materials | <input type="checkbox"/> Recreation                           |
| <input checked="" type="checkbox"/> Agricultural and Forestry Resources | <input type="checkbox"/> Hydrology and Water Quality            | <input type="checkbox"/> Transportation/Traffic               |
| <input checked="" type="checkbox"/> Air Quality                         | <input type="checkbox"/> Land Use and Planning                  | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Biological Resources                | <input type="checkbox"/> Mineral Resources                      | <input type="checkbox"/> Utilities and Service Systems        |
| <input checked="" type="checkbox"/> Cultural Resources                  | <input checked="" type="checkbox"/> Noise                       | <input checked="" type="checkbox"/> Wildfires                 |
| <input checked="" type="checkbox"/> Geology and Soils                   | <input type="checkbox"/> Population and Housing                 | <input type="checkbox"/> Mandatory Findings of Significance   |
| <input type="checkbox"/> Greenhouse Gas Emissions                       | <input type="checkbox"/> 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.

### **AGRICULTURE AND FOREST RESOURCES**

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Implementation of Mitigation Measure MM 4.4.6.

### **AIR QUALITY**

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**MM 4.3.1** The City shall ensure through contractual obligations that the following measures are implemented:

- a. All material excavated, stockpiled, or graded shall be covered or sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards.
- b. All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.
- c. All areas with vehicle traffic (other than paved roads and temporary wood slabs, HDPE mats, or other driving surfaces employed in wetland areas) shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.
- d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
- e. All land clearing, grading, earth moving, and excavation activities on the project site shall be suspended if/when the City's project engineer determines that winds are causing excessive dust generation.
- f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of CVC Section 23114. This provision is enforced by local law enforcement agencies.
- g. Paved streets in and adjacent to the construction site shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud resulting from activities on the development site.
- h. All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications.
- i. Off-road construction equipment shall not be left idling for periods longer than five minutes when not in use.

## **BIOLOGICAL**

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### **MM 4.4.1 Construction Measures to Minimize Effects to Wetlands**

Construction of the casing support structures for the aerial crossing at Cold Creek shall be initiated no earlier than July 1. All other work within the Morgan-Merrill Preserve (Siskiyou County Assessor's Parcel 036-210-060-000) (e.g., trenching and pipe laying) shall be restricted to August 1 or later to minimize impacts to wetlands. In areas where vehicles or equipment will be driving through or operating in wetlands, the wetlands shall be protected through installation of temporary wood slabs, swamp mats, HDPE mats, geotextile fabric with a layer of gravel, or similar protective materials approved by the City. The protective materials shall be removed upon completion of construction. Areas subject to ground surface protection shall be identified on the improvement plans.

### **MM 4.4.2 Install Exclusionary Fencing to Avoid Impacts to Special-Status Plants and Sensitive Habitats**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), exclusionary fencing shall be installed around the following biological resources that are designated for preservation:

- Wetlands and other waters of the U.S. and State
- Montane riparian scrub habitats
- Aleppo avens (*Geum aleppicum*) plant populations
- Trees  $\geq 12$  inches diameter, as measured 4.5 feet above ground level, that are planned for retention (see **Mitigation Measure MM 4.4.6**)

Fencing locations shall be determined by a qualified biologist in consultation with the project engineer and City staff. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the fenced areas, except as allowed under **Mitigation Measure 4.4.6**. The exclusionary fencing shall be periodically inspected by a qualified biologist throughout project construction to ensure the fencing is properly maintained. The fencing shall be removed upon project completion.

### **MM 4.4.3 Avoid Effects to Special-Status Birds, Nesting Migratory Birds, and/or Raptors**

In order to avoid impacts to special-status birds protected under the California Endangered Species Act (CESA) and 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 CDFW 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 Mt. Shasta shall consult with the USFWS and CDFW regarding appropriate action to comply with the CESA, Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5. 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.

#### **MM 4.4.4 Conduct Worker Environmental Awareness Program**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), all construction personnel shall receive training from a qualified biologist regarding protective measures for special-status plant and animal species and sensitive habitats that could exist in the study area. If new personnel are added to the project, the City shall ensure that they receive the mandatory training before starting work. At a minimum, the training shall include the following:

- a. A review of the special-status species that could occur in the project study area, the locations where the species could occur, the laws and regulations that protect these species, and the consequences of noncompliance with those laws and regulations.
- b. Procedures to be implemented in the event that these species are encountered during construction.
- c. A review of sensitive habitats that occur in the study area and the location of the sensitive habitats.
- d. A review of applicable mitigation measures, standard construction measures, best management practices, and resource-agency permit conditions that apply to the protection of special-status species and sensitive habitats.

**MM 4.4.5 Retain Qualified Biologists to Ensure Implementation of Mitigation Measures and Permit Conditions**

The City shall retain qualified biologists, as necessary, to ensure that impacts to special-status species, migratory birds, native vegetation, wetlands, wildlife habitat, and other identified sensitive biological resources are avoided or minimized in accordance with the adopted environmental documents for the Project and pertinent permit conditions. The biologist(s) shall be responsible for the tasks noted below.

- a. Completing pre-construction surveys for special-status birds, migratory birds, and raptors.
- b. Conducting the worker environmental awareness trainings.
- c. Observing placement of exclusionary fencing around sensitive biological habitats to delineate areas where construction activities are prohibited.
- d. Reviewing resource-agency permit conditions, consulting with the City of Mt. Shasta and resource agencies to ensure an understanding of the permit conditions, and, to the extent possible, ensuring that the conditions of the permits are met. If the biologist observes violations of the conditions, the biologist shall immediately report the violations to the City. The City shall have the authority to halt construction activities until consultation with the appropriate resource agency occurs and remedial actions are identified.
- e. Conducting periodic site inspections on a weekly basis, or as otherwise deemed necessary by the project biologist, when construction activities occur in areas with sensitive biological resources to ensure that exclusionary fencing is properly maintained, wetland mats are in place, that any buffers for sensitive resources (e.g., nesting birds) are maintained, and that other mitigation measures and permit conditions are met.
- f. Preparing monitoring reports and compliance documentation as needed to document pre-construction, construction, and post-construction mitigation efforts.

**MM 4.4.6 Construction Measures to Promote Retention of Conifers.**

Temporary construction fencing shall be installed and maintained at least 6 feet outside of the dripline of all trees to be preserved. The fencing around this “root protection zone” shall be maintained throughout construction.

- a. No vehicle parking or materials stockpiling shall occur within the root protection zone.
- b. To the extent feasible, no construction activities (including grading, cutting, and trenching), shall occur within the root protection zone. If the sewer interceptor must be installed using open trenching within the root protection zone, the work shall be completed under the supervision of a certified arborist to ensure that impacts to the tree are minimized.

**MM 4.4.7 Avoid and Minimize Impacts to Native Vegetation**

To promote regeneration of plants from their root systems, removal of plant root systems shall be limited to the extent necessary for trench installation. Outside of the trench footprint, removal of native plants shall be achieved by pruning them at ground level, or crushing them with heavy equipment; the root systems shall be left in place.

**MM 4.4.8 Restore Sensitive Vegetation Communities Disturbed by Construction Activities**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), the City shall develop a plan describing how temporary and permanent impacts to sensitive vegetation communities will be offset. Revegetation shall be conducted by promoting growth of plants that were crushed or pruned during construction and/or by installing new plantings. The revegetation plan shall be submitted to the appropriate permitting agency(ies) (e.g., Army Corps of Engineers, Regional Water Quality Control Board and/or California Department of Fish and Game) for review and approval prior to any earth disturbance in areas subject to their jurisdiction.

The plan shall include the following information:

- a. Required qualifications and experience of individuals performing the revegetation work.
- b. Methods to be used to revegetate the impacted areas (e.g., soil preparation, seeding, planting, etc.).
- c. An implementation schedule.
- d. Criteria and measures to be used to determine success of revegetated areas.
- e. Monitoring methods and reporting requirements.
- f. Remedial measures to be used to ensure the success of revegetation.
- g. Other pertinent data to ensure successful revegetation of native vegetation and riparian habitat.

**MM 4.4.9 Minimize the 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.

## **CULTURAL**

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- 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 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.

## **GEOLOGY AND SOILS**

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- MM 4.6.1** All grading plans, foundation plans, and structural calculations shall be reviewed by a qualified professional to ensure that all recommendations included in the KC Engineering Geotechnical Report are implemented. Applicable notes shall be placed on the attachment sheet to the improvements plans and in applicable project plans and specifications.
- If significant engineering design changes occur during construction, the City shall consult with a qualified geotechnical engineer to identify any geotechnical constraints related to the design changes. Recommendations of the geotechnical engineer shall be implemented as warranted.
- MM 4.6.2** The City shall ensure through contractual obligations that earthwork activities are monitored by a qualified professional to ensure that recommendations included in the final Geotechnical Report are implemented.

## **HAZARDS/HAZARDOUS MATERIALS**

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**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**

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**MM 4.12.1** Construction activities shall be limited to between the hours of 7:00 a.m. and 5:00 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.

## **TRIBAL CULTURAL RESOURCES**

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Implementation of Mitigation Measures MM 4.5.1 and MM 4.5.2.

## **WILDFIRE**

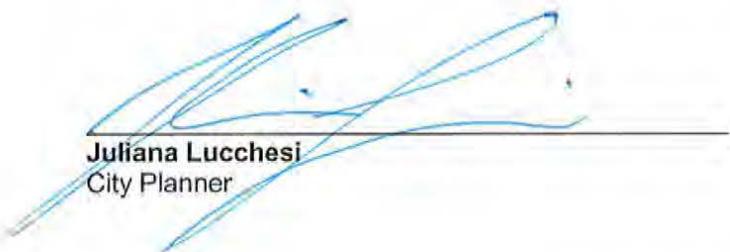
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Implementation of Mitigation Measure MM 4.8.1.

## 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.

  
\_\_\_\_\_  
**Juliana Lucchesi**  
City Planner

2/4/19  
\_\_\_\_\_  
Date

## SECTION 3.0 PROJECT DESCRIPTION

### 3.1 INTRODUCTION

The City of Mt. Shasta (City) provides wastewater collection and treatment services within the City limits, as well as to a number of residential and commercial developments that are outside of the City limits. The unincorporated areas served by the City comprise approximately 843 acres and include the Lake Siskiyou campground and marina, Mt. Shasta Resort and Golf Course, and Lake Siskiyou Highlands Subdivision.

The service area for the City's sewer system is approximately 11,714 acres. The City's collection system consists of approximately 30 miles of sewer mains and collectors, with collectors ranging in size from 12 inches to 30 inches in diameter. All of the sewage from the City flows to the wastewater treatment plant (WWTP), located approximately 0.75 miles south of the City between the Sacramento River and Interstate 5 (I-5).

The proposed Project entails improvements to the City's wastewater collection system, including replacing/upsizing existing interceptor pipes, installing new pipe segments, rehabilitating a damaged pipe under I-5, replacing manholes, and improving maintenance access. Existing sewer laterals would be reconnected as the interceptor is constructed.

An existing dirt road off of S. Old Stage Road would be used to access the Morgan-Merrill Preserve south of Cold Creek. Access to other work areas would be from paved public roads or private graveled driveways.

As shown in **Figure 1**, temporary staging of construction equipment and materials would occur on an undeveloped parcel south of W. Jessie Street on the west side of I-5; in the center of the Morgan-Merrill Preserve directly south of Cold Creek; in the southeastern area of the Preserve; and in the southern Project boundary south of W. Ream Avenue. Project staging would also occur in the affected street ROW throughout the project area. Minimal vegetation removal may be required to establish the staging areas; however, no tree removal or grading would occur in the staging areas.

As discussed in Section 3.3 below, boulders and oversized cobbles are present in several areas along the interceptor alignment and must be removed to accommodate the proposed improvements. These boulders and oversized cobbles would be disposed of off-site in accordance with City and County regulations. The City has identified the old Roseburg Mill site on S. Mt. Shasta Boulevard as a potential disposal site (see **Figure 1**).

Some of the pipeline improvements in the Preserve would occur outside the existing easement, and the City would be required to obtain new easements. Improvements outside of the Preserve would occur within existing easements. In addition, the City has acquired all temporary construction easements that are required to establish the staging areas and allow adequate room for construction outside of the Preserve.

For purposes of this Initial Study, "study area" and "Project site" shall mean the Project's footprint, and include access roads, staging areas, and areas in which improvements would occur. Details on the proposed improvements are included in Section 3.3 (Project Components/Physical Improvements).

## 3.2 PROJECT BACKGROUND, NEED AND OBJECTIVES

The City's wastewater collection system dates back to 1912, with major additions being constructed between the late 1930s through the 1950s. Some portions of the existing sewer system are up to 70 years old and consist of clay pipe with cement mortar joints. More recent portions consist of asbestos-cement and PVC pipe.

The main interceptor on the west side of I-5 beginning at W. Lake Street was constructed in 1938. The majority of this interceptor was replaced with 12-inch interceptor sewer as part of the 1976 Clean Water Grant Sewer Project. Approximately 3,000 feet of the old interceptor was replaced with a new 18-inch interceptor a couple of years later. Approximately 1,600 feet of the 12-inch interceptor that receives the force main flow from the Lake Siskiyou Recreation Area and the Lake Siskiyou Mutual Water Company is still in use.

The City of Mt. Shasta's 1992 Master Sewer Plan for the Sewage Collection and Treatment Facilities was prepared by PACE Engineering with input from Siskiyou County. The Master Plan includes conceptual plans, staging, and cost estimates for the major capital improvements necessary over a 20-year time period, with sewage flow projections and main line sewers sized for ultimate potential flows.

In 2005, Schlumpberger Consulting Engineers, Inc., completed a sewer system capacity evaluation to identify capacity deficiencies in the sewer collection system, prioritize the deficiencies, and recommend alternatives to eliminate the deficiencies. As part of the evaluation, flow monitoring was conducted in various sewer mains in order to verify existing pipeline flows and determine whether flows were over the recommended capacity.

The 2005 Schlumpberger report identified overall work priorities, including addressing the interceptor "bottleneck" at W. Ream Avenue and S. Old Stage Road to prevent future manhole surcharge events. In addition, the report recommended that the interceptor from W. Jessie Street, south to W. Ream Avenue be upsized to handle existing Peak Wet Weather Flows (PWWF).

The report acknowledges that a 24-inch pipe may be necessary in areas with flat slopes. In addition, a larger pipe is required in areas with a high potential for groundwater infiltration. The report further identified replacement of the manhole and pipe on W. Jessie Street on the east side of I-5 as a priority.

### ***Sanitary Sewer Overflows***

In early January 2017, a segment of the interceptor within the Morgan-Merrill Preserve failed and resulted in the release of ±2,690,000 gallons of wastewater directly into Cold Creek, and ultimately to Lake Siskiyou. Approximately 50 percent of this volume was infiltration and inflow (I&I) and ±1,315,000 gallons was raw sewage.

It is believed the failure was caused due to heavy precipitation that increased flows in Cold Creek. The increased flows eroded a drainage ditch and caused a tree to fall onto the aerial pipe across Cold Creek and shear the pipe at both banks of the creek. As an interim measure, the failed pipe segment was replaced; however, additional improvements are required to minimize the potential for future sanitary sewer overflows.

## **Access**

There is presently no access to the sewer interceptor in the Morgan-Merrill Preserve north of Cold Creek because the previous access road was eliminated during construction of I-5. The City recently requested approval to establish an access road to this location directly off of I-5, but this request was denied by Caltrans due to traffic safety issues. Without access to the interceptor, the City's ability to adequately maintain the pipeline is hindered.

## **Summary**

The proposed Project addresses infrastructure improvements that were identified as priority projects in the 1992 Master Sewer Plan and the 2005 Sewer System Capacity Evaluation report. The proposed improvements are required to enable the sewer collection system to adequately handle existing PWWFs, to prevent storm water infiltration, and to eliminate manhole surcharging during significant wet weather events. In addition, construction of the maintenance road is required in order for the City to conduct routine maintenance of the interceptor.

### **3.3 PROJECT COMPONENTS/PHYSICAL IMPROVEMENTS**

Due to the presence of boulders and unstable soils in the Project site (see discussion under *Trenching/Shoring* below), trenchless construction methods for the pipeline improvements are not possible; therefore, all pipeline improvements would be installed using open-cut trenching. At culvert crossings, the pipe would be installed either in the fill overlying the culvert, or under the culvert as further discussed below. Existing sewer laterals would be reconnected as the interceptor is constructed. Paved roads that are disturbed during construction would be re-paved following installation of the improvements.

#### ***Pipeline under Interstate 5:***

The interceptor pipe under I-5 between the west end of W. Jessie Street on the east side of I-5 and the east end of W. Jessie Street on the west side of I-5 would be rehabilitated using a "cured-in-place pipe" (CIPP) process. A flexible tube coated with resin would be blown or pulled into the damaged pipe from a nearby manhole and inflated. The resin would be cured using hot water, ultraviolet light, or steam to form a tight-fitting, jointless replacement pipe. No earth disturbance would occur during the CIPP process.

#### ***Improvements on the East Side of Interstate 5:***

- ±220 feet of the existing 12-inch interceptor in W. Jessie Street would be replaced with a 24-inch interceptor; two manholes would be abandoned and replaced with new manholes. All work would occur within the paved public road ROW. The pipe would be installed under a 12-inch culvert on W. Jessie Street.

#### ***Improvements on the West Side of Interstate 5:***

The majority of the existing interceptor is 12 inches in diameter. All replacement and new interceptor pipe would be 18- or 24-inch diameter, which is the minimum required to accommodate existing PWWF, prevent storm water infiltration, and eliminate manhole surcharging during significant wet weather events.

- ±400 feet of the existing interceptor pipe immediately west of I-5 on W. Jessie Street would be replaced with an 18-inch pipe. A portion of this pipe segment is currently on private property; the new interceptor would be installed entirely in the public road ROW.

The existing easement that crosses private property would be abandoned. Five existing manholes would be abandoned and replaced with new manholes.

- ±250 feet of the existing interceptor pipe between the west end of W. Jessie Street and the northern property line of the Morgan-Merrill Preserve would be replaced. The pipe would be placed in the fill overlying a 36-inch culvert on Hatchery Lane, immediately south of W. Jessie Street.
- A maintenance road that would be used for construction access and to access the interceptor pipe during future maintenance activities would be constructed from the northern property line of the Morgan-Merrill Preserve, along the toe of the Caltrans overpass embankment along W. Lake Street. The maintenance road would be ±350 feet in length by 12 feet in width. Establishing the road would require placement of approximately six feet of fill in the northern segment of the road; the road would level out as it enters the Preserve. The road would be surfaced with gravel.
- Improvements within the Morgan-Merrill Preserve include replacement of ±2,200 feet of interceptor pipe; ±150 feet of new pipe would be installed in the southeastern portion of the Preserve in order to collect wastewater entering the system from an existing sewer main on the east side of I-5.
- A new aerial pipeline would be installed across Cold Creek. To minimize impacts to the banks of the creek, the interceptor pipe would be installed within a protective steel casing that would be supported on both sides of the creek by a casing support structure. The casing support footings would be set back from the top of the bank on both sides of the creek as necessary to minimize impacts to the creek.
- Four manholes within the Morgan-Merrill Preserve would be abandoned, and seven new manholes would be installed. The existing interceptor pipe would be abandoned in place.
- From the southern boundary of the Morgan-Merrill Preserve, ±700 feet replacement interceptor pipe would be installed in an existing private driveway to S. Old Stage Road. The pipe would be installed under a 12-inch culvert in S. Old Stage Road. The pipe would proceed in S. Old Stage Road a distance of ±500 feet. A portion of the pipe in S. Old Stage Road would be installed in the paved road ROW, and the rest in the gravel shoulder.
- From S. Old Stage Road, ±1,500 feet of pipe would be installed in an irrigated pasture. In the pasture, the pipe would be installed under two 24-inch culverts in an irrigation ditch.
- From the southern boundary of the pasture, the pipe would proceed ±300 feet southeast across developed residential property and then across W. Ream Avenue. From W. Ream Avenue, the pipe would proceed ±400 feet across private property. The pipe would be installed in the fill overlying an 18-inch culvert on the private property.
- ±550 feet of interceptor pipe would be installed in S. Old Stage Road south of W. Ream Avenue. The pipe would be installed over a 48-inch culvert.

## **Other Construction Considerations**

### ***Trenching/Shoring***

In January 2019, KC Engineering prepared a Geotechnical Exploration Report (Geotechnical Report) that identifies surface and subsurface soil conditions along the proposed pipe alignment, and provides recommendations for engineering design and construction methods for trenching, shoring, and backfill, as well as recommendations for foundations for the manholes and casing supports for the aerial pipeline crossing at Cold Creek. The Geotechnical Report was based on site reconnaissance, exploratory test borings, and laboratory testing of subsurface soil samples.

According to the Geotechnical Report, boulders are present in several areas along the interceptor alignment and should be removed where encountered. Although these boulders can be removed with conventional excavation earthmoving equipment, the trench may need to be significantly widened to allow removal of the boulders or to compensate for poorly cohesive native soils. In areas where boulders are present and/or soil conditions are poor, construction activity could impact up to a 30-foot wide path. Boulders and oversized cobbles would be disposed of off-site in accordance with City and County regulations.

Depths of excavation for the utility trenches would range from 4 feet to 12 feet. Open-graded crushed aggregate would be placed in the bottom of the trench followed by bedding material as recommended in the Geotechnical Report.

For all trenches greater than five feet in depth, the contractor would be required to provide ground-support shoring systems or sloped earthen trench backcuts for safety and to facilitate construction of the proposed improvements. Design of the shoring system is the responsibility of the contractor and would be reviewed by the project geotechnical engineer. Where vertical trenching and shoring are not used, a maximum temporary trench sidewall slope inclination of 1.5 feet horizontal to 1 foot vertical is recommended.

In areas where imported gravel backfill is required over the new pipe, such as under paved and gravel roads, all material excavated from the trenches would be disposed of off-site in accordance with City and County regulations. In areas where native material is used as trench backfill, such as across pasture areas, material excavated from the trench would be temporarily stockpiled adjacent to the trench and then placed as backfill in the trench after the new pipe is installed. No excess soil would be allowed on-site at the end of construction.

### ***Groundwater/Dewatering***

Test borings that were done during completion of the geotechnical study identified groundwater in some locations at a depth of nine feet below existing ground surface. Because the depth of the pipeline could be up to 12 feet, it is likely that groundwater will be encountered during construction. If excessive groundwater is encountered during trenching operations, the contractor would be required to conduct dewatering activities.

Where feasible (e.g., landowner approval is provided, sufficient space with permeable surfaces is available, slopes are gentle enough to allow control of potential sediment transport, etc.), stormwater or groundwater removed from excavations would be discharged overland into well-vegetated areas to promote the settling of sediment and prevent runoff from entering drainage courses. Land disposal is typically restricted to the dry season (May through October) unless the discharger provides evidence that the discharge can be retained on land during the wet-weather season.

If overland discharge is not possible, water removed from excavations would be routed to sump pump pits and/or dewatering wells to control the potential flow of groundwater into the trenches. A sump area would be excavated at the lowest point of the open excavation/trench to facilitate pumping of collected water. Settling basins and/or other means would be used as necessary. The water would be pumped to a City-approved discharge facility. Design of the dewatering system is the responsibility of the contractor. To prevent dewatering of wetlands following completion of construction, concrete cutoff walls would be installed in the trench at designated locations, including areas where open-graded aggregate is used, at access points at the edges of wetlands in the Morgan-Merrill Preserve, ±50 feet from each side of Cold Creek, and near the southern area of the pasture. The number of walls required is dependent on the slope of the trench. At a minimum, it is estimated that a trench cutoff would be used for every four to five feet of fall in the pipeline. The concrete cutoff wall would fill the trench completely around the pipe and extend up to ±18 inches below the ground surface.

### ***Temporary Flow Diversion***

If flow is present in irrigation ditches, temporary diversion and dewatering would be needed to facilitate interceptor construction. It is anticipated that this would be accomplished with use of temporary diversion dams (i.e., sandbag cofferdams) and diversion pipes. A diversion pipe would extend from a point upstream of the work area to point downstream of the work area. A temporary diversion dam would then be constructed to direct flow into the diversion pipe. The diversion structure would be removed following installation of the interceptor pipe through the ditch footprint.

As noted above, the interceptor pipe would be installed by trenching under certain culverts. Depending on the integrity of the culverts, diversion of flow may be necessary prior to interceptor pipe installation under the culverts. Likewise, temporary diversion may be necessary if groundwater flow is encountered in wetlands (e.g., spring flow). In these cases, a similar temporary pipe/cofferdam diversion may be utilized.

### ***Ground Improvement (Potential Liquefaction)***

According to the Geotechnical Report, subsurface sandy deposits near the creek crossing and in the Morgan-Merrill Preserve may be subject to seismically induced liquefaction settlement that can result in total and differential settlements of up to five inches and three inches, respectively.

Due to the potential for liquefaction, the Geotechnical Report recommends that the casing support structures and manholes in the Morgan-Merrill Preserve be supported on deepened foundation elements or shallow footings in conjunction with an appropriate ground improvement technique, such as low mobility compaction grouting.

Compaction grouting is a method in which soil is densified using a thick, low-slump grout. The grout forms a bulb at the tip of the grout pipe, displacing the soil; soil between the grout bulbs is thus compacted and strengthened. Low mobility compaction grouting has minimal adverse impacts because it does not mix with or permeate the soil, does not travel freely beyond the injection point, and becomes immobile when injection pressure ceases. Ground improvement depths would be variable, and 10- to 30-foot depths should be anticipated on all sides of the casing support structures for the Cold Creek aerial pipeline crossing.

Ground improvements for manholes may also include over-excavation and replacement with a geogrid-reinforced aggregate base layer or Controlled Low Strength Material (CLSM). CLSM is a cementitious grout-like material placed without compaction.

### **Construction Schedule**

The Project has been designed to allow the improvements to be constructed in three phases, which may be necessary due to funding constraints, inclement weather, or other factors outside of the City's control. Construction is anticipated to commence in July 2020. It is estimated that the improvements would be completed in a total of six months.

## **3.4 CUMULATIVE IMPACTS ANALYSIS**

As defined in §15355 of the CEQA Guidelines, a cumulative impact consists of an impact that is created as a result of the combination of a proposed project together with other closely related past, present, and reasonably foreseeable future projects that cause related impacts. As noted in §15064(h)(4) of the CEQA Guidelines, the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

Further, §15130(b) of the CEQA Guidelines states, *"The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."*

As documented in Section 4.0 (Environmental Analysis), the proposed Project does not include any components that would result in long-term operational impacts; therefore, only construction-related impacts are considered in the cumulative impacts analysis. In addition to growth associated with the build-out projections in the City's and County's General Plans, the projects described below were considered in determining whether the proposed Project's impacts would be cumulatively considerable in accordance with §15064(h) of the CEQA Guidelines. No other related projects were identified as being reasonably foreseeable in accordance with §15144 of the CEQA Guidelines.

### **Crystal Geyser Bottling Plant**

On September 20, 2017, the Siskiyou County Planning Commission certified the Final Environmental Impact Report for the Crystal Geyser Bottling Plant<sup>1</sup>. An appeal challenging the certification was filed, and the Board of Supervisors denied the appeal on December 12, 2017. Legal action was subsequently taken against the project, and it is not known when the legal action will conclude.

The EIR for the Crystal Geyser Project included a sewer system capacity analysis prepared by CH2M in August 2016 (revised in December 2016) to determine improvements that would be required for the proposed Crystal Geyser project.

As noted in Section 3.3 above, the sewer interceptor improvement project includes replacing the interceptor pipe at W. Ream Avenue and S. Old Stage Road to eliminate manhole surcharge events. The CH2M analysis concluded that Crystal Geyser would be required to replace this pipeline segment in order for Crystal Geyser to operate. The analysis concluded that no other improvements to the City's sewer collection system are required to accommodate additional flows from Crystal Geyser.

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<sup>1</sup> Crystal Geyser Draft Environmental Impact Report and related documents:

<https://www.co.siskiyou.ca.us/content/community-development-crystal-geyser-project>

Although Crystal Geyser is required to upsize the pipeline at W. Ream Avenue and S. Old Stage Road, this improvement is required regardless of whether or not Crystal Geyser commences operations; therefore, it is included in the City's project in the event that Crystal Geyser does not proceed. Because Crystal Geyser does not include any additional infrastructure or construction-related improvements in proximity to the proposed sewer interceptor improvements, it would not contribute to cumulative impacts associated with the sewer interceptor improvements.

### ***City of Mt. Shasta Wastewater Treatment Plant (WWTP) Improvements***

On May 9, 2016, the City of Mount Shasta adopted a Mitigated Negative Declaration for the State-Mandated Wastewater Treatment and Outfall Improvement Project. The project entails replacement of the existing treatment lagoon system with a new treatment facility, installation of pipelines from the existing WWTP headworks to the replacement treatment facility, and installation of a new diffuser at the existing Sacramento River outfall. These improvements are necessary to comply with CVRWQCB requirements for wastewater discharge. The improvements will be located within the footprint of the existing facilities.

The WWTP is located at the southern terminus of Grant Road, just south of the City limits and west of Interstate 5, approximately one mile south of the southern boundary of the proposed Project. Construction of the WWTP improvements is anticipated to occur between April 2019 and October 2021 over the course of two years.

Construction contractors would travel on W. Lake Street/Hatchery Lane and S. Old Stage Road to access the WWTP site. The WWTP Improvements project would contribute to cumulative traffic and traffic noise impacts if the project is constructed simultaneously with the sewer interceptor improvements.

### ***Mt. Shasta Downtown Collection System Improvements***

On November 14, 2017, a CEQA Categorical Exemption was filed with the State Clearinghouse for the Mt. Shasta Downtown Collection System Improvements project. The project includes replacement of sewer mains, laterals, and cleanouts in the public ROW of Cedar Street, W. Alma Street, and McCloud Avenue. The Downtown Collection System Improvements project includes replacement of a sewer main on Cedar Street between W. Alma Street and W. Jessie Street, approximately 550 feet northeast of the proposed sewer interceptor improvements on W. Jessie Street. Construction contractors for the Downtown Collection System Improvements project may travel on the same streets as contractors for the sewer interceptor improvements. It is also possible that both projects would use the same staging area on S. Mt. Shasta Boulevard.

If the Downtown Collection System Improvements project is constructed simultaneously with the sewer interceptor improvements, cumulative traffic and traffic noise as well as cumulative noise impacts and temporarily increased air emissions during construction would occur.

However, according to the City's engineer, the Downtown Collection System Improvements are scheduled to be completed by the end of 2019, prior to commencement of the sewer interceptor improvements. Therefore, the Downtown Collection System Improvements project would not contribute to cumulative impacts.

### ***Mt. Shasta Tank 1 and Roseburg Water System Improvements***

On November 27, 2018, the City adopted a Mitigated Negative Declaration for the Mt. Shasta Tank 1 and Roseburg Water System Improvements project. The project includes replacement of a water tank on Quail Hill, improvements to two water tanks on Quail Hill, improvements to an existing pressure-reducing valve (PRV) station on McCloud Avenue east of Madison Avenue, and replacement of an existing waterline on Old McCloud Road, Mountain View Drive, and S. Mount Shasta Boulevard. The proposed waterline improvements would occur approximately one mile southeast of the sewer interceptor improvements on W. Jessie Street.

However, it is possible that both projects would use the same staging areas on S. Mt. Shasta Boulevard. The Tank 1 and Roseburg Water System improvements project would contribute to cumulative traffic and traffic noise impacts if the project is constructed simultaneously with the sewer interceptor improvements.

### ***Mt. Shasta Water Distribution System Improvements***

The City is in the process of completing environmental review for the Water Distribution System Improvements project. The project includes replacement of existing water mains on the east side of I-5 in proximity to the proposed sewer interceptor improvements. Water main improvements would occur on several streets, including W. Jessie Street, Spring Street, Cedar Street, Pine Street, W. Ivy Street, W. Field Street, W. Alma Street, N. Mt. Shasta Boulevard, and S. Mt. Shasta Boulevard. Water main improvements on W. Jessie Street would occur at the same location as the sewer interceptor improvements as well as other streets in the area.

Construction contractors for the water distribution system improvements would travel on the same streets as contractors for the sewer interceptor improvements. It is also possible that both projects would use the same staging areas on S. Mt. Shasta Boulevard. The Water Distribution System Improvements project would contribute to cumulative traffic and traffic noise impacts if the project is constructed simultaneously with the sewer interceptor improvements. There is also a potential for cumulative noise impacts and temporarily increased air emissions during construction.

### ***Proposed PacifiCorp Lassen Substation***

PacifiCorp presently owns and operates the Mount Shasta Substation on S. Old Stage Road. In 2016, PacifiCorp submitted an application to the California Public Utilities Commission to replace and upgrade the substation. As shown in **Figure 3**, the proposed project includes demolishing the existing Mount Shasta Substation; constructing the new Lassen Substation immediately northeast of the existing substation; demolishing two single-family dwellings that are within the new substation footprint; replacing 36 transmission poles along a 1.5-mile segment of the existing transmission system; installing three additional poles to connect to the proposed substation; reconductoring two existing distribution lines; removing an existing overhead distribution line; and undergrounding approximately 1,200 feet of the existing overhead line.

As shown in **Figure 3**, some of the Lassen Substation improvements are proposed in the same area as the sewer interceptor improvements. This includes improvements on the east side of I-5 on W. Jessie Street, within the Morgan-Merrill Preserve, adjacent to the driveway between the southern boundary of the Preserve and S. Old Stage Road, and in the pasture west of S. Old Stage Road.

In order to accommodate the new substation, existing buildings and most or all trees would be cleared prior to grading. The substation would then be built on a graded gravel pad measuring approximately 215 feet by 250 feet. The existing residential driveway would be graveled, and an additional road would be constructed to provide a 20- to 24-foot-wide fire truck access loop through the substation property that would connect back to S. Old Stage Road.

On November 23, 2016, the CPUC released a Notice of Intent to Adopt a Mitigated Negative Declaration for the project, and the IS/MND was made available for a 30-day public review period.<sup>2</sup> Based on comments submitted during the public review period, the CPUC prepared revisions to the IS/MND, and a final IS/MND was published on June 19, 2017. The CPUC responded to comments on the final IS/MND and prepared an errata to the final IS/MND in response to those comments.

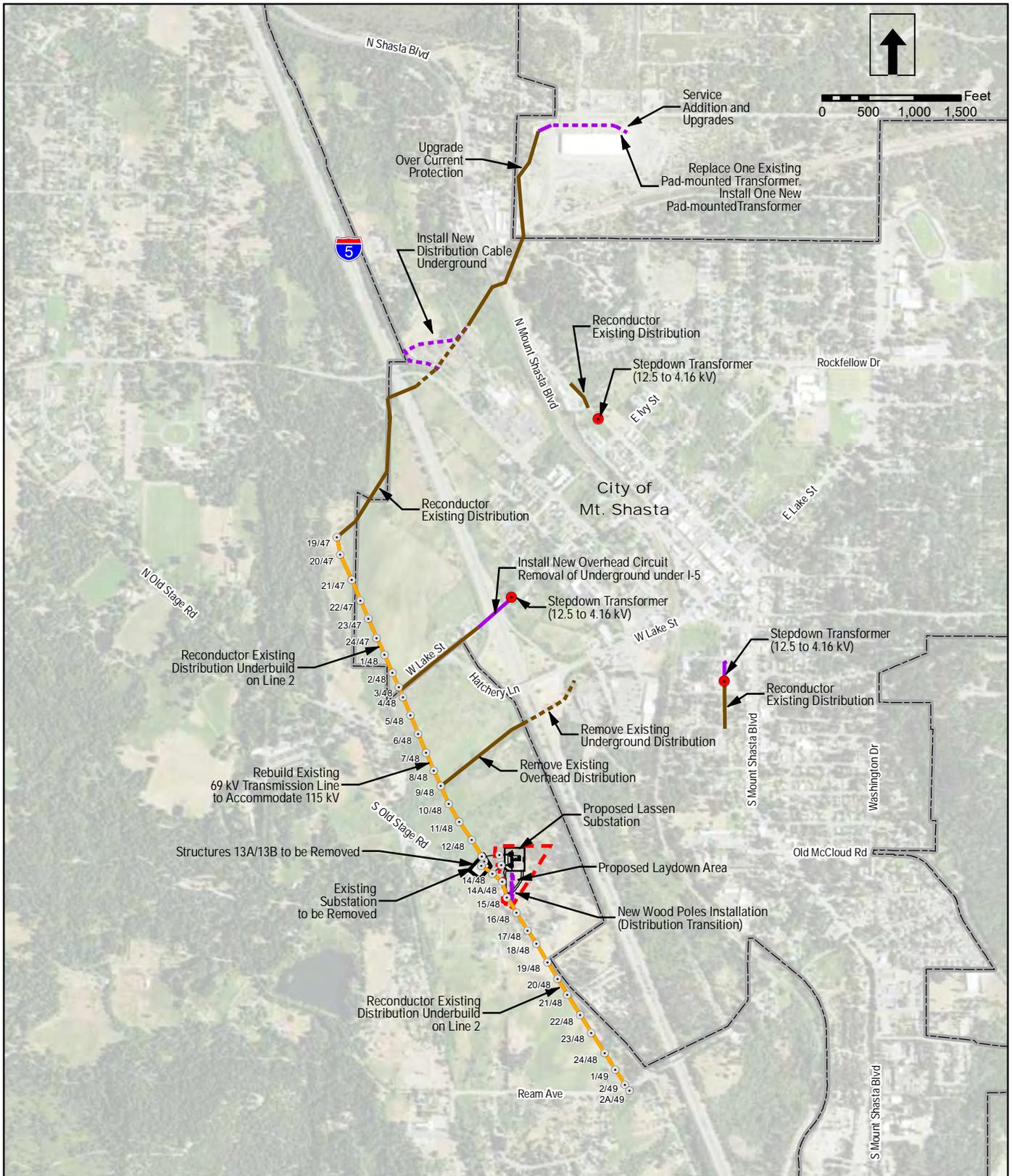
According to the CPUC, as of November 2018, the MND has not been adopted by the CPUC, and it is not known when adoption of the MND will occur. The CPUC anticipates that construction of the new substation project will commence in the summer of 2019 and be completed within 12 months; however, the actual date of construction will depend on when the MND is adopted.

The PacifiCorp Lassen Substation project would contribute to cumulative impacts if the project is constructed simultaneously with the sewer interceptor improvements. Potential cumulative impacts include possible effects to the visual quality of the area (due to construction activities and tree removal), possible effects to special-status plant and wildlife species, loss of riparian habitat, loss of wetlands, loss of potential habitat for nesting migratory birds, impacts to cultural resources and tribal cultural resources (if present), the introduction and spread of noxious weeds during construction, temporarily increased risk of wildfires, temporarily increased air emissions, and temporarily increased noise and vibration levels.

Potential cumulative impacts are further discussed in the applicable resource sections in Section 4.0 below.

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<sup>2</sup> California Public Utilities Commission, Environmental Review Documents for proposed Lassen Substation Project: <http://www.cpuc.ca.gov/environment/info/dudek/LassenSub/PacifiCorpLassenSub.htm#Environmental%20Review>.



<b>LEGEND</b>		<b>FIGURE 3</b>
<ul style="list-style-type: none"> <li>○ TRANSMISSION STRUCTURE</li> <li>— EXISTING TRANSMISSION LINE TO BE REBUILT</li> <li>— EXISTING OVERHEAD DISTRIBUTION</li> <li>- - - EXISTING UNDERGROUND DISTRIBUTION</li> <li>— PROPOSED OVERHEAD DISTRIBUTION</li> <li>- - - PROPOSED UNDERGROUND DISTRIBUTION</li> </ul>	<ul style="list-style-type: none"> <li>● INSTALL 12.47 TO 4.16 KV STEPDOWN</li> <li>□ PROPOSED LASSEN SUBSTATION SITE</li> <li>□ EXISTING SUBSTATION (MT. SHASTA)</li> <li>⊕ CITY LIMITS</li> </ul>	
		<b>PacifiCorp Lassen Substation - Proposed Improvements</b>

Source: Biological Resources Habitat Assessment for the Lassen Substation Project (Power Engineers, 2015).

## SECTION 4.0 ENVIRONMENTAL 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of public views of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### REGULATORY CONTEXT

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#### FEDERAL

There are no federal regulations pertaining to aesthetics that apply to the proposed project.

#### STATE

##### California Scenic Highway Program

The California Scenic Highway Program, administered by the California Department of Transportation (Caltrans), was established in 1963 to preserve and protect the natural beauty of scenic highway corridors in the State. The Scenic Highway System includes a list of highways that have been designated as scenic highways as well as a list of highways that are eligible for designation as scenic highways. Local jurisdictions can nominate scenic highways for official designation by identifying and defining the scenic corridor of the highway and adopting a Corridor Protection Program that includes measures that strictly limit development and control outdoor advertising along the scenic corridor.

#### LOCAL

##### City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
<b>Goal</b>	OC-7	Protect the scenic resources of the Mt. Shasta area.
<b>Policy</b>	OC-7.1	Promote the protection of the scenic beauty of the Mt. Shasta area through appropriate zoning, development standards, and the development review process involving lands in both the City and outside the city limits. The County is encouraged to support and help implement this policy.

<b>IM</b>	OC-7.1(b)	Establish and enforce standards for new development to protect visible hillsides and ridges. These standards will address screening, design, and setbacks from the tops of ridges.
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**Siskiyou County**

The Siskiyou County Scenic Highways Element of the General Plan was established to provide guidance for the development of city and county programs to protect and enhance the scenic values along designated scenic routes and in scenic areas visible from these routes. The following objectives apply to the proposed Project:

- Objective 2:** To conserve, enhance and protect scenic views observable from scenic routes without unduly restricting the primary uses of the lands involved.
- Objective 4:** To preserve for all travelers the outstanding characteristics of Siskiyou County, primarily clean air and magnificent scenery, so that it may so remain, providing incentives for tourism, and to stabilize and increase property values and the economy of Siskiyou County.

**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 Mount Shasta, trees and other vegetation, creeks, streams, open space, and forested hills that surround the community. The Project area is visible to individuals living and working in the area and to travelers on adjacent roadways, including I-5, W. Jessie Street, W. Ivy Street, Spring Street, Hatchery Lane, W. Lake Street, S. Old Stage Road, and W. Ream Avenue.

Improvements on the east side of I-5 on W. Jessie Street would occur adjacent to single-family residences (**Photo A-1**). The sewer interceptor would be installed in the paved road ROW using open-cut trenching, and no vegetation would be removed to accommodate the proposed improvements.

The road would be re-paved following completion of the improvements; therefore, there would be no permanent impacts on the east side of I-5.

On the west side of I-5, improvements would occur in the paved road ROW of W. Jessie Street adjacent to the California Highway Patrol Office and single-family residences (**Photo A-2**).

As shown in **Figure 2**, staging of construction equipment and materials would occur on the west side of I-5 on an undeveloped parcel south of W. Jessie Street; in the center of the Morgan-Merrill Preserve directly south of Cold Creek; in the



**Photo A-1.** W. Jessie St. on the east side of I-5; facing east.



**Photo A-2.** W. Jessie St. on the west side of I-5; facing west.

southeastern area of the Preserve; and in the southern Project boundary south of W. Ream Avenue. Project staging would also occur in the affected street ROW throughout the project area. Minor clearing of vegetation would be required to establish the off-street staging areas; however, no grading or tree removal would occur.

As discussed in Section 3.3 (Project Components/Physical Improvements), a maintenance road that would be used for construction access and to access the interceptor for future maintenance activities would be constructed from the northern property line of the Morgan-Merrill Preserve, along the toe of the Caltrans overpass embankment along W. Lake Street (**Photo A-3**). The maintenance road would be ±350 feet in length by 12 feet in width.

Establishing the road would require placement of approximately six feet of fill in the northern segment of the road; the road would level out as it enters the Preserve. The road would be surfaced with gravel.

As shown in **Photo A-3**, one oak and one cedar adjacent to the fill slope near the northern Preserve boundary would need to be removed to establish the road. As shown in **Photo A-4**, two non-native trees adjacent to the fill slope, approximately 425 feet south of Hatchery Lane, would also need to be removed.



**Photo A-3.** Location of Proposed Maintenance Road; facing southwest from W. Lake Street.



**Photo A-4.** Location of Proposed Maintenance Road; facing southwest from W. Lake Street, ±425 feet south of Hatchery Lane.

Improvements within the Morgan-Merrill Preserve (**Photo A-5**) include the subsurface interceptor pipeline and an aerial pipeline crossing at Cold Creek (**Photo A-6**). To minimize impacts to the banks of the creek, the interceptor pipe would be installed within a protective steel casing that would be supported on both sides of the creek by a casing support structure. The casing support footings would be set back from the top of the bank on both sides of the creek as necessary to minimize impacts to the creek.



**Photo A-5.** *Morgan-Merrill Preserve; representative photo.*



**Photo A-6.** *Existing aerial crossing over Cold Creek; facing northwest.*

The aerial crossing is located  $\pm 1,000$  feet southeast of Hatchery Lane,  $\pm 1,300$  feet east of S. Old Stage Road, and  $\pm 500$  feet west of I-5. The closest residences to the aerial crossing are approximately 1,200 feet to the northwest on W. Jessie Street and Hatchery Lane. Due to the distance as well as intervening trees and other vegetation, the aerial crossing would not be visible from any roadway or residence. The proposed Project does not include the construction of any other structures that would permanently impede the view of any scenic resource.

South of the Morgan-Merrill Preserve, the pipeline would cross property owned by PacifiCorp and continue in a graveled driveway (**Photo A-7**) to S. Old Stage Road. Tree removal in this area would be limited to the southernmost portion of the Morgan-Merrill Preserve. It is anticipated that approximately six conifer trees would need to be removed to accommodate the proposed improvements. According to the final Initial Study for the PacifiCorp Lassen Substation project, most or all trees on the PacifiCorp parcel would be removed to accommodate substation construction.

The tree removal would occur approximately 600 feet northeast of S. Old Stage Road. This area would be marginally visible to the traveling public on S. Old Stage Road. Considering the trees and other vegetation that would remain, visual impacts associated with tree removal would be less than significant. The pipeline would continue in the paved road ROW of a portion of S. Old Stage Road, then continue across a privately owned pasture (**Photo A-8**) to W. Ream Avenue. No trees would be removed in the pasture.



**Photo A-7.** *Facing east from driveway encroachment on S. Old Stage Road*

South of W. Ream Avenue, improvements would occur in a public utility easement between two single-family residences, and in the paved road ROW of S. Old Stage Road. Improvements directly south of W. Ream Avenue (**Photo A-9**) would require the removal of dense brush; however, no mature trees would be removed.



**Photo A-8.** Pasture on the west side of S. Old Stage Rd., north of W. Ream Avenue; facing northwest.



**Photo A-9.** South of W. Ream Avenue.

As discussed in Section 3.3 above, in areas where boulders are present and/or soil conditions are poor, construction activities could impact up to a 30-foot wide path. In addition, the Project would also have short-term visual impacts during construction due to trenching required to install the sewer interceptor.

Although short-term and long-term visual impacts of the proposed project are less than significant, it should be noted that mitigation measures required under Section 4.4 (Biological Resources) even further reduce the potential for visual impacts. These measures minimize vegetation removal during construction, require the City to develop and implement a revegetation plan, and ensure that temporarily disturbed areas are returned to pre-construction contours.

Therefore, because above-ground structures associated with the aerial pipeline crossing at Cold Creek would not be visible from a roadway or residence; areas disturbed during construction would be revegetated; impacted roads would be re-paved following installation of the pipeline; and impacts during construction would be temporary and cease at completion of the project, impacts would be less than significant.

**Question B**

There are currently no officially designated State Scenic Highways in Siskiyou County. Therefore, there would be no impact.

**Question D**

The proposed Project does not include the installation of any new permanent exterior lighting. Temporary lighting needed during construction activities would be required to comply with City standards to prevent impacts on motor vehicles and nearby residences. Impacts would be less than significant.

**CUMULATIVE IMPACTS**

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Potential cumulative projects in the area include growth according to the build-out projections in the City's and County's General Plans, and the cumulative projects identified in Section 3.4 above. The proposed Project does not include any features that would result in a significant permanent change to the visual character of the community. Although four small trees would be removed to accommodate the maintenance road (**Photos A-3 and A-4**), this would not degrade the existing aesthetic quality of the site

and its surroundings. The removal of approximately six conifer trees in the southernmost portion of the Morgan-Merrill Preserve would occur in an area that is only marginally visible to the traveling public on S. Old Stage Road.

As noted in Section 3.4 above, construction of the new PacifiCorp Lassen Substation would require grading and tree removal. The majority of the affected trees are located approximately 450 feet north of S. Old Stage Road on the new substation site on two parcels presently developed with single-family dwellings. Although the number of trees that would be removed is not known, considering that Mount Shasta dominates the background view, significant trees and other vegetation would remain, and the existing substation would be removed, visual impacts associated with tree removal for the Lassen Substation would be less than significant. Although the Lassen Substation project would include additional permanent lighting, the proposed Project would include only temporary construction lighting that would 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.** 2016. California State Scenic Highway Mapping System. Siskiyou County.  
[http://www.dot.ca.gov/hq/LandArch/16\\_livability/scenic\\_highways/index.htm](http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm). Accessed November 2018.

**California Public Utilities Commission.** 2017. Final Initial Study and Proposed Mitigated Negative Declaration.  
<http://www.cpuc.ca.gov/environment/info/dudek/LassenSub/PacifiCorpLassenSub.htm#Environmental%20Review>. Accessed November 2018.

**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Open Space and Conservation Element.  
<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed November 2018.

**Siskiyou County.** 1975. Siskiyou County General Plan, Scenic Highways Element.  
[http://www.co.siskiyou.ca.us/sites/default/files/docs/GP\\_ScenicHighwaysElement.pdf](http://www.co.siskiyou.ca.us/sites/default/files/docs/GP_ScenicHighwaysElement.pdf). Accessed November 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) or result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## REGULATORY CONTEXT

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### FEDERAL

#### Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) of 1981 applies to federal projects and federally funded activities. The FPPA requires a farmland conversion analysis for projects that result in the permanent conversion of lands designated by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), as prime, unique, or important farmland, as well as lands under a Williamson Contract. The NRCS land evaluation and site assessment (LESA) system is used to conduct the farmland conversion analysis.

### STATE

#### California Farmland Mapping and Monitoring Program (FMMP)

The FMMP was established in 1982 to provide data to decision makers to assist them in making informed decisions for the best utilization of California's farmland. Under the FMMP, the Department of Conservation (DOC) is responsible for mapping, monitoring, and reporting on the conversion of the State's farmland to and from agricultural use. Important Farmland Maps are updated and released every two years. The following mapping categories, which are determined based on soil qualities and current land use information, are included in the FMMP: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, grazing land, urban and built-up land, other land, and water. Any conversion of prime farmland, farmland of statewide importance, or unique farmland is typically considered an adverse impact.

#### Williamson Act

The Williamson Act (California Land Conservation Act of 1965) was enacted as a means to protect agricultural uses in the State. Under the Williamson Act, local governments can enter into contracts with private landowners to ensure that specific parcels are restricted to agricultural and related open space uses. In return, landowners receive reduced property tax assessments. The minimum term for a Williamson Act contract is ten years, and the contract is automatically renewed for one-year terms unless the landowner files a notice of nonrenewal or a petition for cancellation. When a notice of non-renewal is filed, the annual tax assessment gradually increases over a ten-year period until it reaches the market value tax rate, at which time the contract is terminated. The landowner may also petition the local government to immediately cancel the contract. If the cancellation is approved, the landowner must pay a cancellation fee, and the property is thereafter taxed at its current market value.

#### 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).”

## LOCAL

### City of Mt. Shasta

The City’s General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
<b>Goals</b>	OC-4	Encourage and conserve lands for agricultural purposes.
	OC-5	Encourage and conserve lands for timber purposes.
<b>Policies</b>	OC 4.1	Allow agricultural production lands to remain available for agriculture and rural uses.
	OC 5.1	Allow timber production lands to remain available for the harvest and replanting of timber resources, as well as rural and recreation uses.

### Siskiyou County General Plan, Conservation Element

The Conservation Element includes the following general objective related to agricultural resources:

- Preserve and protect the prime and productive agricultural lands and the agricultural economy of Siskiyou County.

## DISCUSSION OF IMPACTS

### Questions A, B, and D

According to the *Important Farmland in California* map published by the FMMP, there are no areas designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance in proximity to the Project site. The area on the east side of I-5 where improvements would occur is designated as Urban and Built-Up Land. On the west side of I-5, areas south of the Morgan-Merrill Preserve and north of the pasture are designated as Other Land, which is a designation applied to low-density rural developments, areas not suitable for grazing, and other vacant and nonagricultural land greater than 40 acres.

Improvements within the Preserve and the pasture on the west side of S. Old Stage Road would occur in areas designated as Farmland of Local Importance. In addition, the pasture is zoned by the County as Non-Prime Agricultural (AG-2), which is intended to provide an area where general agricultural activities can occur.

In Siskiyou County, Farmland of Local Importance includes dryland, or sub-irrigated hay and grain, and improved pasture forage species; farmlands presently irrigated but which do not meet the soil characteristics of Prime Farmland or Farmland of Statewide Importance, and areas currently shown as Prime Agricultural Land in the Siskiyou County General Plan.

Although the sewer interceptor would be installed in areas designated as Farmland of Local Importance, improvements would be subsurface, and no permanent conversion of farmland would occur. In addition, no properties in the Project area are under a Williamson Act contract. Therefore, the proposed Project would have no impact on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; would not conflict with zoning for agricultural use or with a Williamson Act contract; and would not result in other changes in the existing environment that could result in the conversion of farmland to non-agricultural use.



**Photo AG-1.** *Mixed-Conifer Forest Community; southern area of Morgan-Merrill Preserve.*

### Question C

According to the City's and County's General Plans, the Project site and surrounding area are not designated as forest land or timberland and are not zoned for timberland production. As stated under Regulatory Context above, "forest land" is defined in PRC §12220(g) as land that can support 10 percent 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.

As discussed in Section 4.4 under Question B, a mixed-conifer forest community occurs in the southern area of the Morgan-Merrill Preserve. The canopy is dense and meets the definition of forest land. Approximately six conifer trees larger than 12-inch diameter at breast height (DBH) would be directly impacted by the proposed Project. In addition, construction activities in the vicinity of the trees could result in indirect impacts to trees.

As documented in Section 4.4, due to the small number of trees to be removed, direct impacts would be less than significant. In terms of potential indirect impacts, **Mitigation Measure MM 4.4.6** requires exclusionary fencing to be placed at least six feet outside of the dripline of all trees to be preserved to create a "root protection zone."

If the sewer interceptor must be installed using open trenching within a fenced root protection zone, the work must be completed under the supervision of a certified arborist to ensure that the trees are not substantially damaged.

Therefore, the Project's impact on forest land, as defined by PRC §12220(g), is less than significant with implementation of **Mitigation Measure MM 4.4.6**.

## CUMULATIVE IMPACTS

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Potential cumulative projects in the area include growth according to the build-out projections in the City's and County's General Plans, and the cumulative projects identified in Section 3.4 above. As documented above, the Project site and surrounding area are not designated as timberland or zoned for timberland production; therefore, the project would not contribute to adverse impacts associated with cumulative impacts to timberland. Although the sewer interceptor would be installed in areas designated as Farmland of Local Importance, improvements would be subsurface, and the proposed Project would not interfere with agricultural uses in the area in the long-term. Therefore, the proposed Project's cumulative impacts to agricultural resources would be less than significant.

As documented above, approximately six conifer trees larger than 12-inch diameter at breast height (DBH) would be directly impacted by the proposed Project, and these trees are in an area that meets the definition of forest land under PRC §12220(g). The proposed PacifiCorp Lassen Substation project also would include the removal of trees in an area that may meet the definition of forest land. However, the magnitude of tree removal for both projects combined is low in relation to the distribution and availability of forest land in the region.

In addition, as discussed in Section 4.4 under Question B, implementation of **Mitigation Measure MM 4.4.6** would avoid/minimize potential impacts to trees. With this measure, the proposed Project's cumulative impacts to forest land would be less than significant.

## MITIGATION

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None necessary

## DOCUMENTATION

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## 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## REGULATORY CONTEXT

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### FEDERAL

#### Federal Ambient Air Quality Standards

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

**Ozone (O<sub>3</sub>).** Ozone is formed through chemical reactions between two major classes of air pollutants: reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>). These reactions are stimulated by sunlight and temperature; thus, ozone occurs in higher concentrations during warmer times of the year. Major sources: Combustion sources associated with motor vehicles and factories, and evaporation of solvents and fuels.

**Nitrogen Dioxide (NO<sub>2</sub>).** Nitrogen oxides (NO<sub>x</sub>) include nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and nitrous oxide (N<sub>2</sub>O) and are formed when nitrogen (N<sub>2</sub>) combines with oxygen (O<sub>2</sub>). 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<sub>2</sub> 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<sub>2</sub>).** 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<sub>2</sub> oxidizes in the atmosphere, it forms sulfate (SO<sub>4</sub>). Collectively, these pollutants are referred to as sulfur oxides (SO<sub>x</sub>). 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 and wood. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of carbon monoxide. 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<sub>10</sub> and PM<sub>2.5</sub>).** PM<sub>10</sub> is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. PM<sub>10</sub> is emitted from mobile and stationary sources, construction operations (e.g., grading and other

earth disturbance), wildfires, fireplaces and wood stoves, and natural windblown dust. PM<sub>2.5</sub> is formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO<sub>2</sub> released from power plants and industrial facilities and nitrates that are formed from NO<sub>x</sub> released 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).

### **Clean Air Act - Federal General Conformity Rule**

The General Conformity Rule of the CAA requires that all federally funded projects conform to the applicable State Implementation Plan (SIP). The Conformity Rule applies to projects in areas that are designated as nonattainment or maintenance areas for any of the six federal criteria air pollutants when the total direct and indirect emissions of the criteria pollutant (or its precursors) are at or above the de minimis thresholds listed in Code of Federal Regulations (CFR) Title 40, §93.153(b).

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

## **STATE**

### **State Ambient Air Quality Standards**

The California CAA establishes maximum concentrations for the six federal 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) has jurisdiction over local air districts and has established its own standards and violation criteria for each CAP under the CAAQS.

For areas within the State that have not attained air quality standards, the CARB works with local air districts to develop and implement attainment plans to obtain compliance with both federal and State air quality standards.

**Visibility-Reducing Particles.** Particulate matter impacts the environment by decreasing visibility. Visibility-reducing particles vary greatly in shape, size and chemical composition, and come from a variety of natural and manmade sources. Major sources include wildfires, residential fireplaces and woodstoves, windblown dust, ocean sprays, biogenic emissions, dust and fume-producing construction, industrial and agricultural operations, and fuel combustion.

**Sulfate (SO<sub>4</sub>).** Sulfate is oxidized to sulfur dioxide (SO<sub>2</sub>) during the combustion process and is subsequently converted to sulfate compounds in the atmosphere. Major sources include industrial processes and the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur.

**Hydrogen Sulfide (H<sub>2</sub>S).** Hydrogen sulfide is a colorless gas with the odor of rotten eggs. Major sources include geothermal power plants, petroleum refineries, and wastewater treatment plants.

**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 4.3-1** includes the federal and State ambient air quality standards:

**TABLE 4.3-1  
Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O <sub>3</sub> )	8 Hour	0.070 ppm (137µg/m <sup>3</sup> )	0.070 ppm (137µg/m <sup>3</sup> )
	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	–
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> )	1 Hour	0.18 ppm (339 µg/m <sup>3</sup> )	100 ppb (188 µg/m <sup>3</sup> )
	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )	53 ppb (100 µg/m <sup>3</sup> )
Sulfur Dioxide (SO <sub>2</sub> )	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )	N/A
	3 Hour	–	N/A
	1 Hour	0.25 ppm (665 µg/m <sup>3</sup> )	75 ppb
Particulate Matter (PM <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	N/A
	24 Hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
Particulate Matter – Fine (PM <sub>2.5</sub> )	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
	24 Hour	N/A	35 µg/m <sup>3</sup>
Sulfates	24 Hour	25 µg/m <sup>3</sup>	N/A
Lead	Calendar Quarter	N/A	1.5 µg/m <sup>3</sup>
	30 Day Average	1.5 µg/m <sup>3</sup>	N/A
	Rolling 3-Month Average	-	(0.15 µg/m <sup>3</sup> )
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	N/A
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	N/A
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	–	N/A

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

### California Regional Haze Plan

The USEPA adopted the Regional Haze Rule in 1999, which includes requirements to protect visibility in Class I areas, which are the largest national parks and wilderness areas in the United States. In 2009, CARB prepared the California Regional Haze Plan that sets forth goals for improving visibility in the State's 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. There are presently over 200 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 and demolition of structures (asbestos), and diesel-motor vehicle exhaust. 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. 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.

Assembly Bill 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987, was adopted in response to public concern regarding potential adverse health effects associated with emissions of TACs. Facilities found to release high volumes of toxic air pollution are required to conduct a detailed health risk assessment that estimates emission impacts to the neighboring community.

## LOCAL

### City of Mt. Shasta

The City's General Plan includes Goals, Policies, and Implementation Measures related to maintaining attainment status in the area, primarily through regulating wood-burning appliances and outdoor burning.

### Siskiyou County Air Pollution Control District (SCAPCD):

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. For new or modified stationary sources, Siskiyou County has defined 250 pounds (lbs)/day as the threshold of significance for NO<sub>x</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, and SO<sub>2</sub> 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.

## DISCUSSION OF IMPACTS

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### Questions A and B

See discussion under Regulatory Context above and Section 4.7 (Greenhouse Gas Emissions). Project emissions were estimated using Version 2016.3.1 of the California Emissions Estimator Model (CalEEMod). CalEEMod reports both maximum daily emissions (pounds per day) and overall annual emissions (tons per year) for both construction and operational emissions. Output files, including all site-specific inputs and assumptions, are provided in **Appendix A**.

Site-specific inputs and assumptions include, but are not limited to, the following. CalEEMod provides default values when site-specific inputs are not available.

- Emissions from construction are based on all construction-related activities, including but not limited to grading, site preparation, use of construction equipment, material hauling, trenching, and paving.
- Construction would start in May 2020 and occur over a period of approximately six months.
- Total land disturbance would be approximately one acre; 1,206 cubic yards (CY) of dirt would be imported; 2,282 CY would be exported.
- The total area to be re-paved following pipeline installation would be 0.075 acres.
- The total weight of demolition debris (pavement) to be removed from the project site would be approximately 120 tons.

The proposed Project would result in the temporary generation of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and other regulated pollutants during construction. ROG and NO<sub>x</sub> emissions are associated with employee vehicle trips, delivery of materials, and construction equipment exhaust. PM<sub>10</sub> is

generated during site preparation, excavation, road paving, and from exhaust associated with construction equipment.

Although neither the City nor the Siskiyou County Air Pollution Control District (SCAPCD) have adopted specific thresholds for construction-related air quality emissions, the City typically references current SCAPCD rules, including Rule 6.1-Construction Permit Standards for Criteria Pollutants, which includes thresholds for new or modified stationary sources. Although the proposed project does not include any new or modified stationary sources, the City determined that it would be appropriate to use these significance thresholds for construction-related emissions as well.

Emissions are considered significant if they exceed the thresholds presented in **Table 4.3-2**. As indicated, the proposed Project would not exceed the numerical threshold for any of the pollutants during construction. In addition, the Project does not have any components that would result in an increase in long-term operational emissions.

**TABLE 4.3-2  
Projected Construction Emissions**

Pollutants of Concern						
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	SO <sub>2</sub>
	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
<b>Project Emissions (2020)</b>	1.34	20.23	1.79	0.93	10.19	0.05
<b>SCAPCD Threshold</b>	250	250	250	250	2,500	250

In addition, the proposed Project would not result in significant impacts associated with ozone (O<sub>3</sub>), lead (Pb), hydrogen sulfide (H<sub>2</sub>S), 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<sub>x</sub>) are calculated. Because project construction would generate relatively low amounts of both ROG and NO<sub>x</sub>, 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. Because these conditions are not applicable to the proposed Project, the potential for hydrogen sulfide emissions is less than significant.

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

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

As discussed under Regulatory Context above, 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. Further, because the proposed Project would not exceed the referenced thresholds during construction, does not have any components that would increase long-term operational emissions, and would not result in significant impacts associated with O<sub>3</sub>, Pb, H<sub>2</sub>S, vinyl chloride, or visibility-reducing particles, impacts would be less than significant.

#### **Question C**

The Northeast Plateau Air Basin is in attainment or unclassified for all federal and state criteria pollutants; therefore, there would be no impact.

#### **Question D**

See discussion under Questions A and B above. Sensitive receptors are individuals or groups of people that are more affected by air pollution than others, including young children, elderly people, and people weakened by disease or illness. Locations that may contain high concentrations of sensitive receptors include residential areas, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. As stated above, the proposed Project does not have any components that would result in long-term operational emissions.

The proposed Project includes construction activities adjacent to single-family residences on W. Jessie Street, S. Old Stage Road, and W. Ream Avenue. As discussed above, the proposed Project would generate PM<sub>10</sub> 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**

The Project does not include any components that would result in the generation of long-term odors or similar emissions adversely affecting a substantial number of people. 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.

### **CUMULATIVE IMPACTS**

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

As documented above, the proposed Project would not result in an increase in long-term operational emissions. In addition, construction emissions resulting from the proposed Project would not exceed the SCAPCD referenced thresholds. However, implementation of the proposed Project combined with future development within the Project area could lead to cumulative impacts to air quality. Although the cumulative projects identified in Section 3.4 would also generate emissions during construction, and there is a possibility that some of these projects could be constructed simultaneously, all projects in Siskiyou County are subject to applicable CARB and SCAPCD rules and regulations, including mitigation measures that address impacts during construction.

Implementation of **Mitigation Measure MM 4.3.1** and compliance with CARB and SCAPCD regulations ensures that the proposed Project would have a less-than-significant cumulative impact on local and regional air quality.

## **MITIGATION**

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- MM 4.3.1** The City shall ensure through contractual obligations that the following measures are implemented:
- a. All material excavated, stockpiled, or graded shall be covered or sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards.
  - b. All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.
  - c. All areas with vehicle traffic (other than paved roads and temporary wood slabs, HDPE mats, or other driving surfaces employed in wetland areas) shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.
  - d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
  - e. All land clearing, grading, earth moving, and excavation activities on the project site shall be suspended if/when the City's project engineer determines that winds are causing excessive dust generation.
  - f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of CVC Section 23114. This provision is enforced by local law enforcement agencies.
  - g. Paved streets in and adjacent to the construction site shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud resulting from activities on the development site.
  - h. All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications.
  - i. Off-road construction equipment shall not be left idling for periods longer than five minutes when not in use.

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## 4.4 BIOLOGICAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REGULATORY CONTEXT

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### FEDERAL

#### Federal Clean Water Act

##### *Section 404*

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into wetlands and 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 prior to discharging dredged or fill material into waters below the ordinary high water mark (OHWM). There are several types of permits issued by the USACE that are based on the project's location and/or level of impact. Regional general permits are issued for recurring activities at a regional level. Nationwide permits (NWP) authorize a wide variety of minor activities that have minimal effects. Projects that are not covered under a regional general permit and do not qualify for a NWP are required to obtain a standard permit (e.g., individual permit or letter of permission).

##### *Section 401*

Under Section 401 of the CWA, 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 impacts to wetlands before it will issue a water quality certification.

#### Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 requires that all federal agencies 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. Projects that would result in "take" of any federally listed species are required to obtain authorization from National Marine Fisheries Service (NMFS) and/or USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project.

#### Federal Migratory Bird Treaty Act

Under the Migratory Bird Treaty Act (MBTA) of 1918, as amended, migratory bird species listed in CFR Title 50, §10.13, including their nests and eggs, are protected from injury or death, and any project-related disturbances. The MTBA applies to over 1,000 bird species, including geese, ducks, shorebirds, raptors, songbirds, and other bird species that were near extinction before MBTA protections were put in place in 1918. The MTBA also provides protections for native bird species, including non-migratory birds.

### **Fish and Wildlife Conservation Act**

Under the Fish and Wildlife Conservation Act of 1980, as amended, the USFWS maintains lists of migratory and non-migratory birds that, without additional conservation action, are likely to become candidates for listing under the FESA. These species are known as Birds of Conservation Concern and represent the highest conservation priorities.

### **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.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), also known as the Sustainable Fisheries Act, requires the identification of Essential Fish Habitat (EFH) for federally managed fishery species and implementation of appropriate measures to conserve and enhance EFH that could be affected by project implementation. All federal agencies must consult with NMFS on projects authorized, funded, or undertaken by that agency that may adversely affect EFH for species managed under the MSFCMA.

## **STATE**

### **California Endangered Species Act**

Under the California Endangered Species Act (CESA), CDFW is responsible for listing and delisting threatened and endangered species, including candidate species for threatened or endangered status. CDFW maintains a list of these species and related occurrence records. In addition, CDFW maintains a list of fully protected species, most of which are also listed as threatened or endangered. CDFW also maintains a list of species of special concern (SSC). SSC are vulnerable to extinction but are not legally protected under CESA; however, impacts to SSC are generally considered significant under CEQA.

CESA prohibits the take of State-listed threatened and endangered species, but CDFW has the authority to issue incidental take permits under special conditions when it is demonstrated that impacts are minimized and mitigated. Fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take. One exception allows the collection of fully protected species for scientific research.

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

California Fish and Game Code §1600 *et seq.*, requires that a project proponent enter into a Streambed Alteration Agreement (SAA) with 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 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 Fish and Game Code §1900-1913 (Native Plant Protection Act)

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance native plants that are listed as rare and endangered under the CESA. The NPPA states that no person shall 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 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 as well as implementation of oak woodland mitigation measures, if necessary.

## LOCAL

### City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
<b>Goals</b>	OC-1	Conserve lands that support important fisheries, wildlife and botanical habitat, and wetlands.
	OC-2	Protect riparian habitat along streams in the Planning Area.
	OC-3	Conserve wetland areas
<b>Policies</b>	OC-1.1	Limit development on lands that provide important fisheries, wildlife and botanical habitat, and wetlands to agriculture and rural density residential.
	OC-2.1	Require erosion control protection as a part of grading and development plans.
	OC-3.1	Work to satisfy state and national wetlands policy.
<b>IM</b>	OC-1.3(b)	Consider the Theiss 1990 wetland report and the documented identification of the California Department of Fish and Game's deer wintering and fawning grounds as initial steps in identifying important fishery, wildlife and botanical, and wetland habitats in the planning area. Recognize and reference new, credible information as it becomes available.

### Siskiyou County General Plan, Conservation Element

The Conservation Element includes the following general objectives related to biological resources:

- Conserve and protect the land resources of Siskiyou County.
- Conserve and maintain habitat for wildlife species and plant life.
- Preserve and protect the prime and productive agricultural lands and the agricultural economy of Siskiyou County.
- Preserve and maintain streams, lakes and forest open space as a means of providing natural habitat for species of wildlife.

## DISCUSSION OF IMPACTS

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### Question A

The following evaluation of potential impacts on special-status species is based on a review of California Natural Diversity Data Base (CNDDDB) and USFWS records, as well as botanical and wildlife surveys completed by ENPLAN. Evaluation of potential effects on federally listed, proposed, and candidate species entailed review of plant and animal species under jurisdiction of the USFWS and anadromous fish species under the jurisdiction of NMFS. A USFWS Official Species List for the proposed Project was generated for species of concern to the USFWS. According to NMFS, there are no anadromous fish in the Project area because Shasta and Keswick Dams block upstream passage to spawning areas in the McCloud, Pit, and upper Sacramento River. Included as **Appendix B** is a Biological Study Report (BSR) for the proposed Project that was prepared by ENPLAN in January 2019. 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.
- U.S. Fish and Wildlife Service List of Threatened and Endangered Species.
- List of Vascular Plant Species Observed: June 14, 2017; July 12, July 21, and August 16, 2018.
- List of Wildlife Species Observed: June 14, 2017; July 12, July 21, and August 16, 2018.

To determine the presence/absence of special-status plant and animal species, an ENPLAN biologist conducted botanical and wildlife surveys on June 14, 2017; July 12, July 21, August 16, and October 25, 2018. The special-status plant species potentially occurring in the study area would have been evident at the time the fieldwork was conducted. Most of the special-status wildlife species 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 (CNDDDB) records for special-status plants and animals; California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants; USFWS records for federally listed, proposed, and 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. Neither the USFWS nor CNDDDB identified any critical habitats within the Project site. 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 four federally listed plant species, Gentner's fritillary, Hoover's spurge, slender Orcutt grass, and whitebark pine, as potentially being affected by the proposed Project. The Project area does not contain designated critical habitat for federally listed plant species. Review of CNDDDB records showed that the following special-status plant species have been broadly mapped in the Project area: broad-nerved hump moss, marsh skullcap, northern adder's-tongue, Siskiyou clover, woodnymph, and woolly balsamroot. In addition, one non-status plant, three-ranked hump moss, has been broadly mapped in the Project area.

The following additional special-status plant species have been reported within a five-mile radius of the Project area: Aleppo avens, Cascade grass-of-Parnassus, Gasquet rose, Jepson's dodder, Klamath fawn lily, little-leaved huckleberry, Oregon fireweed, pallid bird's-beak, rattlesnake fern, seaside bittercress, Shasta chaenactis, subalpine aster, thread-leaved beardtongue, and Waldo daisy. In addition, the following non-status plants have been reported within a five-mile radius of the Project site: Baker's globe mallow and Pacific fuzzwort. The CNPS Inventory identified two additional special-status plants: crested potentilla and Mt. Eddy draba; and five additional non-status plants within the study area: California lady's-slipper, California pitcherplant, clustered lady's-slipper, marsh claytonia, and rough harebell.

The potential for each special-status plant species to occur on the Project site is evaluated in Table 3 of the BSR. As documented in Table 3 and further discussed below, one special-status plant species, Aleppo avens was identified during the botanical surveys. No other special-status plants species were identified during the surveys, nor are any expected to be present.

#### ***Aleppo Avens (Geum aleppicum)***

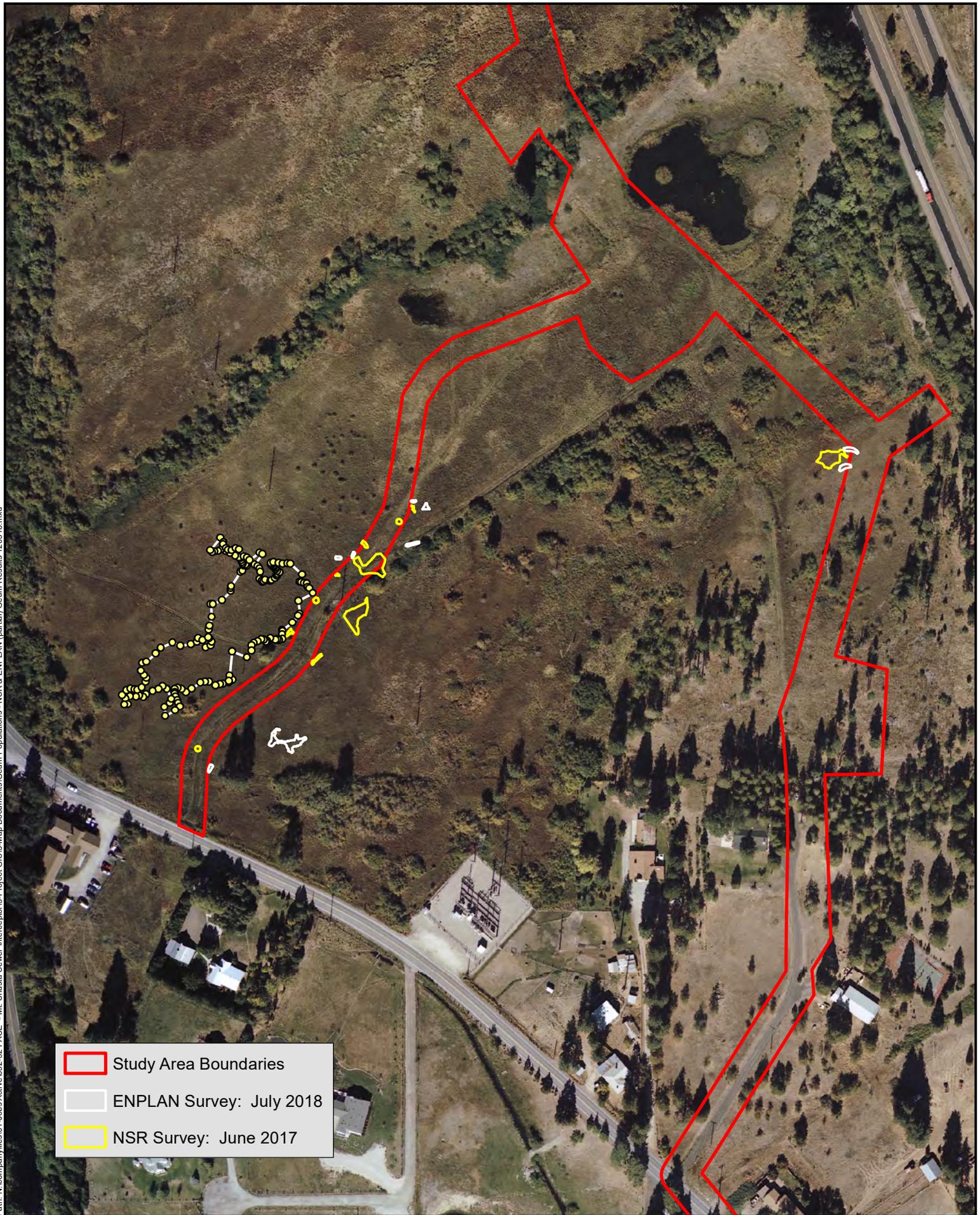
Aleppo avens is a perennial herb found in meadows and seeps, Great Basin scrub, and lower montane coniferous forest. The species is reported between 1,400 and 5,000 feet in elevation. The flowering period is June through August. The species was previously identified in the Project site during a botanical survey conducted by North State Resources, Inc. (NSR) on July 1, 2014. A species-specific survey for Aleppo avens was conducted by an ENPLAN botanist on July 21, 2018. The species was mapped in the proposed access route off S. Old Stage Road, and in the central portion of the study area within wet meadow and fresh emergent wetland vegetation communities in the Morgan-Merrill Preserve. **Figure 4.4-1** depicts the location of Aleppo avens based on ENPLAN's 2018 survey, and NSR's 2014 botanical survey.

As shown in **Figure 4.4-1**, the majority of the Aleppo avens population is located north of the access road corridor (the full extent of the offsite population was not determined due to time constraints). However, two small occurrences of Aleppo avens are present in the proposed pipeline corridor and about a dozen other small occurrences are in or adjacent to the access corridor leading from S. Old Stage Road to the south side of Cold Creek. Direct effects on Aleppo avens could result from trenching and associated construction activities, from vehicle/equipment travel on the access route, and through inadvertent entry into the plant occurrences.

Although the plant is present in the access road, no grading or earth disturbance would occur to establish the access road. As required by standard conditions of the Department of the Army Nationwide Permits and **Mitigation Measure 4.4.1**, the contractor is required to use temporary wood slabs, swamp mats, HDPE mats, geotextile fabric with a layer of gravel, or other acceptable pre-fabricated mats when vehicles and heavy equipment are driving through or working in wetlands. Because all occurrences of Aleppo avens are within wetlands, use of mats or other soil protectors will minimize direct effects to Aleppo avens. Further protection will be provided through **Mitigation Measure 4.4.2**, which requires exclusionary fencing to be placed around Aleppo avens populations that are designated for avoidance.

#### **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: northern spotted owl, yellow-billed cuckoo, gray wolf, 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, and review of the USFWS critical habitat map confirmed this finding.



All depictions are approximate. Not a survey product. 12.03.18



Figure 4.4-1  
**Aleppo Avens Populations**

Review of CNDDDB records showed that the following special-status wildlife species have been broadly mapped to encompass a portion of the Project site: Cascades frog, fisher – West Coast DPS, spotted bat, and western yellow-billed cuckoo. The following non-status species have been mapped in the Project site: obscure bumble bee, Suckley's cuckoo bumble bee, and western bumble bee.

In addition, the following special-status wildlife species have been reported within a five-mile radius of the Project area: American peregrine falcon, bald eagle, bank swallow, black swift, foothill yellow-legged frog, Northern goshawk, Sierra Nevada red fox, western mastiff bat, and yellow rail. The following non-status animals have been mapped within a five-mile radius of the Project site: Franklin's bumble bee, great blue heron, long-eared myotis, Natural Bridge megomphix, North American porcupine, osprey, Pacific marten, and silver-haired bat.

The potential for each special-status animal species to occur on the Project site 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, as further discussed below, the Project site provides potentially suitable habitat for foothill yellow-legged frogs, greater sandhill cranes, and yellow rails. In addition, willow flycatchers are known to occur in the region and could potentially nest in the project site.

#### ***Foothill Yellow-Legged Frog (*Rana boylei*)***

Foothill yellow-legged frogs, a State species of special concern, 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. According to CNDDDB records, a foothill yellow-legged frog was observed in Big Spring Creek in September 2001, ±0.4 miles west of the Project site. Although no foothill yellow-legged frogs were observed during the wildlife survey, the species has a low potential to utilize the onsite reach of Cold Creek.

Because no in-water work would occur in Cold Creek, the proposed Project would have no direct impacts on foothill yellow-legged frogs. Indirect effects could potentially occur if sediments or other pollutants enter surface waters and degrade habitat in the Project vicinity and/or downstream. As discussed in Section 1.6 (Regulatory Requirements), the City is required to develop a SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. With implementation of BMPs, the potential for indirect effects to foothill yellow-legged frog is less than significant.

#### ***Yellow Rail (*Coturnicops noveboracensis*)***

Yellow rail, a State species of special concern, inhabits dense, grassy marshes, wet meadows, fens, and seeps. Yellow rails are highly elusive and are rarely seen. They are most commonly identified by the male's call during the breeding season, a unique metallic 5-note call easily imitated by tapping two stones together. Their nest is a shallow cup of sedges and grasses in a shallow part of a marsh, on damp soil or over water less than six inches deep. The length of the breeding season is poorly known in California, but it is thought to extend from May through early September. According to CNDDDB records, yellow rails were detected approximately two miles northwest of the Project site during the breeding season in 2002 through 2005. Yellow rail has a moderate potential to nest in the Morgan-Merrill Preserve.

#### ***Greater Sandhill Crane (*Grus canadensis tabida*)***

Greater sandhill cranes, a State threatened species, breed in extensive wetlands or shallow lacustrine settings, and forage nearby in agricultural fields, rice paddies, pastures, or grassland environments. Nests are constructed on hummocks in shallow wetland areas. Although the nearest CNDDDB reported occurrence is approximately 15 miles north of the study area, the

species is regularly observed in the Mt. Shasta area during the summer months, and unconfirmed nesting has been noted in wetland areas associated with Wagon Creek, approximately 4.5 miles northwest of the study area. The species has a low potential to nest in wetlands habitats in the Morgan-Merrill Preserve.

***Willow Flycatcher (Empidonax traillii)***

According to the Mount Shasta Area Audubon Society, willow flycatcher, a State endangered species, is uncommon in Siskiyou County and normally occurs only as a migrant in passage between summering and wintering areas. CNDDDB records show that the closest reported occurrence of nesting willow flycatchers is approximately ten miles southeast of the Project area (last observed in 2004); however, the species is known to occur in the general Project area in habitat that is similar to the freshwater emergent wetland/riparian habitat in the Morgan-Merrill Preserve. Flycatcher nests are shallow cups of grasses and plant fibers placed in low shrubs and bushes, about 2 to 5 feet above the ground. Willow flycatchers have a moderate potential to nest within the Morgan-Merrill Preserve.

Yellow rails, greater sandhill cranes, and willow flycatchers could be directly or indirectly affected by construction activities if vegetation clearing and other ground-disturbing activities occur during the nesting season. Direct effects could include mortality resulting from removal of vegetation containing an active nest with eggs or chicks, or construction equipment operating in an area containing an active nest. 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.

As required by **Mitigation Measure MM 4.4.3**, if construction occurs during the nesting season, pre-construction surveys shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area. If absence is determined, construction may commence. If active nests are found, the City shall consult with the USFWS and CDFW regarding appropriate action to comply with the CESA, 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.

The pre-construction nesting 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.

Further protection will be provided through **Mitigation Measure MM 4.4.4**, which requires that all construction personnel receive training from a qualified biologist regarding identification of special-status species that have a potential to be present in the Project site and procedures to be implemented in the event that these species are encountered during construction activities.

**Mitigation Measure MM 4.4.5** summarizes the role of the biological monitor in ensuring implementation of the biological protections prescribed in the mitigation measures and resource-agency permits for the project.

Therefore, because the mitigation measures described above are included to minimize/avoid effects to special-status plants and animals and their habitats, and BMPs would be implemented throughout construction to control erosion and sedimentation, impacts would be less than significant.

**Questions B and C**

According to CDFW, since the inception of the Natural Heritage Program in 1979, natural communities have been considered for their conservation significance (CDFW, 2017). Unique natural communities were recorded in the CNDDDB until the mid-1990s; at that time, funding for the natural community portion of the program was eliminated. Although natural communities are no longer being

added to the CNDDDB, many of the natural community occurrences maintained in the CNDDDB still have significance for conservation, and their existence should be considered in the environmental review process.

Review of CNDDDB natural community records shows that a fen has been mapped northwest of the project site, north of Hatchery Lane; however, no fens are present in the study site. CNDDDB records do not identify any other sensitive natural communities within a five-mile radius of the project site. Other records reviewed for sensitive natural communities included those maintained by the USFWS and NMFS. The USFWS does not identify any designated critical habitats for federally listed species within the study area. NMFS does not identify Essential Fish Habitat in the study area.

ENPLAN conducted field investigations on April 20, June 28, and July 10, 2017, and August 16, 2018, to identify potential USACE jurisdictional wetlands and other waters of the U.S. and State. To identify these waters, ENPLAN followed the methodology prescribed in the USACE 1987 *Wetland Delineation Manual*; the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, May 2010; and the *2008 Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*. As a result of the field delineation effort, approximately 2.338 acres of waters subject to USACE and State jurisdiction were delineated on the site as shown in **Figure 4.4-2a** (northern project area) and **Figure 4.4-2b** (southern project area).

As described below, and shown in **Figure 4.4-3**, the principal natural communities in the study area are stream/riverine, mixed-conifer forest, wet meadow, freshwater emergent wetland, montane riparian scrub, perennial grassland, pasture, and urban. Three of these communities, stream/riverine, wet meadow, and freshwater emergent wetland, qualify as wetlands or “other Waters of the United States” and are considered as sensitive natural communities. In addition, certain occurrences of montane riparian scrub may qualify as “Waters of the State.”

### **Principal Natural Communities**

#### ***Stream/Riverine***

Two irrigation ditches and three small streams pass through the project study area; these features total approximately 0.08 acres. The streams are small spring-fed perennial features that flow through the project corridor in a southwesterly direction.

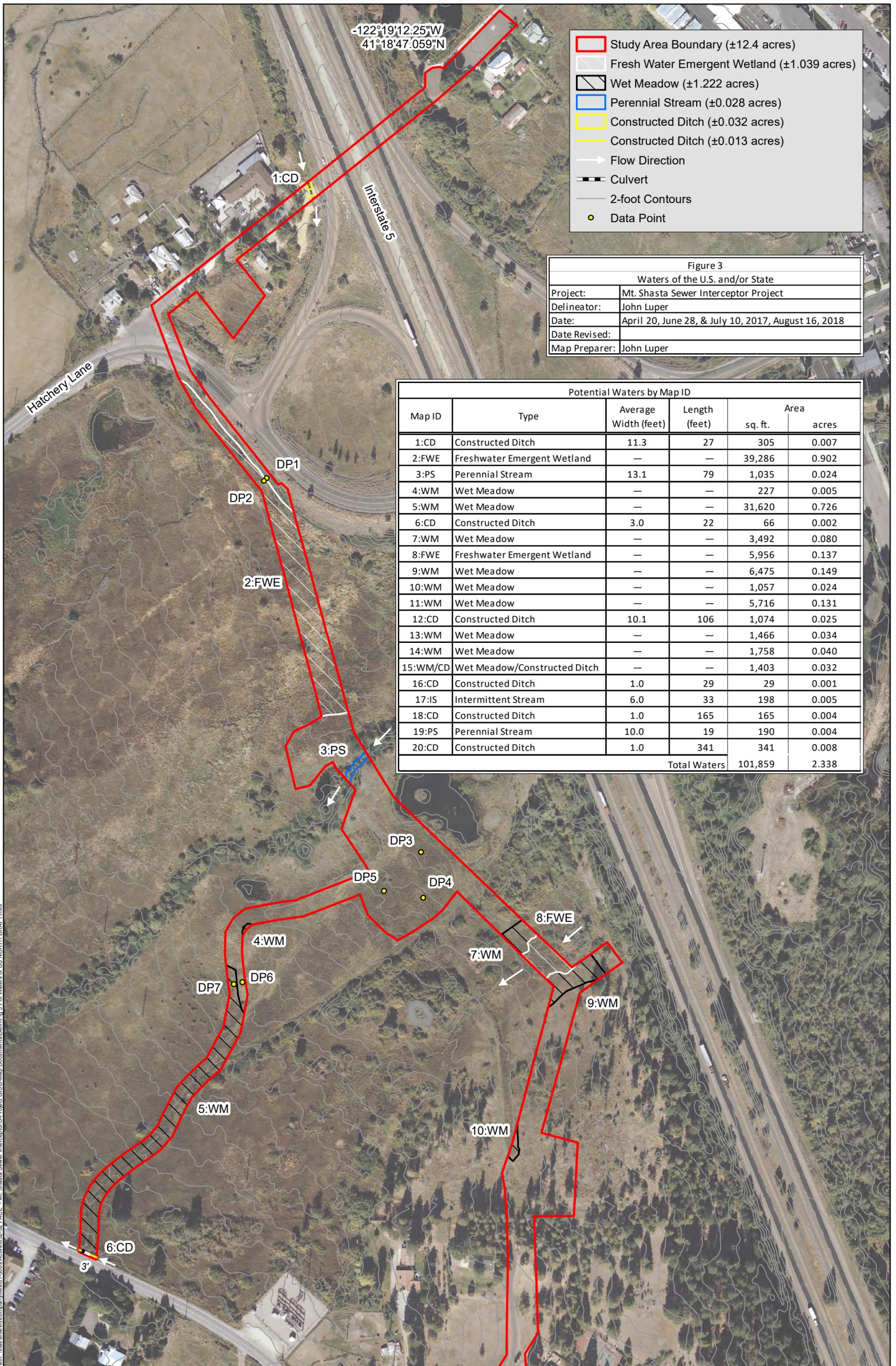
The two smaller streams are in the southern portion of the study corridor and are culverted under existing road crossings; the new interceptor will cross under or over the culverts, with no disturbance to the streams. The largest of three streams is Cold Creek (**Photo B-1**).

Cold Creek originates as springs in the City of Mt. Shasta; from the planned interceptor crossing location, the stream flows approximately 1.6 miles to Lake Siskiyou. The stream is well shaded, has cool water, has a gravelly or cobbly bottom, and may support invertebrates, amphibians, and reptiles.



**Photo B-1.** Cold Creek just downstream of the aerial crossing location.

Although no fish were observed during the field surveys, it is possible that resident trout are present, particularly downstream of S. Old Stage Road.



-122°19'12.25"W  
41°18'47.059"N

- Study Area Boundary (±12.4 acres)
- Fresh Water Emergent Wetland (±1.039 acres)
- Wet Meadow (±1.222 acres)
- Perennial Stream (±0.028 acres)
- Constructed Ditch (±0.032 acres)
- Constructed Ditch (±0.013 acres)
- Flow Direction
- Culvert
- 2-foot Contours
- Data Point

Figure 3	
Waters of the U.S. and/or State	
Project:	Mt. Shasta Sewer Interceptor Project
Delineator:	John Luper
Date:	April 20, June 28, & July 10, 2017, August 16, 2018
Date Revised:	
Map Preparer:	John Luper

Potential Waters by Map ID					
Map ID	Type	Average Width (feet)	Length (feet)	sq. ft.	Area acres
1:CD	Constructed Ditch	11.3	27	305	0.007
2:FWE	Freshwater Emergent Wetland	—	—	39,286	0.902
3:PS	Perennial Stream	13.1	79	1,035	0.024
4:WM	Wet Meadow	—	—	227	0.005
5:WM	Wet Meadow	—	—	31,620	0.726
6:CD	Constructed Ditch	3.0	22	66	0.002
7:WM	Wet Meadow	—	—	3,492	0.080
8:FWE	Freshwater Emergent Wetland	—	—	5,956	0.137
9:WM	Wet Meadow	—	—	6,475	0.149
10:WM	Wet Meadow	—	—	1,057	0.024
11:WM	Wet Meadow	—	—	5,716	0.131
12:CD	Constructed Ditch	10.1	106	1,074	0.025
13:WM	Wet Meadow	—	—	1,466	0.034
14:WM	Wet Meadow	—	—	1,758	0.040
15:WM/CD	Wet Meadow/Constructed Ditch	—	—	1,403	0.032
16:CD	Constructed Ditch	1.0	29	29	0.001
17:IS	Intermittent Stream	6.0	33	198	0.005
18:CD	Constructed Ditch	1.0	165	165	0.004
19:PS	Perennial Stream	10.0	19	190	0.004
20:CD	Constructed Ditch	1.0	341	341	0.008
Total Waters				101,859	2.338

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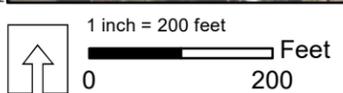


Figure 4.4.2a

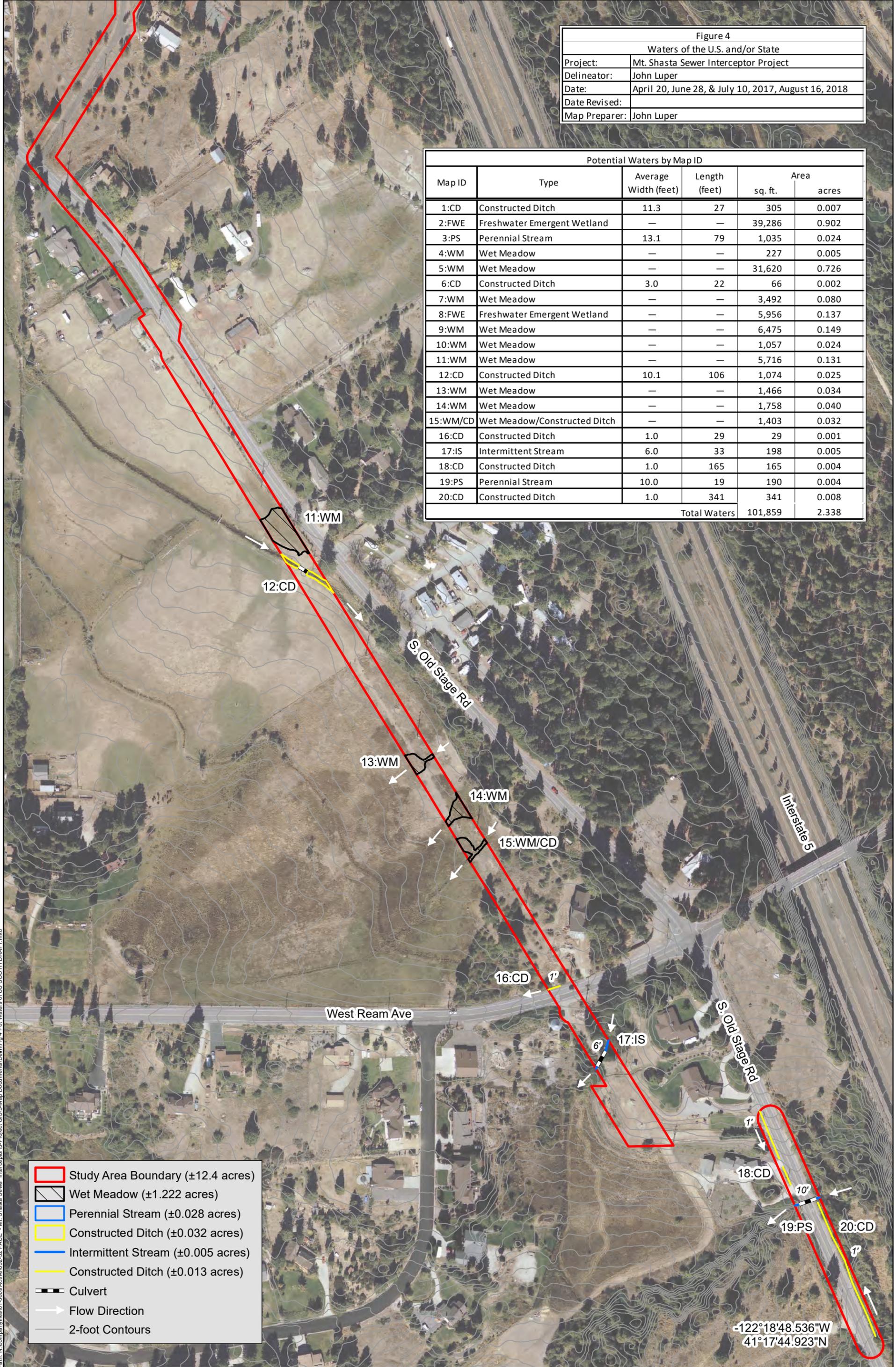
NAVD 1988 All depictions are approximate. Not a survey product. 09.12.18  
Boundaries are preliminary until verified by the USACE.

**Potential Wetlands and Other Waters of the U.S. and/or State**



Figure 4	
Waters of the U.S. and/or State	
Project:	Mt. Shasta Sewer Interceptor Project
Delineator:	John Luper
Date:	April 20, June 28, & July 10, 2017, August 16, 2018
Date Revised:	
Map Preparer:	John Luper

Potential Waters by Map ID					
Map ID	Type	Average Width (feet)	Length (feet)	Area sq. ft.	Area acres
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2:FWE	Freshwater Emergent Wetland	—	—	39,286	0.902
3:PS	Perennial Stream	13.1	79	1,035	0.024
4:WM	Wet Meadow	—	—	227	0.005
5:WM	Wet Meadow	—	— </td <td>31,620</td> <td>0.726</td>	31,620	0.726
6:CD	Constructed Ditch	3.0	22	66	0.002
7:WM	Wet Meadow	—	—	3,492	0.080
8:FWE	Freshwater Emergent Wetland	—	—	5,956	0.137
9:WM	Wet Meadow	—	—	6,475	0.149
10:WM	Wet Meadow	—	—	1,057	0.024
11:WM	Wet Meadow	—	—	5,716	0.131
12:CD	Constructed Ditch	10.1	106	1,074	0.025
13:WM	Wet Meadow	—	—	1,466	0.034
14:WM	Wet Meadow	—	—	1,758	0.040
15:WM/CD	Wet Meadow/Constructed Ditch	—	—	1,403	0.032
16:CD	Constructed Ditch	1.0	29	29	0.001
17:IS	Intermittent Stream	6.0	33	198	0.005
18:CD	Constructed Ditch	1.0	165	165	0.004
19:PS	Perennial Stream	10.0	19	190	0.004
20:CD	Constructed Ditch	1.0	341	341	0.008
Total Waters				101,859	2.338



- Study Area Boundary (±12.4 acres)
- Wet Meadow (±1.222 acres)
- Perennial Stream (±0.028 acres)
- Constructed Ditch (±0.032 acres)
- Intermittent Stream (±0.005 acres)
- Constructed Ditch (±0.013 acres)
- Culvert
- Flow Direction
- 2-foot Contours

-122°18'48.536"W  
41°17'44.923"N

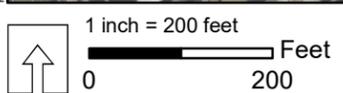


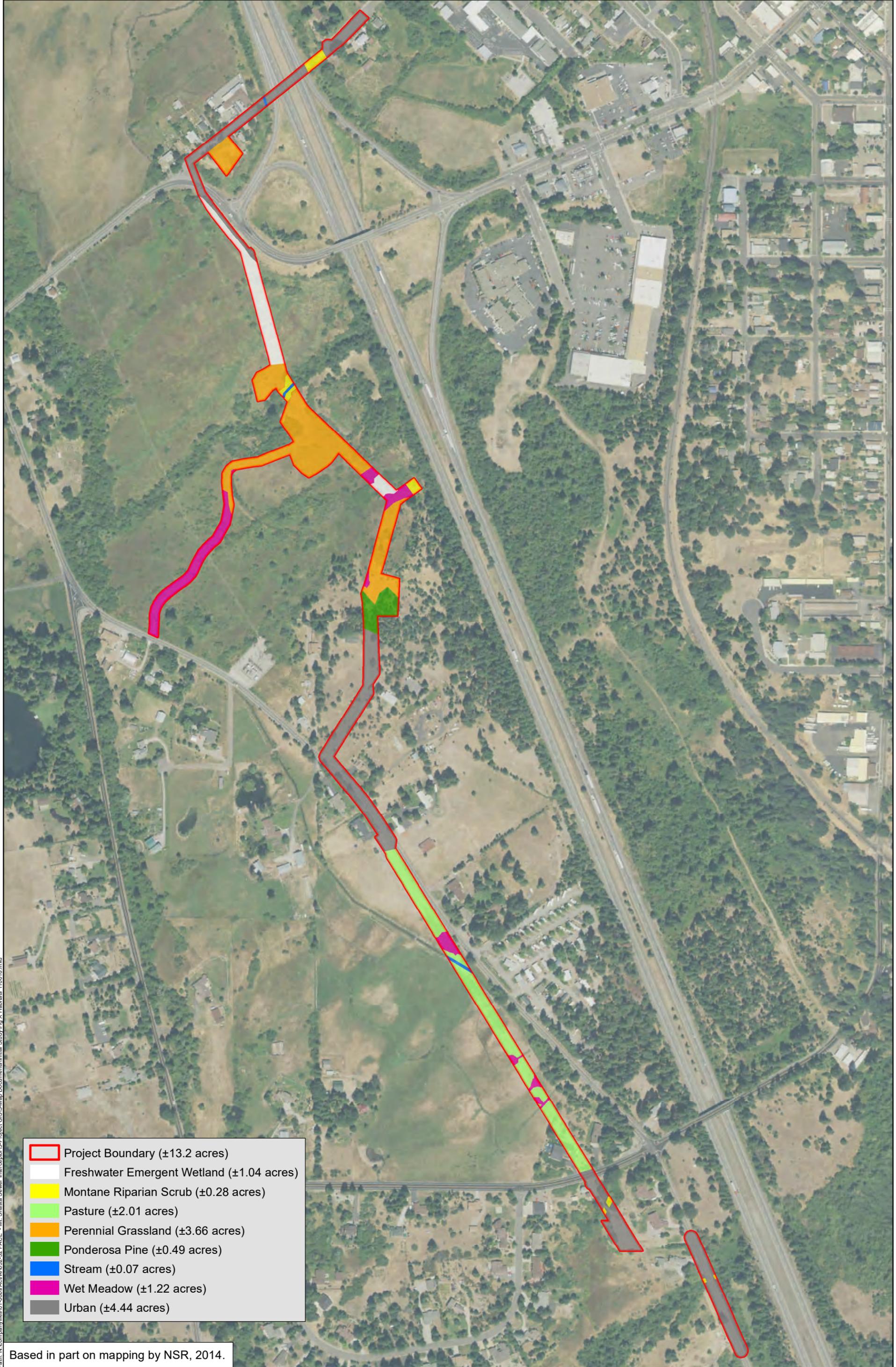
Figure 4.4.2b  
**Potential Wetlands and Other Waters of the U.S. and/or State**

NAVD 1988 All depictions are approximate. Not a survey product. 09.14.18  
Boundaries are preliminary until verified by the USACE.



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- Project Boundary (±13.2 acres)
- Freshwater Emergent Wetland (±1.04 acres)
- Montane Riparian Scrub (±0.28 acres)
- Pasture (±2.01 acres)
- Perennial Grassland (±3.66 acres)
- Ponderosa Pine (±0.49 acres)
- Stream (±0.07 acres)
- Wet Meadow (±1.22 acres)
- Urban (±4.44 acres)

Based in part on mapping by NSR, 2014.



Figure 4.4-3  
**Habitat Types**

All depictions are approximate. Not a survey product. 11.06.18

### ***Mixed-Conifer Forest***

The mixed-conifer forest community is located in the southern area of the Morgan-Merrill Preserve and on the PacifiCorp parcel south of the Preserve. As shown in **Photo B-2**, the ±0.49-acre mixed-conifer forest consists of mature trees with few understory shrubs and a moderately developed herbaceous layer.

Representative species include ponderosa pine, incense-cedar, green-leaved manzanita, downy brome, big squirreltail, and medusa-head. The community has been fragmented by urban development.



**Photo B-2.** *Mixed-conifer forest; southern area of Morgan-Merrill Preserve.*



**Photo B-3.** *Wet meadow in southern area of the pasture.*

### ***Wet Meadow***

The wet-meadow community occurs in the temporary access route off S. Old Stage Road, in the southeastern portion of the Morgan-Merrill Preserve, and within the pasture west of S. Old Stage Road (**Photo B-3**). The wet-meadow occurrences total approximately 1.22 acres. Wet-meadow vegetation is represented by wild teasel, Kentucky bluegrass, tall fescue, Baltic rush, blue-pod lupine, birdsfoot trefoil and other species. This community is quite variable in structure and species composition. Photo B-3 shows a low-growing wet meadow that is subject to cattle grazing. The ungrazed wet meadow in the Cold Creek access road corridor supports a lush growth of grasses and perennial herbs that is about three feet in height.

### ***Freshwater Emergent Wetland***

The freshwater emergent wetland occurs as a large expanse between Cold Creek and Hatchery Lane in the Morgan-Merrill Preserve (**Photo B-4**), and in the southeastern area of the Preserve property. The two occurrences total ±1.04 acres. The northernmost freshwater emergent wetland is saturated to shallowly ponded in the spring and dries out during the summer. This occurrence supports various sedges, poison hemlock, wild teasel, velvet grass, pockets of cattail, and a wide array of other wetland plants. South of Cold Creek, the freshwater emergent wetland is substantially wetter, typically being ponded year-round. The existing interceptor passes through the wettest areas, which are dominated by a dense stand of cattails; the proposed project would route the interceptor upslope (west) of the wettest portion of this community, where the vegetation is more similar to that north of Cold Creek.



**Photo B-4.** *Freshwater emergent wetlands in Morgan-Merrill Preserve.*



**Photo B-5.** *Montane riparian scrub habitat.*

### **Montane Riparian Scrub**

The montane riparian scrub community occurs along streams and ditches throughout the study corridor. Most of the occurrences are within the Morgan-Merrill Preserve, including the Cold Creek corridor in the vicinity of the planned interceptor crossing (**Photo B-5**). The montane riparian scrub community covers approximately 0.28 acres, and is characterized by dense linear stands of shrubs and vines up to roughly 20 feet in height. Common species include mountain alder, yellow willow, red willow, arroyo willow, Klamath hawthorn, Himalayan blackberry, and other woody plant species.

### **Perennial Grassland**

The perennial grassland community occurs in the staging area south of W. Jessie Street (**Photo B-6**), the staging area on the Morgan-Merrill Preserve south of Cold Creek, and the southern area of the Preserve north of the mixed-conifer forest community; the occurrences total about 3.66 acres. The community occurs on dry, upland soils, where it forms open to moderately dense stands up to about three feet in height. The community is characterized by perennial grasses and forbs including cereal rye, blue wild rye, meadow fescue, Kentucky bluegrass, Fuller’s teasel, and Canada thistle. A few scattered trees and shrubs occur within the perennial grassland community including Klamath hawthorn, willow, rose, and Himalayan blackberry.



**Photo B-6.** *Mowed and unmowed perennial grassland at the W. Jesse Street staging area, with montane riparian scrub in the right mid-ground.*



**Photo B-7.** *Pasture west of S. Old Stage Road.*

### **Pasture**

Approximately 2.01 acres of grazed and irrigated pasture habitat are present on the west side of S. Old Stage Road (**Photo B-7**). The pasture community is dominated by perennial grass species, including bulbous bluegrass, Kentucky bluegrass, orchard grass, cereal rye, fescue, timothy, creeping bentgrass, barley, and the “grass-like” Baltic rush. Common forbs include clovers, spring draba, plantain, yarrow, buttercup, common dandelion, thistle, and common mullein.

### **Urban**

The urban community includes approximately 4.43 acres of road rights-of-way and developed residential properties in the study area (**Photo B-8**). Much of the urban community in the study area consists of paved roads. Urban vegetation is primarily located along the road margins and on residential parcels. Roadside vegetation includes English plantain, dandelion, bachelor buttons, red-stemmed filaree, puncture vine, and annual ragweed. The residential parcels support a wide variety of plants, including native species, introduced weeds, and horticultural species.



**Photo B-8.** Urban habitat along W. Jessie Street, east of I-5.

### **Potential Impacts**

As detailed in the BSR (Appendix B), the proposed Project has the potential to impact natural communities as described below:

#### ***Loss of Conifers***

Mixed-conifer forest is present in both the pipeline corridor and one of the planned staging areas. In the staging area and part of the pipeline corridor, the forest is very open, consisting of scattered individual trees. No trees will be removed from the staging area. Conifers are relatively dense in a portion of the pipeline corridor and tree removal cannot be avoided in this location. The project engineer has estimated that about six conifers with a diameter of 12 inches or greater would need to be removed to accommodate the proposed improvements. However, in addition to direct loss of trees, trenching has the potential to damage roots of adjoining trees, which could lead to eventual loss of those trees, and staging activities could compact soils under the trees, leading to impaired drainage and root damage.

Potential indirect impacts can be avoided through implementation of **Mitigation Measure MM 4.4.6**, which requires the placement of exclusionary fencing around trees planned for retention; the fencing would be placed six feet outside the driplines of the trees to create a “root protection zone;” to the extent feasible, no construction activities or storage of materials would occur within this zone. If the sewer interceptor must be installed using open trenching within the root protection zone, the work shall be completed under the direction of a certified arborist to ensure that the trees are not substantially damaged. With implementation of this measure, the potential direct and indirect loss of conifers is less than significant.

#### ***Temporary and Permanent Impacts to Wetlands***

The proposed project would temporarily impact  $\pm 1.22$  acres of wet meadow and  $\pm 1.04$  acres of freshwater emergent wetland, and would result in the permanent loss of 0.08 acres of freshwater emergent wetland for construction of a permanent access road.

The project is subject to conditions of a Clean Water Act (CWA) Section 404 permit as required by the U.S. Army Corps of Engineers (USACE). It is anticipated that the proposed project qualifies for USACE Nationwide Permit (NWP) 12. NWP 12 applies to activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities, provided the activity does not result in the loss of greater than  $\frac{1}{2}$ -acre of waters of the U.S. NWP 12 also authorizes the construction of temporary and permanent access roads for the utility lines.

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. If work would affect one or more of the streams in the study corridor, a Streambed Alteration Agreement from CDFW would also be required.

Among other conditions, the USACE permit require that temporary fills be removed in their entirety and the affected areas be returned to pre-construction contours to maintain the original wetland hydrology of the site. In addition, areas affected by temporary fills must be revegetated with native plants, as appropriate; the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench; the trench cannot be constructed in a manner that would drain waters of the U.S.; and heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.

With respect to access roads, the USACE requires that they be the minimum width necessary, must minimize adverse effects on waters, and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the U.S. must be designed to maintain surface flows. For permanent wetland losses of 0.1 acres or less that require pre-construction notification, the USACE may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

In addition to compliance with conditions of permits that may be required for the project, other measures to avoid or minimize impacts to wetlands are warranted. **Mitigation Measure 4.4.1** limits vehicle access and construction activity in wetland areas to late summer, when conditions are at their driest. **Mitigation Measure 4.4.2** requires that exclusionary fencing be installed at the outer edge of the construction area where it abuts or approaches wetlands and other waters of the U.S. and State. The fencing shall be installed under the direction of a qualified biologist and shall be maintained throughout the construction period.

To promote regeneration of shrubs from their root systems, **Mitigation Measure 4.4.7** requires that, in areas planned for temporary disturbance, vegetation should be crushed or pruned at ground level rather than mechanically removing the plant and root system. **Mitigation Measure 4.4.8** requires preparation of a revegetation plan that addresses temporary and permanent impacts to sensitive vegetation communities.

Because the City would comply with conditions of resource-agency permits, and implement **Mitigation Measures MM 4.4.1, MM 4.4.2, MM 4.4.4, MM 4.4.5, MM 4.4.7, and MM 4.4.8**, impacts to wetlands would be less than significant.

#### ***Temporary Impacts to Montane Riparian Scrub Habitat***

Project implementation would result in the temporary disturbance of  $\pm 0.28$  acres of montane riparian scrub habitat. Although these habitats do not qualify as “wetlands or other waters of the U.S.,” certain occurrences may be within “waters of the State,” in which case project impacts would be addressed in a Streambed Alteration Agreement to be issued by CDFW.

In addition to complying with conditions that may be imposed through a Streambed Alteration Agreement, **Mitigation Measure MM 4.4.2** requires exclusionary fencing to be placed around montane riparian scrub habitat that is designated for preservation. Compliance with conditions of resource-agency permits and implementation of **Mitigation Measures MM 4.4.2 and MM 4.4.7** ensures that impacts on montane riparian scrub habitats would be less than significant.

#### ***Temporary Disturbance of Upland Habitats***

Project implementation would result in the temporary disturbance of  $\pm 2.01$  acres of pasture,  $\pm 3.66$  acres of perennial grassland, and  $\pm 4.43$  acres of urban habitat. None of these communities is

considered sensitive. Although mitigation is not required to offset community impacts, temporarily disturbed areas would be revegetated upon completion of construction to minimize the potential for erosion.

### ***Indirect Impacts to Downstream Aquatic Habitats***

Construction activities would result in the exposure of on-site soils to erosive actions. If the eroded soils are washed into downstream waters, they could directly and indirectly affect aquatic species and habitats. As discussed in Section 1.6 (Regulatory Requirements), the City is required to develop a 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 surface waters and sensitive habitats; and revegetating temporarily disturbed sites upon completion of construction. Given the existing requirement for erosion control BMPs during project construction, no further mitigation is needed to protect downstream aquatic habitats.

### ***Temporary and Permanent Loss of Wildlife Habitat***

Plant communities in the study area support a wide variety of wildlife species. Project implementation would result in temporary impacts to wildlife throughout the construction period due to increased human activity, increased noise levels, and temporary loss of vegetation that may provide food and shelter for wildlife. Long-term impacts include further fragmentation of the mixed-conifer forest habitat and the permanent loss of 0.08 acres of wetlands due to access road construction.

The temporary impacts are not considered significant due to their limited duration. Wetlands that would be permanently lost due to access road construction are immediately adjacent to the I-5/Hatchery Lane interchange. This location minimizes wildlife impacts because it does not create further habitat fragmentation or loss of wildlife corridors, and lands adjacent to roads have reduced wildlife values due to existing effects of noise, night lights, and human activity. The proposed access road will have very limited use and will only minimally extend the intrusion of such impacts into wildlife habitats.

Although some trees will be removed near the PacifiCorp substation, this habitat is already severely fragmented and is subject to on-going human activity. Given the location and scale of the proposed project as well as the mitigation measures noted above, impacts on wildlife habitat are not considered significant.

### ***Introduction and Spread of Noxious Weeds***

The introduction and spread of noxious weeds during construction activities has the potential to impact natural habitats. Each noxious weed identified by the California Department of Agriculture receives a rating which 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.

As stated in the BSR, several high-priority noxious weeds were observed during the botanical survey. These weeds could be transported off-site, or other noxious weeds could be introduced into the Project area if construction vehicles are not properly washed before and after being used on-site.

Soil import/export and use of certain erosion-control materials such as straw can also result in the spread of noxious weeds. As required by **Mitigation Measure 4.4.9**, 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

construction vehicles and equipment at a commercial wash facility before entering the job site. Implementation of **Mitigation Measure MM 4.4.9** reduces potential impacts related to the introduction and spread of noxious weeds to a less than significant level.

Compliance with the conditions of resource-agency permits, use of BMPs for spill prevention and erosion control, and implementation of **Mitigation Measures MM 4.4.1 and MM 4.4.2 through 4.4.9** would reduce potential impacts of the proposed Project on natural communities to a less-than-significant level.

#### 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.

According to the City's Open Space/Conservation Element of the General Plan, the southernmost extent of the Planning Area near the Sacramento River is recognized as a critical winter range for black-tail deer. This area is on the west side of Interstate 5, approximately one mile south of the Project site. The closest fawning grounds to the Project site are approximately one mile east of the Project site and would not be impacted.

The Open Space/Conservation Element also states that streams and other surface water resources in the planning area that support resident fisheries include the Sacramento River, Lake Siskiyou, Wagon Creek, Big Springs Creek, and their tributaries. The State Fish Hatchery, located approximately 0.3 miles southwest of the northern extent of the interceptor improvements, raises rainbow, brown, brook and Eagle Lake trout. Occasionally, these fish escape from the hatchery and are found in nearby Big Springs Creek.

Indirect effects of construction, such as erosion/sedimentation and pollutant-loaded stormwater runoff in the watershed that enter surface waters, can be harmful to water quality and fish habitat. However, as discussed in Section 1.6 (Regulatory Requirements), the City is required to develop a SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. BMPs include, but are not limited to, limiting construction to the dry season; use of straw wattles, silt fences, and/or gravel berms to prevent sediment from discharging off-site; and revegetating temporarily disturbed sites upon completion of construction.

The Project area is located within the Pacific Flyway, and it is possible that migratory birds could nest in or adjacent to the Project area. As discussed under Question A above, the potential for adversely affecting nesting birds can be greatly minimized by removing vegetation and conducting construction activities outside of the nesting season (i.e., either before February 1 or after August 31). If this is not possible, a nesting survey would be conducted within one week prior to removal of vegetation and/or the start of construction. In the local area, most birds nest between February 1 and August 31.

As required by **Mitigation Measure MM 4.4.3**, 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 4.4.3** 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's and County's General Plans include objectives and programs related to the conservation of natural resources. **Mitigation Measures MM 4.4.1 through MM 4.4.9** are included to ensure consistency with the General Plan.

Chapter 12.10 (City Tree Ordinance) of the City's Municipal Code includes provisions for the control, management, conservation, planting, and enhancement of trees. The Tree Ordinance applies only within commercial and industrial General Plan designations. The City's Director of Public Works has the responsibility to approve plans for public utilities that have the potential to damage street trees. Because the proposed Project would not require the removal of any street trees, there would be no conflict with existing City policies or ordinances.

There are no other local policies or ordinances related to the protection of biological resources that would apply to the proposed Project. Therefore, impacts would be less than significant.

#### **Question F**

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the Federal Endangered Species Act (FESA) when a project results in the "take" of threatened or endangered wildlife. Regional HCPs address the "take" of listed species at a broader scale to avoid the need for project-by-project permitting. 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**

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As documented above and in the BSR (Appendix B), the proposed Project has the potential to adversely affect wetlands, other waters of the U.S. and State, and montane riparian scrub habitat; would result in the direct removal of conifers in the pipeline corridor and could damage adjacent trees; would disturb special-status plants known to occur in the project corridor; has the potential to adversely affect special-status birds and nesting migratory birds; and could result in the introduction and spread of noxious weeds.

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

Although mobile species may have 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.

Cumulative projects described in Section 3.4 that would occur in the road ROW in previously disturbed areas (i.e., sewage collection system and water distribution improvements) have no potential to impact biological resources. Construction of the PacifiCorp Lassen Substation project could result in possible effects to special-status plant and wildlife species, loss of riparian habitat, loss of wetlands, disturbance of nesting migratory birds (if present), and the introduction and spread of noxious weeds during construction.

However, PacifiCorp, along with other development projects in the City and County, is required to comply with federal, State, and local regulations as described under Regulatory Context above. In addition, all projects are required to implement appropriate BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat, and must implement appropriate mitigation measures to reduce project-specific impacts.

Compliance with the conditions of resource-agency permits, implementation of BMPs for spill prevention and erosion control, and implementation of **Mitigation Measures MM 4.4.1 through MM 4.4.9** avoids, reduces, or mitigates potential impacts to biological resources. These measures ensure that the proposed Project's contribution to cumulative regional impacts to biological resources would be less than significant.

## **MITIGATION**

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### **MM 4.4.1      Construction Measures to Minimize Effects to Wetlands**

Construction of the casing support structures for the aerial crossing at Cold Creek shall be initiated no earlier than July 1. All other work within the Morgan-Merrill Preserve (Siskiyou County Assessor's Parcel 036-210-060-000) (e.g., trenching and pipe laying) shall be restricted to August 1 or later to minimize impacts to wetlands. In areas where vehicles or equipment will be driving through or operating in wetlands, the wetlands shall be protected through installation of temporary wood slabs, swamp mats, HDPE mats, geotextile fabric with a layer of gravel, or similar protective materials approved by the City. The protective materials shall be removed upon completion of construction. Areas subject to ground surface protection shall be identified on the improvement plans.

### **MM 4.4.2      Install Exclusionary Fencing to Avoid Impacts to Special-Status Plants and Sensitive Habitats**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), exclusionary fencing shall be installed around the following biological resources that are designated for preservation:

- Wetlands and other waters of the U.S. and State
- Montane riparian scrub habitats
- Aleppo avens (*Geum aleppicum*) plant populations
- Trees ≥12 inches diameter, as measured 4.5 feet above ground level, that are planned for retention (see **Mitigation Measure MM 4.4.6**)

Fencing locations shall be determined by a qualified biologist in consultation with the project engineer and City staff. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the fenced areas, except as allowed under **Mitigation Measure 4.4.6**. The exclusionary fencing shall be periodically inspected by a qualified biologist throughout project construction to ensure the fencing is properly maintained. The fencing shall be removed upon project completion.

**MM 4.4.3 Avoid Effects to Special-Status Birds, Nesting Migratory Birds, and/or Raptors**

In order to avoid impacts to special-status birds protected under the California Endangered Species Act (CESA) and 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 CDFW 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 Mt. Shasta shall consult with the USFWS and CDFW regarding appropriate action to comply with the CESA, Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5. 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.

**MM 4.4.4 Conduct Worker Environmental Awareness Program**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), all construction personnel shall receive training from a qualified biologist regarding protective measures for special-status plant and animal species and sensitive habitats that could exist in the study area. If new personnel are added to the project, the City shall ensure that they receive the mandatory training before starting work. At a minimum, the training shall include the following:

- a. A review of the special-status species that could occur in the project study area, the locations where the species could occur, the laws and regulations that protect these species, and the consequences of noncompliance with those laws and regulations.
- b. Procedures to be implemented in the event that these species are encountered during construction.

- c. A review of sensitive habitats that occur in the study area and the location of the sensitive habitats.
- d. A review of applicable mitigation measures, standard construction measures, best management practices, and resource-agency permit conditions that apply to the protection of special-status species and sensitive habitats.

**MM 4.4.5 Retain Qualified Biologists to Ensure Implementation of Mitigation Measures and Permit Conditions**

The City shall retain qualified biologists, as necessary, to ensure that impacts to special-status species, migratory birds, native vegetation, wetlands, wildlife habitat, and other identified sensitive biological resources are avoided or minimized in accordance with the adopted environmental documents for the Project and pertinent permit conditions. The biologist(s) shall be responsible for the tasks noted below.

- a. Completing pre-construction surveys for special-status birds, migratory birds, and raptors.
- b. Conducting the worker environmental awareness trainings.
- c. Observing placement of exclusionary fencing around sensitive biological habitats to delineate areas where construction activities are prohibited.
- d. Reviewing resource-agency permit conditions, consulting with the City of Mt. Shasta and resource agencies to ensure an understanding of the permit conditions, and, to the extent possible, ensuring that the conditions of the permits are met. If the biologist observes violations of the conditions, the biologist shall immediately report the violations to the City. The City shall have the authority to halt construction activities until consultation with the appropriate resource agency occurs and remedial actions are identified.
- e. Conducting periodic site inspections on a weekly basis, or as otherwise deemed necessary by the project biologist, when construction activities occur in areas with sensitive biological resources to ensure that exclusionary fencing is properly maintained, wetland mats are in place, that any buffers for sensitive resources (e.g., nesting birds) are maintained, and that other mitigation measures and permit conditions are met.
- f. Preparing monitoring reports and compliance documentation as needed to document pre-construction, construction, and post-construction mitigation efforts.

**MM 4.4.6 Construction Measures to Promote Retention of Conifers.**

Temporary construction fencing shall be installed and maintained at least 6 feet outside of the dripline of all trees to be preserved. The fencing around this “root protection zone” shall be maintained throughout construction.

- a. No vehicle parking or materials stockpiling shall occur within the root protection zone.
- b. To the extent feasible, no construction activities (including grading, cutting, and trenching), shall occur within the root protection zone. If the sewer interceptor must be installed using open trenching within the root protection zone, the work shall be completed under the supervision of a certified arborist to ensure that impacts to the tree are minimized.

**MM 4.4.7 Avoid and Minimize Impacts to Native Vegetation**

To promote regeneration of plants from their root systems, removal of plant root systems shall be limited to the extent necessary for trench installation. Outside of the trench footprint, removal of native plants shall be achieved by pruning them at ground level, or crushing them with heavy equipment; the root systems shall be left in place.

**MM 4.4.8 Restore Sensitive Vegetation Communities Disturbed by Construction Activities**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), the City shall develop a plan describing how temporary and permanent impacts to sensitive vegetation communities will be offset. Revegetation shall be conducted by promoting growth of plants that were crushed or pruned during construction and/or by installing new plantings. The revegetation plan shall be submitted to the appropriate permitting agency(ies) (e.g., Army Corps of Engineers, Regional Water Quality Control Board and/or California Department of Fish and Game) for review and approval prior to any earth disturbance in areas subject to their jurisdiction.

The plan shall include the following information:

- a. Required qualifications and experience of individuals performing the revegetation work.
- b. Methods to be used to revegetate the impacted areas (e.g., soil preparation, seeding, planting, etc.).
- c. An implementation schedule.
- d. Criteria and measures to be used to determine success of revegetated areas.
- e. Monitoring methods and reporting requirements.
- f. Remedial measures to be used to ensure the success of revegetation.
- g. Other pertinent data to ensure successful revegetation of native vegetation and riparian habitat.

**MM 4.4.9 Minimize the 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.

**DOCUMENTATION**

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## 4.5 CULTURAL RESOURCES

Would the project:

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

### REGULATORY CONTEXT

#### FEDERAL

##### Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA and its implementing regulations require federal agencies to take into account the effects of their activities and programs on historic properties. 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]). A resource is considered eligible for listing in the NRHP if it meets the following criteria as defined in CFR Title 36, §60.4:

*The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*

1. *That are associated with events that have made a significant contribution to the broad patterns of our history;*
2. *That are associated with the lives of persons significant in our past;*
3. *That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
4. *That has yielded, or may be likely to yield, information important to prehistory or history.*

Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP. In addition to meeting at least one of the criteria outlined above, the property must also retain enough integrity to enable it to convey its historic significance. To retain integrity, a property will always possess several, and usually most, of the seven aspects of integrity noted above. If a site is determined to be an eligible or historic property, impacts are assessed in terms of "effects." An undertaking is considered to have an adverse effect 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
- f. Neglect of a property that causes its deterioration; and the transfer, lease, or sale of the property.

If 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.

## STATE

### California Environmental Quality Act (CEQA)

CEQA requires that projects financed by or requiring the discretionary approval of public agencies in California be evaluated to determine potential adverse effects on historical and archaeological resources (California Code of Regulations [CCR], §15064.5).

Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Pursuant to §15064.5 of the CCR a property may qualify as a historical resource if it meets any of the following criteria:

- 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 Public Resources Code (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), or §5024.1, or may be significant as supported by substantial evidence in light of the whole record. Pursuant to PRC §5024.1, 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 are listed in or formally determined eligible for listing in the NRHP are included in the CRHR, and thus are significant historical resources for the purposes of CEQA (PRC §5024.1(d)(1)).

A unique archaeological resource" means an artifact, object, or site that meets any of the following criteria:

- 1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

**LOCAL**

**City of Mt. Shasta**

The City’s General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

<b>Open Space and Conservation Element</b>		
<b>Goals</b>	OC-8	Preserve areas of significant cultural resources.
<b>Policies</b>	OC-8.1	Ensure that appropriate measures are taken concerning protection or study of significant cultural resources.
<b>IMs</b>	OC-8.1(a)	When projects are proposed on lands identified as having High Cultural Resource Sensitivity, the application shall be accompanied by a Cultural Resources Reconnaissance and Archival Report conducted and compiled by a qualified archaeologist. If there is the likelihood that cultural resources are present on the site, the City may require field study to determine the location, potential for disturbance, and scope of mitigation.
	OC-8.1(c)	The scope of mitigation shall conform to the requirements of the California Environmental Quality Act with an emphasis on avoiding, if feasible, disturbance of the cultural resource. Avoidance may be accomplished by capping the site, if appropriate.
	OC-8.1(d)	When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with an appropriate specialist (e.g., archaeologist or architectural historian). The project proponent shall be required to implement mitigation necessary for the protection of cultural resources.  The City and the project applicant shall consider mitigation recommendations presented by a qualified archeologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.
	OC-8.1(e)	When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: If human remains are discovered, all work must stop in the immediate vicinity of the find, and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California’s Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

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OC-8.1(f) When approving construction projects, the City shall incorporate the following mitigation measures, or similar measures that would fulfill the intent: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement mitigation necessary for the protection of paleontological resources.

The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

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## **DISCUSSION OF IMPACTS**

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### **Questions A and B**

A Cultural Resources Inventory Report (CRI) was completed for the proposed Project by ENPLAN. The study included a records search, Native American consultation, and field evaluation. The records search included review of records at the Northeast Information Center of the California Historical Resources Information System (NEIC/CHRIS); and a review of historic maps, the *National Register of Historic Places*, *California Register of Historical Resources*, *California Historical Landmarks*, *California Inventory of Historic Resources*, *California Points of Historic Interest*, and *Directory of Properties in the Historic Property Data Files for Siskiyou County*.

Archaeological fieldwork took place on June 28 and August 24, 2017, and February 27, 2018, during which the entire APE was surveyed, although at varying intensities due to the presence of wetlands and dense vegetation, to identify cultural or historical resources that would be potentially affected by the proposed Project.

#### **Area of Potential Effects (APE)**

For purposes of the CRI, the horizontal APE for the proposed Project would be generally 60 feet in width along the pipeline alignment. The APE includes areas for staging, off-site disposal of boulders and oversized cobbles, and temporary construction access, as well as sufficient area for construction.

The vertical APE (i.e., associated with the potential for buried cultural resources) is based upon 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. Depths of excavation for the utility trenches would range from 4 feet to 12 feet. Compaction grouting surrounding the Cold Creek aerial pipeline crossing would have a maximum depth of 30 feet (refer to discussion in Section 3.3 under *Ground Improvement - Potential Liquefaction*).

#### **Records Search**

Research at the NEIC/CHRIS was conducted on June 12, 2017, and covered an approximate half-mile radius around the APE 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.

Twelve archaeological surveys have previously been conducted within a half-mile radius of the APE, including two within the proposed Project's APE. There are 12 previously recorded archaeological sites within a half-mile radius of the APE. There are no previously recorded archaeological sites within the APE. Review of the NRHP, the CRHR, the California Inventory of Historic Resources, and the California Historical Landmarks identified no other historic properties within a half-mile radius of the project area.

### **Native American Consultation**

In response to ENPLAN's request for information, on July 3, 2017, 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.

A response to the comment solicitation letters was received from Blake Follis on behalf of the Modoc Tribe of Oklahoma on August 14, 2017. Mr. Follis stated he has no knowledge of any existing cultural resources in the project's APE, but said he would like to be informed if any such resources are found during construction. A response was received from Dennis Fleming on behalf of the Klamath Tribe of Oregon on August 18, 2017. He did not have any knowledge of existing sites in the area, but expressed that he was interested in any archaeological finds. Another response was received from Isaiah Williams on behalf of the Quartz Valley Indian Reservation on September 6, 2017. Mr. Williams said there are no known cultural resources in the project APE that he is aware of at this time.

Follow-up contact was made by e-mail and telephone on November 22, 2017, to the tribal members identified in the correspondence received from the NAHC on August 3, 2017. Dennis Fleming responded by e-mail on November 27, 2017. On behalf of the Klamath Tribes, Mr. Fleming stated the project is located outside of their ancestral territory and, therefore, defer to the appropriate tribal authority regarding cultural resources.

Mark Miyoshi responded by e-mail on December 4, 2017. On behalf of the Winnemem Wintu Tribe, Mr. Miyoshi stated the tribe would like to consult on this project and requested further information. In addition to this request for further information, Mr. Miyoshi confirmed that the tribe is requesting "AB 52" consultation. This request was forwarded to the City of Mt. Shasta. On December 8, 2017, the City provided a letter to Caleen Sisk, Tribal Chief and Spiritual Leader of the Winnemem Wintu Tribe, asking that she notify the City if the tribe wished to engage in formal consultation regarding the project. No response was received.

### **Conclusions**

Based on ENPLAN's evaluation, two historic-age resources were identified as described below:

#### ***Sewer Interceptor Pipe***

This feature is the sewer interceptor pipe located primarily on the west side of I-5. According to the *City of Mt. Shasta Sewer Plan for the Sewage Collection and Treatment Facilities* (PACE 1992), the main interceptor was constructed in 1938 and was modified in the late-1960s when the wastewater treatment plant was relocated to its current site. The majority of this interceptor was replaced during the 1970s and 1980s. Although parts of the sewer interceptor may be more than 50 years old, no part of the interceptor observed during the pedestrian survey appeared older than the 1970s.

Based on available data, and in keeping with accepted professional standards, the archaeologist determined that the sewer interceptor has no demonstrable potential for historic significance and that no further evaluation is warranted. Nonetheless, fragments of asbestos-cement pipe observed near Cold Creek were recorded as a historic isolate.

### **Concrete Foundation**

The concrete foundation measures approximately 9 feet by 12 feet and is located immediately south of W. Jessie Street on the west side of I-5. No artifacts were identified in association with this foundation, and historical research did not yield any information pertaining to its origins.

The CRI Report concluded that the concrete foundation is not eligible for inclusion in the CRHR or the NRHP for the following reasons:

- The concrete foundation is not known to be associated with events that have made a significant contribution to the broad patterns of our history.
- No documentation was found suggesting that this concrete foundation was associated with the lives of persons significant in our past.
- The concrete foundation, which is composed of large aggregate concrete material, does not embody a distinctive characteristic of a type, period, or method of construction; does not represent the work of a master or possess high artistic values; and does not represent a significant and distinguishable entity whose components may lack individual distinction.
- Based on historic research, it is unlikely this structure will yield information important in prehistory or history.

No significant cultural resources were identified within the project area as a result of the cultural resources inventory survey. However, based on the geomorphological and topographic characteristics of the project site, the results of the records and literature search, and the age of soils mapped in the area, improvements in previously undisturbed areas have a moderate to high potential to encounter buried historic and prehistoric resources. **Mitigation Measures MM 4.5.1 and 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. It is possible that the federal funding agency 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 are less than significant.

### **Question C**

According to the California Geological Survey, the geology of the Project area consists of Quaternary period alluvium deposits overlying Black Butte pyroclastic flow; fossilized paleontological resources are unlikely to be present in the Project area. 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 Section 15064.5(e) of the CEQA Guidelines. Therefore, impacts are less than significant.

## CUMULATIVE IMPACTS

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Cumulative projects in the vicinity of the Project area have the potential to impact cultural resources. Archaeological and historic resources are afforded special legal protections designed to reduce the cumulative effects of development. Cumulative projects and the proposed Project are subject to the protection of cultural resources afforded by the CEQA Guidelines Section 15064.5 and related provisions of the PRC. In addition, projects with federal involvement are 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, **Mitigation Measures MM 4.5.1 and MM 4.5.2** address the inadvertent discovery of cultural resources and/or human remains during construction. Because all development projects in the State are subject to the same measures pursuant to PRC §21083.2 and CEQA Guidelines §15064.5., the proposed Project's cumulative impact to cultural resources is less than significant.

## MITIGATION

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**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 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

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**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Open Space and Conservation Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed November 2018.

**National Park Service.** 1990. National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. Published 1990, revised for Internet 2002. <http://www.cr.nps.gov/nr/publications/bulletins/nrb15/>. Accessed November 2018.

**ENPLAN.** 2019. Cultural Resources Inventory for the City of Mt. Shasta Sewer Interceptor Improvements.

**State of California, Department of Conservation,** California Geological Survey. 2010. Geologic Map of California. <http://www.quake.ca.gov/gmaps/GMC/stategeologicmap.html>. Accessed November 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. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death, involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## REGULATORY CONTEXT

### FEDERAL

#### National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction (NEHR) Act was passed in 1977 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 U.S. Geological Survey (USGS).

## STATE

### California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC §2621 *et seq.*) was passed in 1972 to reduce the risk to life and property from surface faulting in California. The Act prohibits the siting of most structures intended for human occupancy on the surface trace of active faults. Before a project can be permitted in a designated Alquist-Priolo Fault Study Zone, a geologic investigation must be prepared to demonstrate that proposed buildings would not be constructed across active faults.

### California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act (SHMA) of 1990 (PRC §2690–2699.6) addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction and seismically induced landslides. The SHMA also addresses expansive soils, settlement, and slope stability.

Under the SHMA, cities and counties may withhold development permits for sites within seismic hazard areas until geologic/geotechnical investigations have been completed and measures to reduce potential damage have been incorporated into development plans.

### California Building Standards Code

Title 24 of the CCR, also known as the California Building Standards Code (CBSC), provides minimum standards for building design and construction, including excavation, seismic design, drainage, and erosion control. The CBSC is based on the International Building Code (IBC) used widely throughout the country. The CBSC has been modified for California conditions to include more detailed and/or more stringent regulations.

## LOCAL

### City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Safety Element		
<b>Goal</b>	SF-2	Assure life and property are adequately protected from seismic hazards in the area.
<b>Policy</b>	SF-2.1	Avoid development in areas of steep slope and high erosion potential.
<b>IM</b>	SF-2.1(c)	Ensure that site development on steep slopes is designed to avoid creating areas that may be subject to slippage or movement from storm events.

## DISCUSSION OF IMPACTS

### Question A

#### i and ii)

According to the Alquist-Priolo Earthquake Fault Zoning Map for Siskiyou County, there are no Alquist-Priolo Special Study Zones in the Project area. The nearest Special Study Zone is the Cedar Mountain Fault Zone, approximately 25 miles northeast of the Project area.

According to the City's General Plan, the Project area is potentially subject to ground shaking from faults located in eastern Siskiyou County and volcanic activity at Mount Shasta. Historically, there have been only two recorded earthquakes with a Richter magnitude of 4.0 or greater occurring in the immediate Mt. Shasta area.

According to the California Geological Survey (CGS), two potentially active unnamed faults are located northeast of the Project area. One is a north-south trending fault running through the top of Mount Shasta; the other is an east-west trending fault that runs from the top of Mount Shasta to a point north of Black Butte.

As discussed under Section 3.3 above, a Geotechnical Exploration Report for the proposed Project was completed by a registered professional geotechnical engineer from KC Engineering Company in January 2019. The Geotechnical Report states that the Project should be designed to withstand anticipated ground acceleration in accordance with USGS Seismic Design Maps and California Building Code seismic design specifications. **Mitigation Measure MM 4.6.1** requires that all grading plans, foundation plans, and structural calculations shall be reviewed by a qualified professional to ensure all recommendations included in the final report are implemented.

Because potential impacts would be addressed through proper engineering design, and project plans would be reviewed by a geotechnical engineer to ensure that recommendations in the final Geotechnical Report are implemented, 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. Building foundations can sink, break apart or tilt, and gravity-fed pipelines can back up. This is most likely to occur in alluvial (geologically recent, unconsolidated sediments) stream channel deposits, and glacial outwash deposits, especially when the groundwater table is high.

According to the Geotechnical Report, liquefiable soils were identified in some of the test borings across the site, particularly adjacent to the aerial pipeline crossing at Cold Creek. Subsurface sandy deposits near the creek crossing may be subject to seismically induced liquefaction settlement that can result in total and differential settlements of five to three inches, respectively.

Due to the potential for liquefaction, the Geotechnical Report recommends that the casing support structures and manholes in the Morgan-Merrill Preserve be supported on deepened foundation elements or shallow footings in conjunction with an appropriate ground improvement technique, such as low mobility compaction grouting.

Compaction grouting is a method in which soil is densified using a thick, low-slump grout. The grout forms a bulb at the tip of the grout pipe, displacing the soil; soil between the grout bulbs is thus compacted and strengthened. Low mobility compaction grouting has minimal adverse impacts because it does not mix with or permeate the soil, does not travel freely beyond the injection point, and becomes immobile when injection pressure ceases. Ground improvement depths would be variable, and 10- to 30-foot depths should be anticipated on all sides of the casing support structures for the Cold Creek aerial pipeline crossing. Ground improvements for manholes may also include over-excavation and replacement with a geogrid-reinforced aggregate base layer or Controlled Low Strength Material (CLSM). CLSM is a cementitious grout-like material placed without compaction. Flexible utility and pipeline joints, connections, and materials are also recommended.

As required by **Mitigation Measure MM 4.6.1**, improvement plans shall be reviewed by a qualified professional to ensure all recommendations included in the Geotechnical Report are implemented. In addition, **Mitigation Measure MM 4.6.2** requires that earthwork activities

are monitored by a qualified professional as recommended in the Geotechnical Report to ensure that recommendations included in the final report are implemented. Therefore, impacts would be less than significant because the proposed Project will be designed in accordance with USGS Seismic Design Maps and California Building Code seismic design specifications, **Mitigation Measure MM 4.6.1** requires project plans to be reviewed by a qualified professional to ensure that recommendations in the Geotechnical Report are implemented, and **Mitigation Measure MM 4.6.2** ensures that a qualified engineer monitor and inspect work activities in accordance with the Geotechnical Report.

iv)

According to the Geotechnical Report, topography along the proposed sewer interceptor alignment is relatively flat and not subject to seismically-induced landslide hazards. However, Cold Creek in the area of the proposed aerial crossing has eroded to a relatively steep inclination.

As discussed under Section 3.0 (Project Description), to minimize impacts to the banks of the creek, the pipeline crossing would consist of a protective steel casing that would be supported on both sides of the creek by a casing support structure. The casing support footings would be set back from the top of the bank on both sides of the creek as necessary to minimize impacts to the creek. The final design will be based on recommendations in the Geotechnical Report. Foundation excavations for the support structures would be observed and approved by a qualified engineer in accordance with **Mitigation Measure MM 4.6.2**.

Therefore, because recommendations included in the final Geotechnical Report would be implemented into the Project design, and work would be monitored by a qualified engineer, the potential for landslides would be less than significant.

#### Question B

Construction of the proposed Project would involve excavation, grading activities, and installation of Project components, which would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events. This could generate accelerated runoff, localized erosion, and sedimentation. In addition, construction activities could expose soil to wind erosion that could adversely affect on-site soils and the revegetation potential of the area.

As discussed in Section 1.6 (Regulatory Requirements), the City is required to develop a SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. 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 Questions A and B above. Unstable soils consist of loose or soft deposits of sands, silts, and clays. According to the KC Engineering Geotechnical Study, the areas of greatest concern for instability are adjacent to Cold Creek and within wetlands in the Morgan-Merrill Preserve.

In addition, soil samples taken near the aerial crossing at Cold Creek revealed that soils in this area have a moderate to severe risk of corrosion to buried metal (e.g., copper, aluminum, cast iron, carbon steel, stainless steel, alloy steel, etc.). Corrosive soils could cause a uniform loss of material and thinning of the pipe, resulting in premature failure. The Geotechnical Report recommends that an individual knowledgeable in corrosion engineering design be consulted to identify which pipe segments require a protective coating to prevent damage from corrosive soils.

The Geotechnical Report concludes that the proposed improvements are feasible provided that recommendations presented in the Geotechnical Report are incorporated into the project plans and specifications.

**Mitigation Measure MM 4.6.1** requires that recommendations included in the final Geotechnical Report must be incorporated into the final project plans. The grading, foundation plans, and structural calculations would be reviewed by a qualified professional to ensure all recommendations included in the Geotechnical Report are implemented. In addition, **Mitigation Measure MM 4.6.2** requires that a qualified engineer monitor and inspect work activities in accordance with the final Geotechnical Report.

Implementation of **Mitigation Measures MM 4.6.1 and MM 4.6.2** ensures that 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. When these soils swell, the change in volume can exert significant pressure on loads that are upon them, such as buildings or underground utilities. According to the KC Engineering Geotechnical Report, soils testing indicated that the soils in the center of the Project site, adjacent to single-family residences just south of the Morgan-Merrill Preserve, have a very high expansion potential to a depth of four feet.

Potential issues related to expansive soils can be mitigated by removing the expansive soils and replacing them with non-expansive soils, or by reinforcing slabs and footings. These recommendations will be incorporated into all project plans and specifications in accordance with **Mitigation Measure MM 4.6.1**. Further, as called for in **Mitigation Measures MM 4.6.2**, earthwork activities will be monitored by a qualified professional to ensure that the recommendations are implemented. With incorporation of these measures, the geologic hazards associated with expansive soils would be less than significant.

#### Question E

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

### CUMULATIVE IMPACTS

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Completion of the proposed Project and other potential cumulative projects in the region 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.

As discussed above, all development projects in the County are required to obtain coverage under the NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* by submitting a Notice of Intent to the SWRCB along with an effective SWPPP that includes BMPs to minimize erosion. In addition, pursuant to existing State regulations, incorporation of standard seismic safety and engineering design measures are required for all public utility projects. Therefore, the proposed Project's cumulative impacts are less than significant.

### MITIGATION

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**MM 4.6.1** All grading plans, foundation plans, and structural calculations shall be reviewed by a qualified professional to ensure that all recommendations included in the KC Engineering

Geotechnical Report are implemented. Applicable notes shall be placed on the attachment sheet to the improvements plans and in applicable project plans and specifications.

If significant engineering design changes occur during construction, the City shall consult with a qualified geotechnical engineer to identify any geotechnical constraints related to the design changes. Recommendations of the geotechnical engineer shall be implemented as warranted.

- MM 4.6.2** The City shall ensure through contractual obligations that earthwork activities are monitored by a qualified professional to ensure that recommendations included in the final Geotechnical Report are implemented.

## DOCUMENTATION

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## 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### REGULATORY CONTEXT

#### FEDERAL

##### U.S. Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gas emissions (GHGs) are air pollutants covered by the federal Clean Air Act (CAA). In reaching its decision, the Court also acknowledged that climate change is caused, in part, by human activities. The Supreme Court's ruling paved the way for the regulation of GHG emissions by the USEPA under the CAA. The USEPA has enacted regulations that address GHG emissions, including, but not limited to, mandatory GHG reporting requirements, carbon pollution standards for power plants, and air pollution standards for oil and natural gas.

#### STATE

##### 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 <sub>2</sub> )	Carbon dioxide (CO <sub>2</sub> ) is the primary greenhouse gas emitted through human activities. In 2014, CO <sub>2</sub> accounted for about 80.9 percent of all U.S. greenhouse gas emissions from human activities. The main human activity that emits CO <sub>2</sub> 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 <sub>2</sub> .
Methane (CH <sub>4</sub> )	Methane (CH <sub>4</sub> ) is the second most prevalent greenhouse gas emitted in the United States from human activities. Methane is emitted by natural sources such as wetlands, as well as human activities such as the raising of livestock; the production, refinement, transportation and storage of natural gas; methane in landfills as waste decomposes; and in the treatment of wastewater.
Nitrous oxide (N <sub>2</sub> O)	In 2014, nitrous oxide (N <sub>2</sub> O) 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 <sub>2</sub> O 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.

Greenhouse Gas	Description
Perfluorocarbons (PFCs)	Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF <sub>4</sub> ), perfluoroethane (C <sub>2</sub> F <sub>6</sub> ), perfluoropropane (C <sub>3</sub> F <sub>8</sub> ), perfluorobutane (C <sub>4</sub> F <sub>10</sub> ), perfluorocyclobutane (C <sub>4</sub> F <sub>8</sub> ), perfluoropentane (C <sub>5</sub> F <sub>12</sub> ), and perfluorohexane (C <sub>6</sub> F <sub>14</sub> ). Perfluorocarbons are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors.
Sulfur hexafluoride (SF <sub>6</sub> )	Sulfur hexafluoride (SF <sub>6</sub> ) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF <sub>6</sub> 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 <sub>6</sub> produced worldwide.
Nitrogen trifluoride (NF <sub>3</sub> )	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.

## LOCAL

### City of Mt. Shasta

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

Open Space and Conservation Element		
<b>Goal</b>	OC-15	Be prepared for and respond to the impacts of climate change.
<b>Policy</b>	OC-15-1	The City will consider the potential factors of climate change in planning community infrastructure and services.

## 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 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 than 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<sub>2</sub> equivalent (CO<sub>2</sub>e) 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**

<b>GHG</b>	<b>GWP (100-year time horizon)</b>	<b>Atmospheric Lifetime (years)</b>
CO <sub>2</sub>	1	50 -200
CH <sub>4</sub>	25	12
N <sub>2</sub> O	298	114
HFCs	Up to 14,800	Up to 270
PFCs:	7,390-12,200	2,600 – 50,000
SF <sub>6</sub>	22,800	3,200
NF <sub>3</sub>	17,200	740

Source: U.S. Environmental Protection Agency, 2018.

Neither Siskiyou County nor the City 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, which are widely adopted GHG emissions thresholds, as shown in **Table 4.7-3**. These thresholds are tied directly to AB 32 and state-wide emissions reduction goals.

**TABLE 4.7-3  
Greenhouse Gas Emissions Thresholds**

<b>Category</b>	<b>Bay Area AQMD</b>	<b>Sacramento Metropolitan AQMD</b>
<b>Construction</b>	None Recommended	1,100 tons/year CO <sub>2</sub> e
<b>Stationary Sources</b> <sup>3</sup>	10,000 metric tons/year CO <sub>2</sub> e	10,000 metric tons/year CO <sub>2</sub> e
<b>Land Development Projects (Operational)</b>	1,100 metric tons/year CO <sub>2</sub> e or 4.6 tons CO <sub>2</sub> e/service population/year	1,100 metric tons/year CO <sub>2</sub> e

The City has determined the commonly adopted numeric thresholds for land development projects of 1,100 metric tons of CO<sub>2</sub>e per year for construction emissions, and 1,100 metric tons of CO<sub>2</sub>e per year for operational emissions are appropriate for the proposed Project. If construction or operational emissions exceed 1,100 metric tons of CO<sub>2</sub>e, then the impact is considered significant.

**Project GHG Emissions**

GHG emissions for the proposed Project were estimated using the CalEEMod.2016.3.1 software. CalEEMod is a statewide model designed to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

<sup>3</sup> 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<sub>3</sub>) emissions. Instead, emissions of ozone precursors are calculated. Ozone precursors are quantified as ROG and NO<sub>x</sub> which, when released, interact in the atmosphere and produce ozone.

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<sub>2</sub>e associated with construction of the proposed Project would not exceed the numerical threshold of 1,100 metric tons/year of CO<sub>2</sub>e, impacts during construction would be less than significant.

**TABLE 4.7-4  
Construction-Related Greenhouse Gas Emissions**

<b>Total Construction Emissions (Metric Tons)</b>			
<b>Carbon Dioxide (CO<sub>2</sub>)</b>	<b>Methane (CH<sub>4</sub>)</b>	<b>Nitrous Oxide (N<sub>2</sub>O)</b>	<b>Carbon Dioxide Equivalent (CO<sub>2</sub>e)</b>
78.59	0.02	0	79.05

With respect to operational emissions, the proposed Project does not include any components that would result in an increase in the consumption of energy resources or an increase in GHG emissions above existing levels. In addition, because the proposed improvements are required to address existing deficiencies and are not for the purpose of accommodating growth, there would be no indirect GHG emissions. Therefore, because the proposed Project would not exceed the numerical threshold of 1,100 metric tons/year of CO<sub>2</sub>e during construction, and there would be no increase in operational emissions, impacts would be less than significant.

**Questions B, C, and D**

See discussion under Regulatory Context and Question A above. The proposed Project would generate minimal GHG emissions on a temporary basis during construction activities, with no increase in operational emissions. Emissions will be well below the referenced threshold of 1,100 metric tons/year of CO<sub>2</sub>e. This threshold is tied directly to AB 32 and state-wide emissions reduction goals; therefore, there would be no conflict with these GHG management policies.

Likewise, although moderate amounts of energy may be used on a temporary basis for Project construction, there would be no increase in operational energy consumption. Further, the proposed Project would not result in a permanent increase in vehicle miles travelled (VMT) and, therefore, would be consistent with SB 375 and the GHG-related goals, policies, and strategies that are included in the Siskiyou County Regional Transportation Plan. There are no other adopted plans that regulate renewable energy, energy efficiency, or GHG emissions that would apply to the proposed Project. Therefore, there would be no impact.

**CUMULATIVE IMPACTS**

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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.

As documented above, construction-related GHG emissions would not exceed the numerical threshold of 1,100 metric tons/year CO<sub>2</sub>e, and there would be no increased energy use or GHG emissions as a result of Project operation; therefore, the proposed Project would not significantly contribute to adverse impacts associated with cumulative GHG emissions and cumulative impacts are less than significant.

## MITIGATION

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None necessary

## DOCUMENTATION

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## 4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REGULATORY CONTEXT

### FEDERAL

#### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is the primary federal law for the regulation of solid waste and hazardous waste in the United States and provides for the “cradle-to-grave” regulation of hazardous wastes, including generation, transportation, treatment, storage, and disposal. The USEPA has primary responsibility for implementing the RCRA. The RCRA requires businesses, institutions, and other entities that generate hazardous waste to track such waste from the point of generation until it is recycled, reused, or properly disposed of.

## **USEPA's Risk Management Plan**

Section 112(r) of the federal CAA (referred to as the USEPA's Risk Management Plan) specifically covers "extremely hazardous materials" which include acutely toxic, extremely flammable, and highly explosive substances. Facilities involved in the use or storage of extremely hazardous materials must implement a Risk Management Plan (RMP), which requires a detailed analysis of potential accident factors and implementation of applicable mitigation measures.

## **Federal Occupational Safety and Health Administration (OSHA)**

The Occupational Safety and Health Act (OSHA) prepares and enforces 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 workplace 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.

## **STATE**

### **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."*

### **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)**

The California Occupational Safety and Health Administration (Cal/OSHA) has 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 the State 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)**

The goal of the California Accidental Release Prevention Program (CalARP) is to prevent accidental releases of substances that pose the greatest risk of immediate harm to the public and the environment. Facilities are required to prepare a Risk Management Plan in compliance with CCR Title 19, Division 2, Chapter 4.5, if they handle, manufacture, use, or store a federally regulated substance in amounts above established federal thresholds; or if they handle a state regulated substance in amounts greater than state thresholds and have been determined to have a high potential for accident risk.

**LOCAL**

**City of Mt. Shasta**

The City’s General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

<b>Safety Element</b>		
<b>Goals</b>	SF-4	Protect property and life from fire hazards.
	SF-5	Protect people and the environment from hazardous materials exposure.
<b>Policies</b>	SF-4.2	Adopt and enforce development standards that provide adequate fire protection.
	SF-5.1	Assure that the use, storage and transportation of hazardous materials complies with federal and state regulations.
<b>IM</b>	SF-5.1(a)	Working with the State Department of Health and the County Health Department, enforce the applicable provisions of State law related to hazardous material storage.

**DISCUSSION OF IMPACTS**

**Questions A and B**

The Project would not result in any long-term impacts related to the transport of hazardous materials. During construction activities, limited quantities of hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, 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.

### **Question C**

According to the Siskiyou County Office of Education, the school closest to the Project site is Mt. Shasta Elementary School on Cedar Street, approximately 450 feet southeast of proposed pipeline improvements on the east side of I-5 on W. Jessie Street. There are no other schools within one-quarter mile of the proposed improvements.

As described under Questions A and B above, project construction would involve use of relatively small quantities of materials such as diesel, gasoline, oils, and other engine fluids. However, existing State standards govern the transport, use, and disposal of hazardous materials. Because work would be conducted in accordance with these existing requirements, and potential impacts could occur only during construction activities, impacts would be less than significant.

### **Question D**

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 the following two voluntary clean-up sites that are owned by the City of Mt. Shasta.

#### **The Landing - Old Mill Site**

The Old Mill site is located on the west side of S. Mt. Shasta Boulevard, approximately 0.4 miles east of proposed improvements on the west side of I-5. The site was first developed by the Pioneer Box Factory in 1900 and was used as a lumber mill by several parties until the late 1960s, when operations were moved south to the "New Mill" site. Historical mill operations included the use of a dip tank, where lumber was treated with PCP and placed into an adjacent transfer pit, a boiler room, refuse burner, and a log pond. At the time of the property transfer, all of the former mill structures at the site had been removed and the log pond had been filled with lumber scrap debris.

In December 2016, a Targeted Brownfields Assessment (TBA), which consisted of a combined Phase I/II Environmental Site Assessment (ESA), was prepared for the U.S. Environmental Protection Agency by Weston Solutions, Inc., to identify and evaluate remedial alternatives to mitigate impacts to human health and the environment from soil contamination.

The ESA identified total petroleum hydrocarbons (TPH), pentachlorophenol (PCP), and dioxins/furans in the site soils at concentrations above human health screening levels for shallow soil exposure. The ESA also identified dioxin/furan concentrations at the site that exceeded the human health screening level for any land use/any depth soil exposure. The TBA provided five alternatives for soil remediation.

A Draft Final Removal Action Work Plan (RAW) for the site was prepared by Geocon Consultants, Inc. in April 2018. The RAW summarized the previous soil investigations, described the nature and extent of the chemicals of concern on the site, assesses the risk to human health and the environment, evaluated four removal alternatives, and proposes an alternative to mitigate the risk. The proposed alternative included excavating approximately 375 cubic yards of contaminated soil and transporting it to a landfill. The site would then be backfilled with uncontaminated soil. The DTSC provided written concurrence with the RAW on April 24, 2018.

DTSC is in the process of completing CEQA review for the proposed clean-up. It is anticipated that an Initial Study and proposed Negative Declaration will be available for public review in 2019.

### **New Mill and Box Factory Site (Roseburg Lumber Mill)**

The Roseburg Lumber Mill site is located on the west side of S. Mt. Shasta Boulevard, approximately 0.3 miles southeast of proposed improvements on the west side of I-5. The property was historically operated as a lumber mill and box factory from 1900 through 1985. Former activities at this site included a dip tank for wood treatment, diesel fuel aboveground storage tank, gasoline fuel underground storage tank, dump area, and an equipment maintenance shed. Southwest of the New Mill facilities is a former box factory, which previously contained a mill, a burner, and transformers. The milling operations ceased in 1985.

In June 2013, the City entered into a Voluntary Cleanup Agreement with DTSC, and a Removal Action Work Plan (RAW) was prepared by TRC, the City's consultant. The purpose of the RAW was to identify and evaluate remedial alternatives to mitigate impacts to human health and the environment from soil contamination.

According to the Remedial Action Completion Report prepared by TRC in September 2016, most of the contaminated soil was removed from the site in July 2016. The remaining contamination is confined to the southern half of an old equipment shed footprint and will be addressed during future development of the site. On September 7, 2018, the DTSC provided written notice to the City confirming that no further investigation of the New Mill site is required.

As discussed in Section 3.0 (Project Description), boulders and oversized cobbles are present in several areas along the interceptor alignment and would be disposed of off-site in accordance with City and County regulations. It is possible that the boulders would be disposed of at the New Mill and Box Factory Site (Roseburg Lumber Mill). Because the location of the remaining contamination is known and can be avoided, there is no potential to encounter hazardous materials during disposal of the boulders and/or cobbles.

According to the SWRCB GeoTracker Database, the closest clean-up site is on a residential property on Cedar Street, approximately 600 feet northeast of the proposed improvements on the east side of I-5 on W. Jessie Street. In May 2018, a ±200-gallon heating oil above-ground storage tank (AST) was removed from the property, and an unauthorized release (leak) of petroleum hydrocarbons was detected in samples collected from the soil beneath the AST and from a grab water sample collected from the excavation. In response to a request by the CVRWQCB, a site assessment work plan was prepared by Broadbent & Associates, Inc. and submitted to the CVRWQCB for review. The work plan proposed drilling a minimum of four borings to facilitate the collection of soil and groundwater samples in areas with potential residual contamination. In addition, soil vapor samples would be collected to evaluate potential vapor intrusion at adjacent residences. All work associated with the site assessment would occur on the subject residential parcel, and no monitoring wells were proposed in the public road ROW.

The SWRCB does not identify any other clean-up sites, active Cease and Desist Orders, or Clean-Up and Abatement Orders within a one-mile radius of the Project site. Because the extent of contamination associated with clean-up sites in proximity to the Project site is known, the proposed Project would have no impact on the clean-up sites.

## Questions E and F

The Dunsmuir Municipal-Mott Airport is located approximately three miles southeast of the southern boundary of the sewer interceptor improvements. According to the Siskiyou County Airport Land Use Compatibility Plan, no portion of the Project site is located within an airport influence area. According to the Federal Aviation Administration, the Project site is not located in the vicinity of a private airstrip. Therefore, the project will not result in a safety hazard related to airports.

## Question G

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

In addition, pursuant to Cal/OSHA requirements, temporary traffic control during completion of activities that require work in the public right-of-way is required and must adhere to the procedures, methods and guidance given in the current edition of the California Manual on Uniform Traffic Control Devices (MUTCD). Specific requirements for traffic safety measures would be included in the City's contract documents. At the discretion of the County, the contractor may be required to submit a temporary traffic control plan for review and approval by the County prior to issuance of an encroachment permit. The plan must illustrate the location of the work, affected roads, and types and locations of temporary traffic control measures (i.e., signs, cones, flaggers, etc.) that would be implemented during the work. These requirements ensure that impacts are less than significant.

## Question H

The California Department of Forestry and Fire Protection (CAL FIRE) adopted Fire Hazard Severity Zone (FHSZ) Maps for State Responsibility Areas (SRA) in November 2007 (Updated May 2008). Pursuant to California Government Code §51175-51189, CAL FIRE also recommended FHSZs for Local Responsibility Areas (LRA). Proposed improvements on the west side of I-5 are located within SRA Moderate and Very High FHSZs. Chapter 7.60 of the Mt. Shasta Municipal Code establishes Very High FHSZs within the City of Mt. Shasta, which includes the northern and eastern areas of the City. In addition, Chapter 7.15 (Fire Prevention – Burn Permit Required) states the Mt. Shasta Fire Chief has included the entire City of Mt. Shasta in the high FHSZ, and the fire prevention requirements set forth in California Government Code §51182 apply to all properties in the City.

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. Implementation of **Mitigation Measure MM 4.8.1** will ensure impacts are less than significant.

## CUMULATIVE IMPACTS

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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. The transport of hazardous chemicals would be regulated in a similar fashion to other cumulative projects that require the transport of hazardous chemicals for site-specific activities. In addition, pursuant to conditions for issuance of an encroachment permit, the proposed Project and cumulative projects must implement temporary traffic control measures (i.e., signs, cones, flaggers, etc.) to ensure that emergency response vehicles are not hindered by construction activities. Because the proposed Project and cumulative projects are required

to implement measures to reduce the potential for adverse impacts associated with hazards and hazardous materials, the proposed Project's cumulative impacts would be less than significant.

## MITIGATION

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

## DOCUMENTATION

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- City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Safety Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/6SafetyElement.pdf>. Accessed November 2018.
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- State Water Resources Control Board.** 2018. GeoTracker. <http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Mt.+shasta>. Accessed November 2018.
- \_\_\_\_\_. 2018. Geotracker Cleanup Documents: Private Residence (T10000011803). [https://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T10000011803](https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000011803). Accessed November 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 through the addition of impervious surfaces in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### REGULATORY CONTEXT

#### FEDERAL

##### 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.
2. Section 401 (Water Quality Certification) requires an applicant for any federal permit that would authorize a discharge to waters of the U.S 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 U.S. 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 U.S.

### **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, 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.

### **Federal Emergency Management Agency (FEMA)**

FEMA is responsible for mapping flood-prone areas under the National Flood Insurance Program (NFIP). Communities that participate in the NFIP are required to adopt and enforce a floodplain management ordinance to reduce future flood risks related to new construction in a flood hazard area. In return, property owners have access to affordable federally-funded flood insurance policies.

### **National Pollutant Discharge Elimination System**

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

## **STATE**

### **National Pollutant Discharge Elimination System**

Pursuant to the federal CWA, the responsibility for issuing NPDES permits and enforcing the NPDES program was delegated to the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB). NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the U.S. Below is a description of relevant NPDES general permits.

### **Sanitary Sewer Systems**

On May 2, 2006, the SWRCB adopted statewide *General Waste Discharge Requirements for Sanitary Sewer Systems* (General Order 2006-0003DWQ [the General Order]). 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.

### **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 Storm Water Pollution Prevention Plan (SWPPP). Coverage under the construction activities permit is obtained by submitting a Notice of Intent to the SWRCB and preparing 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.

### **Dewatering Activities (Discharges to Surface Waters and Storm Drains)**

Construction dewatering activities that involve the direct discharge of relatively pollutant-free wastewater that poses little or no threat to the water quality of waters of the U.S., are subject to the provisions of CVRWQCB Order R5-2016-0076-01 (NPDES No. CAG995002), *Waste Discharge Requirements, Limited Threat Discharges to Surface Water*, as amended. WDRs for this order include discharge prohibitions, receiving water limitations, monitoring, and reporting, etc. Depending on the final design of the dewatering system, the City may be required to obtain coverage under this order by submitting a Notice of Intent to the applicable RWQCB.

### **Dewatering Activities (Discharges to Land)**

Construction dewatering activities that are contained on land and do not enter waters of the U.S. are authorized under SWRCB Water Quality Order No. 2003-003-DWQ, provided that the dewatering discharge is of a quality as good as or better than the underlying groundwater, and there is a low risk of nuisance.

### **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*. Under the Anti-Degradation Policy, any actions that can adversely affect water quality in surface or 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 RWQCBs enforces waste discharge requirements identified in the Report.

### **Water Quality Control Plans (Basin Plans)**

Each of the State's RWQCBs are responsible for developing and adopting a basin plan for all areas within

its region. The Plans identify beneficial uses to be protected for both surface water and groundwater. Water quality objectives for all waters addressed through the plans are included, along with implementation programs and policies to achieve those objectives. Waste discharge requirements (WDRs) were adopted in order to attain the beneficial uses listed for the Basin Plan areas.

**Sustainable Groundwater Management Act**

The Sustainable Groundwater Management Act (SGMA), enacted in September 2014, established a framework for groundwater resources to be managed by local agencies in areas designated by the Department of Water Resources as “medium” or “high” priority basins. The SGMA requires local agencies in medium and high priority basins to form Groundwater Sustainability Agencies (GSAs) and develop and implement Groundwater Sustainability Plans (GSPs) for each applicable groundwater basin.

Medium and high priority basins under the California Statewide Groundwater Elevation Monitoring (CASGEM) program are subject to *critical conditions of overdraft* and must be managed under a GSP by January 31, 2020. All other medium and high priority basins must be managed under a GSP by January 31, 2022. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, the deadline is 2040. For the remaining high and medium priority basins, the deadline is 2042.

**LOCAL**

**City of Mt. Shasta**

The City’s General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

<b>Open Space and Conservation Elements</b>		
<b>Goal</b>	OC-10	Protect the drinking water of Mt. Shasta residents.
<b>Policies</b>	OC-10.1	Maintain a safe drinking water supply.
	OC-10.2	Protect the City’s drinking water sources from contamination.
<b>IMs</b>	OC-10.1(a)	Comply with drinking water standards.
	OC-10.2(a)	When reviewing development proposals for projects with the potential to contaminate drinking water supplies, ensure that the environmental and project review process incorporates appropriate measures to avoid drinking water contamination.
<b>Safety Element</b>		
<b>Goal</b>	SF-1	Protect people and property from flooding.
<b>Policy</b>	SF-1.1	Identify areas subject to inundation.
<b>IM</b>	SF-1.1(a)	Require that the limits of flooding resulting from a one hundred-year storm event be shown on all permit site plans where lands may be subject to inundation.

**DISCUSSION OF IMPACTS**

**Questions A and B**

The proposed Project has the potential to temporarily degrade water quality due to increased erosion during Project construction; however, as discussed under Regulatory Context above, and in Section

4.6 under Questions B, the City is required to implement an effective SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses, and aquatic habitat.

In addition, the City is required to obtain a State Water Quality Certification (or waiver) from the CVRWQCB to ensure that the project will not violate established State water quality standards. The City also must file a Report of Waste Discharge for any discharge of waste to land or surface waters that may impair a beneficial use of surface or groundwater of the state.

As discussed under Regulatory Context above, if construction activities result in the dewatering discharge to storm drains or waters of the U.S., the City's contractor is required to obtain coverage under CVRWQCB General Order R5-2016-0076-01 *Waste Discharge Requirements - Limited Threat Discharges to Surface Water*.

If construction activities result in the dewatering discharge to land, and the discharge would not enter waters of the U.S., dewatering activities would be authorized under CVRWQCB resolution number 2003-003-DWQ, provided that the dewatering discharge is of a quality as good as or better than the underlying groundwater, and there is a low risk of nuisance. These General Orders include specific requirements for monitoring, reporting, and implementing BMPs for construction dewatering activities.

As stated in Section 3.0 above (Project Description), to minimize impacts to Cold Creek, the new aerial pipeline crossing would consist of a protective steel casing supported at either end by a casing support structure. The casing support footings would be set back from the top of the bank on both sides of the creek as necessary to minimize impacts to the creek.

In the long term, the proposed Project will reduce the potential for violations of water quality standards. As stated in Section 3.3 (Project Background, Need, and Objectives), in January 2017, a segment of the interceptor within the Morgan-Merrill Preserve failed and resulted in the release of  $\pm 2,690,000$  gallons of wastewater. Approximately 50 percent of this volume was I&I, and  $\pm 1,315,000$  gallons was raw sewage.



*Cold Creek pipeline following repairs*

The proposed improvements would reduce the potential for SSOs by replacing aging infrastructure and upsizing the pipe to adequately handle existing peak wet weather flows.

Because the proposed Project would have a beneficial effect by reducing the potential for future SSOs, and potential temporary impacts to water quality during construction would be avoided/minimized with implementation of standard resource-agency permit conditions and BMPs for erosion and sediment control, impacts would be less than significant.

As discussed under Regulatory Context above, the SGMA established a framework for groundwater resources to be managed by local agencies in areas designated by the Department of Water Resources as medium or high priority basins. The Project site is not located in a medium or high priority basin, and there is not a sustainable groundwater management plan that applies to the proposed Project.

Thus, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

### **Question C**

The proposed Project would not require new groundwater supplies for construction or operation and would not increase the amount of impervious surface on the Project site in a manner that would prevent the infiltration of water into the soil. The presence of groundwater is anticipated during construction; however, dewatering would be conducted on a temporary basis during construction and would not result in a lowering of the groundwater table. For these reasons, impacts on groundwater supplies and recharge are less than significant; thus, the Project would not impede sustainable groundwater management of the basin.

### **Questions D and E**

The proposed Project does not include any in-water work, would not substantially increase impervious surfacing, and would not alter the course of a river or stream or otherwise affect drainage patterns. Therefore, the potential for increased flooding, soil erosion, or sedimentation of waterways as a result of Project implementation would be less than significant.

### **Question F**

The only creation or contribution of increased runoff or polluted runoff associated with the proposed Project would be due to dewatering during construction. The discharge could increase runoff and may contain soil particles. As discussed under Questions A and B above, appropriate permits would be obtained and the discharge would be managed to protect water quality and downstream impacts. In addition, BMPs for erosion and sediment control would be implemented in accordance with existing requirements. Therefore, the potential for water quality degradation and exceedance of drainage system capacities would be less than significant.

### **Questions G and H**

According to the FEMA Flood Insurance Rate Map (Panel 06093C3025D, effective January 19, 2011), the Project site is not located within a flood hazard zone. Therefore, there would be no impact.

### **Question I**

According to FEMA, there are no levees in the Project area. The closest jurisdictional dam to the Project area is Box Canyon Dam, approximately one mile southwest (downstream) of the southern boundary of the Project site. 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. According to the Safety Element of the City's General Plan, only the Box Canyon area below Lake Siskiyou is subject to flood hazards from the potential failure of Box Canyon Dam.

According to a 2018 report by the California Natural Resources Agency, if Box Canyon Dam were to fail, the downstream hazard is considered extremely high; however, the report also states that the 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.

Therefore, the proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of a failure of a levee or dam. There would be no impact.

### **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 one mile northeast 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. As stated under Questions G and H above, according to the FEMA Flood Insurance Rate Map, the Project site is not located within a flood hazard zone. Therefore, the potential for the release of pollutants due to inundation by flood, tsunami, and seiche is less than significant.

## CUMULATIVE IMPACTS

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Completion of the proposed Project and other potential cumulative projects in the region could temporarily degrade water quality due to increased erosion during construction; however, all development projects in the County are required to obtain coverage under the NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* and implement an effective SWPPP that includes BMPs to minimize erosion. In addition, all projects are required to comply with local regulations for stormwater runoff and stormdrain systems. These regulations are intended to reduce the potential for cumulative impacts to water quality during construction. In addition, all projects in the County are subject to regulations for development in flood hazard areas to ensure that impacts related to flooding are minimized or avoided. With implementation of federal, State, and local regulations, the proposed Project's cumulative impact to hydrology and water quality would be less than significant.

## MITIGATION

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None necessary

## DOCUMENTATION

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## 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### REGULATORY CONTEXT

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#### FEDERAL

There are no federal regulations pertaining to land use and planning that apply to the proposed project.

#### STATE

##### California Government Code

California Government Code (CGC) §65300 *et seq.* contains many of the State laws pertaining to the regulation of land uses by cities and counties. These regulations include requirements for general plans, specific plans, subdivisions, and zoning. State law requires that all cities and counties adopt General Plans that include seven mandatory elements: land use, circulation, conservation, housing, noise, open space, and safety. A General Plan is defined as a comprehensive long-term plan for the physical development of the county or city, and any land outside its boundaries that is determined to bear relation to its planning. A development project must be found to be consistent with the General Plan prior to project approval.

#### LOCAL

##### City of Mt. Shasta

The City's General Plan includes goals, policies, and implementation measures designed for the purpose of avoiding or minimizing environmental effects. The Mt. Shasta Municipal Code implements the City's General Plan. The purpose of the land use and planning provisions of the Code (Title 18, Zoning) is to provide for the orderly and efficient application of regulations and to implement and supplement related laws of the state of California, including but not limited to the California Environmental Quality Act (CEQA).

### DISCUSSION OF IMPACTS

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#### 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 project would not create a barrier for existing or planned development; therefore, there would be no impact.

## Question B

As discussed in each resource section of this Initial Study, the proposed Project is consistent with applicable Goals, Policies, and Implementation Measures of the Mt. Shasta and Siskiyou County General Plans and regulations of the regulatory agencies identified in Section 1.6 of this Initial Study. Where necessary, mitigation measures are included to reduce impacts to less than significant levels. Therefore, with implementation of the Mitigation Measures identified in Section 1.9, the proposed Project would not conflict with any plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. No additional mitigation measures are necessary.

## CUMULATIVE IMPACTS

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Cumulative projects in the vicinity of the Project area, including population growth resulting from build-out of the City's and County's 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 the General Plan land use designations, goals, and policies, and would not contribute to the potential for adverse cumulative land use effects.

## MITIGATION

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None necessary

## DOCUMENTATION

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## 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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## REGULATORY CONTEXT

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### FEDERAL

There are no federal regulations pertaining to mineral resources that apply to the proposed Project.

### STATE

#### Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA), Chapter 9, Division 2 of the Public Resources Code (PRC), provides 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 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.

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

**MRZ-3b:** Areas containing inferred mineral occurrences of undetermined significance.

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

### LOCAL

There are no local regulations pertaining to mineral resources that apply to the proposed Project.

## DISCUSSION OF IMPACTS

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### Questions A and B

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

The City's General Plan indicates that the only noteworthy mineral resource in the planning area is aggregate. The Spring Hill Mine is located within the city limits east of Interstate 5 at the north end of the City. In addition, the Upton Pit, outside the city limits on the west side of Interstate 5, south of Abrams Lake Road has been mined for aggregate for many years and the facility imports and

processes aggregate from the Spring Hill Mine. However, the proposed Project is not in the vicinity of Spring Hill Mine or the Upton Pit.

There are no publicly known, economically viable deposits of precious metals in the vicinity, nor is the Project site or adjacent areas designated or zoned for mineral extraction activities. In addition, the State does not identify mineral deposits of statewide significance in the area. Therefore, there would be no impact.

## CUMULATIVE IMPACTS

As documented herein, the proposed Project would not result in impacts to mineral resources; therefore, the project would not contribute to adverse impacts associated with cumulative impacts to mineral resources.

## MITIGATION

None necessary

## DOCUMENTATION

**Department of Conservation**, California Geological Survey. SMARA Mineral Land Classification Maps. <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc>. Accessed July 2018.

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## 4.12 NOISE

Would the project result in:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## REGULATORY CONTEXT

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### FEDERAL

There are no federal regulations pertaining to noise that apply to the proposed project.

### STATE

#### California Government Code §65302(f)

California Government Code §65302(f) requires a Noise Element to be included in all city and county General Plans. The Noise Element must identify and appraise major noise sources in the community (e.g., highways and freeways, airports, railroad operations, local industrial plants, etc.). A noise contour diagram depicting major noise sources must be prepared and used as a guide for establishing land use patterns to minimize the exposure of residents to excessive noise. The Noise Element must include implementation measures and possible solutions that address existing and foreseeable noise levels.

#### California Building Code

The California Building Code (CBC) (CCR Title 24, Part 2) includes noise insulation standards that apply to all new construction in California. The CBC requires that interior noise levels attributable to exterior sources must not exceed an annual CNEL of 45 dB in any habitable room. Additional requirements are included for multi-family residential buildings. Cities and counties are responsible for ensuring compliance with the noise insulation standards through the building permit process.

### LOCAL

#### City of Mt. Shasta

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

Noise Element		
<b>Goals</b>	NZ-1	Protect City residents from the harmful and annoying effects of exposure to excessive noise.
<b>Policies</b>	NZ-1.1	Enforce standards for noise exposure from proposed and existing non-transportation noise sources.
<b>IM</b>	NZ-1.8(c)	Noise associated with construction activity between the hours of 7 a.m. and 5 p.m. shall be exempt from the standards cited in Table 7-5 [Noise Standards for New Uses Affected by Non-Transportation Noise]. Construction activity outside of this period may exceed the cited standards if an exemption is granted by the City to cover special circumstances.

## NOISE FUNDAMENTALS

Commonly used technical acoustical terms are defined as follows:

<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive pre-project acoustical characteristics of a given area consisting of all noise sources audible at that location.
<b>Attenuation</b>	The reduction of noise.

<b>A-Weighting</b>	The sound level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.
<b>Decibel, or dB</b>	The fundamental unit of measurement that indicates the intensity of a sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
<b>CNEL</b>	Community Noise Equivalent Level. The average sound level over a 24-hour period, with a penalty of 5 dB added during evening hours (between 7:00 PM and 10:00 PM) and a penalty of 10 dB added during nighttime hours (between 10:00 PM and 7:00 AM).
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
<b>L10, L33, L50, L90</b>	The A-weighted sound level that is exceeded 10, 33, 50, and 90 percent of the sample time.
<b>Ldn</b>	Day-Night Average Sound Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night after 10 p.m. and before 7 a.m. (Note: CNEL and Ldn represent daily levels of noise exposure averaged on an annual or daily basis).
<b>Leq</b>	The sound level in decibels, equivalent to the total sound energy measured over a stated period of time. <b>Leq</b> includes both steady background sounds and transient short-term sounds.

A change of 1 dBA generally cannot be perceived by humans; a 3 dBA change is considered to be a barely noticeable difference; a 5 dBA change is typically noticeable; and a 10 dBA increase is considered to be a doubling in loudness.

Depending on the type of construction, interior noise levels are about 10-15 dBA lower than exterior levels with the windows partially open, and approximately 20-25 decibels lower than exterior noise levels with the windows closed.

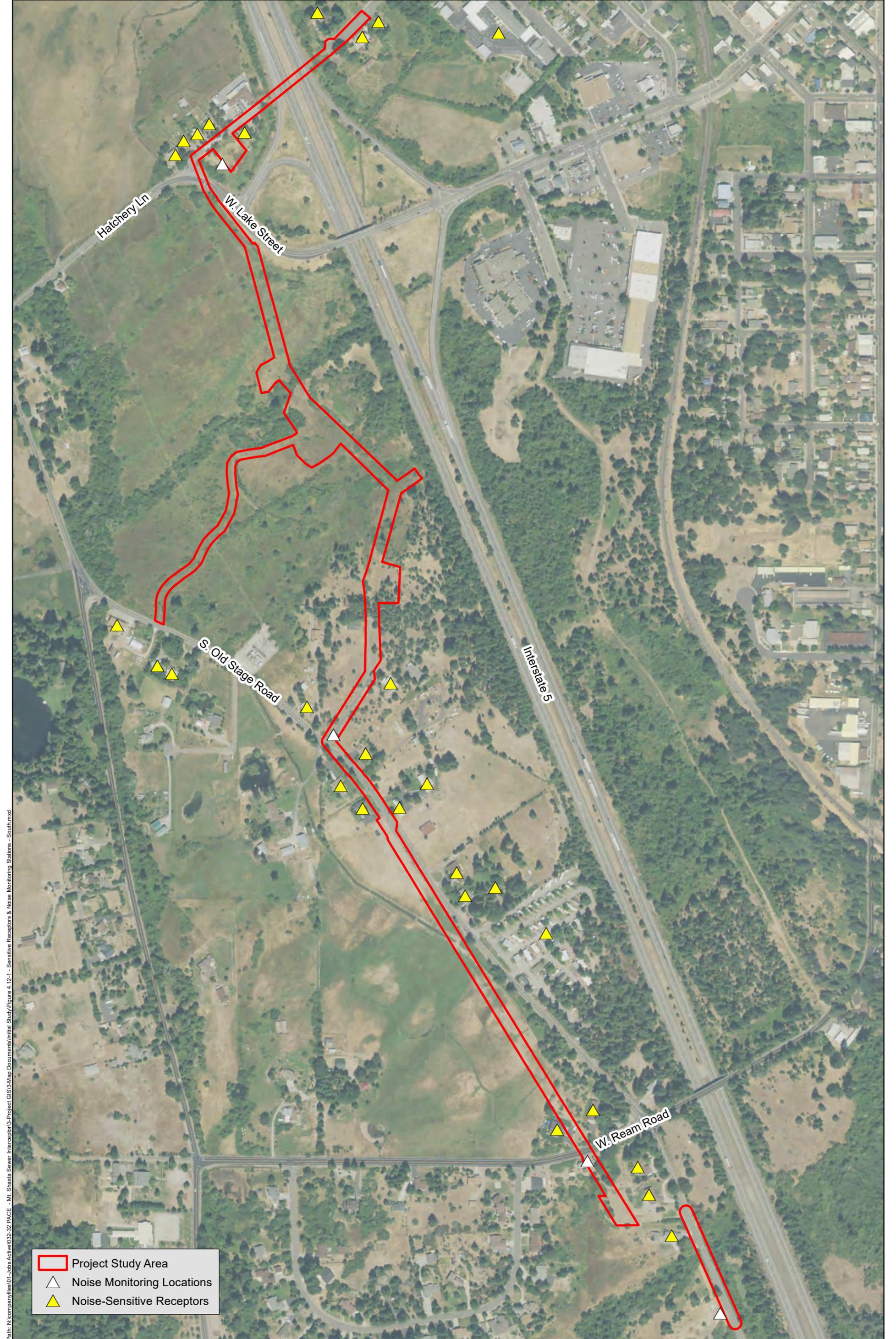
## DISCUSSION OF IMPACTS

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### Question A

Some individuals and groups of people are considered more sensitive to noise than others and are more likely to be affected by the existence of noise. Locations that may contain high concentrations of noise-sensitive receptors include residential areas, schools, parks, churches, hospitals, and long-term care facilities.

The proposed Project includes improvements to the City's wastewater collection system and does not include any components that would result in a permanent increase in noise levels in the area. Construction of the proposed Project would temporarily increase noise levels and vibration at nearby sensitive land uses. As shown in **Figure 4.12-1**, sensitive receptors on the east side of I-5 include single-family residences on W. Jessie Street, and Mt. Shasta Elementary School on Spring Street. **Figure 4.12-1** also shows noise monitoring locations as further discussed below.



Path: N:\company\files\01-Jobs\Active\03-32\_PACE - Mt. Shasta Sewer Interceptor\3-Project\GIS\Map Documents\Initial Study\Figure 4.12-1 - Sensitive Receptors & Noise Monitoring Stations - South.mxd

	Project Study Area
	Noise Monitoring Locations
	Noise-Sensitive Receptors



**Figure 4.12-1**  
**Location of Sensitive Receptors and Noise Monitoring Stations**

All depictions are approximate. Not a survey product. 12.03.18

Sensitive receptors on the west side of I-5 include single-family residences on W. Jessie Street, S. Old Stage Road, and W. Ream Avenue, and a mobile home park on S. Old Stage Road. Improvements would occur about 450 feet northwest of the school and as close as 40 feet from some of the single-family residences. In addition, the staging area on W. Jessie Street on the west side of I-5 and the staging area at the southern Project boundary south of W. Ream Avenue are located adjacent to single-family residences.

Temporary noise impacts would occur due to an increase in traffic from construction workers commuting to the site; however, it is not anticipated that worker commutes would significantly increase daily traffic volumes. Noise would be generated during delivery of construction equipment and materials to the Project site; however, heavy equipment would remain on-site for the duration of construction. Noise impacts resulting from construction activities 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 4.12-2** shows noise levels of common activities to enable the reader to com

**Figure 4.12-2**  
Noise Levels of Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft) Commercial Area	70	Vacuum Cleaner at 3 m (10 ft)
Heavy Traffic at 90 m (300 ft)	60	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	50	Large Business Office
Quiet Urban Nighttime	40	Dishwasher Next Room
Quiet Suburban Nighttime	30	Theater, Large Conference Room (Background)
Quiet Rural Nighttime	20	Library
	10	Bedroom at Night, Concert Hall (Background)
	0	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans, 2016

### **Existing Ambient Noise Levels**

To obtain an estimate of existing ambient noise levels, ENPLAN conducted sound level monitoring in proximity to sensitive receptors as shown in **Figure 4.12-1**. The four monitoring locations were selected to represent the worst-case exposure for each area:

**Station 1:** W. Ream Avenue, ±300 feet west of S. Old Stage Road, ±50 feet from road centerline

**Station 2:** S. Old Stage Road, south of W. Ream Avenue, ±48 feet from road centerline

**Station 3:** Driveway off S. Old Stage Road, ±50 feet from road centerline

**Station 4:** Sewer manhole in W. Jessie Street staging area, facing I-5 overpass

Because of the absence of a secure station at which to deploy an unattended sound-level meter for long duration, sound levels were monitored for approximately ten minutes at each monitoring location. Monitoring was conducted on October 25, 2018, between the hours of approximately 10:00 AM and 11:00 AM. Wind speeds ranged from 0 to 8 miles per hour. The weather was partly cloudy, and the temperature was approximately 72 degrees Fahrenheit.

Ambient noise levels in the vicinity of the Project site are typical of rural residential areas. Primary noise sources in rural environments are household pets, landscape equipment (e.g., lawnmowers, hedge trimmers, leaf blowers, etc.), natural noise (wind, birds, etc.), and vehicular traffic, including cars, trucks, buses, and emergency vehicles.

Primary noise sources during the sound monitoring included cars (nearby and pass-by), semi-trucks on I-5, construction work at the I-5/Central Mt. Shasta Interchange, construction equipment with reverse signal alarms, barking dogs, and birds.

Sound measurement equipment consisted of a Larson Davis Model 700 integrating sound level meter. The meter was mounted to a tripod; the microphone was positioned five feet above ground level and was equipped with a wind screen. The meter was calibrated with a Larson Davis Model CA-250 acoustical calibrator in the field before each use. The equipment meets the specifications of the American National Standards Institute (ANSI) for Type 2 sound measurement systems. The meter was set to the “fast” time-averaging mode and “A” frequency weighting.

Monitoring results are shown in **Table 4.12-1**.

**TABLE 4.12-1  
Noise Monitoring Results**

<b>Station Number</b>	<b>Leq</b>	<b>L10</b>	<b>L33</b>	<b>L50</b>	<b>L90</b>
<b>1</b>	51.9	53.0	48.0	47.0	43.5
<b>2</b>	59.2	59.0	51.5	49.5	45.0
<b>3</b>	54.1	55.5	47.0	44.5	41.5
<b>4</b>	53.5	56.5	53.0	51.5	48.5

### **Construction Noise**

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 4.12-2**, construction equipment anticipated to be used for project construction typically generates maximum noise levels ranging from 74 to 89 decibels (dBA) at a distance of 50 feet.

**TABLE 4.12-2**  
**Examples of Construction Equipment**  
**Noise Emission Levels**

Equipment	Typical Noise Level (dBA) 50 feet from Source
Roller	74
Concrete Vibrator	76
Pump	76
Saw	76
Backhoe	80
Air Compressor	81
Generator	81
Compactor	82
Concrete Pump	82
Compactor (ground)	83
Crane, Mobile	83
Concrete Mixer	85
Dozer	85
Excavator	85
Grader	85
Loader	85
Jack Hammer	88
Truck	88
Paver	89
Scraper	89

*Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. Federal Highway Administration, 2017.*

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, 74 to 89 dBA noise levels would drop to 68 to 83 dBA at a distance of 100 feet; 62 to 77 dBA at a distance of 200 feet; and 58 to 73 dBA at a distance of 300 feet. At a distance of 40 feet, 74 to 89 dBA noise levels would increase to 76 to 91 dBA.

Because it is a logarithmic unit of measurement, a decibel cannot be added or subtracted arithmetically. The combination of two or more identical sound pressure levels at a single location involves the addition of logarithmic quantities as shown in **Table 4.12.3**. A doubling of identical sound sources results in a sound level increase of approximately 3 dB. Three identical sound sources would result in a sound level increase of approximately 4.8 dB.

For example, if the sound from one backhoe resulted in a sound pressure level of 80 dB, the sound level from two backhoes would be 83 dB, and the sound level from three backhoes would be 84.8.

**TABLE 4.12.3**  
**Cumulative Noise: Identical Sources**

<b>Number of Sources</b>	<b>Increase in Sound Pressure Level (dB)</b>
2	3
3	4.8
4	6
5	7
10	10
15	11.8
20	13

*Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. The Engineering Toolbox, 2018.*

In addition, as shown in **Table 4.12.4**, the sum of two sounds of a different level is only slightly higher than the louder level. For example, if the sound level from one source is 80 dB, and the sound level from the second source is 85 dB, the level from both sources together would be 86 dB; if the sound level from one source is 80, and the sound level from the second source is 89 dB, the level from both sources together would be 89.5.

**TABLE 4.12.4**  
**Cumulative Noise: Different Sources**

<b>Sound Level Difference between two sources (dB)</b>	<b>Decibels to Add to the Highest Sound Pressure Level</b>
0	3
1	2.5
2	2
3	2
4	1.5
5	1
6	1
7	1
8	0.5
9	0.5
10	0.5
Over 10	0

*Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. The Engineering Toolbox, 2018.*

With two pieces of equipment with a noise level of 89 dBA operating simultaneously within 40 feet of a sensitive receptor, noise levels could reach approximately 92 dBA at the exterior of single-family residences on W. Jessie Street, S. Old Stage Road, and W. Ream Avenue.

As noted above, assuming typical California construction methods, interior noise levels are about 10 to 15 dBA lower than exterior levels within residential units with the windows partially open, and approximately 20 to 25 decibels lower than exterior noise levels with the windows closed. Interior noise levels could reach 67 to 72 dBA when equipment operates directly adjacent to the residence, provided that the windows were closed.

In addition to noise from construction equipment, OSHA regulations (Title 29 CFR, §1926.601(b)(4)(i) and (ii) and §1926.602(a)(9)(ii)) state that no employer shall use any motor vehicle, earthmoving, or compacting equipment that has an obstructed view to the rear unless the vehicle has a reverse signal alarm audible above the surrounding noise level or the vehicle is backed up only when an observer signals that it is safe to do so.

Although these regulations require an alarm to be only at a level that is distinguishable from the surrounding noise level ( $\pm 5$  dB), some construction vehicles are pre-equipped with non-adjustable alarms that range from 97 to 112 dBA. At a distance of 40 feet, 97 to 112 dBA noise levels would increase to 99 to 114 dBA; such noise levels could temporarily be experienced at the exteriors of single-family residences on W. Jessie Street, S. Old Stage Road, and W. Ream Avenue. Depending on the decibel level of the alarm, interior noise levels could reach 74 to 94 dBA, provided that the windows were closed. As discussed above, ambient noise levels in the Project area range from  $\pm 51.9$  to  $\pm 59.2$  dB Leq. In comparison to ambient noise levels, construction noise would be substantially greater.

The exposure to loud noises (above 85 dB) over a long period of time may lead to hearing loss. The longer the exposure, the greater the risk for hearing loss, especially when there is not enough time for the ears to rest between exposures. Hearing loss can also result from a single extremely loud sound at very close range, such as sirens and firecrackers (Centers for Disease Control, 2018). Even when noise is not at a level that could result in hearing loss, excessive noise can affect quality of life, especially during nighttime hours.

The California Division of Safety and Health and OSHA have established thresholds for exposure to noise in order to prevent hearing damage. The maximum allowable daily noise exposure is 90 dBA for 8 hours, 95 dBA for 4 hours, 100 dBA for 2 hours, 105 dBA for 1 hour, 110 dBA for 30 minutes, and 115 dBA for 15 minutes (Caltrans, 2013).

In the worst-case scenario, exterior noise levels from construction equipment operation could reach approximately 92 dBA at the exterior of single-family residences on W. Jessie Street, S. Old Stage Road, and W. Ream Avenue, and could reach approximately 114 dBA if reverse signal alarms are used. Interior noise levels due to construction equipment operation could reach approximately 72 dBA, and could reach approximately 94 dBA if reverse signal alarms are used.

Construction equipment does not operate continuously throughout the entire work day. In addition, given the linear nature of the Project, construction equipment would be operating within 40 to 50 feet of a particular residence for a relatively short duration and would then proceed to the next work area. Overall, construction work on W. Jessie Street, S. Old Stage Road, and W. Ream Avenue, are anticipated to be completed in one week in each of these areas. In addition, reverse signal alarms are needed only intermittently, and each occurrence involves only seconds of elevated noise levels. Therefore, while construction noise may reach considerable levels for short instances, much of the time the construction noise levels at the nearby residences will be moderate.

In order to minimize impacts from construction noise, **Mitigation Measure MM 4.12.1** limits construction activities to between the hours of 7:00 a.m. and 5:00 p.m. to ensure consistency with the City's General Plan. Any construction outside of this timeframe may occur only if the City issues an exemption 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** requires that construction equipment be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, and **MM 4.12.3** prohibits motorized construction equipment to be left idling for more than five minutes when not in use.

Therefore, because the proposed Project does not include any components that would result in a permanent increase in ambient noise levels; there is no expectation that noise levels during

construction would be at a duration and intensity that would cause hearing loss; and **Mitigation Measures MM 4.12.1 through MM 4.12.3** minimize noise during construction, impacts would be less than significant. Further, construction noise is a temporary impact that would cease at completion of the Project.

**Question B**

Excessive vibration during construction occurs only when high vibration equipment (e.g., compactors, large dozers, etc.) are operated. The proposed Project may require limited use of equipment with high vibration levels during construction. Potential effects of ground-borne vibration include perceptible movement of building floors, rattling windows, shaking of items on shelves or hangings on walls, and rumbling sounds.

In extreme cases, vibration can cause damage to buildings. Both human and structural response to ground-borne vibration are influenced by various factors, including ground surface, distance between the source and the receptor, and duration.

The most common measure used to quantify vibration amplitude is the peak particle velocity (PPV). PPV is a measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state.

Although there are no federal, state, or local regulations for ground-borne vibration, Caltrans has developed criteria for evaluating vibration impacts, both for potential structural damage and for human annoyance. The Caltrans Transportation and Construction Vibration Guidance Manual (2013), was referenced in the analysis of construction-related vibration impacts.

**Table 4.12-5** includes the potential for damage to various building types as a result of ground-borne vibration. Transient sources include activities that create a single isolated vibration event, such as blasting. Continuous, frequent, or intermittent sources include jack hammers, bulldozers, and vibratory rollers.

**TABLE 4.12-5  
Structural Damage Thresholds from Ground-Borne Vibration**

Structure Type	Vibration Level (Inches per Second PPV)	
	Transient Sources	Continuous/ Frequent/ Intermittent Sources
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Historic and some old buildings	0.5	0.25
Newer industrial/commercial buildings	2.0	0.5

Source: Caltrans, 2013

**Table 4.12-6** indicates the potential for annoyance to humans as a result of ground-borne vibration.

**TABLE 4.12-6  
Human Response to Ground-Borne Vibration**

Human Response	Vibration Level (Inches per Second PPV)	
	Transient Sources	Continuous/ Frequent/ Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.10
Disturbing	2.0	0.4

Source: Caltrans, 2013

**Table 4.12-7** indicates vibration levels for various types of construction equipment that may be used for the proposed Project.

**TABLE 4.12-7  
Examples of Construction Equipment Ground-Borne Vibration**

Equipment Type	Inches per Second PPV at 25 feet
Bulldozer (small)	0.003
Bulldozer (large)	0.089
Jackhammer	0.035
Loaded trucks	0.076
Vibratory roller	0.210

Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2013.

Vibration levels from construction equipment use at varying distances from the source can be calculated using the following formula:

$$PPV_{\text{Equipment}} = PPV_{\text{Ref}} \times (25/D)^n$$

Based on this equation, a vibratory roller at a distance of 40 feet would generate a PPV of 0.13 inches per second, while a large bulldozer would generate a PPV of up to 0.06 inches per second. As shown in **Table 4.12-5**, these vibration levels would be Distinctly Perceptible to Strongly Perceptible but, as shown in **Table 4.12-5**, would not cause structural damage to older residences. Because increased ground-borne vibration is temporary and would cease at completion of the Project, and **Mitigation Measures MM 4.12.1, through 4.12.3** would be implemented to reduce impacts from noise and vibration during construction, impacts would be less than significant.

### Question C

The Dunsmuir Municipal-Mott Airport is located approximately two miles southeast of the southern Project boundary. According to the Siskiyou County Airport Land Use Compatibility Plan, no portion of the Project site is located within an airport influence area. According to the Federal Aviation Administration, the Project site is not located in the vicinity of a private airstrip. Therefore, the project would not expose people residing or working in the Project area to excessive noise levels associated with an airport or private airstrip; there would be no impact.

## CUMULATIVE IMPACTS

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As documented above, although the cumulative projects identified in Section 3.4 would also generate noise and vibration during construction, and there is a possibility that some of these projects could be constructed simultaneously, given the limited work area adjacent to sensitive receptors, it is not likely that more than two pieces of equipment would be operating at the same time at these locations. In addition, given the linear nature of the Project, noise and vibration would be intermittent and occur for short periods of time until the equipment proceeds to the next work area. In addition, all projects in the City of Mt. Shasta are subject to time limits for construction activities and appropriate mitigation measures to minimize construction noise and vibration. With implementation of **Mitigation Measures MM 4.12.1 through MM 4.12.3**, the proposed Project's contribution to cumulative noise impacts would be less than significant.

## MITIGATION

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- MM 4.12.1** Construction activities shall be limited to between the hours of 7:00 a.m. and 5:00 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.

## DOCUMENTATION

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**California Department of Transportation.** 2013. Transportation and Construction Vibration Guidance Manual. [http://www.dot.ca.gov/hq/env/noise/pub/TCVGM\\_Sep13\\_FINAL.pdf](http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf). Accessed August 2018.

\_\_\_\_\_. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. [http://www.dot.ca.gov/hq/env/noise/pub/TeNS\\_Sept\\_2013B.pdf](http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf). Accessed January 2019.

**Centers for Disease Control.** 2018. Loud Noise and Hearing Loss. [https://www.cdc.gov/nceh/hearing\\_loss/what\\_noises\\_cause\\_hearing\\_loss.html](https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html). Accessed January 2019.

**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Noise Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/7Noise.pdf>. Accessed August 2018.

**Engineering Toolbox.** 2018. Logarithmic Decibel Scale. [https://www.engineeringtoolbox.com/adding-decibel-d\\_63.html](https://www.engineeringtoolbox.com/adding-decibel-d_63.html). Accessed November 2018.

**Federal Aviation Administration.** 2016. Airport Facilities Data. [https://www.faa.gov/airports/airport\\_safety/airportdata\\_5010/menu/](https://www.faa.gov/airports/airport_safety/airportdata_5010/menu/). Accessed August 2018.

**Federal Highway Administration.** 2017. Construction Noise Handbook. [https://www.fhwa.dot.gov/Environment/noise/construction\\_noise/handbook/handbook09.cfm](https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm). Accessed November 2018.

**Siskiyou County.** 2001. Airport Land Use Compatibility Map. <https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/5611ff3de4b0890ee930ae5d/1444020029221/20151001120556.pdf>. Accessed August 2018.

**U.S. Department of Transportation, Federal Transit Administration.** 2018. Transit Noise and Vibration Impact Assessment Manual. [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123\\_0.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf). Accessed November 2018.

**U.S. Government Publishing Office.** 2013. California Code of Regulations, Title 29, Part 1926 (Safety and Health Regulations for Construction). <https://www.gpo.gov/fdsys/pkg/CFR-2013-title29-vol8/pdf/CFR-2013-title29-vol8-part1926.pdf>. Accessed November 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 unplanned 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### REGULATORY CONTEXT

#### FEDERAL

There are no federal regulations pertaining to population or housing that apply to the proposed project.

#### STATE

##### California Government Code §65581

California Government Code §65581 *et seq.* requires a Housing Element to be included in all city and county General Plans. The Regional Housing Need Allocation (RHNA) is the state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its Housing Element. Each jurisdiction is required to demonstrate how it will accommodate the required number of housing units.

#### LOCAL

##### City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Housing Element		
<b>Goals</b>	HO-1	Provide an adequate supply of sound, affordable housing for existing and future residents of Mt. Shasta.
<b>Policies</b>	HO-1.5	With all due consideration to financial constraints, and consistent with other General Plan policies, the City shall encourage, participate, and cooperate in

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extension of City services to currently unserved and underserved areas, including direct financial participation when deemed appropriate by the City Council.

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<b>IMs</b>	HO-1.5.2	The City shall continue to develop and implement plans to expand domestic water and sewage collection and treatment systems such that planned development over the General Plan 20-year timeframe can be accommodated.
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## **DISCUSSION OF IMPACTS**

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### **Question A**

Because the proposed Project does not involve construction of residences or businesses, the Project would not directly induce population growth.

As discussed in Section 3.2 above, the purpose of the proposed Project is to replace aging and inefficient infrastructure and correct existing deficiencies. Although the interceptor pipe will be upsized, according to the Sewer Flow Measurement and Data Collection Report prepared by Schlumpberger Consulting Engineers, Inc., in 2005, pipes up to 24 inches in diameter may be necessary in areas with flat slopes. Because the Project site is relatively flat with little topographical relief, a 24-inch pipe is required to handle PWWFs and reduce the potential for sewer overflows.

The Schlumpberger report acknowledges that upsizing the interceptor may allow for growth to occur, and implementation of the proposed Project could potentially indirectly foster development of vacant properties served by the City's public sewer system.

Although the total amount of vacant property in the City is not currently readily available, according to the City's 2014-2019 Housing Element, in 2014, there were about 120 vacant parcels totaling 585 acres in the City limits that were not served by public sewer and that could accommodate residential uses. There is undoubtedly additional commercial and industrial vacant property in the City's sewer service area that is not currently served by public sewer.

These properties have a range of zoning designations with various allowable densities and building intensities. Because of the wide range of allowable uses, projecting population growth or development density that may occur as a result of the proposed Project would be too speculative to allow a meaningful evaluation at this time. Whether the proposed Project would have a major influence on the development of adjacent undeveloped lands cannot be ascertained because there are many other factors that influence the density and timing of development (e.g., cost of installing water, electric, and gas infrastructure; cost of completing roadway improvements, regulatory controls, economic conditions, property owner decisions, and other market forces); it is not anticipated that the proposed Project would significantly influence development in the sewer service area; therefore, the proposed Project's potential growth-inducing impacts are less than significant.

### **Question B**

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

## **CUMULATIVE IMPACTS**

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Cumulative growth in the area has been addressed in the City's and County's General Plans. Because the proposed Project does not involve construction of residences or businesses, it would not directly increase growth beyond that projected in the City's and County's General Plans.

The Project could potentially indirectly foster development in the City’s sewer service area by upsizing the sewer interceptor; however, vacant properties in the service area have a range of zoning designations with various allowable densities and building intensities. Because of the wide range of allowable uses, projecting population growth or development density that may occur as a result of the proposed Project would be too speculative to allow a meaningful evaluation at this time. Because there are many other factors that influence the density and timing of development (e.g., cost of installing water, electric, and gas infrastructure; cost of completing roadway improvements, regulatory controls, economic conditions, property owner decisions, and other market forces), it is not anticipated that the proposed Project, even when combined with the infrastructure projects described in Section 3.4, will significantly influence development in the City. Therefore, cumulative population and housing impacts would be less than significant.

## MITIGATION

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None necessary

## DOCUMENTATION

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**California Department of Finance.** 2018. E-5 Population and Housing Estimated for Cities, Counties and the state, 2011-2018 with 2010 Census Benchmark. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>. Accessed August 2018.

\_\_\_\_\_. 2018. P-1: State Population Projections (2010-2060), Total Population by County. <http://www.dof.ca.gov/Forecasting/Demographics/projections/>. Accessed August 2018.

**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Housing Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/8HousingElement.pdf>. Accessed August 2018.

**PACE Engineering.** 1994. City of Mt. Shasta 1992 Master Sewer Plan for the Sewage Collection and Treatment Facilities.

**Schlumpberger Consulting Engineers, Inc.** 2005. Sewer Flow Measurement and Data Collection, City of Mt. Shasta. On file at the City of Mt. Shasta.

## 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## REGULATORY CONTEXT

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There are no federal, State, or local regulations pertaining to public services that apply to the proposed project.

## DISCUSSION OF IMPACTS

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### Questions A and B

The proposed Project would not result in the need for additional long-term fire protection services. In the event of an emergency during construction, fire protection services would be provided by the City of Mt. Shasta Fire Department and/or Mt. Shasta Fire Protection District. No new facilities related to fire protection would need to be constructed. In addition, the proposed Project would not result, either directly or indirectly, in an increase in population requiring additional law enforcement services. Therefore, there would be no impact.

### Questions C and D

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

### Question E

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

## CUMULATIVE IMPACTS

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

## MITIGATION

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None necessary

## DOCUMENTATION

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**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Land Use Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/3LandUseElement.pdf>. Accessed August 2018.

\_\_\_\_\_. 2007. Mt. Shasta General Plan, Open Space and Conservation Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed August 2018.

## 4.15 RECREATION

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### REGULATORY CONTEXT

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There are no federal, State, or local regulations pertaining to public services that apply to the proposed project.

### DISCUSSION OF IMPACTS

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#### Questions A and B

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

### CUMULATIVE IMPACTS

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

### MITIGATION

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None necessary

### DOCUMENTATION

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**City of Mt. Shasta.** 2009. Mt. Shasta Bicycle, Pedestrian and Trails Master Plan.  
[http://mtshastaca.gov/wp/wp-content/uploads/2016/01/Bicycle\\_Master\\_Plan\\_File2.pdf](http://mtshastaca.gov/wp/wp-content/uploads/2016/01/Bicycle_Master_Plan_File2.pdf) .  
 Accessed August 2018.

\_\_\_\_\_. 2007. Mt. Shasta General Plan, Open Space and Conservation Element.  
<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>.  
 Accessed August 2018.

## 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks, pedestrian facilities)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### REGULATORY CONTEXT

#### FEDERAL

There are no federal regulations pertaining to transportation/traffic that apply to the proposed project.

#### STATE

##### California Streets and Highways Code

California Streets and Highways Code §660 *et seq.* requires that an encroachment permit be obtained from Caltrans prior to the placement of structures or fixtures within, under, or over State highway right-of-way (ROW). This includes, but is not limited to, utility poles, pipes, ditches, drains, sewers, or other above-ground or underground structures.

#### LOCAL

##### City of Mt. Shasta

The City's Circulation Element of the General Plan includes Goals, Policies, and Implementation Measures regarding the design and use of roadways within the City limits. The City's Bicycle, Pedestrian, and Trails Master Plan addresses a city-wide network of bike lanes and routes, and pedestrian facilities.

##### Siskiyou County

The majority of the proposed improvements are located on the west side of I-5 within unincorporated Siskiyou County, and roads used to access the Project site are under the jurisdiction of Siskiyou County. These roads include a portion of W. Jessie Street, W. Lake Street, Hatchery Lane, S. Old Stage Road, and W. Ream Avenue.

## DISCUSSION OF IMPACTS

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### Questions A and B

The proposed Project does not include the construction of housing or commercial/industrial development that would cause a permanent increase in traffic in the area. As discussed in Section 4.13 under Question A, because there are many other factors that influence the density and timing of development, it is not anticipated that the proposed Project, will significantly influence development in the City's sewer service area. As such, implementation of the proposed Project would not substantially affect the surrounding transportation network in the long term, and would not conflict with existing plans, ordinances, policies, or programs.

There would be short-term increases in traffic in the area associated with construction workers and equipment; however, as discussed in Section 4.8 under Question G, safety measures must be employed to safeguard travel by the general public during construction. Therefore, impacts would be less than significant.

### Questions C and D

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

### Question E

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

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The proposed Project would not result in a permanent increase in traffic. There would be a temporary increase in traffic associated with construction workers and equipment during construction.

As noted in Section 3.4, construction of the PacifiCorp Lassen Substation could occur at the same time as the sewer interceptor improvements on the west side of I-5. In addition, there is a possibility that construction of the City's water system improvements could occur at the same time as the sewer interceptor improvements on the east side of I-5.

As discussed in Section 4.8 under Question G, pursuant to Cal/OSHA requirements, temporary traffic control for all projects that require work in the public right-of-way is required and must adhere to the procedures, methods, and guidance given in the current edition of the MUTCD. Specific requirements for traffic safety measures would be included in the City's contract documents. In addition, at the discretion of the County, the contractor may be required to submit a temporary traffic control plan for review and approval by the County prior to issuance of an encroachment permit. The plan must illustrate the location of the work, affected roads and types and locations of temporary traffic control measures (i.e., signs, cones, flaggers, etc.) that would be implemented during the work.

Therefore, because the proposed Project would not result in a permanent increase in traffic; all cumulative projects are required to implement safety measures to protect the traveling public during construction; and construction traffic is a temporary impact that would cease at completion of the Project, the Project's traffic impact would not be cumulatively considerable.

## MITIGATION

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None necessary

## DOCUMENTATION

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**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Circulation Element.  
<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/4TrafficCirculation.pdf>. Accessed August 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) section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe, and that is:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. A resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 Section 5024.1? In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REGULATORY CONTEXT

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### FEDERAL

There are no federal regulations pertaining to tribal cultural resources that apply to the proposed project.

### STATE

#### California Environmental Quality Act

Assembly Bill 52 of 2014 (Public Resources Code [PRC] §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 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 §21074 defines “tribal cultural resources” as 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 included or determined to be eligible for inclusion in the CRHR; or are included in a local register of historical resources as defined in PRC §5020.1(k).

A historical resource described in §21084.1, a unique archaeological resource as defined in §21083.2(g), or a “nonunique archaeological resource” as defined in §21083.2(h) may also be a tribal cultural resource if it meets this criteria.

2. A resource determined by the lead agency, taking into consideration the significance of the resource to a California Native American tribe, to be significant pursuant to criteria set forth in PRC §5024.1(c).

## LOCAL

There are no local regulations pertaining to tribal cultural resources that apply to the proposed project.

## DISCUSSION OF IMPACTS

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### Questions A and B

See discussion in Section 4.5 under Question A.

On December 8, 2017, the City sent a letter to Caleen Sisk, Tribal Chief and Spiritual Leader of the Winnemem Wintu Tribe providing detailed information on the proposed Project and describing the AB 52 consultation process. The letter stated that if the Tribe would like to engage in formal consultation with the City regarding possible significant effects that the Project may have on tribal cultural resources, the Tribe must respond to the City in writing within 30 days of the Tribe’s receipt of the letter. No response was received from the Winnemem Wintu Tribe. No other California Native American tribes have requested that the City provide formal notification of proposed projects in the geographical area. Therefore, the requirements of PRC §21080.3.1 have been satisfied.

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. **Mitigation Measures MM 4.5.1 and 4.5.2** address the inadvertent discovery of cultural resources. These measures ensure that impacts to tribal cultural resources are less than significant.

## CUMULATIVE IMPACTS

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Cumulative projects in the vicinity of the Project area have the potential to impact tribal cultural resources. 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. 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. 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

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

## DOCUMENTATION

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**ENPLAN**. 2019. Cultural Resources Inventory for the City of Mt. Shasta Sewer Interceptor Improvements.

## 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. Require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## REGULATORY CONTEXT

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### FEDERAL

There are no federal regulations pertaining to utilities and service systems that apply to the proposed project.

## STATE

### California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act (CIWMA) of 1989 is designed to increase landfill life and conserve other resources through increased source reduction and recycling. Goals of the CIWMA include diverting approximately 50 percent of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products. The CIWMA requires cities and counties to prepare Solid Waste Management Plans and Source Reduction and Recycling Elements to implement CIWMA goals

## LOCAL

### City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Land Use Element		
<b>Goals</b>	LU-18	Maintain a water supply and distribution system that meets drinking water standards and that serves the domestic and fire protection needs of the community.
	LU-19	Provide for the efficient collection, transport, and discharge of stormwater in a safe manner and protect people and property from flooding.
<b>Policies</b>	LU-18.1	Ensure that the growth of the community does not outstrip the water supply and distribution system of the City.
	LU-18.2	Ensure that the City's drinking water source is protected from biological, chemical and other contaminants that may pose a health risk.
	LU-19.1	Utilize the Storm Drainage Master Plan to improve existing storm drainage conditions and ensure adequate storm drainage infrastructure design and construction for future developments.
<b>IMs</b>	LU-18.1(b)	Update the City Water Master Plan and utilize the updated Water Master Plan to prioritize water infrastructure improvements and expansion programs to serve the existing and planned development of the community.
	LU-18.2(a)	The City shall encourage the enforcement of all federal, state, regional and county regulations and shall enforce local regulations regarding the preservation and enhancement of water quality as it relates to the City's water sources.
Circulation Element		
<b>Goal</b>	CI-9	Ensure adequate utilities to meet community needs.
<b>Policy</b>	CI-9.1	Encourage participation of public utilities in the project review process.
<b>IM</b>	CI-9.1(b)	Support efforts by utilities to upgrade and improve service to the Mt. Shasta area.

## DISCUSSION OF IMPACTS

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### Question A

As stated in Section 4.13 under Question A, the purpose of the proposed project is to replace aging infrastructure 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 or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities. In addition, no water, wastewater treatment, electric power, natural gas, or telecommunications facilities would need to be relocated to accommodate the proposed Project. Therefore, there would be no impact.

### Questions B and C

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, there would be no impact.

### Questions D and E

The proposed Project would generate a minimal amount of solid waste, mainly from removal of pavement in public road ROWs to accommodate the interceptor pipe. Construction debris would be disposed of at the Black Butte Transfer Station, located just north of the City limits, and then consolidated and ultimately trucked to the Dry Creek Landfill in southern Oregon.

The construction contractor would be responsible for disposing of all construction waste. The City would ensure through contractual obligations that the contractor complies with all federal, State and local statutes related to solid waste disposal. Therefore, there would be no impact.

## CUMULATIVE IMPACTS

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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

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None necessary

## DOCUMENTATION

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**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Land Use Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/3LandUseElement.pdf>. Accessed August 2018.

**PACE Engineering, Inc.** City of Mt. Shasta 1992 Master Sewer Plan. Prepared for the City of Mt. Shasta, March 4, 1994.

\_\_\_\_\_. 2007. Final Environmental Impact Report, City of Mt. Shasta General Plan Update Project (SCH No. 2005082099). <http://mtshastaca.gov/wp/wp-content/uploads/2015/11/Draft-MASTER-EIR.pdf>. Accessed August 2018.

**Rouge Disposal Company.** 2018. Construction Services. <https://roquedisposal.com/solutions/construction>. Accessed August 2018.

## 4.19 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire, or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REGULATORY CONTEXT

### FEDERAL

There are no federal regulations pertaining to wildfire that apply to the proposed project.

### STATE

#### California Department of Forestry and Fire Protection (CAL FIRE)

The Bates Bill (AB 337), enacted in 1992, required CAL FIRE to work with local governments to identify high fire hazard severity zones throughout each county in the State. CAL FIRE adopted Fire Hazard Severity Zone (FHSZ) Maps for State Responsibility Areas (SRA) in November 2007. Pursuant to California Government Code §51175-51189, CAL FIRE also recommended FHSZs for Local Responsibility Areas (LRA). Over the years, CAL FIRE has updated the maps and provided new recommendations to local governments based on fire hazard modeling. Proposed improvements on the west side of I-5 are located within SRA Moderate and Very High FHSZs.

The fire hazard model considers wildland fuels (natural vegetation that burns during the wildfire); topography (fires burn faster as they burn up-slope); weather (fire burns faster and with more intensity when air temperature is high, relative humidity is low, and winds are strong); and ember production and movement (how far embers move and how receptive the landing site is to new fires). The model recognizes that some areas of California have more frequent and severe wildfires than other areas.

#### California Fire Code

California Fire Code, Part 9, Chapter 49 (Wildland-Urban Interface Fire Areas), and California Building Code Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) include standards

for new construction in Wildland-Urban Interface Fire Areas (fire hazard severity zones). The purpose of the standards is to prevent a building from being ignited by flying embers that can travel as much as a mile away from a wildfire and to contribute to a systematic reduction in fire-related losses through the use of performance and prescriptive requirements.

## LOCAL

### City of Mt. Shasta

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

Safety Element		
Goals	SF-4	Protect property and life from fire hazards.
	SF-7	Identify and maintain emergency evacuation routes.

Chapter 7.60 of the Mt. Shasta Municipal Code establishes Very High FHSZs within the City, which includes the northern and eastern areas of the City. In addition, Chapter 7.15 (Fire Prevention – Burn Permit Required) states the Mt. Shasta Fire Chief has included the entire City in the high FHSZ, and the fire prevention requirements set forth in California Government Code §51182 apply to all properties in the City.

## DISCUSSION OF IMPACTS

### Question A

See discussion in Section 4.8 under 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. Temporary traffic control during completion of activities that require work in the public right-of-way is required and must adhere to the procedures, methods and guidance given in the current edition of the MUTCD. Implementation of traffic control measures during construction ensures impacts are less than significant.

### Question B

As discussed under Regulatory Context above, the Project site is within a Very High Fire Hazard Severity Zone. With the exception of construction activities noted above, the proposed Project does not include any development or improvements that would increase the risk of wildland fires or expose people or structures to wildland fires. Implementation of **Mitigation Measure MM 4.8.1** would avoid/minimize the risk of wildfires during construction.

### Question C

The proposed Project would not require installation of infrastructure that could exacerbate fire hazards (e.g., power lines in vegetated areas); would not construct public roads or otherwise intrude into natural spaces in a manner that would increase wildlife hazards in the long term; and would not require construction of fuel breaks, installation of emergency water sources, or other fire prevention/suppression infrastructure. Therefore, the increased risk of fire due to project infrastructure and the potential for temporary or ongoing impacts due to fire-related infrastructure are less than significant.

## Question D

The proposed Project would not expose people or structures to significant post-fire risks. The project site consists of gently sloping lands with little potential for post-fire erosion, landslides or other slope instability, or drainage changes or flooding. Nearly all project improvements would be underground, and the few above-ground elements (manholes, rod holes, and a sewer main encased in a steel casing) are not at risk due to fire or post-fire effects. Post-fire impacts would be less than significant.

## CUMULATIVE IMPACTS

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Cumulative projects are described in Section 3.4. Pursuant to conditions for issuance of an encroachment permit, the proposed Project and cumulative projects must implement temporary traffic control measures (i.e., signs, cones, flaggers, etc.) to ensure that emergency response vehicles are not hindered by construction activities. Because all projects must provide adequate access during construction, there would be no cumulative impact even if more than one project were under construction at the same time.

In the long term, the proposed Project would not contribute individually or cumulatively to increased risks of wildfire, effects of fire prevention/suppression infrastructure, or post-fire hazards. Although cumulative wildfire risks could occur during construction, implementation of **Mitigation Measure MM 4.8.1** adequately avoids, reduces, or mitigates such risks.

## MITIGATION

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Implementation of **Mitigation Measure MM 4.8.1**.

## DOCUMENTATION

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**California Board of Forestry and Fire Protection.** 2018. Strategic Fire Plan for California. <http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614.pdf>. Accessed January 2019.

**California Department of Forestry and Fire Protection (CAL FIRE).** 2008. Siskiyou County, Very High Fire Hazard Severity Zones in SRA. [http://frap.fire.ca.gov/webdata/maps/siskiyou/fhszs\\_map.47.pdf](http://frap.fire.ca.gov/webdata/maps/siskiyou/fhszs_map.47.pdf). Accessed August 2018.

**City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Safety Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/6SafetyElement.pdf>. Accessed August 2018.

\_\_\_\_\_. Mt. Shasta Municipal Code. 2018. Chapter 7.15 (Fire Prevention – Burn Permit Required). <http://www.codepublishing.com/CA/MtShasta/>. Accessed August 2018.

\_\_\_\_\_. Mt. Shasta Municipal Code. 2018. Chapter 7.60 (Very High Fire Hazard Severity Zones). <http://www.codepublishing.com/CA/MtShasta/>. Accessed August 2018.

## 4.20 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### DISCUSSION OF IMPACTS

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#### Question A

As discussed in the applicable environmental resource sections above, Project implementation could result in possible effects to special-status plant and wildlife species, loss of riparian habitat, loss of wetlands, disturbance of nesting migratory birds (if present), impacts to cultural resources and tribal cultural resources (if present), the introduction and spread of noxious weeds during construction, potential encounters with unstable soils, 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 area above. The mitigation measures identified in Section 1.9 reduce all potential impacts to a less than significant level.

#### 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, temporarily increased noise and vibration levels, and potential encounters with contaminated soil. 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  
Jacob Ewald ..... Environmental Planner  
John Luper ..... Environmental Scientist  
Jacques Peltier ..... Archaeologist  
Sabrina Hofkin ..... Wildlife Biologist  
Teresa Baarts ..... Production Coordinator

### City of Mt. Shasta

Rod Bryan ..... Public Works Director  
Juliana Lucchesi ..... City Planner

### PACE Engineering

Paul Reuter, P.E. .... Managing Engineer  
Keith Krantz, P.E. .... Civil Engineer  
Curtis Paget, P.E. .... Civil Engineer

## SECTION 6.0 ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ANSI	American National Standards Institute
AQMD	Air Quality Management District
APCD	Air Pollution Control District
APE	Area of Potential Effects
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
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
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
CNDDDB	California Natural Diversity Data Base
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
County	Siskiyou County
CRHR	California Register of Historical Resources
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CY	Cubic Yards
dBA	Decibels (A-weighted)
DBH	Diameter at Breast Height
DOC	Department of Conservation
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control

EO	Executive Order
FEMA	Federal Emergency Management Act
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
GHG	Greenhouse Gas Emissions
GWP	Global Warming Potential
H <sub>2</sub> S	Hydrogen Sulfide
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbons
HSC	California Health and Safety Code
I-5	Interstate 5
I&I	Infiltration and Inflow
IBC	International Building Code
IS	Initial Study
LRA	Local Responsibility Area
MACT	Maximum Achievable Control Technology
MCL	Maximum Contaminant Level
mg/m <sup>3</sup>	Milligrams per Cubic Meter
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MUTCD	California Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEIC/CHRIS	Northeast Information Center of the California Historical Resources Information System
NEHRA	National Earthquake Hazards Reduction Act
NEPA	National Environmental Policy Act
NF <sub>3</sub>	Nitrogen Trifluoride
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
N <sub>2</sub>	Nitrogen gas
N <sub>2</sub> O	Nitrous Oxide
NO	Nitric Oxide
NO <sub>2</sub>	Nitrogen Dioxide

NO <sub>x</sub>	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O <sub>2</sub>	Oxygen gas
O <sub>3</sub>	Ozone
OHWM	Ordinary High Water Mark
OSHA	Occupational Safety and Health Act
Pb	Lead
PFC	Perfluorocarbons
PM <sub>2.5</sub>	Particulate Matter, 2.5 microns in size
PM <sub>10</sub>	Particulate Matter, 10 microns in size
PPB	Parts per Billion
PPM	Parts per Million
PRC	Public Resources Code
Project	Mt. Shasta Sewer Interceptor Improvements Project
PVC	Polyvinyl Chloride
PWWF	Peak Wet Weather Flow
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SB	Senate Bill
SCAPCD	Siskiyou County Air Pollution Control District
SF <sub>6</sub>	Sulfur Hexafluoride
SHPO	State Historic Preservation Officer
SMARA	The Surface Mining and Reclamation Act
SO <sub>2</sub>	Sulfur Dioxide
SO <sub>4</sub>	Sulfate
SO <sub>x</sub>	Sulfur Oxides
SRA	State Responsibility Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

TAC	Toxic Air Contaminants
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
VMT	Vehicle Miles Travelled
WDRs	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant
$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter

**Appendix A .....**

**CalEEMod.2016.3.2**

Emissions Report

Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

**Mt. Shasta Sewer Interceptor Improvements**  
**Siskiyou County APCD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.00		0.62	0.00	0
Other Asphalt Surfaces	0.00		0.00	3,267.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Rural	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	85
<b>Climate Zone</b>	14			<b>Operational Year</b>	2021
<b>Utility Company</b>	PacifiCorp				
<b>CO2 Intensity (lb/MW hr)</b>	1656.39	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Construction Phase - Construction schedule provided by PACE Engineering.

Grading - Grading information provided by PACE Engineering.

Demolition -

Land Use Change -

Construction Off-road Equipment Mitigation -

## Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	80.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	10/7/2020	9/25/2020
tblConstructionPhase	PhaseEndDate	5/15/2020	5/22/2020
tblConstructionPhase	PhaseEndDate	5/20/2020	6/5/2020
tblConstructionPhase	PhaseEndDate	10/14/2020	10/9/2020
tblConstructionPhase	PhaseEndDate	5/18/2020	5/15/2020
tblConstructionPhase	PhaseStartDate	5/21/2020	6/8/2020
tblConstructionPhase	PhaseStartDate	5/4/2020	5/18/2020
tblConstructionPhase	PhaseStartDate	5/19/2020	5/25/2020
tblConstructionPhase	PhaseStartDate	10/8/2020	9/28/2020
tblConstructionPhase	PhaseStartDate	5/16/2020	5/4/2020
tblGrading	AcresOfGrading	0.00	0.62
tblGrading	AcresOfGrading	5.00	0.50
tblGrading	MaterialExported	0.00	2,282.00
tblGrading	MaterialImported	0.00	1,206.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

## 2.0 Emissions Summary

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## Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-4-2020	8-3-2020	0.3497	0.3497
2	8-4-2020	9-30-2020	0.1955	0.1955
		Highest	0.3497	0.3497



## Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

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

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/4/2020	5/15/2020	5	10	
2	Demolition	Demolition	5/18/2020	5/22/2020	5	5	
3	Grading	Grading	5/25/2020	6/5/2020	5	10	
4	Building Construction	Building Construction	6/8/2020	9/25/2020	5	80	
5	Paving	Paving	9/28/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0.62

Acres of Paving: 0.62

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

#### OffRoad Equipment

Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	12.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	436.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

**3.2 Site Preparation - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0422	0.0205	5.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	4.2796	4.2796	1.3800e-003	0.0000	4.3142
<b>Total</b>	<b>3.4300e-003</b>	<b>0.0422</b>	<b>0.0205</b>	<b>5.0000e-005</b>	<b>2.7000e-004</b>	<b>1.6800e-003</b>	<b>1.9500e-003</b>	<b>3.0000e-005</b>	<b>1.5400e-003</b>	<b>1.5700e-003</b>	<b>0.0000</b>	<b>4.2796</b>	<b>4.2796</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>4.3142</b>

Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

**3.2 Site Preparation - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.1000e-004	1.8600e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.3034	0.3034	2.0000e-005	0.0000	0.3038
<b>Total</b>	<b>2.7000e-004</b>	<b>2.1000e-004</b>	<b>1.8600e-003</b>	<b>0.0000</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.3034</b>	<b>0.3034</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3038</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0422	0.0205	5.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	4.2796	4.2796	1.3800e-003	0.0000	4.3142
<b>Total</b>	<b>3.4300e-003</b>	<b>0.0422</b>	<b>0.0205</b>	<b>5.0000e-005</b>	<b>1.2000e-004</b>	<b>1.6800e-003</b>	<b>1.8000e-003</b>	<b>1.0000e-005</b>	<b>1.5400e-003</b>	<b>1.5500e-003</b>	<b>0.0000</b>	<b>4.2796</b>	<b>4.2796</b>	<b>1.3800e-003</b>	<b>0.0000</b>	<b>4.3142</b>

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**3.2 Site Preparation - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.1000e-004	1.8600e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.3034	0.3034	2.0000e-005	0.0000	0.3038
<b>Total</b>	<b>2.7000e-004</b>	<b>2.1000e-004</b>	<b>1.8600e-003</b>	<b>0.0000</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.3034</b>	<b>0.3034</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3038</b>

**3.3 Demolition - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2800e-003	0.0000	1.2800e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1700e-003	0.0197	0.0191	3.0000e-005		1.1700e-003	1.1700e-003		1.1100e-003	1.1100e-003	0.0000	2.6019	2.6019	4.9000e-004	0.0000	2.6142
<b>Total</b>	<b>2.1700e-003</b>	<b>0.0197</b>	<b>0.0191</b>	<b>3.0000e-005</b>	<b>1.2800e-003</b>	<b>1.1700e-003</b>	<b>2.4500e-003</b>	<b>1.9000e-004</b>	<b>1.1100e-003</b>	<b>1.3000e-003</b>	<b>0.0000</b>	<b>2.6019</b>	<b>2.6019</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>2.6142</b>

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**3.3 Demolition - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.7100e-003	2.7000e-004	1.0000e-005	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.4792	0.4792	2.0000e-005	0.0000	0.4798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.1000e-004	1.8600e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.3034	0.3034	2.0000e-005	0.0000	0.3038
<b>Total</b>	<b>3.2000e-004</b>	<b>1.9200e-003</b>	<b>2.1300e-003</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>1.0000e-005</b>	<b>4.2000e-004</b>	<b>1.1000e-004</b>	<b>1.0000e-005</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.7826</b>	<b>0.7826</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.7836</b>

**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					5.8000e-004	0.0000	5.8000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1700e-003	0.0197	0.0191	3.0000e-005		1.1700e-003	1.1700e-003		1.1100e-003	1.1100e-003	0.0000	2.6019	2.6019	4.9000e-004	0.0000	2.6142
<b>Total</b>	<b>2.1700e-003</b>	<b>0.0197</b>	<b>0.0191</b>	<b>3.0000e-005</b>	<b>5.8000e-004</b>	<b>1.1700e-003</b>	<b>1.7500e-003</b>	<b>9.0000e-005</b>	<b>1.1100e-003</b>	<b>1.2000e-003</b>	<b>0.0000</b>	<b>2.6019</b>	<b>2.6019</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>2.6142</b>

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**3.3 Demolition - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.7100e-003	2.7000e-004	1.0000e-005	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.4792	0.4792	2.0000e-005	0.0000	0.4798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.1000e-004	1.8600e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.3034	0.3034	2.0000e-005	0.0000	0.3038
<b>Total</b>	<b>3.2000e-004</b>	<b>1.9200e-003</b>	<b>2.1300e-003</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>1.0000e-005</b>	<b>4.2000e-004</b>	<b>1.1000e-004</b>	<b>1.0000e-005</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.7826</b>	<b>0.7826</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.7836</b>

**3.4 Grading - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.2900e-003	0.0000	4.2900e-003	2.1300e-003	0.0000	2.1300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
<b>Total</b>	<b>4.3400e-003</b>	<b>0.0394</b>	<b>0.0381</b>	<b>6.0000e-005</b>	<b>4.2900e-003</b>	<b>2.3400e-003</b>	<b>6.6300e-003</b>	<b>2.1300e-003</b>	<b>2.2300e-003</b>	<b>4.3600e-003</b>	<b>0.0000</b>	<b>5.2038</b>	<b>5.2038</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>5.2284</b>

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**3.4 Grading - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8900e-003	0.0620	9.9500e-003	1.8000e-004	3.6500e-003	2.3000e-004	3.8800e-003	1.0100e-003	2.2000e-004	1.2200e-003	0.0000	17.4109	17.4109	8.6000e-004	0.0000	17.4324
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	5.3000e-004	4.2000e-004	3.7200e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6068	0.6068	3.0000e-005	0.0000	0.6077
<b>Total</b>	<b>2.4200e-003</b>	<b>0.0624</b>	<b>0.0137</b>	<b>1.9000e-004</b>	<b>4.2600e-003</b>	<b>2.4000e-004</b>	<b>4.4900e-003</b>	<b>1.1700e-003</b>	<b>2.3000e-004</b>	<b>1.3900e-003</b>	<b>0.0000</b>	<b>18.0178</b>	<b>18.0178</b>	<b>8.9000e-004</b>	<b>0.0000</b>	<b>18.0401</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9300e-003	0.0000	1.9300e-003	9.6000e-004	0.0000	9.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
<b>Total</b>	<b>4.3400e-003</b>	<b>0.0394</b>	<b>0.0381</b>	<b>6.0000e-005</b>	<b>1.9300e-003</b>	<b>2.3400e-003</b>	<b>4.2700e-003</b>	<b>9.6000e-004</b>	<b>2.2300e-003</b>	<b>3.1900e-003</b>	<b>0.0000</b>	<b>5.2038</b>	<b>5.2038</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>5.2284</b>

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**3.4 Grading - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8900e-003	0.0620	9.9500e-003	1.8000e-004	3.6500e-003	2.3000e-004	3.8800e-003	1.0100e-003	2.2000e-004	1.2200e-003	0.0000	17.4109	17.4109	8.6000e-004	0.0000	17.4324
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	5.3000e-004	4.2000e-004	3.7200e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6068	0.6068	3.0000e-005	0.0000	0.6077
<b>Total</b>	<b>2.4200e-003</b>	<b>0.0624</b>	<b>0.0137</b>	<b>1.9000e-004</b>	<b>4.2600e-003</b>	<b>2.4000e-004</b>	<b>4.4900e-003</b>	<b>1.1700e-003</b>	<b>2.3000e-004</b>	<b>1.3900e-003</b>	<b>0.0000</b>	<b>18.0178</b>	<b>18.0178</b>	<b>8.9000e-004</b>	<b>0.0000</b>	<b>18.0401</b>

**3.5 Building Construction - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0345	0.3541	0.2955	4.6000e-004		0.0209	0.0209		0.0192	0.0192	0.0000	40.0242	40.0242	0.0129	0.0000	40.3478
<b>Total</b>	<b>0.0345</b>	<b>0.3541</b>	<b>0.2955</b>	<b>4.6000e-004</b>		<b>0.0209</b>	<b>0.0209</b>		<b>0.0192</b>	<b>0.0192</b>	<b>0.0000</b>	<b>40.0242</b>	<b>40.0242</b>	<b>0.0129</b>	<b>0.0000</b>	<b>40.3478</b>

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**3.5 Building Construction - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	4.9300e-003	1.6600e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.6000e-004	7.0000e-005	3.0000e-005	9.0000e-005	0.0000	1.1017	1.1017	9.0000e-005	0.0000	1.1039
Worker	4.2000e-004	3.4000e-004	2.9800e-003	1.0000e-005	4.9000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4855	0.4855	3.0000e-005	0.0000	0.4862
<b>Total</b>	<b>6.6000e-004</b>	<b>5.2700e-003</b>	<b>4.6400e-003</b>	<b>2.0000e-005</b>	<b>7.3000e-004</b>	<b>3.0000e-005</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>3.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.5871</b>	<b>1.5871</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.5900</b>

**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	0.0345	0.3541	0.2955	4.6000e-004		0.0209	0.0209		0.0192	0.0192	0.0000	40.0242	40.0242	0.0129	0.0000	40.3478
<b>Total</b>	<b>0.0345</b>	<b>0.3541</b>	<b>0.2955</b>	<b>4.6000e-004</b>		<b>0.0209</b>	<b>0.0209</b>		<b>0.0192</b>	<b>0.0192</b>	<b>0.0000</b>	<b>40.0242</b>	<b>40.0242</b>	<b>0.0129</b>	<b>0.0000</b>	<b>40.3478</b>

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**3.5 Building Construction - 2020**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	4.9300e-003	1.6600e-003	1.0000e-005	2.4000e-004	3.0000e-005	2.6000e-004	7.0000e-005	3.0000e-005	9.0000e-005	0.0000	1.1017	1.1017	9.0000e-005	0.0000	1.1039
Worker	4.2000e-004	3.4000e-004	2.9800e-003	1.0000e-005	4.9000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4855	0.4855	3.0000e-005	0.0000	0.4862
<b>Total</b>	<b>6.6000e-004</b>	<b>5.2700e-003</b>	<b>4.6400e-003</b>	<b>2.0000e-005</b>	<b>7.3000e-004</b>	<b>3.0000e-005</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>3.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.5871</b>	<b>1.5871</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.5900</b>

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.8600e-003</b>	<b>0.0361</b>	<b>0.0356</b>	<b>6.0000e-005</b>		<b>1.9800e-003</b>	<b>1.9800e-003</b>		<b>1.8300e-003</b>	<b>1.8300e-003</b>	<b>0.0000</b>	<b>4.6965</b>	<b>4.6965</b>	<b>1.3700e-003</b>	<b>0.0000</b>	<b>4.7307</b>

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**3.6 Paving - 2020**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	7.6000e-004	6.7000e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0923	1.0923	6.0000e-005	0.0000	1.0938
<b>Total</b>	<b>9.5000e-004</b>	<b>7.6000e-004</b>	<b>6.7000e-003</b>	<b>1.0000e-005</b>	<b>1.0900e-003</b>	<b>1.0000e-005</b>	<b>1.1000e-003</b>	<b>2.9000e-004</b>	<b>1.0000e-005</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>1.0923</b>	<b>1.0923</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.0938</b>

**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	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.8600e-003</b>	<b>0.0361</b>	<b>0.0356</b>	<b>6.0000e-005</b>		<b>1.9800e-003</b>	<b>1.9800e-003</b>		<b>1.8300e-003</b>	<b>1.8300e-003</b>	<b>0.0000</b>	<b>4.6965</b>	<b>4.6965</b>	<b>1.3700e-003</b>	<b>0.0000</b>	<b>4.7307</b>







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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



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**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>							

**7.0 Water Detail**

---

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste**

Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

**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			
	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

Mt. Shasta Sewer Interceptor Improvements - Siskiyou County APCD Air District, Annual

**8.2 Waste by Land Use**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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**

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**Appendix B .....**

**Biological Study Report**

Prepared by ENPLAN

January 2019

# BIOLOGICAL STUDY REPORT

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## City of Mt. Shasta Sewer Interceptor Project Mt. Shasta, Siskiyou County, California



*Prepared for:*

**City of Mt. Shasta**

*Prepared by:*

**John Luper, Qualified Biologist**

**January 2019**

032-32

**ENPLAN**

3179 Bechelli Lane, Suite 100, Redding, CA 96002  
(530) 221-0440  
[www.enplan.com](http://www.enplan.com)

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Appendix B. Lists of Wildlife Species and Vascular Plants Observed on the Site

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## 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 site. 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 study was performed by John Luper, Environmental Scientist, Stacey Alexander, Wildlife Biologist, and Don Burk, Environmental Services Manager.

Mr. Luper received his Bachelor of Science degree in Botany and Biology (Environmental) from California State University, Humboldt. He has over twelve 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.

Ms. Alexander received her Bachelor of Science degree in Ecology, Evolution, and Organismal Biology from California State University, Channel Islands. She has over five years of experience working as a wildlife biologist throughout California. Her experience includes general wildlife surveys, aquatic surveys, regulatory permitting, and environmental monitoring for construction projects. Ms. Alexander was responsible for the general wildlife survey.

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 assisted with the wildlife study and was responsible for the botanical surveys and final report review.

## 2.0 PROJECT LOCATION

As shown in **Figure 1**, the proposed Project is located both within the City of Mt. Shasta City limits (primarily on the east side of I-5) and in a portion of the unincorporated area of Siskiyou County (on the west side of I-5). The project study area boundaries were established in consultation with PACE Engineering based on the location of construction activities, access to the sites, staging areas, and parking for construction workers.

Improvements east of I-5 would occur in the road right-of-way (ROW) of W. Jessie Street. Improvements west of I-5 would occur in the road ROWs of W. Jessie Street, W. Lake Street, S. Old Stage Road, and W. Ream Avenue; within the Morgan-Merrill Preserve (a wetland mitigation area); and on other privately owned property. The existing sewer main under I-5 at W. Jesse Street would be renovated in place, with no surface disturbance.

As shown in **Figure 1**, temporary staging of construction equipment and materials would occur on an undeveloped parcel south of W. Jessie Street on the west side of I-5; in the center of the Preserve directly south of Cold Creek; in the southeastern area of the Preserve; and in the southern Project area south of W. Ream Avenue. Project staging would also occur in the affected road ROW throughout the project area. Minor clearing of vegetation would be required to establish the off-street staging areas; however, no grading or tree removal would occur.

## 3.0 PROJECT DESCRIPTION

The proposed Project entails improvements to the City's wastewater collection system, including replacing/upsizing existing interceptor pipes, installing new pipe segments, rehabilitating a damaged pipe under I-5, replacing manholes, and constructing a maintenance road that would be used during construction and to access the interceptor pipe during future maintenance activities. This section describes the proposed improvements that are the subject of this BSR.

Path: N:\complan\files\01-Jobs\Active\032-32 PACE - Mt. Shasta Sewer Interceptor\3-Project\_CIS\3-Map Documents\Cultural\Appendix A\Figure 1 Project Location and Vicinity Map 121117.mxd

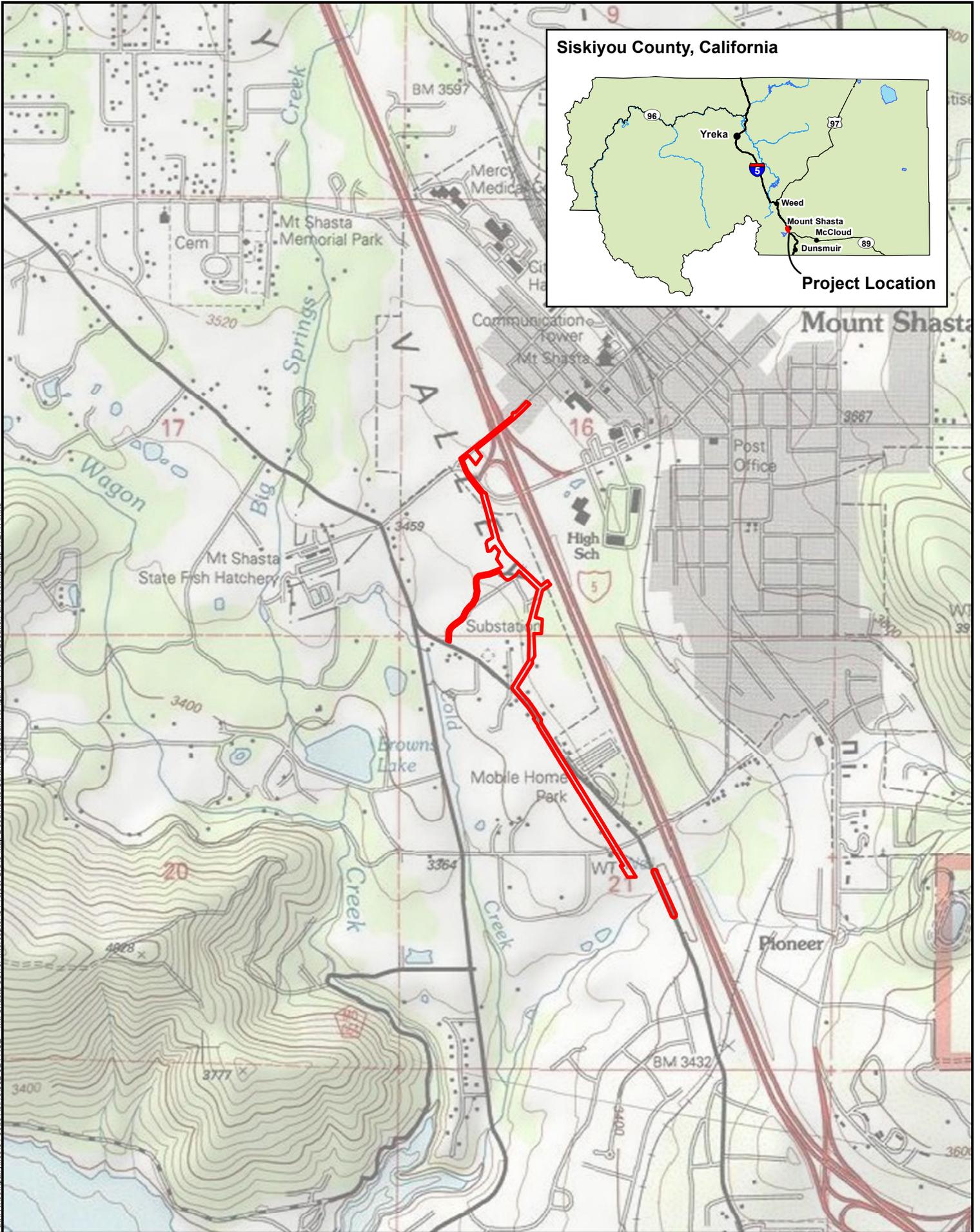


Figure 1

All depictions are approximate. Not a survey product. 11.01.18



# Project Location and Vicinity



Due to the presence of boulders and unstable soils in the Project site (see discussion under *Trenching/Shoring* below), trenchless construction methods for the pipeline improvements are not possible; therefore, all pipeline improvements would be installed using open-cut trenching. At culvert crossings, the pipe would be installed either in the fill overlying the culvert, or under the culvert as further discussed below. Existing sewer laterals would be reconnected as the interceptor is constructed. Paved roads that are disturbed during construction would be re-paved following installation of the improvements.

***Pipeline under Interstate 5:***

The interceptor pipe under I-5 between the west end of W. Jessie Street on the east side of I-5 and the east end of W. Jessie Street on the west side of I-5 would be rehabilitated using a “cured-in-place pipe” (CIPP) process. A flexible tube coated with resin would be blown or pulled into the damaged pipe from a nearby manhole and inflated. The resin would be cured using hot water, ultraviolet light, or steam to form a tight-fitting, jointless replacement pipe. No earth disturbance would occur during the CIPP process.

***Improvements on the East Side of Interstate 5:***

Approximately 220 feet of the existing 12-inch interceptor in W. Jessie Street would be replaced with a 24-inch interceptor; two manholes would be abandoned and replaced with new manholes. All work would occur within the paved public road ROW. The pipe would be installed under a 12-inch culvert on W. Jessie Street.

***Improvements on the West Side of Interstate 5:***

The majority of the existing interceptor is 12 inches in diameter. All replacement and new interceptor pipe would be 18- or 24-inch diameter, which is the minimum required to accommodate existing PWWF, prevent storm water infiltration, and eliminate manhole surcharging during significant wet weather events.

- ±400 feet of the existing interceptor pipe immediately west of I-5 on W. Jessie Street would be replaced with an 18-inch pipe. A portion of this pipe segment is currently on private property; the new interceptor would be installed entirely in the public road ROW. The existing easement that crosses private property

would be abandoned. Five existing manholes would be abandoned and replaced with new manholes.

- $\pm 250$  feet of the existing interceptor pipe between the west end of W. Jessie Street and the northern property line of the Morgan-Merrill Preserve would be replaced. The pipe would be placed in the fill overlying a 36-inch culvert on Hatchery Lane, immediately south of W. Jessie Street.
- A maintenance road that would be used for construction access and to access the interceptor pipe during future maintenance activities would be constructed from the northern property line of the Morgan-Merrill Preserve, along the toe of the Caltrans overpass embankment along W. Lake Street. The maintenance road would be  $\pm 350$  feet in length by 12 feet in width. Establishing the road would require placement of approximately six feet of fill in the northern segment of the road; the road would level out as it enters the Preserve. The road would be surfaced with gravel.
- Improvements within the Morgan-Merrill Preserve include replacement of  $\pm 2,200$  feet of interceptor pipe;  $\pm 150$  feet of new pipe would be installed in the southeastern portion of the Preserve in order to collect wastewater entering the system from an existing sewer main on the east side of I-5.
- A new aerial pipeline would be installed across Cold Creek. To minimize impacts to the banks of the creek, the interceptor pipe would be installed within a protective steel casing that would be supported on both sides of the creek by a casing support structure. The casing support footings would be set back from the top of the bank on both sides of the creek as necessary to minimize impacts to the creek.
- Four manholes within the Morgan-Merrill Preserve would be abandoned, and seven new manholes would be installed. The existing interceptor pipe would be abandoned in place.

- From the southern boundary of the Morgan-Merrill Preserve,  $\pm 700$  feet replacement interceptor pipe would be installed in an existing private driveway to S. Old Stage Road. The pipe would be installed under a 12-inch culvert in S. Old Stage Road. The pipe would proceed in S. Old Stage Road a distance of  $\pm 500$  feet. A portion of the pipe in S. Old Stage Road would be installed in the paved road ROW, and the rest in the gravel shoulder.
- From S. Old Stage Road,  $\pm 1,500$  feet of pipe would be installed in an irrigated pasture. In the pasture, the pipe would be installed under two 24-inch culverts in an irrigation ditch.
- From the southern boundary of the pasture, the pipe would proceed  $\pm 300$  feet southeast across developed residential property and then across W. Ream Avenue. From W. Ream Avenue, the pipe would proceed  $\pm 400$  feet across private property. The pipe would be installed in the fill overlying an 18-inch culvert on the private property.
- $\pm 550$  feet of interceptor pipe would be installed in S. Old Stage Road south of W. Ream Avenue. The pipe would be installed over a 48-inch culvert.

## **Other Construction Considerations**

### ***Trenching/Shoring***

In January 2019, KC Engineering prepared a Geotechnical Exploration Report (Geotechnical Report) that identifies surface and subsurface soil conditions along the proposed pipe alignment, and provides recommendations for engineering design and construction methods for trenching, shoring, and backfill, as well as recommendations for foundations for the manholes and casing supports for the aerial pipeline crossing at Cold Creek. The Geotechnical Report was based on site reconnaissance, exploratory test borings, and laboratory testing of subsurface soil samples.

According to the Geotechnical Report, boulders are present in several areas along the interceptor alignment and should be removed where encountered. Although these boulders can be removed with conventional excavation earthmoving equipment,

the trench may need to be significantly widened to allow removal of the boulders or to compensate for poorly cohesive native soils. In areas where boulders are present and/or soil conditions are poor, construction activity could impact up to a 30-foot wide path. Boulders and oversized cobbles would be disposed of off-site in accordance with City and County regulations.

Depths of excavation for the utility trenches would range from 4 feet to 12 feet. Open-graded crushed aggregate would be placed in the bottom of the trench followed by bedding material as recommended in the Geotechnical Report.

For all trenches greater than five feet in depth, the contractor would be required to provide ground-support shoring systems or sloped earthen trench backcuts for safety and to facilitate construction of the proposed improvements. Design of the shoring system is the responsibility of the contractor and would be reviewed by the project geotechnical engineer. Where vertical trenching and shoring are not used, a maximum temporary trench sidewall slope inclination of 1.5 feet horizontal to 1 foot vertical is recommended.

In areas where imported gravel backfill is required over the new pipe, such as under paved and gravel roads, all material excavated from the trenches would be disposed of off-site in accordance with City and County regulations. In areas where native material is used as trench backfill, such as across pasture areas, material excavated from the trench would be temporarily stockpiled adjacent to the trench and then placed as backfill in the trench after the new pipe is installed. No excess soil would be allowed on-site at the end of construction.

### ***Groundwater/Dewatering***

Test borings that were done during completion of the geotechnical study identified groundwater in some locations at a depth of nine feet below existing ground surface. Because the depth of the pipeline could be up to 12 feet, it is likely that groundwater will be encountered during construction. If excessive groundwater is encountered during trenching operations, the contractor would be required to conduct dewatering activities.

Where feasible (e.g., landowner approval is provided, sufficient space with permeable surfaces is available, slopes are gentle enough to allow control of potential sediment transport, etc.), stormwater or groundwater removed from excavations would be discharged overland into well-vegetated areas to promote the settling of sediment and prevent runoff from entering drainage courses. Land disposal is typically restricted to the dry season (May through October) unless the discharger provides evidence that the discharge can be retained on land during the wet-weather season.

If overland discharge is not possible, water removed from excavations would be routed to sump pump pits and/or dewatering wells to control the potential flow of groundwater into the trenches. A sump area would be excavated at the lowest point of the open excavation/trench to facilitate pumping of collected water. Settling basins and/or other means would be used as necessary. The water would be pumped to a City-approved discharge facility. Design of the dewatering system is the responsibility of the contractor.

To prevent dewatering of wetlands following completion of construction, concrete cutoff walls would be installed in the trench at designated locations, including areas where open-graded aggregate is used, at access points at the edges of wetlands in the Morgan-Merrill Preserve,  $\pm 50$  feet from each side of Cold Creek, and near the southern area of the pasture. The number of walls required is dependent on the slope of the trench. At a minimum, it is estimated that a trench cutoff would be used for every four to five feet of fall in the pipeline. The concrete cutoff wall would fill the trench completely around the pipe and extend up to  $\pm 18$  inches below the ground surface.

### ***Temporary Flow Diversion***

If flow is present in irrigation ditches, temporary diversion and dewatering would be needed to facilitate interceptor construction. It is anticipated that this would be accomplished with use of temporary diversion dams (i.e., sandbag cofferdams) and diversion pipes. A diversion pipe would extend from a point upstream of the work area to point downstream of the work area. A temporary diversion dam would then be constructed to direct flow into the diversion pipe. The diversion structure would be removed following installation of the interceptor pipe through the ditch footprint.

As noted above, the interceptor pipe would be installed by trenching under certain culverts. Depending on the integrity of the culverts, diversion of flow may be necessary prior to interceptor pipe installation under the culverts. Likewise, temporary diversion may be necessary if groundwater flow is encountered in wetlands (e.g., spring flow). In these cases, a similar temporary pipe/cofferdam diversion may be utilized.

### ***Ground Improvement (Potential Liquefaction)***

According to the Geotechnical Report, subsurface sandy deposits near the creek crossing and in the Morgan-Merrill Preserve may be subject to seismically induced liquefaction settlement that can result in total and differential settlements of up to five inches and three inches, respectively.

Due to the potential for liquefaction, the Geotechnical Report recommends that the casing support structures and manholes in the Morgan-Merrill Preserve be supported on deepened foundation elements or shallow footings in conjunction with an appropriate ground improvement technique, such as low mobility compaction grouting.

Compaction grouting is a method in which soil is densified using a thick, low-slump grout. The grout forms a bulb at the tip of the grout pipe, displacing the soil; soil between the grout bulbs is thus compacted and strengthened. Low mobility compaction grouting has minimal adverse impacts because it does not mix with or permeate the soil, does not travel freely beyond the injection point, and becomes immobile when injection pressure ceases. Ground improvement depths would be variable, and 10- to 30-foot depths should be anticipated on all sides of the casing support structures for the Cold Creek aerial pipeline crossing.

Ground improvements for manholes may also include over-excavation and replacement with a geogrid-reinforced aggregate base layer or Controlled Low Strength Material (CLSM). CLSM is a cementitious grout-like material placed without compaction.

## 4.0 AREA CHARACTERISTICS AND HABITAT TYPES

The study area is situated between 3,375 and 3,500 feet above mean sea level within the Sacramento Headwaters watershed in south-central Siskiyou County. The study area is located about two miles southwest of the base of Mount Shasta and one mile northeast of Lake Siskiyou.

The climate of the project vicinity is Mediterranean, with cool, moist winters and warm, dry summers. Annual precipitation averages  $\pm 39.94$  inches, as determined at an observation station within the City of Mt. Shasta. The average daily maximum July temperature is 84.9 degrees Fahrenheit, and the average daily minimum January temperature is 25.8 degrees Fahrenheit (Western Regional Climate Center 2018).

Pipeline improvements are proposed in the Morgan-Merrill Preserve, a wildlife habitat and wetlands mitigation area that contains natural wetlands, man-made wetlands, and non-wetland natural areas. The Preserve was established in the early 1990s as mitigation for development projects located in the W. Lake Street area of the City on the east side of I-5. As stated in the Morgan-Merrill Developer Wetlands Mitigation Plan prepared by Karen Theiss and Associates in 1990, the purpose of the Preserve was to restore, create, and enhance a large tract of contiguous wetland with a high wildlife habitat value, recognizing that a system of diverse habitats attracts a greater variety of wildlife species and numbers of individuals to the general area than does any habitat independently. The Preserve is bisected by Cold Creek, which begins at springs in the City of Mt. Shasta, on the east side of I-5. The natural wetlands occur north of Cold Creek, and the man-made wetlands occur south of Cold Creek. Non-wetlands natural areas are located on both sides of the Creek.

As a result of the field evaluation, eight communities were identified in the study area: stream/riverine, mixed conifer forest, wet meadow, freshwater emergent wetland, montane riparian scrub, perennial grassland, pasture, and urban. Three of these communities, stream/riverine, wet meadow, and freshwater emergent wetland, qualify as wetlands or “other Waters of the United States” and are considered as sensitive natural communities. In addition, certain occurrences of montane riparian scrub may qualify as “Waters of the State.”

Each of these communities is briefly described below. **Figure 2** shows the locations of each community.

#### 4.1 Stream/Riverine

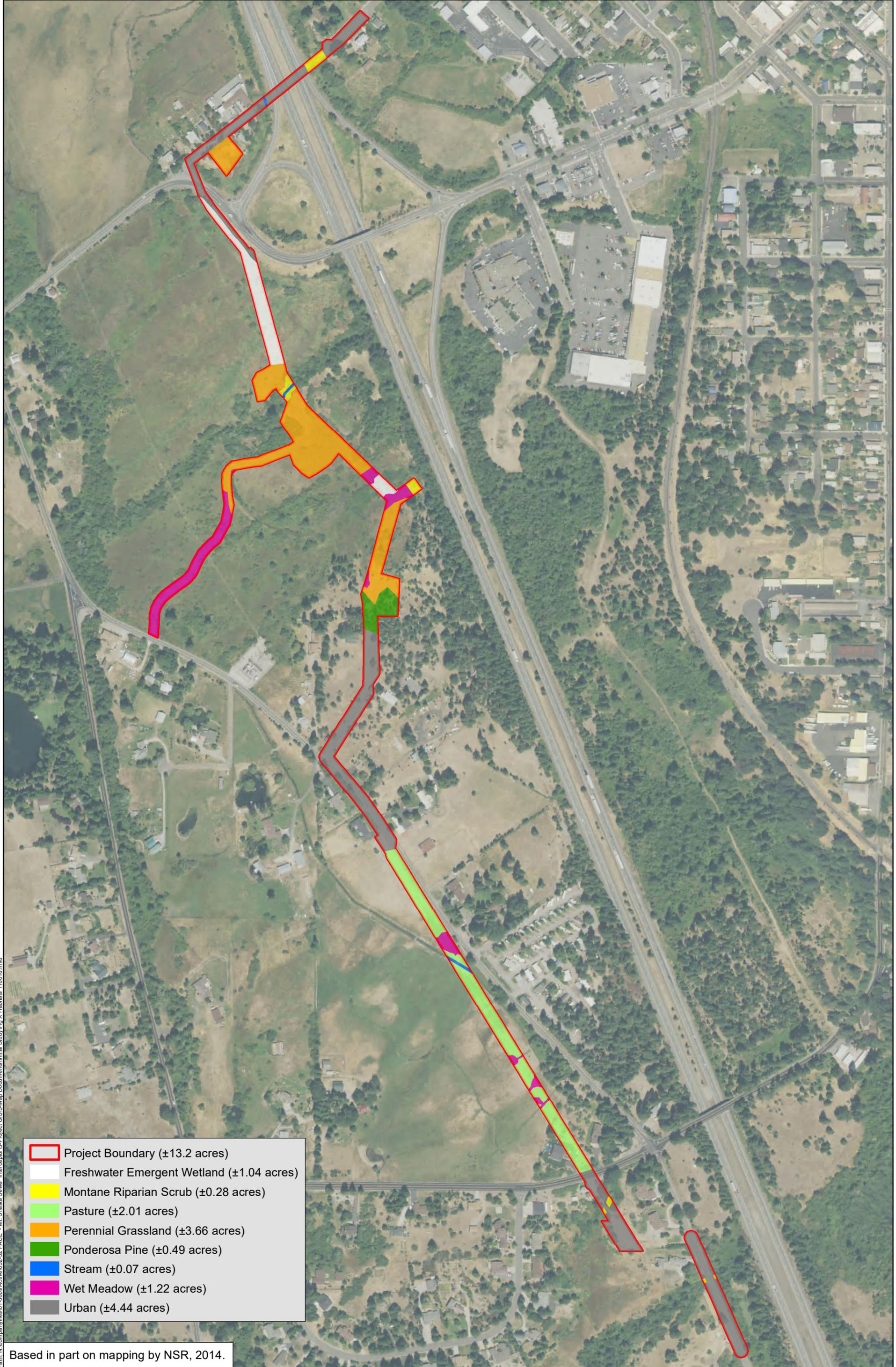
Two irrigation ditches and three small streams pass through the project study area; these features total approximately 0.08 acres. The streams are small spring-fed perennial features that flow through the project corridor in a southwesterly direction. The two smaller streams are in the southern portion of the study corridor and are culverted under existing road crossings; the new interceptor will cross under or over the culverts, with no disturbance to the streams. The largest of three streams is Cold Creek (Photo 1).

Cold Creek originates as springs in the City of Mt. Shasta; from the planned interceptor crossing location, the stream flows approximately 1.6 miles to Lake Siskiyou. The stream is well shaded, has cool water, has a gravelly or cobbly bottom, and may support invertebrates, amphibians, and reptiles. Although no fish were observed, it is possible that resident trout are present, particularly downstream of the S. Old Stage Road.



Photo 1. Cold Creek just downstream of the aerial crossing location.

Path: N:\company\files\01-Jobs\Active\032-32\_PACE - Mt. Shasta Sewer Interceptor\3-Project\GIS\Map\_Documents\Initial\_Study\Fig X\_Habitats\_110618.mxd



- Project Boundary (±13.2 acres)
- Freshwater Emergent Wetland (±1.04 acres)
- Montane Riparian Scrub (±0.28 acres)
- Pasture (±2.01 acres)
- Perennial Grassland (±3.66 acres)
- Ponderosa Pine (±0.49 acres)
- Stream (±0.07 acres)
- Wet Meadow (±1.22 acres)
- Urban (±4.44 acres)

Based in part on mapping by NSR, 2014.



Figure 2  
**Habitat Types**

All depictions are approximate. Not a survey product. 11.06.18

## 4.2 Mixed-Conifer Forest

The mixed-conifer forest community is located in the southern area of the Morgan-Merrill Preserve and immediately to the south. As shown in Photo 2, the ±0.49-acre mixed conifer forest consists of mature trees with few understory shrubs and a moderately developed herbaceous layer. Representative species include ponderosa pine (*Pinus ponderosa*), incense-cedar (*Calocedrus decurrens*), green-leaved manzanita (*Arctostaphylos patula*), downy brome (*Bromus tectorum*), big squirreltail (*Elymus multisetus*), and medusa-head (*Elymus caput-medusae*). The community has been fragmented by urban development.



Photo 2. Mixed-conifer forest; southern area of Morgan-Merrill Preserve.

## 4.3 Wet Meadow

The wet-meadow community occurs in the temporary access route off S. Old Stage Road, in the southeastern portion of the Morgan-Merrill Preserve, and within the pasture west of S. Old Stage Road (Photo 3). The wet-meadow occurrences total approximately 1.22 acres. Wet-



Photo 3. Wet meadow in southern area of the pasture.

meadow vegetation is represented by wild teasel (*Dipsacus fullonum*), Kentucky bluegrass (*Poa pratensis*), tall fescue (*Festuca arundinacea*), Baltic rush (*Juncus balticus*), blue-pod lupine (*Lupinus polyphyllus*), birdsfoot trefoil (*Lotus corniculatus*) and other species.

This community is quite variable in structure and species composition. Photo 3 shows a low-growing wet meadow that is subject to cattle grazing. The ungrazed wet meadow in the Cold Creek access road corridor supports a lush growth of grasses and perennial herbs that is about three feet in height.

#### 4.4 Freshwater Emergent Wetland

The freshwater emergent wetland occurs as a large expanse between Cold Creek and Hatchery Lane in the Morgan-Merrill Preserve (Photo 4), and in the southeastern area of the Preserve property. The two occurrences total  $\pm 1.04$  acres. The northernmost freshwater emergent wetland is saturated to shallowly ponded in the spring and dries out



Photo 4. Freshwater emergent wetlands in Morgan-Merrill Preserve.

during the summer. This occurrence supports various sedges (*Carex* spp.), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), velvet grass (*Holcus lanatus*), pockets of cattail (*Typha* sp.), and a wide array of other wetland plants. South of Cold Creek, the freshwater emergent wetland is substantially wetter, typically being ponded year-round. The existing interceptor passes through the wettest areas, which are dominated by a dense stand of cattails; the proposed project would route the interceptor upslope (west) of the wettest portion of this community, where the vegetation is more similar to that north of Cold Creek.

## 4.5 Montane Riparian Scrub

The montane riparian scrub community occurs along streams and ditches throughout the study corridor. Most of the occurrences are within the Morgan-Merrill Preserve, including the Cold Creek corridor in the vicinity of the planned interceptor crossing (Photo 5). The montane riparian scrub community covers



Photo 5. Montane riparian scrub habitat.

approximately 0.28 acres, and is characterized by dense linear stands of shrubs and vines up to roughly 20 feet in height. Common species include mountain alder (*Alnus incana* ssp. *tenuifolia*), yellow willow (*Salix lasiandra*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Klamath hawthorn (*Crataegus gaylussacia*), Himalayan blackberry, and other woody plant species.

## 4.6 Perennial Grassland

The perennial grassland community occurs in the staging area south of W. Jessie Street (Photo 6), the staging area on the Morgan-Merrill Preserve south of Cold Creek, and the southern area of the Preserve north of



Photo 6. Mowed and unmowed perennial grassland at the W. Jesse Street staging area, with montane riparian scrub in the right mid-ground.

the mixed-conifer forest community; the occurrences total about 3.66 acres. The community occurs on dry, upland soils, where it forms open to moderately dense stands up to about three feet in height. The community is characterized by perennial grasses and forbs including cereal rye (*Secale cereale*), blue wild rye (*Elymus glaucus* ssp. *glaucus*), meadow fescue (*Festuca pratensis*), Kentucky bluegrass (*Poa pratensis*), Fuller's teasel, and Canada thistle (*Cirsium arvense*). A few scattered trees and shrubs occur within the perennial grassland community including Klamath hawthorn, willow (*Salix* spp.), rose (*Rosa* sp.), and Himalayan blackberry (*Rubus armeniacus*).

#### 4.7 Pasture

Approximately 2.01 acres of grazed and irrigated pasture habitat are present on the west side of S. Old Stage Road (Photo 7). The pasture community is dominated by perennial grass species, including bulbous bluegrass (*Poa bulbosa*), Kentucky bluegrass, orchard grass (*Dactylis glomerata*),



Photo 7. Pasture west of S. Old Stage Road.

cereal rye (*Secale cereale*), fescue (*Festuca* sp.), timothy (*Phleum pratensis*), creeping bentgrass (*Agrostis stolonifera*), barley (*Hordeum murinum*), and the “grass-like” Baltic rush. Common forbs include clovers (*Trifolium* spp.), spring draba (*Draba verna*), plantain (*Plantago* sp.), yarrow (*Achillea millefolium*), buttercup (*Ranunculus* sp.), common dandelion (*Taraxacum officinale*), thistle (*Cirsium* sp.), and common mullein (*Verbascum thapsus*).

## 4.8 Urban

The urban community includes approximately 4.43 acres of road rights-of-way and developed residential properties in the study area (Photo 8). Much of the urban community in the study area consists of paved roads. Urban vegetation is primarily located along the road margins and on residential



Photo 8. Urban habitat along W. Jessie Street, east of I-5.

parcels. Roadside vegetation includes English plantain (*Plantago lanceolata*, FACU), dandelion (*Taraxacum officinale*), bachelor buttons (*Centaurea cyanus*), red-stemmed filaree (*Erodium cicutarium*), puncture vine (*Tribulus terrestris*), and annual ragweed (*Ambrosia artemisiifolia*). The residential parcels support a wide variety of plants, including native species, introduced weeds, and horticultural species.

## 5.0 RECORDS REVIEW AND FIELD RECONNAISSANCE

### 5.1 Records Review

Records reviewed for this evaluation consisted of California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDDB) records for special-status plants, animals, and natural communities (**Table 1**); California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (**Table 2**); U.S. Fish and Wildlife Service (USFWS) records for federally listed, proposed, and Candidate plant and animal species under jurisdiction of the USFWS (**Appendix A**); USFWS records for migratory birds of conservation concern; essential fish habitat (EFH) data maintained by the National Marine Fisheries Service (NMFS); and soils records

maintained by the U.S. Department of Agriculture's Natural Resources Conservation Service. The CNDDDB records search covered a 5-mile radius around the Project site. This entailed review of records for portions of the Dunsmuir, City of Mount Shasta, Girard Ridge, McCloud, Seven Lakes Basin, and Tombstone Mountain quadrangles.

Available local records were also reviewed, including the Draft Initial Study for the PacifiCorp Lassen Substation Project, biological surveys for the subject project prepared by North State Resources, and our in-house files.

## **5.2 Field Reconnaissance**

To determine the presence/absence of special-status plant and animal species, ENPLAN biologists conducted botanical and wildlife surveys on June 14, 2017; July 12, July 21, August 16, and October 25, 2018. The special-status plant species potentially occurring in the study area would have been evident at the time the fieldwork was conducted. Most of the special-status wildlife species 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. Lists of plants and animals observed in the study area are included in **Appendix B**.

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

## **6.0 NATURAL COMMUNITIES AND WILDLIFE HABITATS**

According to CDFW, since the inception of the Natural Heritage Program in 1979, natural communities have been considered for their conservation significance (CDFW, 2017). Unique natural communities were recorded in the CNDDDB until the mid-1990s; at that time, funding for the natural community portion of the program was eliminated. Although natural communities are no longer being added to the CNDDDB, many of the natural community occurrences maintained in the CNDDDB still have significance for conservation, and their existence should be considered in the environmental review process. Review of CNDDDB natural community records shows that a fen has been mapped northwest of the project site, north of Hatchery Lane; however, no fens are

present in the study site. CNDDDB records do not identify any other sensitive natural communities within a five-mile radius of the project site.

Other records reviewed for sensitive natural communities included those maintained by the US Fish and wildlife Service and National Marine Fisheries Service. The USFWS does not identify any designated critical habitats for federally listed species within the study area. NMFS does not identify Essential Fish Habitat in the study area.

As described above, the principal natural communities in the study area are stream/riverine, mixed conifer forest, wet meadow, freshwater emergent wetland, montane riparian scrub, perennial grassland, pasture, and urban. Three of these communities, stream/riverine, wet meadow, and freshwater emergent wetland, qualify as wetlands or “other Waters of the United States” and are considered as sensitive natural communities. In addition, certain occurrences of montane riparian scrub may qualify as “Waters of the State.”

Potential impacts of the proposed project on natural communities include the loss of several conifer trees, temporary impacts to wetland and montane riparian scrub habitats, permanent loss of about 0.08 acres of wetlands, temporary disturbance of upland habitats, potential indirect impacts to downstream aquatic habitats, and temporary and permanent loss of wildlife habitat. Each of these effects is briefly discussed below.

**Loss of conifers.** Mixed conifer forest is present in both the pipeline corridor and one of the planned staging areas. In the staging area and part of the pipeline corridor, the forest is very open, consisting of scattered individual trees. No trees will be removed from the staging area. Conifers are relatively dense in a portion of the pipeline corridor and tree removal cannot be avoided in this location. The project engineer has estimated that about six conifers with a diameter of 12 inches or greater would need to be removed to accommodate the proposed improvements. However, in addition to direct loss of trees, trenching has the potential to damage roots of adjoining trees, which could lead to eventual loss of those trees, and staging activities could compact soils under the trees, leading to impaired drainage and root damage.

Potential indirect impacts can be avoided through implementation of **Mitigation Measure 1**, which requires the placement of exclusionary fencing around trees planned

for retention; the fencing would be placed six feet outside the driplines of the trees to create a “root protection zone;” to the extent feasible, no construction activities or storage of materials would occur within this zone. If the sewer interceptor must be installed using open trenching within the root protection zone, the work shall be completed under the direction of a certified arborist to ensure that the trees are not substantially damaged. With implementation of this measure, the potential direct and indirect loss of conifers is less than significant.

***Temporary and permanent impacts to wetlands.*** The proposed project would temporarily impact ±1.22 acres of wet meadow and ±1.04 acres of freshwater emergent wetland, and would result in the permanent loss of 0.08 acres of freshwater emergent wetland for construction of a permanent access road.

The project is subject to conditions of a Clean Water Act (CWA) Section 404 permit as required by the U.S. Army Corps of Engineers (USACE). It is anticipated that the proposed project qualifies for USACE Nationwide Permit (NWP) 12. NWP 12 applies to activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities, provided the activity does not result in the loss of greater than ½-acre of waters of the U.S. NWP 12 also authorizes the construction of temporary and permanent access roads for the utility lines. 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. If work would affect one or more of the streams in the study corridor, a Streambed Alteration Agreement from CDFW would also be required.

Among other conditions, the USACE permit require that temporary fills be removed in their entirety and the affected areas be returned to pre-construction contours to maintain the original wetland hydrology of the site. In addition, areas affected by temporary fills must be revegetated with native plants, as appropriate; the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench; the trench cannot be constructed in a manner that would drain waters of the United States; and heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.

With respect to access roads, the Corps requires that they be the minimum width necessary, must minimize adverse effects on waters, and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be designed to maintain surface flows. For permanent wetland losses of 0.1 acres or less that require pre-construction notification, the Corps may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

In addition to compliance with conditions of permits that may be required for the project, other measures to avoid or minimize impacts to wetlands are warranted.

**Mitigation Measure 2** limits vehicle access and construction activity in wetland areas to late summer, when conditions are at their driest. **Mitigation Measure 3** requires that exclusionary fencing be installed at the outer edge of the construction area where it abuts or approaches wetlands and other waters of the U.S. and State. The fencing shall be installed under the direction of a qualified biologist and shall be maintained throughout the construction period. To promote regeneration of shrubs from their root systems, **Mitigation Measure 4** requires that, in areas planned for temporary disturbance, vegetation should be crushed or pruned at ground level rather than mechanically removing the plant and root system. **Mitigation Measure 5** requires preparation of a revegetation plan that addresses temporary and permanent impacts to sensitive vegetation communities.

Further protection will be provided through **Mitigation Measure 6**, which requires that all construction personnel receive training from a qualified biologist regarding identification of special-status species and sensitive habitats that have a potential to be present in the Project site and procedures to be implemented in the event that these species are encountered during construction activities. **Mitigation Measure 7** summarizes the role of the biological monitor in ensuring implementation of the biological protections prescribed in the mitigation measures and resource-agency permits for the project.

Because the City would comply with conditions of regulatory agency permits, and implement **Mitigation Measures 2 through 7**, impacts to wetlands would be less than significant.

***Temporary impacts to montane riparian scrub habitat.*** Project implementation would result in the temporary disturbance of  $\pm 0.28$  acres of montane riparian scrub habitat. Although these habitats do not qualify as “wetlands or other waters of the United States,” certain occurrences may be within “waters of the State,” in which case project impacts would be addressed in a Streambed Alteration Agreement to be issued by CDFW. In addition to complying with conditions that may be imposed through a Streambed Alteration Agreement, temporary impacts to montane riparian scrub habitat would be minimized through implementation of **Mitigation Measures 3, 4, and 5**. With implementation of any required permit conditions as well as the referenced mitigation measures, temporary impacts on montane riparian scrub habitats would be less than significant.

***Temporary disturbance of upland habitats.*** Project implementation would result in the temporary disturbance of  $\pm 2.01$  acres of pasture,  $\pm 3.66$  acres of perennial grassland, and  $\pm 4.43$  acres of urban habitat. None of these communities is considered sensitive. Although mitigation is not required to offset community impacts, temporarily disturbed areas would be revegetated upon completion of construction to minimize the potential for erosion.

***Indirect impacts to downstream aquatic habitats.*** Construction activities would result in the exposure of on-site soils to the erosive actions. If the eroded soils are washed into downstream waters, they could directly and indirectly affect aquatic species and habitats. The City of Mt. Shasta 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 sensitive 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 surface waters and sensitive habitats; and revegetating temporarily disturbed sites upon completion of construction. Given the existing requirement for erosion control BMPs during project construction, no further mitigation is needed to protect downstream aquatic habitats.

***Temporary and permanent loss of wildlife habitat.*** Plant communities in the study area support a wide variety of wildlife species. Project implementation would result in temporary impacts to wildlife throughout the construction period due to increased human activity, increased noise levels, and temporary loss of vegetation that may provide food and shelter for wildlife. Long-term impacts include the permanent loss of 0.08 acres of wetlands due to access road construction and further fragmentation of the mixed conifer forest habitat.

The temporary impacts are not considered significant due to their limited duration. Wetlands that would be lost due to access road construction are immediately adjacent to the I-5/Hatchery Lane interchange. This location minimizes wildlife impacts because it does not create further habitat fragmentation or loss of wildlife corridors, and lands adjacent to roads have reduced wildlife values due to existing effects of noise, night lights, and human activity. The proposed access road will have very limited use and will only minimally extend the intrusion of such impacts into wildlife habitats. Although some trees will be removed near the electrical substation, this habitat is already severely fragmented and is subject to on-going human activity. Given the location and scale of the proposed project as well as the mitigation measures noted above, impacts on wildlife habitat are not considered significant.

## **7.0 SPECIAL-STATUS SPECIES**

### **7.1 Special-Status Plant Species**

Review of the USFWS species list for the Project area identified four federally listed plant species as potentially being affected by the proposed Project: Gentner's fritillary, Hoover's spurge, slender Orcutt grass, and whitebark pine. The Project area does not contain designated critical habitat for federally listed plant species.

Review of CNDDDB records showed that the following special-status plant species have been broadly mapped in the Project area: broad-nerved hump moss, marsh skullcap, northern adder's-tongue, Siskiyou clover, woodnymph, and woolly balsamroot. In addition, one non-status plant, three-ranked hump moss, has been broadly mapped in the Project area.

The following additional special-status plant species have been reported within a five-mile radius of the Project area: Aleppo avens, Cascade grass-of-Parnassus, Gasquet rose, Jepson's dodder, Klamath fawn lily, little-leaved huckleberry, Oregon fireweed, pallid bird's-beak, rattlesnake fern, seaside bittercress, Shasta chaenactis, subalpine aster, thread-leaved beardtongue, and Waldo daisy. In addition, the following non-status plants have been reported within a five-mile radius of the Project site: Baker's globe mallow and Pacific fuzzwort.

The CNPS Inventory (**Table 2**) identifies two additional special status plants, crested potentilla and Mt. Eddy draba, and five additional non-status plants within the study area: California lady's-slipper, California pitcherplant, clustered lady's-slipper, marsh claytonia, and rough harebell.

The potential for each special-status plant species to occur on the Project site is evaluated in **Table 3**. As documented in **Table 3** and further discussed below, one special-status plant species, Aleppo avens was identified during the botanical surveys. No other special-status plants species were identified during the surveys, nor are any expected to be present.

### ***Aleppo Avens (Geum aleppicum)***

Aleppo avens is a perennial herb found in meadows and seeps, Great Basin scrub, and lower montane coniferous forest habitats. The species is reported between 1,400 and 5,000 feet in elevation. The flowering period is June through August. The species was previously identified in the Project site during a botanical survey conducted by North State Resources, Inc. (NSR) on July 1, 2014. A species-specific survey for Aleppo avens was conducted by an ENPLAN botanist on July 21, 2018. The species was mapped in the proposed access route off S. Old Stage Road, and in the central portion of the study area within wet meadow and fresh emergent wetland vegetation

communities in the Morgan-Merrill Preserve. **Figure 3** depicts the location of Aleppo avens based on ENPLAN's 2018 survey, and NSR's 2014 botanical survey.

As shown in **Figure 3**, the majority of the Aleppo avens population is located north of the access road corridor (the full extent of the offsite population was not determined due to time constraints). However, two small occurrences of Aleppo avens are present in the proposed pipeline corridor and about a dozen others are in or adjacent to the access corridor leading from S. Old Stage Road to the south side of Cold Creek. Direct effects on Aleppo avens could result from trenching and associated construction activities, from vehicle/equipment travel on the access route, and through inadvertent entry into the plant occurrences.

Although the plant is present in the access road, no grading or earth disturbance would occur to establish the access road. As required by standard conditions of the Department of the Army Nationwide Permits and **Mitigation Measure 2**, the contractor is required to use temporary wood slabs, swamp mats, HDPE mats, geotextile fabric with a layer of gravel, or other acceptable pre-fabricated mats when vehicles and heavy equipment are driving through or working in wetlands. Because all occurrences of Aleppo avens are within wetlands, use of mats or other soil protectors will minimize direct effects to Aleppo avens. Further protection will be provided through **Mitigation Measure 3**, which requires exclusionary fencing to be placed around Aleppo avens populations that are designated for preservation.

**Mitigation Measure 6** requires that all construction personnel receive training from a qualified biologist on identification of special-status species that have a potential to be present in the Project site and measures to be implemented to avoid/minimize impacts to special-status species. **Mitigation Measure 7** summarizes the role of the biological monitor in ensuring implementation of the biological protections prescribed in mitigation measures and resource-agency permits for the project. With implementation of the recommended mitigation measures, impacts of the proposed project on Aleppo avens would be less than significant.

## 7.2 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: northern spotted owl, yellow-billed cuckoo, gray wolf, 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, and review of the USFWS critical habitat map confirmed this finding.

Review of CNDDDB records showed that the following special-status wildlife species have been broadly mapped to encompass a portion of the Project site: Cascades frog, fisher – West Coast DPS, spotted bat, and western yellow-billed cuckoo. The following non-status species have been mapped in the Project site: obscure bumble bee, Suckley's cuckoo bumble bee, and western bumble bee.

In addition, the following special-status wildlife species have been reported within a five-mile radius of the Project area: American peregrine falcon, bald eagle, bank swallow, black swift, Cascades frog, fisher-west coast DPS, foothill yellow-legged frog, northern goshawk, Sierra Nevada red fox, spotted bat, western mastiff bat, western yellow-billed cuckoo, and yellow rail. The following non-status animals have been mapped within a five-mile radius of the Project site: Franklin's bumble bee, great blue heron, long-eared myotis, Natural Bridge megomphix, North American porcupine, obscure bumblebee, osprey, Pacific marten, silver-haired bat, Suckley's cuckoo bumble bee, and western bumble bee.

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, as further discussed below, the Project site provides potentially suitable habitat for foothill yellow-legged frogs, greater sandhill cranes, and yellow rails. In addition, willow flycatchers are known to occur in the region and could potentially nest in the project site.

***Foothill Yellow-Legged Frog (Rana boylei)***

Foothill yellow-legged frogs, a State species of special concern, 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. According to CNDDDB records, a foothill yellow-legged frog was observed in Big Spring Creek in September 2001, ±0.4 miles west of the Project site. Although no foothill yellow-legged frogs were observed during the wildlife survey, the species has a low potential to utilize the onsite reach of Cold Creek. Because no in-water work would occur in Cold Creek, the proposed Project would have no direct impacts on foothill yellow-legged frogs. Indirect effects could potentially occur if sediments or other pollutants enter surface waters and degrade habitat in the Project vicinity and/or downstream. As discussed above, the City is required to develop a SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses and aquatic habitat. With implementation of BMPs, the potential for indirect effects to foothill yellow-legged frog is less than significant.

***Yellow Rail (Coturnicops noveboracensis)***

Yellow rail, a State species of special concern, inhabits dense, grassy marshes, wet meadows, fens, and seeps. Yellow rails are highly elusive and are rarely seen. They are most commonly identified by the male's call during the breeding season, a unique metallic 5-note call easily imitated by tapping two stones together. Their nest is a shallow cup of sedges and grasses in a shallow part of a marsh, on damp soil or over water less than six inches deep. The length of the breeding season is poorly known in California, but it is thought to extend from May through early September. According to CNDDDB records, yellow rails were detected approximately two miles northwest of the Project site during the breeding season in 2002 through 2005. Yellow rail has a moderate potential to nest in the Morgan-Merrill Preserve.

***Greater sandhill crane (Grus canadensis tabida)***

Greater sandhill cranes, a State threatened species, breed in extensive wetlands or shallow lacustrine settings, and forage nearby in agricultural fields, rice paddies, pastures, or grassland environments. Nests are constructed on hummocks in shallow wetland areas. Although the nearest CNDDDB reported occurrence is approximately 15 miles north of the study area, the species is regularly observed in the Mt. Shasta area during the summer months, and unconfirmed nesting has been noted in wetland areas associated with Wagon Creek, approximately 4.5 miles northwest of the study area. The species has a low potential to nest in wetlands habitats in the Morgan-Merrill Preserve.

***Willow Flycatcher (Empidonax traillii)***

According to the Mount Shasta Area Audubon Society, willow flycatcher, a State endangered species, is uncommon in Siskiyou County and normally occurs only as a migrant in passage between summering and wintering areas. CNDDDB records show that the closest reported occurrence of nesting willow flycatchers is approximately ten miles southeast of the Project area (last observed in 2004); however, the species is known to occur in the general Project area in habitat that is similar to the freshwater emergent wetland/riparian habitat in the Morgan-Merrill Preserve. Flycatcher nests are shallow cups of grasses and plant fibers placed in low shrubs and bushes, about 2 to 5 feet above the ground. Willow flycatchers have a moderate potential to nest within the Morgan-Merrill Preserve.

Yellow rails, greater sandhill cranes, and willow flycatchers could be directly or indirectly affected by construction activities if vegetation clearing and other ground-disturbing activities occur during the nesting season. Direct effects could include mortality resulting from removal of vegetation containing an active nest with eggs or chicks, or construction equipment operating in an area containing an active nest. 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.

As required by **Mitigation Measure 8**, if construction will occur during the nesting season, pre-construction surveys shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area. If absence is determined, construction may commence. If active nests are found, the City shall consult with the USFWS and CDFW regarding appropriate action to comply with the CESA, 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.

The pre-construction nesting 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.

Further protection will be provided through **Mitigation Measure 6**, which requires that all construction personnel receive training from a qualified biologist regarding identification of special-status species that have a potential to be present in the Project site and procedures to be implemented in the event that these species are encountered during construction activities. **Mitigation Measure 7** summarizes the role of the biological monitor in ensuring implementation of the biological protections prescribed in mitigation measures and resource-agency permits for the project.

## **8.0 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, great blue heron, lesser yellowlegs, long-billed

curlew, marbled godwit, olive-sided flycatcher, rufous hummingbird, semipalmated sandpiper, short-billed dowitcher, western screech-owl, whimbrel, and willet. The potential for each of these species to utilize the Project sites is evaluated in **Table 4**.

As discussed above, during construction, nesting migratory birds, if present, could be directly or indirectly affected by construction activities. The potential for adversely affecting nesting birds can be greatly minimized by conducting construction activities either before February 1 or after August 31. If construction occurs during the nesting season, a pre-construction survey would be conducted in accordance with **Mitigation Measure 8**.

## 9.0 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<sup>1</sup>:

**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. 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.

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<sup>1</sup> [https://www.cdfa.ca.gov/plant/IPC/encycloweedia/winfo\\_weedratings.html](https://www.cdfa.ca.gov/plant/IPC/encycloweedia/winfo_weedratings.html)

**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.

At least eight noxious weeds were observed in the study area, including two A-rated weeds (rush skeletonweed and spotted knapweed), two B-rated weeds (Canadian thistle and dyer's-woad), three C-rated weeds (Klamath weed, puncture vine, and Scotch broom), and one species not listed (medusahead). Noxious weeds could be introduced into the study area or transported outside the study area if construction vehicles are not properly washed before and after being used on-site. Soil import/export and use of certain erosion-control materials such as straw can also result in the spread of noxious weeds. As required by **Mitigation Measure 9**, 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 job site.

## **10.0 CONCLUSIONS AND RECOMMENDATIONS**

Based on the records search results, field observations, and the above analyses, we find that the proposed project has the potential to adversely affect wetlands, other waters of the United States and State, and montane riparian scrub habitat; would result in the direct removal conifers in the pipeline corridor and could damage adjacent trees; would disturb special-status plants known to occur in the project corridor; has the potential to adversely affect special-status bird and nesting migratory birds; and could result in the introduction and spread of noxious weeds. However, compliance with the conditions of resource-agency permits, use of Best Management Practices for spill prevention and erosion control, and implementation of the following mitigation measures would reduce the potential impacts of the proposed project on biological resources to a less-than-significant level.

### **Mitigation Measure 1: Construction Measures to Promote Retention of Conifers**

Temporary construction fencing shall be installed and maintained at least 6 feet outside of the dripline of all trees to be preserved. The fencing around this “root protection zone” shall be maintained throughout construction.

- a. No vehicle parking or materials stockpiling shall occur within the root protection zone.
- b. To the extent feasible, no construction activities (including grading, cutting, and trenching), shall occur within the root protection zone. If the sewer interceptor must be installed using open trenching within the root protection zone, the work shall be completed under the supervision of a certified arborist to ensure that impacts to the tree are minimized.

### **Mitigation Measure 2: Construction Measures to Minimize Effects to Wetlands**

Construction of the casing support structures for the aerial crossing at Cold Creek shall be initiated no earlier than July 1. All other work within the Morgan-Merrill Preserve (Siskiyou County Assessor’s Parcel 036-210-060-000) (e.g., trenching and pipe laying) shall be restricted to August 1 or later to minimize impacts to wetlands. In areas where vehicles or equipment will be driving through or operating in wetlands, the wetlands shall be protected through installation of temporary wood slabs, swamp mats, HDPE mats, geotextile fabric with a layer of gravel, or similar protective materials approved by the City. The protective materials shall be removed upon completion of construction. Areas subject to ground surface protection shall be identified on the improvement plans.

### **Mitigation Measure 3: Install Exclusionary Fencing to Avoid Impacts to Special-Status Plants and Sensitive Habitats**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), exclusionary fencing shall be installed around the following biological resources that are designated for preservation:

- Wetlands and other waters of the U.S. and State
- Montane riparian scrub habitats
- Aleppo avens (*Geum aleppicum*) plant populations
- Trees  $\geq 12$  inches diameter, as measured 4.5 feet above ground level, that are planned for retention (see Mitigation Measure 1)

Fencing locations shall be determined by a qualified biologist in consultation with the project engineer and City staff. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the fenced areas, except as allowed under Mitigation Measure 1. The exclusionary fencing shall be periodically inspected by a qualified biologist throughout project construction to ensure the fencing is properly maintained. The fencing shall be removed upon project completion.

#### **Mitigation Measure 4: Avoid and Minimize Impacts to Native Vegetation**

To promote regeneration of plants from their root systems, removal of plant root systems shall be limited to the extent necessary for trench installation. Outside of the trench footprint, removal of native plants shall be achieved by pruning them at ground level, or crushing them with heavy equipment; the root systems shall be left in place.

#### **Mitigation Measure 5: Restore Sensitive Vegetation Communities Disturbed by Construction Activities**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), the City shall develop a plan describing how temporary and permanent impacts to sensitive vegetation communities will be offset. Revegetation shall be conducted by promoting growth of plants that were crushed or pruned during construction and/or by installing new plantings. The revegetation plan shall be submitted to the appropriate permitting agency(ies) (e.g., Army Corps of Engineers, Regional Water Quality Control Board and/or California Department of Fish and Game) for review and approval prior to any earth disturbance in areas subject to their jurisdiction.

The plan shall include the following information:

- a. Required qualifications and experience of individuals performing the revegetation work.
- b. Methods to be used to revegetate the impacted areas (e.g., soil preparation, seeding, planting, etc.).
- c. An implementation schedule.
- d. Criteria and measures to be used to determine success of revegetated areas.
- e. Monitoring methods and reporting requirements.
- f. Remedial measures to be used to ensure the success of revegetation.
- g. Other pertinent data to ensure successful revegetation of native vegetation and riparian habitat.

#### **Mitigation Measure 6: Conduct Worker Environmental Awareness Program.**

Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), all construction personnel shall receive training from a qualified biologist regarding protective measures for special-status plant and animal species and sensitive habitats that could exist in the study area. If new personnel are added to the project, the City shall ensure that they receive the mandatory training before starting work. At a minimum, the training shall include the following:

- a. A review of the special-status species that could occur in the project study area, the locations where the species could occur, the laws and

regulations that protect these species, and the consequences of noncompliance with those laws and regulations.

- b. Procedures to be implemented in the event that these species are encountered during construction.
- c. A review of sensitive habitats that occur in the study area and the location of the sensitive habitats.
- d. A review of applicable mitigation measures, standard construction measures, best management practices, and regulatory agency permit conditions that apply to the protection of special-status species and sensitive habitats.

**Mitigation Measure 7: Retain Qualified Biologists to Ensure Implementation of Mitigation Measures and Permit Conditions.**

The City shall retain qualified biologists, as necessary, to ensure that impacts to special-status species, migratory birds, native vegetation, wetlands, wildlife habitat, and other identified sensitive biological resources are avoided or minimized in accordance with the adopted environmental documents for the Project and pertinent permit conditions. The biologist(s) shall be responsible for the tasks noted below.

- a. Completing pre-construction surveys for special-status birds, migratory birds, and raptors.
- b. Conducting the worker environmental awareness trainings.
- c. Observing placement of exclusionary fencing around sensitive biological habitats to delineate areas where construction activities are prohibited.
- d. Reviewing resource-agency permit conditions, consulting with the City of Mt. Shasta and resource agencies to ensure an understanding of the permit conditions, and, to the extent possible, ensuring that the conditions of the permits are met. If the biologist observes violations of the conditions, the biologist shall immediately report the violations to the City. The City shall have the authority to halt construction activities until consultation with the appropriate resource agency occurs and remedial actions are identified.
- e. Conducting periodic site inspections on a weekly basis, or as otherwise deemed necessary by the project biologist, when construction activities occur in areas with sensitive biological resources to ensure that exclusionary fencing is properly maintained, wetland mats are in place, that any buffers for sensitive resources (e.g., nesting birds) are maintained, and that other mitigation measures and permit conditions are met.
- f. Preparing monitoring reports and compliance documentation as needed to document pre-construction, construction, and post-construction mitigation efforts.

**Mitigation Measure 8: Avoid Effects to Special-Status Birds, Nesting Migratory Birds, and/or Raptors.**

In order to avoid impacts to special-status birds protected under the California Endangered Species Act (CESA) and 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 CDFW 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 Mt. Shasta shall consult with the USFWS and CDFW regarding appropriate action to comply with the CESA, Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5. 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.

**Mitigation Measure 9: Minimize the 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.

## 11.0 REFERENCES CITED

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- North State Resources, Inc.** 2014. Botanical field survey results, including plant community map, list of plant species observed, and *Geum aleppicum* location data. Unpublished data on file with ENPLAN.
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- United States Fish and Wildlife Service.** 2018. List of Threatened and Endangered Species That May Occur in the Project Location and/or May Be Affected by the Proposed Project. January 2019 Data.
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- Western Regional Climate Center.** 2018. Mt. Shasta, California (045983). < <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5983>>

# TABLES

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**Table 1.** CNDDDB (Rarefind) Report Summary

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

**Table 3.** Summary Report: Potential for Special-Status Species to Occur on the Study Site

**Table 4.** Summary Report: Potential for Migratory Bird Species to Occur on the Study Site

**Table 1**  
**Rarefind (CNDDDB) Report Summary**  
**Five-Mile Radius of Project Site**  
**Mt. Shasta Sewer Interceptor**  
 January 2019

Listed Element	Quadrangle <sup>1</sup>							Status <sup>2</sup>
	CMS	DU	HO	MC	ME	MS	SLB	
<b>ANIMALS</b>								
American peregrine falcon		•						SFP
Bald eagle					•			SE, SFP
Bank swallow	•							ST
Black swift		•						SSSC
Cascades frog *	•							SCE, SSSC
Fisher – West Coast DPS *	•				•			ST, SSSC
Foothill yellow-legged frog	•				•			SCT, SSSC
Franklin's bumble bee				•				None
Great blue heron	•							None
Long-eared myotis						•		None
Natural Bridge megomphix		•						None
North American porcupine	•			•				None
Northern goshawk				•				SSSC
Obscure bumble bee *	•					•		None
Osprey	•	•						WL
Pacific marten				•				None
Sierra Nevada red fox				•		•		FC, ST
Silver-haired bat	•					•		None
Spotted bat *	•							SSSC
Suckley's cuckoo bumble bee *	•							None
Western bumble bee *	•							None
Western mastiff bat	•							SSSC
Western yellow-billed cuckoo *	•							FT, SE
Yellow rail	•							SSSC

<b>PLANTS</b>								
Aleppo avens	•							2B.2
Baker's globe mallow	•							4.2
Broad-nerved hump moss *	•							2B.2
Cascade grass-of-Parnassus		•						2B.2
Gasquet rose	•							1B.3
Jepson's dodder				•				1B.2
Klamath fawn lily		•						2B.2
Little-leaved huckleberry							•	2B.2
Marsh skullcap *	•							2B.2

Northern adder's-tongue *	•							2B.2
Oregon fireweed					•			1B.2
Pacific fuzzwort	•	•			•			4.3
Pallid bird's-beak	•		•					1B.2
Rattlesnake fern	•							2B.2
Seaside bittercress		•						2B.1
Shasta chaenactis	•						•	1B.3
Siskiyou clover *	•							1B.1
Subalpine aster					•			2B.3
Thread-leaved beardtongue	•	•						1B.3
Three-ranked hump moss *	•							4.2
Waldo daisy		•						2B.3
Woodnymph *	•							2B.2
Woolly balsamroot *	•							1B.2

\* Species have been broadly mapped as potentially occurring in the Project Site.

HIGHLIGHTING DENOTES THE QUADRANGLE IN WHICH THE PROJECT SITE IS LOCATED

**<sup>1</sup>QUADRANGLE CODE**

CMS	City of Mount Shasta	ME	Mount Eddy
DU	Dunsmuir	MS	Mt. Shasta
HO	Hotlum	SLB	Seven Lakes Basin
MC	McCloud		

**<sup>2</sup>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 City of Mount Shasta 7.5-minute Quadrangle

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
Aleppo avens	<i>Geum aleppicum</i>	2B.2	Jun-Aug	None	None
Baker's globe mallow	<i>Iliamna bakeri</i>	4.2	Jun-Sep	None	None
Broad-nerved hump moss	<i>Meesia uliginosa</i>	2B.2	Jul, Oct	None	None
California lady's-slipper	<i>Cypripedium californicum</i>	4.2	Apr-Aug (Sep)	None	None
California pitcherplant	<i>Darlingtonia californica</i>	4.2	Apr-Aug	None	None
Clustered lady's-slipper	<i>Cypripedium fasciculatum</i>	4.2	Mar-Aug	None	None
Crested potentilla	<i>Potentilla cristae</i>	1B.3	(Jul) Aug-Sep	None	None
Gasquet rose	<i>Rosa gymnocarpa</i> var. <i>serpentina</i>	1B.3	Apr-Jun (Aug)	None	None
Marsh claytonia	<i>Claytonia palustris</i>	4.3	May-Oct	None	None
Marsh skullcap	<i>Scutellaria galericulata</i>	2B.2	Jun-Sep	None	None
Mt. Eddy draba	<i>Draba carnosula</i>	1B.3	Jul-Aug	None	None
Northern adder's-tongue	<i>Ophioglossum pusillum</i>	2B.2	Jul	None	None
Oregon fireweed	<i>Epilobium oregonum</i>	1B.2	Jun-Sep	None	None
Pacific fuzzwort	<i>Ptilidium californicum</i>	4.3	May-Aug	None	None
Pallid bird's-beak	<i>Cordylanthus tenuis</i> ssp. <i>pallidus</i>	1B.2	Jul-Sep	None	None
Rattlesnake fern	<i>Botrypus virginianus</i>	2B.2	Jun, Aug, Sep	None	None
Rough harebell	<i>Campanula scabrella</i>	4.3	Aug-Sep	None	None
Shasta chaenactis	<i>Chaenactis suffrutescens</i>	1B.3	May-Sep	None	None
Siskiyou clover	<i>Trifolium siskiyouense</i>	1B.1	Jun-Jul	None	None
Thread-leaved beardtongue	<i>Penstemon filiformis</i>	1B.3	May-Aug (Sep)	None	None
Three-ranked hump moss	<i>Meesia triquetra</i>	4.2	Jul	None	None
Woodnymph	<i>Moneses uniflora</i>	2B.2	May-Aug	None	None
Woolly balsamroot	<i>Balsamorhiza lanata</i>	1B.2	Apr-Jun	None	None

Rare Plant Rank	
1A	Plants presumed extinct in California and either rare or extinct elsewhere
1B	Plants rare, threatened or endangered in California and elsewhere
2A	Plants presumed extinct in California but common elsewhere
2B	Plants rare, threatened, or endangered in California but common elsewhere
3	Review List: Plants about which more information is needed (generally not considered special-status, unless unusual circumstances warrant)
4	Watch List: Plants of limited distribution (generally not considered special-status, unless unusual circumstances warrant)
Rare Plant Threat Rank	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

**Source:** California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). <http://www.rareplants.cnps.org>. Accessed January 2019.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
<b>PLANTS</b>							
Aleppo avens	<i>Geum aleppicum</i>	2B.2	Aleppo avens, an herbaceous perennial, grows in meadows within Great Basin scrub and lower montane coniferous forest. The species is reported between 1,400 and 5,000 feet in elevation. The flowering period is June through August.	Yes	No	Yes	Aleppo avens is present in and adjacent to the Project site and would be directly affected by implementation of the proposed Project.
Broad-nerved hump moss	<i>Meesia uliginosa</i>	2B.2	Broad-nerved hump moss occurs on damp soil around meadows, seeps, bogs, and fens in upper montane coniferous forests. The species is reported between 4,200 and 8,200 feet in elevation.	No	No	No	The Project site is well below the elevational range for broad-nerved hump moss. The species is not expected to occur in the Project site.
Cascade grass-of-Parnassus	<i>Parnassa cirrata</i> var. <i>intermedia</i>	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	The Project site does not include suitable soils for Cascade grass-of Parnassus; thus, the species would not be present.
Gasquet rose	<i>Rosa gymnocarpa</i> var. <i>serpentina</i>	1B.3	Gasquet rose, a rhizomatous shrub, occurs on serpentine soils in chaparral and cismontane woodlands. Within these vegetation communities, it may occur along streams, roadsides, ridges, and openings. The species is reported between 1,200 and 4,700 feet in elevation. The flowering period is April through June.	No	No	No	According to CNDDDB records, Gasquet rose has been reported one time in Siskiyou County in 1929. The Project site does not include suitable soils for Gasquet rose; thus, the species would not be present.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Gentner's fritillary	<i>Fritillaria gentneri</i>	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 nearest population is approximately 45 miles north of the Project site. The species was not observed during the botanical survey and is not expected to be present.
Hoover's spurge	<i>Chamaesyce hooveri</i>	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	The Project site is well above the known elevational range of Hoover's spurge. In addition, there are no vernal pools in the Project site. Hoover's spurge was not observed during the botanical survey and is not expected to be present.
Jepson's dodder	<i>Cuscuta jepsonii</i>	1B.2	Jepson's dodder is an annual vine parasitic on <i>Ceanothus diversifolius</i> and <i>C. prostratus</i> that occur on streambanks in North Coast coniferous forest, and other mountainous areas, including Mount Shasta. The species is reported between 3,900 and 7,500 feet in elevation. The flowering period is July through September.	No	No	No	Jepson's dodder has been reported in Siskiyou County once, in 1954 around the southern slopes of Mount Shasta. Neither Jepson's dodder nor its host plants were observed during the botanical surveys; the dodder is not expected to be present.
Klamath fawn lily	<i>Erythronium klamathense</i>	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	The Project site is below the elevational range for Klamath fawn lily. The species was not observed during the botanical surveys and is not expected to be present.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Little-leaved huckleberry	<i>Vaccinium scoparium</i>	2B.2	Little-leaved huckleberry occurs in a variety of habitats in upper montane and subalpine coniferous forests, such as alluvial terraces on the forest floor, in wet meadows, and along streams. The species is reported between 5,600 and 6,900 feet in elevation. The flowering period is June through August.	No	No	No	The Project site is well outside of the elevational range for little-leaved huckleberry; thus, the species would not be present.
Marsh skullcap	<i>Scutellaria galericulata</i>	2B.2	Marsh skullcap is a perennial member of the mint family. It occurs in meadows, along streambanks and in other wet places at elevations of 3,000 to 7,000 feet. The flowering period is June through September.	Yes	No	No	According to CNDDB records, marsh skullcap was observed one time in the general project area in 1894. The occurrence is broadly mapped to include the Project site. Although potentially suitable habitat for marsh skullcap occurs in the Project site, the species was not observed during the botanical surveys and is not expected to be present.
Northern adder's tongue	<i>Ophioglossum pusillum</i>	2B.2	Northern adder's tongue occurs along marsh and swamp edges, in meadows and seeps, in low pastures, and grassy roadside ditches. The species is reported between 3,200 and 6,600 feet in elevation. The flowering period is July through September.	Yes	No	No	According to CNDDB records, Northern adder's tongue was observed one time in the general project area in 1894. The occurrence is broadly mapped to include the Project site. Although potentially suitable habitat for Northern adder's tongue occurs in the Project site, the species was not observed during the botanical surveys and is not expected to be present.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Oregon fireweed	<i>Epilobium oreganum</i>	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.	Yes	No	No	Oregon fireweed has been reported eight times in Siskiyou County. Although potentially suitable habitat is present in the Project site, the species was not observed during the botanical surveys.
Pallid bird's beak	<i>Cordylanthus tenuis</i> spp. <i>pallescens</i>	1B.2	Pallid bird's-beak occurs on open volcanic alluvium within lower montane coniferous forest. The species is reported 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 in the Project site. The species was not observed during the botanical surveys and is not expected to be present.
Rattlesnake fern	<i>Botrychium virginianum</i>	2B.2	Rattlesnake fern occurs in meadows, seeps, bogs, and fens in lower montane coniferous forests. The species is reported between 2,400 and 4,300 feet in elevation. The flowering period is June through September.	Yes	No	No	Although suitable habitat for rattlesnake fern occurs in the Project site, the species was not observed during the botanical surveys and is not expected to be present.
Seaside bittercress	<i>Cardamine angulata</i>	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	In California, seaside bittercress occurs primarily near the coast. One collection was reported in the CNDDDB from Dunsmuir, but the record was recently eliminated (it was probably a misidentification). The Dunsmuir occurrence is still reported in the CNPS Inventory. Seaside bittercress was not observed during the botanical surveys and is not expected to be present.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Shasta chaenactis	<i>Chaenactis suffrutescens</i>	1B.3	Shasta chaenactis, a perennial herb, 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	No potentially suitable habitat for Shasta chaenactis occurs in the Project site. The species was not observed during the botanical surveys and is not expected to be present.
Siskiyou clover	<i>Trifolium siskiyouense</i>	1B.1	Siskiyou clover is a perennial herb that occurs in mountain meadows, seeps, and wetlands between 2,800 and 4,900 feet in elevation. The flowering period is June through July.	Yes	No	No	According to CNDDDB records, Siskiyou clover has been reported four times in California. The plant was reported from "Mt. Shasta and vicinity" in 1892. The last reported occurrence was in 1935, approximately 35 miles northwest of the Project site. Although potentially suitable habitat for Siskiyou clover occurs in the Project site, the species was not observed during the botanical surveys and is not expected to be present.
Slender Orcutt grass	<i>Orcuttia tenuis</i>	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 potentially suitable habitats for slender Orcutt grass are present in the Project site. Slender Orcutt grass was not observed during the botanical survey and is not expected to be present.
Subalpine aster	<i>Eurybia merita</i>	2B.3	Subalpine aster, a perennial herb, occurs on moist soils in upper montane coniferous forest. The species is reported between 4,000 and 6,300 feet in elevation. The flowering period is July through August.	No	No	No	The Project site is below the elevational range for subalpine aster. The species was not observed during the botanical survey and is not expected to be present.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Thread-leaved beardtongue	<i>Penstemon filiformis</i>	1B.3	Thread-leaved beardtongue occurs on dry stony sites, grassy openings, and meadows in cismontane woodland and lower montane coniferous forest in Shasta, Trinity, and Siskiyou counties. The species is often found on serpentine soils. The species is reported between 1,400 and 6,000 feet in elevation. The flowering period is May through July.	No	No	No	No suitable habitat for thread-leaved beardtongue occurs in the Project site. The species was not observed during the botanical surveys and is not expected to be present.
Waldo daisy	<i>Erigeron bloomeri</i> var. <i>nudatus</i>	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 serpentine outcrops or other suitable habitat for Waldo daisy occur in the Project site; thus, the species would not be present.
Whitebark pine	<i>Pinus albicaulis</i>	FC	In California, whitebark pine typically occurs in cold, windy, high elevation sites in the Coast and Cascade ranges and the Sierra Nevada. The species is found at elevations ranging from 6,500 to 12,200 feet.	No	No	No	The Project site is well below the elevational range for whitebark pine; thus, the species would not be present.
Woodnymph	<i>Moneses uniflora</i>	2B.2	Woodnymph is a perennial rhizomatous herb that occurs in broadleaved upland forest and North Coast coniferous forest. The species is reported between 300 and 3,600 feet in elevation. The flowering period is May through August.	Yes	No	No	According to CNDDDB records, woodnymph was observed once in "Sisson," presumably prior to 1925 when the town was renamed as Mt. Shasta. The occurrence is broadly mapped to include the Project site. Although marginally suitable habitat for woodnymph occurs in the Project site, the species was not observed during the botanical surveys and is not expected to be present.

**TABLE 3**  
**Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Woolly balsamroot	<i>Balsamorhiza lanata</i>	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	According to CNDDDB records, woolly balsamroot was observed in the general project area in 1998. Although marginally suitable habitat for woolly balsamroot occurs in the Project site, the species was not observed during the botanical surveys and is not expected to be present.
<b>INVERTEBRATES</b>							
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water.	No	No	No	No vernal pools or other potentially suitable habitats for Conservancy fairy shrimp are present in the Project site; thus, the species would not be present.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	The valley elderberry longhorn beetle is found only in association with elderberry shrubs ( <i>Sambucus</i> spp.). The species' elevational range extends from sea level to 3,000 feet. The species is known to occur in the Central Valley and foothills.	No	No	No	No suitable habitat for valley elderberry longhorn beetle is present in the Project site; thus, the species would not be present.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool fairy shrimp are present in the Project site; thus, the species would not be present.
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	FE	Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool tadpole shrimp are present in the Project site; thus, the species would not be present.

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**Potential for Special-Status Species Identified by the USFWS and CNDDB to Occur on the Project Site**  
**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
<b>BIRDS</b>							
American peregrine falcon	<i>Falco peregrinus anatum</i>	SFP	American peregrine falcons frequent water bodies in open areas with cliffs and canyons nearby for nesting. This falcon feeds and breeds near water.	No	No	No	No suitable nesting habitat for the American peregrine falcon is present in the Project site or vicinity; thus, the species would not nest on-site.
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open waters. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No	No suitable nesting habitat for the bald eagle is present in the Project site or vicinity. No bald eagles or eagle nests were observed during the wildlife survey; thus, the species would not nest on-site.
Bank swallow	<i>Riparia riparia</i>	ST	Bank swallows nest on vertical banks and cliffs with fine-textured or sandy soils, near streams, rivers, ponds, lakes, or the ocean.	No	No	No	No vertical banks or cliffs are present in the Project site; thus, the species would not nest on-site.
Black swift	<i>Cypseloides niger</i>	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 habitat for the black swift is present in the Project site or vicinity; thus, the species would not nest on-site.
Greater sandhill crane	<i>Grus canadensis tabida</i>	SFP, ST	Greater sandhill cranes breed in extensive wetlands or shallow lacustrine setting, and forage nearby in agricultural fields, rice paddies, pastures, or grassland environments. Nests are constructed in hummocks in shallow wetland areas.	Yes	No	Pot.	Suitable habitat for greater sandhill crane occurs in wetlands within the Morgan-Merrill Preserve, and the species has a moderate potential to be present. Potential impacts would be mitigated by requiring pre-construction surveys for nesting birds if construction occurs during the nesting season.

**TABLE 3**  
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**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Northern goshawk	<i>Accipiter gentilis</i>	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 in the Project site; thus, the species would not nest on-site.
Northern spotted owl	<i>Strix occidentalis caurina</i>	FT, SC, SSSC	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 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 or potentially suitable nesting trees/snags are present in the Project site or vicinity; thus, the species would not nest on-site.
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i> & <i>Coccyzus americanus</i>	FT, SE	Western yellow-billed cuckoos inhabit and nest in extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut slow-moving watercourses, backwaters, or seeps. Willows are almost always a dominant component of the vegetation.	No	No	No	According to CNDDB records, western yellow-billed cuckoo was observed nesting in the general project area in 1951. The only other reported occurrence of nesting western yellow-billed cuckoos in Siskiyou County was in 1920, approximately 11 miles northwest of the Project site. Given that the species has not been nested in Siskiyou County during the past 67 years, the species is not expected to be present.

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COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Yellow rail	<i>Coturnicops noveboracensis</i>	SSSC	Yellow rails inhabit dense, grassy marshes, wet meadows, fens, and seeps. Their nest is a shallow cup of sedges and grasses in a shallow part of a marsh, on damp soil or over water less than six inches deep. Yellow rails are highly elusive and are rarely seen. They are most commonly identified by the male's call during the breeding season, a unique metallic 5-note call easily imitated by tapping two stones together.	Yes	No	Pot.	According to CNDDB records, yellow rail was reported one time in Siskiyou County in 2002, approximately two miles northwest of the Project site. Yellow rail has a low potential to nest on the Project site. Potential impacts would be mitigated by requiring pre-construction surveys for nesting birds if construction occurs during the nesting season.
<b>AMPHIBIANS</b>							
California red-legged frog	<i>Rana draytonii</i>	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 and creeks, marshes, lagoons, and dune ponds. The CRLF is not characteristically found in deep lacustrine habitats (e.g., deep lakes and reservoirs). Dense, shrubby riparian vegetation and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No	No	No	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.

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Cascades frog	<i>Rana cascadae</i>	SCE, SSSC	In the Klamath Mountains and southern Cascades of Northern California, the Cascades frog is typically found above 5,000 feet in elevation. Cascades frogs inhabit alpine lakes, inlet and outlet streams to mountain lakes, ponds, and meadows. Standing water is required for reproduction. Breeding occurs between March and mid-August. Eggs are deposited in shallow water features with silty, sandy, or gravelly substrates. Adults 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 show that a Cascades frog was observed in the general project area in 1941, ±1.5 miles southwest of the Project site near the South Fork of the Sacramento River. Because the frog has not been observed in the area since 1941 and its typical habitat is at a much higher elevation, Cascades frog is not expected to occur in the study area.
Foothill yellow-legged frog	<i>Rana boylei</i>	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.	According to CNDDB records, a foothill yellow-legged frog was observed in 2001 in Big Spring Creek, ±0.4 miles west of the Project site. Although no foothill yellow-legged frogs were observed during the wildlife survey, the species has a low potential to utilize the onsite reach of Cold Creek.
Oregon spotted frog	<i>Rana pretiosa</i>	FT, SSSC	Oregon spotted frog is typically found in or near a perennial body of water 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 in the Project site; thus, the species would not be present.

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COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
<b>FISH</b>							
Delta smelt	<i>Hypomesus transpacificus</i>	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 for Delta smelt; thus, the species would not be present.
Longfin smelt	<i>Spirinchus thaleichthys</i>	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	No suitable habitat occurs in the Project site for longfin smelt; thus, the species would not be present.
<b>MAMMALS</b>							
Fisher - West Coast DPS	<i>Martes pennanti</i>	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 for fishers 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	According to CNDDB records, a fisher was observed in 2001 in the vicinity of the State Fish Hatchery, ±0.4 miles west of the Project site. Although fishers could potentially forage or stray onto the Project site, the species is not expected to den in the area due to the level of human activity nearby.

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COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Gray wolf	<i>Canis lupus</i>	FE, SE	Gray wolves are habitat generalists and 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. A den may have two or more entrances, which are usually indicated by a large pile of dirt. Den sites are often near water, and are usually elevated to detect approaching enemies. 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 site.
Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	FC, ST	The Sierra Nevada red fox inhabits remote mountainous areas where encounters with humans are rare. Preferred habitat appears to be red fir and lodgepole pine forests in the subalpine and alpine zones of the Sierra Nevada. This species may hunt in forest openings, meadows, and barren rocky areas associated with its high elevation habitats.	No	No	No	No suitable habitat for Sierra Nevada red fox occurs in the Project site; thus, the species would not be present.

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**January 2019**

COMMON NAME	SCIENTIFIC NAME	STATUS <sup>1</sup>	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Spotted bat	<i>Euderma maculatum</i>	SSSC	Spotted bats inhabit grasslands, mixed coniferous forests, and deserts. Spotted bats typically roost in cliff crevices, but may also roost in caves, and manmade structures. Roosts usually occur near suitable foraging areas (i.e., open water, meadows, riparian habitat, and forest openings).	No	No	No	According to CNDDB records, an unknown number of spotted bats were identified in the general project area in 1993 based on recorded calls. The occurrence is broadly mapped to include the Project site. No potentially suitable roosting habitat for spotted bat is present in the Project site; thus, the species is not expected to roost in the Project site.
Western mastiff bat	<i>Eumops perotis californicus</i>	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, grasslands, palm oases, chaparral, desert scrub, and urban areas. The western mastiff bat typically roosts in crevices in rocky canyons and cliffs where the canyon or cliff face is vertical or nearly vertical. The species may also roost in tunnels, buildings, or other manmade structures. Suitable roosts feature an unobstructed drop-off of at least 6.5 feet to provide a launching area for flight.	No	No	No	According to CNDDB records, western mastiff bats were reported in 1993 near Ney Springs Creek, ±2.5 miles southwest of the Project site. There are no rocky canyons, cliffs, or other potentially suitable roosting habitat for western mastiff bats in the Project site; thus, the species is not expected to be present.

## **<sup>1</sup> 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 to Occur: Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Allen's Hummingbird	<i>Selasphorus sasin</i>	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.	Yes	Pot.	According to the Mt. Shasta Audubon Society <i>Birds of Siskiyou County</i> 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 site. Thus, the species would not nest in the project area.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	In Siskiyou County, bald eagles are normally present during the summer months but uncommon during the winter months. No suitable nesting habitat for the bald eagle is present on the project site. No bald eagles or eagle nests were observed during the biological surveys. Thus, the bald eagle is not expected to nest on the project site.
California Thrasher	<i>Toxostoma redivivum</i>	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 <i>Birds of Siskiyou County</i> checklist, California thrasher is an uncommon resident in the Shasta Valley area of Siskiyou County, which is north of the project site. No suitable habitat for California thrasher is present in the project site. Thus, the species would not nest in the project site.
Clark's Grebe	<i>Aechmophorus clarkii</i>	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 <i>Birds of Siskiyou County</i> 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.

TABLE 4

Potential to Occur: Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Golden Eagle	<i>Aquila chrysaetos</i>	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 <i>Birds of Siskiyou County</i> checklist, golden eagles are fairly common residents in Siskiyou County. CNDDDB records identify two golden eagle nest sites in Siskiyou County. The closest reported occurrence is in the Shasta Valley. No suitable nesting habitat for golden eagles is present in the project site. Thus, the golden eagle is not expected to nest in the project area.
Great Blue Heron	<i>Ardea herodias</i>	Great blue herons nest in colonies along marshes, lake margins, tidal flats, wet meadows, rivers, and streams. Nests are generally in the tops of tall trees and snags. Uncommon nest sites include rock ledges, sea cliffs, and tule mats. Breeds March 15 to August 15.	No	No	In Siskiyou County, great blue herons are present all year and are common. However, no great blue herons or heron nesting colonies were observed during the field surveys. Thus, the great blue heron is not expected to nest in the project site.
Lesser Yellowlegs	<i>Tringa flavipes</i>	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 <i>Birds of Siskiyou County</i> 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.
Long-billed Curlew	<i>Numenius americanus</i>	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 <i>Birds of Siskiyou County</i> checklist, in Siskiyou County, long-billed curlews are found primarily in the Klamath Basin and/or Butte Valley. Thus, the species would not nest in the project area.

**TABLE 4**

**Potential to Occur: Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service**

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Marbled Godwit	<i>Limosa fedoa</i>	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 <i>Birds of Siskiyou County</i> 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	<i>Contopus cooperi</i>	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 <i>Birds of Siskiyou County</i> 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 site. 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 conducting pre-construction surveys for nesting birds, as required by the adopted Mitigation Measures.
Rufous Hummingbird	<i>Selasphorus rufus</i>	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 <i>Birds of Siskiyou County</i> checklist, rufous hummingbirds normally occur only as migrants in Siskiyou County. Thus, the species would not nest in the project area.

TABLE 4

Potential to Occur: Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Semipalmated Sandpiper	<i>Calidris pusilla</i>	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 <i>Birds of Siskiyou County</i> 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 site. Thus, the species would not nest in the project area.
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Short-billed dowitchers breed in boggy muskegs 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 <i>Birds of Siskiyou County</i> 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.
Western Screech-Owl	<i>Megascops kennicottii</i>	Western screech-owls inhabit a wide variety of open forest habitats with an abundance of small mammals and insect prey, and cavities for nesting. On the northwest coast, they inhabit coniferous forests along the edges of clearings, rivers, and lakes. Further inland they occupy lowland deciduous forests, especially riparian woodlands. Southern populations inhabit lowland riparian forests, oak-filled arroyos, open pine and pinyon-juniper forests, and some desert habitats. They roost mainly in cavities in large trees, but also in dense foliage of deciduous trees, usually on a branch next to the trunk, or in dense conifers. Breeds March 1 to June 30.	Yes	Pot.	In Siskiyou County, western screech-owls are present year-round and are fairly common. Although no screech-owls were observed during the daytime wildlife survey, they could be present in the project area. Potential impacts would be avoided by conducting pre-construction surveys for nesting birds, as required by the adopted Mitigation Measures.

**TABLE 4**

**Potential to Occur: Migratory Birds of Conservation Concern Identified by the U.S. Fish and Wildlife Service**

Common Name	Scientific Name	General Habitat Description	Habitat Present (Y/N)	Species Present (Y/N/POT.)	Rationale/Comments
Whimbrel	<i>Numenius phaeopus</i>	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 California 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 <i>Birds of Siskiyou County</i> 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.
Willet	<i>Tringa semipalmata</i>	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 <i>Birds of Siskiyou County</i> 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>

\_\_\_\_\_. 2019. California Natural Diversity Database (CNDDDB). <https://www.wildlife.ca.gov/Data/CNDDDB/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. 2019. Environmental Conservation Online System (ECOS). <https://ecos.fws.gov/ecp/>

# APPENDIX A

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**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:

February 01, 2019

Consultation Code: 08EYRE00-2018-SLI-0223

Event Code: 08EYRE00-2019-E-00126

Project Name: 032-32 Mt. Shasta Sewer Interceptor Project

Subject: Updated 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](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](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://>

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[www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm](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](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/Program**

<b>County</b>	<b>Ownership/Program</b>	<b>Species</b>	<b>Office Lead*</b>
<b>Alameda</b>	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
<b>Alameda</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Alpine</b>	Humboldt Toiyabe National Forest	All	RFWO
<b>Alpine</b>	Lake Tahoe Basin Management Unit	All	RFWO
<b>Alpine</b>	Stanislaus National Forest	All	SFWO
<b>Alpine</b>	El Dorado National Forest	All	SFWO
<b>Colusa</b>	Mendocino National Forest	All	AFWO
<b>Colusa</b>	Other	All	By jurisdiction (see map)
<b>Contra Costa</b>	Legal Delta (Excluding ECCHCP)	All	BDFWO
<b>Contra Costa</b>	Antioch Dunes NWR	All	BDFWO

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<b>Contra Costa</b>	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
<b>Contra Costa</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Del Norte</b>	All	All	AFWO
<b>El Dorado</b>	El Dorado National Forest	All	SFWO
<b>El Dorado</b>	LakeTahoe Basin Management Unit		RFWO
<b>Glenn</b>	Mendocino National Forest	All	AFWO
<b>Glenn</b>	Other	All	By jurisdiction (see map)
<b>Humboldt</b>	All except Shasta Trinity National Forest	All	AFWO
<b>Humboldt</b>	Shasta Trinity National Forest	All	YFWO
<b>Lake</b>	Mendocino National Forest	All	AFWO
<b>Lake</b>	Other	All	By jurisdiction (see map)
<b>Lassen</b>	Modoc National Forest	All	KFWO
<b>Lassen</b>	Lassen National Forest	All	SFWO
<b>Lassen</b>	Toiyabe National Forest	All	RFWO
<b>Lassen</b>	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
<b>Lassen</b>	BLM Alturas Resource Area	All	KFWO
<b>Lassen</b>	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
<b>Lassen</b>	All other ownerships	All	By jurisdiction (see map)

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<b>Marin</b>	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
<b>Marin</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Mendocino</b>	Russian River watershed	All	SFWO
<b>Mendocino</b>	All except Russian River watershed	All	AFWO
<b>Modoc</b>	Modoc National Forest	All	KFWO
<b>Modoc</b>	BLM Alturas Resource Area	All	KFWO
<b>Modoc</b>	Klamath Basin National Wildlife Refuge Complex	All	KFWO
<b>Modoc</b>	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
<b>Modoc</b>	All other ownerships	All	By jurisdiction (See map)
<b>Mono</b>	Inyo National Forest	All	RFWO
<b>Mono</b>	Humboldt Toiyabe National Forest	All	RFWO
<b>Napa</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Napa</b>	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
<b>Nevada</b>	Humboldt Toiyabe National Forest	All	RFWO
<b>Nevada</b>	All other ownerships	All	By jurisdiction (See map)
<b>Placer</b>	Lake Tahoe Basin Management Unit	All	RFWO
<b>Placer</b>	All other ownerships	All	SFWO

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<b>Sacramento</b>	Legal Delta	Delta Smelt	BDFWO
<b>Sacramento</b>	Other	All	By jurisdiction (see map)
<b>San Francisco</b>	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
<b>San Francisco</b>	All ownerships but tidal/estuarine	All	SFWO
<b>San Mateo</b>	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
<b>San Mateo</b>	All ownerships but tidal/estuarine	All	SFWO
<b>San Joaquin</b>	Legal Delta excluding San Joaquin HCP	All	BDFWO
<b>San Joaquin</b>	Other	All	SFWO
<b>Santa Clara</b>	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
<b>Santa Clara</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Shasta</b>	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
<b>Shasta</b>	Hat Creek Ranger District	All	SFWO
<b>Shasta</b>	Bureau of Reclamation (Central Valley Project)	All	BDFWO
<b>Shasta</b>	Whiskeytown National Recreation Area	All	YFWO
<b>Shasta</b>	BLM Alturas Resource Area	All	KFWO
<b>Shasta</b>	Caltrans	By jurisdiction	SFWO/AFWO

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<b>Shasta</b>	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
<b>Shasta</b>	All other ownerships	All	By jurisdiction (see map)
<b>Shasta</b>	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
<b>Sierra</b>	Humboldt Toiyabe National Forest	All	RFWO
<b>Sierra</b>	All other ownerships	All	SFWO
<b>Siskiyou</b>	Klamath National Forest (except Ukonom District)	All	YFWO
<b>Siskiyou</b>	Six Rivers National Forest and Ukonom District	All	AFWO
<b>Siskiyou</b>	Shasta Trinity National Forest	All	YFWO
<b>Siskiyou</b>	Lassen National Forest	All	SFWO
<b>Siskiyou</b>	Modoc National Forest	All	KFWO
<b>Siskiyou</b>	Lava Beds National Volcanic Monument	All	KFWO
<b>Siskiyou</b>	BLM Alturas Resource Area	All	KFWO
<b>Siskiyou</b>	Klamath Basin National Wildlife Refuge Complex	All	KFWO
<b>Siskiyou</b>	All other ownerships	All	By jurisdiction (see map)
<b>Solano</b>	Suisun Marsh	All	BDFWO
<b>Solano</b>	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
<b>Solano</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Solano</b>	Other	All	By jurisdiction (see map)

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<b>Sonoma</b>	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
<b>Sonoma</b>	All ownerships but tidal/estuarine	All	SFWO
<b>Tehama</b>	Mendocino National Forest	All	AFWO
<b>Tehama</b>	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
<b>Tehama</b>	All other ownerships	All	By jurisdiction (see map)
<b>Trinity</b>	BLM	All	AFWO
<b>Trinity</b>	Six Rivers National Forest	All	AFWO
<b>Trinity</b>	Shasta Trinity National Forest	All	YFWO
<b>Trinity</b>	Mendocino National Forest	All	AFWO
<b>Trinity</b>	BIA (Tribal Trust Lands)	All	AFWO
<b>Trinity</b>	County Government	All	AFWO
<b>Trinity</b>	All other ownerships	All	By jurisdiction (See map)
<b>Yolo</b>	Yolo Bypass	All	BDFWO
<b>Yolo</b>	Other	All	By jurisdiction (see map)
<b>All</b>	FERC-ESA	All	By jurisdiction (see map)
<b>All</b>	FERC-ESA	Shasta crayfish	SFWO
<b>All</b>	FERC-Relicensing (non-ESA)	All	BDFWO

**\*Office Leads:**

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**AFWO=Arcata 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=Yreka 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

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## Project Summary

Consultation Code: 08EYRE00-2018-SLI-0223

Event Code: 08EYRE00-2019-E-00126

Project Name: 032-32 Mt. Shasta Sewer Interceptor Project

Project Type: WASTEWATER PIPELINE

Project Description: The project entails various improvements to the City of Mt. Shasta's wastewater collection system that are required in order to repair and replace aging infrastructure.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/41.30403727862631N122.3202842956353W>



Counties: Siskiyou, CA

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## Endangered Species Act Species

There is a total of 15 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<sup>1</sup>, 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.

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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 <i>Canis lupus</i> 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 <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/4488">https://ecos.fws.gov/ecp/species/4488</a>	Endangered

### Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/1123">https://ecos.fws.gov/ecp/species/1123</a>	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is <b>proposed</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a>	Threatened

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## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
Oregon Spotted Frog <i>Rana pretiosa</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6633">https://ecos.fws.gov/ecp/species/6633</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened
Longfin Smelt <i>Spirinchus thaleichthys</i> Population: San Francisco Bay delta DPS No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9011">https://ecos.fws.gov/ecp/species/9011</a>	Candidate

## Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a>	Threatened

## Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Flowering Plants

NAME	STATUS
Gentner's Fritillary <i>Fritillaria gentneri</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8120">https://ecos.fws.gov/ecp/species/8120</a>	Endangered
Hoover's Spurge <i>Chamaesyce hooveri</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3019">https://ecos.fws.gov/ecp/species/3019</a>	Threatened
Slender Orcutt Grass <i>Orcuttia tenuis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/1063">https://ecos.fws.gov/ecp/species/1063</a>	Threatened

## Conifers and Cycads

NAME	STATUS
Whitebark Pine <i>Pinus albicaulis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1748">https://ecos.fws.gov/ecp/species/1748</a>	Candidate

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# APPENDIX B

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## Lists of Wildlife Species and Vascular Plants Observed on the Site

**Checklist of Wildlife Species Observed  
Mount Shasta Sewer Interceptor  
June 14, 2017, July 12, July 21, August 16, and October 25, 2018**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
<b>BIRDS</b>		
Acorn woodpecker	<i>Melanerpes formicivorus</i>	None
American crow	<i>Corvus brachyrhynchos</i>	None
American robin	<i>Turdus migratorius</i>	None
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	None
Bushtit	<i>Psaltriparus minimus</i>	None
California quail	<i>Callipepla californica</i>	None
Canada goose	<i>Branta canadensis</i>	None
Northern mockingbird	<i>Mimus polyglottos</i>	None
Dark-eyed (Oregon) junco	<i>Junco hyemalis</i>	None
Osprey	<i>Pandion haliaetus</i>	None
Rock pigeon	<i>Columba livia</i>	None
Song sparrow	<i>Melospiza melodia</i>	None
Spotted towhee	<i>Pipilo maculatus</i>	None
Turkey vulture	<i>Cathartes aura</i>	None
Western scrub-jay	<i>Aphelocoma californica</i>	None
<b>MAMMALS</b>		
American black bear	<i>Ursus americanus</i>	None
Black-tailed deer	<i>Odocoileus hemionus</i>	None
Pocket gopher	<i>Thomomys</i> sp.	None
California ground squirrel	<i>Otospermophilus beecheyi</i>	None
Raccoon	<i>Procyon lotor</i>	None

## CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta Sewer Interceptor Improvement Project  
June 14, 2017, July 12, July 21, and August 16, 2018

### Adoxaceae

*Sambucus nigra* subsp. *caerulea*

### Alismataceae

*Alisma triviale*

### Apiaceae

*Cicuta douglasii*  
*Conium maculatum*  
*Lomatium nudicaule*  
*Osmorhiza berteroi*

### Apocynaceae

*Asclepias* sp.

### Asparagaceae

*Asparagus officinalis* ssp. *officinalis*

### Asteraceae

*Achillea filipendulina*  
*Achillea millefolium*  
*Ambrosia artemisiifolia*  
*Anthemis cotula*  
*Artemisia douglasiana*  
*Centaurea cyanus*  
*Centaurea stoebe* ssp. *micranthos*  
*Chondrilla juncea*  
*Cichorium intybus*  
*Cirsium arvense*  
*Erigeron canadensis*  
*Erigeron philadelphicus* var. *philadelphicus*  
*Gnaphalium palustre*  
*Grindelia nana*  
*Hypochaeris radicata*  
*Lactuca serriola*  
*Madia elegans*  
*Madia gracilis*  
*Matricaria discoidea*  
*Sonchus* sp.  
*Symphotrichum spathulatum*  
*Taraxacum officinale*  
*Tragopogon dubius*

### Betulaceae

*Alnus incana* ssp. *tenuifolia*

### Muskroot Family

Blue elderberry

### Water Plantain Family

Water plantain

### Carrot Family

Western water-hemlock  
Poison hemlock  
Pestle lomatium  
Mountain sweet-cicely

### Dogbane Family

Milkweed

### Asparagus Family

Garden asparagus

### Sunflower Family

Fern-leaf yarrow  
Common yarrow  
Annual ragweed  
Mayweed  
Mugwort  
Bachelor's button  
Spotted knapweed  
Rush skeletonweed  
Chicory  
Canadian thistle  
Canadian horseweed  
Philadelphia fleabane  
Western marsh cudweed  
Idaho resin-weed  
Rough cat's ear  
Prickly lettuce  
Madia  
Slender tarweed  
Pineapple weed  
Sow thistle  
Western mountain aster  
Dandelion  
Goat's beard

### Birch Family

Mountain alder

# CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

## Mt. Shasta Sewer Interceptor Improvement Project

### **Boraginaceae**

*Amsinckia menziesii*  
*Cryptantha torreyana*  
*Lithospermum arvense*  
*Myosotis laxa*  
*Plagiobothrys* sp.

### **Brassicaceae**

*Brassica rapa*  
*Draba verna*  
*Hirschfeldia incana*  
*Isatis tinctoria*  
*Lepidium campestre*  
*Nasturtium officinale*  
*Raphanus raphanistrum*  
*Rorippa curvisiliqua*  
*Sisymbrium altissimum*

### **Caryophyllaceae**

*Dianthus armeria* subsp. *armeria*  
*Scleranthus annuus* subsp. *annuus*  
*Stellaria graminea*  
*Stellaria longipes* subsp. *longipes*  
*Symphoricarpos albus* var. *laevigatus*

### **Cornaceae**

*Cornus sericea* subsp. *sericea*

### **Cupressaceae**

*Calocedrus decurrens*

### **Cyperaceae**

*Carex amplifolia*  
*Carex angustata*  
*Carex feta*  
*Carex nebrascensis*  
*Carex stipata* var. *stipata*  
*Carex subfusca*  
*Eleocharis macrostachya*  
*Scirpus microcarpus*

### **Dennstaedtiaceae**

*Pteridium aquilinum* var. *pubescens*

### **Dipsacaceae**

*Dipsacus fullonum*

### **Equisetaceae**

*Equisetum arvense*

### **Ericaceae**

*Arctostaphylos patula*

### **Borage Family**

Menzie's fiddleneck  
Torrey's cryptantha  
Gromwell  
Bay forget-me-not  
Popcorn-flower

### **Mustard Family**

Field-mustard  
Whitlow grass  
Shortpod mustard  
Dyer's-woad  
English peppergrass  
Water cress  
Jointed charlock  
Western yellow cress  
Tumble-mustard

### **Pink Family**

Deptford pink  
German knotgrass  
Grass-like starwort  
Long-stalked starwort  
Snowberry

### **Dogwood Family**

American dogwood

### **Cypress Family**

Incense cedar

### **Sedge Family**

Big-leaved sedge  
Narrow-spiked sedge  
Green-sheathed sedge  
Nebraska sedge  
Stiped sedge  
Small-bract sedge  
Creeping spikerush  
Small-fruited bulrush

### **Bracken Family**

Bracken fern

### **Teasel Family**

Wild teasel

### **Horsetail Family**

Common horsetail

### **Heath Family**

Green-leaved manzanita

# CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

## Mt. Shasta Sewer Interceptor Improvement Project

### Fabaceae

*Acmispon americanus* var. *americanus*  
*Acmispon nevadensis* var. *nevadensis*  
*Cytisus scoparius*  
*Lathyrus latifolius*  
*Lotus corniculatus*  
*Lupinus bicolor*  
*Lupinus polyphyllus*  
*Robinia pseudoacacia*  
*Trifolium campestre*  
*Trifolium hybridum*  
*Trifolium pratense*  
*Trifolium repens*  
*Vicia americana* subsp. *americana*  
*Vicia sativa*  
*Vicia villosa* subsp. *villosa*

### Fagaceae

*Quercus kelloggii*

### Geraniaceae

*Erodium cicutarium*

### Hypericaceae

*Hypericum perforatum*

### Iridaceae

*Sisyrinchium bellum*

### Juncaceae

*Juncus balticus* subsp. *ater*  
*Juncus bufonius*  
*Juncus effusus*  
*Juncus occidentalis*

### Lamiaceae

*Mentha arvensis*  
*Mentha spicata*  
*Nepeta cataria*  
*Prunella vulgaris* var. *lanceolata*  
*Stachys rigida* var. *rigida*

### Malvaceae

*Sidalcea oregana*

### Montiaceae

*Calyptidium monospermum*

### Legume Family

Spanish lotus  
Sierra Nevada lotus  
Scotch broom  
Perennial sweet pea  
Birdsfoot trefoil  
Bicolored lupine  
Blue-pod lupine  
Black locust  
Hop clover  
Alsike clover  
Red clover  
White clover  
American vetch  
Garden vetch  
Winter vetch

### Oak Family

California black oak

### Geranium Family

Red-stemmed filaree

### St. John's-wort Family

Klamath weed

### Iris Family

Blue-eyed grass

### Rush Family

Baltic rush  
Toad rush  
Soft rush  
Western rush

### Mint Family

Wild mint  
Spearmint  
Catnip  
Mountain self-heal  
Rigid hedge nettle

### Mallow Family

Oregon checkerbloom

### Miner's Lettuce Family

One-seeded pussypaws

# CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

## Mt. Shasta Sewer Interceptor Improvement Project

### Onagraceae

*Epilobium brachycarpum*  
*Epilobium ciliatum* subsp. *ciliatum*  
*Epilobium densiflorum*  
*Gayophytum heterozygum*  
*Oenothera villosa* subsp. *strigosa*

### Orchidaceae

*Platanthera dilatata* var. *leucostachys*  
*Spiranthes porrifolia*

### Papaveraceae

*Eschscholzia californica*

### Phrymaceae

*Mimulus guttatus*

### Pinaceae

*Pinus ponderosa*

### Plantaginaceae

*Plantago lanceolata*  
*Veronica americana*

### Poaceae

*Agrostis* sp.  
*Agrostis scabra*  
*Alopecurus aequalis* var. *aequalis*  
*Bromus carinatus* var. *carinatus*  
*Bromus hordeaceus*  
*Crypsus alopecuroides*  
*Dactylis glomerata*  
*Elymus caput-medusae*  
*Elymus glaucus* subsp. *glaucus*  
*Elymus hispidus*  
*Elymus multisetus*  
*Festuca arundinacea*  
*Festuca bromoides*  
*Festuca myuros*  
*Festuca perennis*  
*Glyceria declinata*  
*Holcus lanatus*  
*Hordeum marinum* subsp. *gussoneanum*  
*Phalaris arundinacea*  
*Phleum pratense*  
*Poa bulbosa*  
*Poa pratensis*  
*Secale cereale*  
*Stipa lemmonii* var. *lemmonii*  
*Ventenata dubia*

### Evening-Primrose Family

Tall annual willowherb  
Fringed willowherb  
Dense flowered spike-primrose  
Zizag groundsmoke  
Hairy evening primrose

### Orchid Family

White bog orchid  
Western ladies' tresses

### Poppy Family

California poppy

### Lopseed Family

Common monkey-flower

### Pine Family

Ponderosa pine

### Plantain Family

English plantain  
American brooklime

### Grass Family

Bentgrass  
Rough bentgrass  
Short-awn foxtail  
California brome  
Soft chess  
Foxtail pricklegrass  
Orchard grass  
Medusahead  
Blue wild rye  
Intermediate wheatgrass  
Big squirreltail  
Tall fescue  
Six-weeks fescue  
Foxtail fescue  
Annual ryegrass  
Low mannagrass  
Common velvet grass  
Mediterranean barley  
Reed canary grass  
Cultivated timothy  
Bulbous bluegrass  
Kentucky bluegrass  
Rye  
Lemmon's needlegrass  
North Africa grass

# CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

## Mt. Shasta Sewer Interceptor Improvement Project

### **Polemoniaceae**

*Collomia grandiflora*

### **Polygonaceae**

*Eriogonum nudum*  
*Persicaria amphibia*  
*Persicaria lapathifolia*  
*Persicaria maculosa*  
*Polygonum aviculare* subsp. *depressum*  
*Rumex* sp. (*transitorius* ?)  
*Rumex acetosella*  
*Rumex crispus*

### **Ranunculaceae**

*Ranunculus repens*  
*Ranunculus uncinatus*

### **Rosaceae**

*Amelanchier utahensis*  
*Crataegus gaylussacia*  
*Geum aleppicum*  
*Geum macrophyllum*  
*Malus* sp.  
*Potentilla gracilis* ssp. *fastigiata*  
*Poteridium annuum*  
*Prunus* sp.  
*Prunus virginiana* var. *demissa*  
*Rosa canina*  
*Rosa multiflora*  
*Rosa pisocarpa*  
*Rubus armeniacus*  
*Spiraea douglasii*

### **Rubiaceae**

*Galium aparine*

### **Salicaceae**

*Populus tremuloides*  
*Populus trichocarpa*  
*Salix laevigata*  
*Salix lasiandra*  
*Salix lasiolepis*  
*Salix melanopsis*

### **Sapindaceae**

*Acer negundo*

### **Scrophulariaceae**

*Verbascum thapsus*

### **Phlox Family**

Large-flowered collomia

### **Buckwheat Family**

Naked buckwheat  
Water smartweed  
Willow weed  
Lady's thumb  
Common knotweed  
Willow dock  
Sheep sorrel  
Curly dock

### **Buttercup Family**

Creeping buttercup  
Hook-seeded buttercup

### **Rose Family**

Utah service-berry  
Klamath hawthorn  
Aleppo avens  
Large-leaved avens  
Apple  
Slender cinquefoil  
Western burnet  
Cherry  
Western choke-cherry  
Dog rose  
Multiflora rose  
Cluster rose  
Himalayan blackberry  
Douglas' spiraea

### **Madder Family**

Cleavers

### **Willow Family**

Quaking aspen  
Black cottonwood  
Red willow  
Yellow willow  
Arroyo willow  
Dusky willow

### **Soapberry Family**

Box elder

### **Snapdragon Family**

Woolly mullein

## CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

### Mt. Shasta Sewer Interceptor Improvement Project

#### **Themidaceae**

*Dichelostemma multiflorum*

*Triteleia hyacinthina*

#### **Typhaceae**

*Typha* sp.

#### **Valerianaceae**

*Valerianella locusta*

#### **Viscaceae**

*Phoradendron leucarpum* subsp. *tomentosum*

#### **Zygophyllaceae**

*Tribulus terrestris*

#### **Brodiaea Family**

Round-toothed ookow

Wild hyacinth

#### **Cattail Family**

Cattail

#### **Valerian Family**

Corn salad

#### **Mistletoe Family**

Oak mistletoe

#### **Caltrop Family**

Puncture vine

# **APPENDIX C**

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## **Resumes**

**Donald Burk, Environmental Services Manager**

**John Luper, Qualified Biologist**

**Stacey Alexander, Field 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.

# 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 twelve 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.

**Stacey Alexander**  
*Environmental Scientist/ Wildlife Biologist*

**Education**

B.S. Biology (Ecology, Evolution and Organismal Biology)  
Minor in Environmental Science and Resource Management  
California State University, Channel Islands

**Professional Affiliations and Certifications**

GIS Certificate, Shasta College, Redding, CA  
American Fisheries Society  
Audubon Society  
California Geographic Information Association

Stacey Alexander has over five years of experience working as an environmental scientist throughout California. Her experience includes aquatic surveys, habitat assessment, environmental monitoring for construction activities, environmental permitting, and endangered species surveys. In addition to working in the private sector, she has extensive research experience working as a field biologist for federal and state agencies in California.

**Representative Experience**

- *Aquatic Surveys.* Performed surveys of streams, rivers, and lakes of all sizes throughout California, including freshwater fish surveys, benthic macroinvertebrate collections, stream habitat assessments, and stream health assessments. Knowledgeable in the identification of aquatic organisms, including threatened and endangered species.
- *Habitat Assessment.* Experience performing habitat assessments to evaluate if an area is optimal, suboptimal, marginal or poor based upon criteria.
- *General Wildlife Surveys.* Performed general wildlife surveys to determine the potential for special-status species to be present on proposed development sites. Also conducted nesting bird surveys and fish habitat assessments.
- *Regulatory Permitting.* Worked closely with developers, engineers, and resource agencies to manage the permitting process for a wide variety of projects.
- *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.
- *Endangered Species Surveys.* Expertise in conducting surveys for various threatened and endangered species.
- *GIS Mapping and Data Collection.* Skilled in creating maps as well as importing, georeferencing, managing, and analyzing data within ArcGIS.